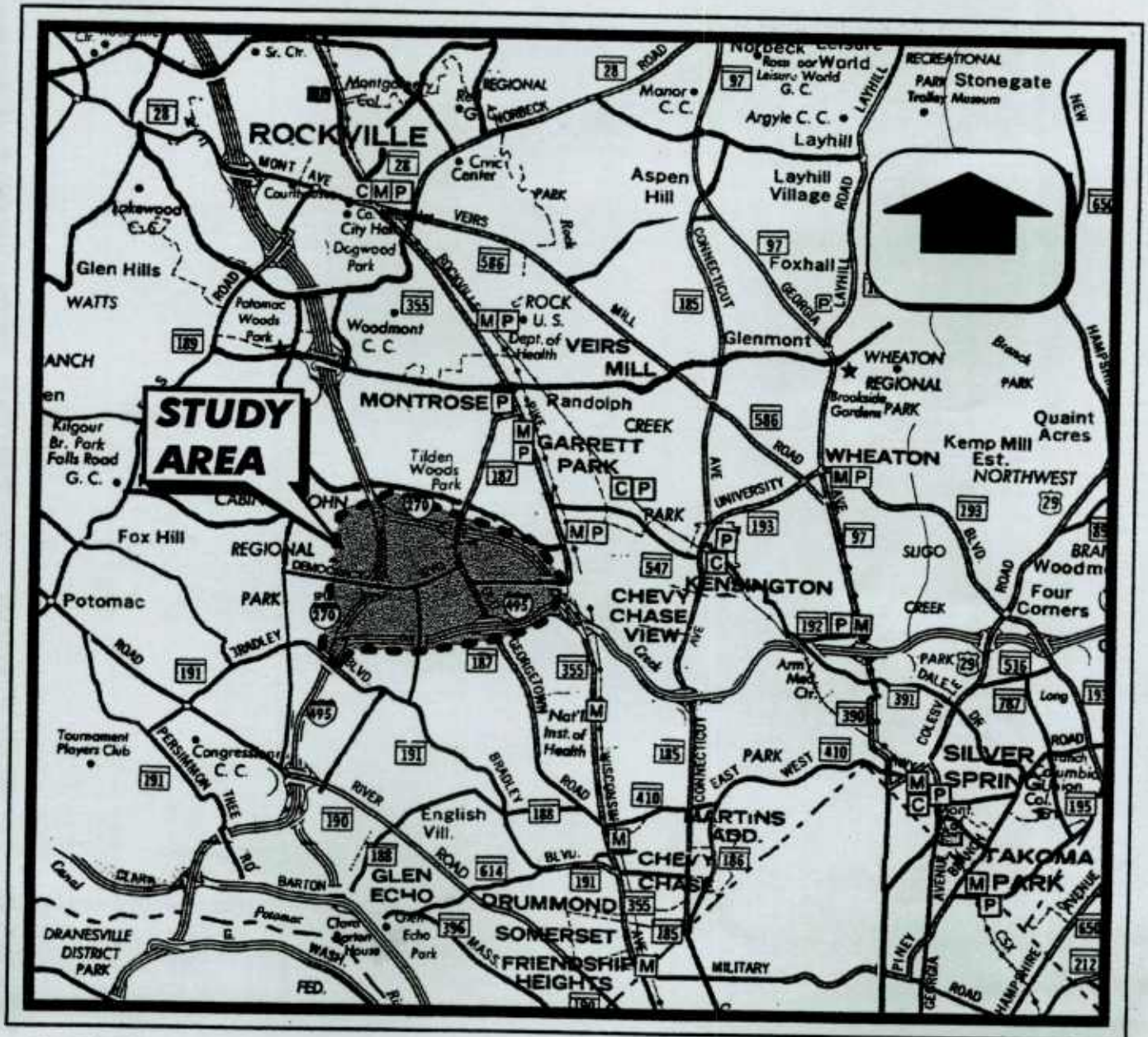




# FINDING OF NO SIGNIFICANT IMPACT

FOR CONTRACT NO. M 401-156-372

## I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD Montgomery County, Maryland



prepared by:

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

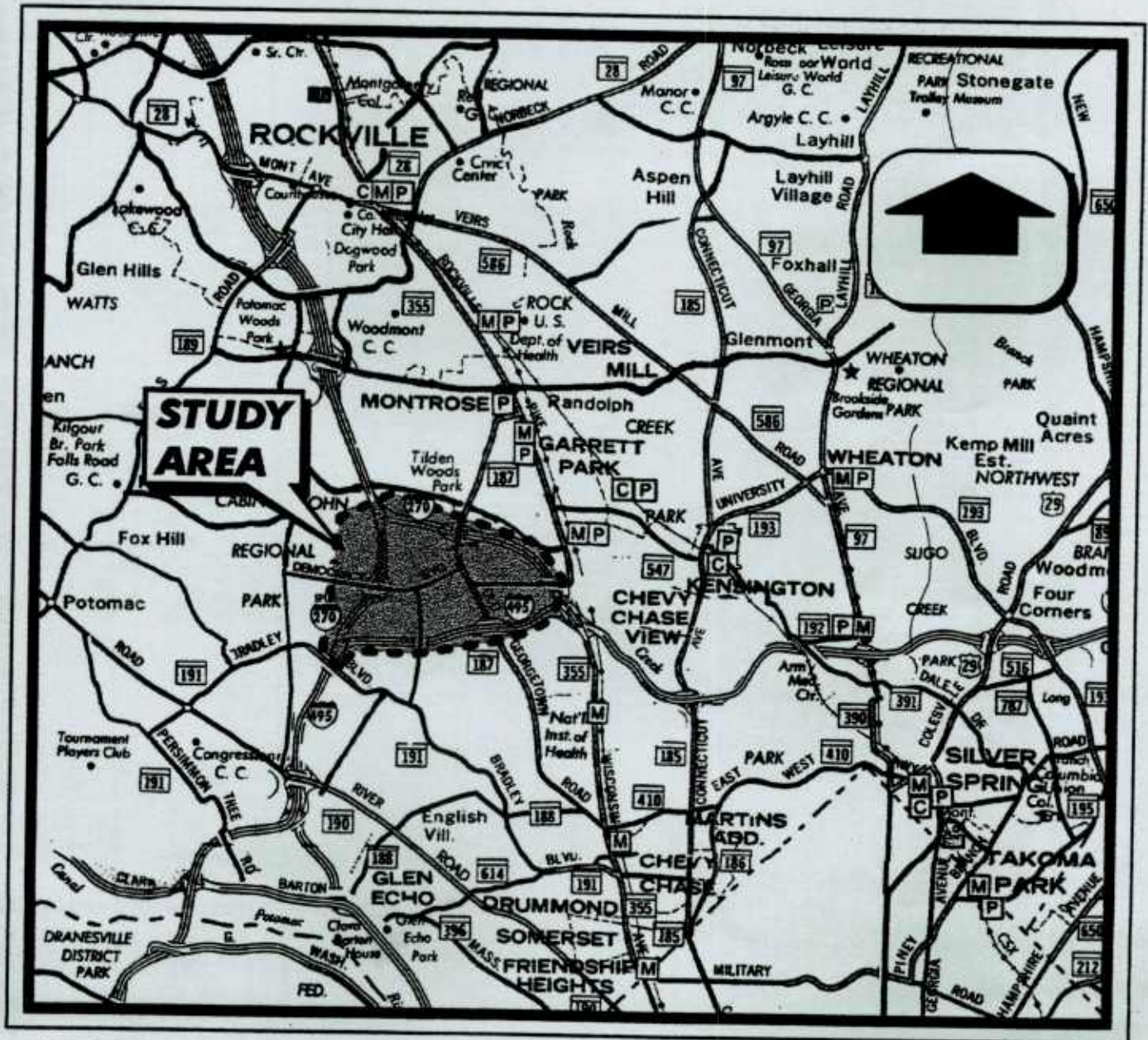
MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION



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FOR CONTRACT NO. M 401-156-372

**I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD**  
*Montgomery County, Maryland*



prepared by:

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BOULEVARD

FINDING OF NO SIGNIFICANT IMPACT

TABLE OF CONTENTS

I. RECORD OF DECISION ..... I-1

II. COMPARISON OF ALTERNATIVES ..... II-1

III. SUMMARY OF ACTIONS AND RECOMMENDATION ..... III-1

    A. Background ..... III-1

        1. Project Location ..... III-1

        2. Purpose and Need for the Project ..... III-1

        3. Project History ..... III-8

    B. Alternatives ..... III-10

        1. Alternatives Presented at the Location/Design Public Hearing on  
        December 12, 1995 ..... III-10

            a. Alternative 1 (No Build) ..... III-10

            b. Alternative 2C ..... III-10

            c. Alternative 2D ..... III-11

            d. Alternative 2E ..... III-11

            e. Alternative 3E ..... III-11

            f. Alternative 3F ..... III-12

            g. Alternative 3G ..... III-12

            h. Alternative 3H ..... III-13

            i. Alternative 4A ..... III-13

            j. Alternative 4B ..... III-14

            k. Alternative 4C ..... III-14

**TABLE OF CONTENTS (CONT'D)**

- l. Alternative 4D ..... III-15
- m. Alternative 5B ..... III-15
- n. Alternative 5C ..... III-16
- o. Alternative 6B ..... III-16
  
- 2. Alternatives Modified Following the Location/Design of  
Public Hearing - December 12, 1995 ..... III-16
  - a. Alternative 2D ..... III-16
  - b. Alternative 4A - Signalized Ramp Option ..... III-17
  - c. Alternative 4C ..... III-18
  
- 3. The Selected Alternative: Alternatives 2D (Modified), 3E,  
4A Signalized (Modified)/4C and 5C, Figures III-1 thru III-6 ..... III-18
  
- 4. Environmental Consequences of the Selected Alternative ..... III-19
  - a. Social/Economic ..... III-19
    - 1) Displacements and Relocations ..... III-19
    - 2) Right-of-Way Requirements ..... III-19
    - 3) Title VI Statement ..... III-20
    - 4) Community Disruption ..... III-20
    - 5) Accessibility to Existing Services and Facilities .... III-21
    - 6) Regional and Local Economic Impacts ..... III-22
  - b. Land Use and Growth Management ..... III-23
  - c. Cultural Resources ..... III-24

**TABLE OF CONTENTS (CONT'D)**

- d. Natural Environment ..... III-24
  - 1) Topography, Geology, and Soils ..... III-24
  - 2) Water Resources ..... III-25
    - a. Surface Water ..... III-26
    - b. Groundwater Effects ..... III-28
  - 3) Floodplains ..... III-29
  - 4) Terrestrial and Aquatic Habitat ..... III-30
- e. Air Quality ..... III-37
- f. Noise Impacts ..... III-37
  - 1) Noise Prediction Methodology ..... III-37
    - a. Federal Highway Administration/  
SHA Guidelines ..... III-37
    - b. Noise Prediction Methodology Using  
FHWA Model ..... III-40
  - 2) Noise Prediction Results ..... III-40
  - 3) Other Mitigation Measures ..... III-45
  - 4) Construction Noise ..... III-46
  - 5) Conclusion/Summary ..... III-47
- C. Summary of Public Involvement ..... III-53
- D. Positions Taken ..... III-54

**TABLE OF CONTENTS (CONT'D)**

IV. PUBLIC HEARING COMMENTS ..... IV-1

V. CORRESPONDENCE ..... V-1

    A. Interagency Meetings/Agency Coordination ..... V-1

    B. Elected Officials

    C. Citizens Comments Received Subsequent to Public Hearing

VI. APPENDICES

6

## LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Follows Page</u>
1	Project Location Map .....	III-2
2	Study Area Map .....	III-2
3	1994 Existing Interchange Levels of Service .....	III-6
4	2020 No-Build Interchange Levels of Service .....	III-6
5	Alternatives Presented at the Location/Design Public Hearing 2C, 2D and 2E .....	III-10
6	Alternatives Presented at the Location/Design Public Hearing 3E and 3F .....	III-12
7	Alternatives Presented at the Location/Design Public Hearing 3G and 3H .....	III-12
8	Alternatives Presented at the Location/Design Public Hearing 4A and 4B .....	III-14
9	Alternatives Presented at the Location/Design Public Hearing 4C and 4D .....	III-14
10	Alternatives Presented at the Location/Design Public Hearing 5B and 5C .....	III-16
11	Alternatives Presented at the Location/Design Public Hearing 6B .....	III-16
12	Selected Alternative Key Map .....	III-18
13	Typical Sections - Selected Alternative .....	III-18
14A	Selected Alternative - 2D (MOD)/3E .....	III-18
14B	Selected Alternative - 2D (MOD)/3E .....	III-18
14C	Selected Alternative - 2D (MOD)/3E .....	III-18
15A	Selected Alternative - 4A Signalized (MOD)/4C (MOD) .....	III-18
15B	Selected Alternative - 4A Signalized (MOD)/4C (MOD) .....	III-18
16	Selected Alternative - 5C .....	III-18
17	Interchange Level of Service Comparison: No-Build vs. Selected Alternative .....	III-18
18	Air and Noise Receptor Locations .....	III-38

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Summary of Impacts .....	II-1
2	1994-2020 Average Daily Traffic Volume Comparison .....	III-4
3	Right-of-Way Acquisition .....	III-20
4	Wetlands Summary .....	III-32
5	2000 and 2020 Carbon Monoxide (CO) Concentrations, Parts Per Million (PPM) for the No-Build and Selected Alternatives .....	III-38
6	Noise Analysis Summary .....	III-48
7	Barrier Feasibility and Reasonableness Checklist - NSA A .....	III-49
8	Barrier Feasibility and Reasonableness Checklist - NSA B-1 .....	III-50
9	Barrier Feasibility and Reasonableness Checklist - NSA F-2 .....	III-51
10	Barrier Feasibility and Reasonableness Checklist - NSA F-2 .....	III-52
	(Barrier Along St. Mark Church Property Only)	
11	Barrier Feasibility and Reasonableness Checklist - NSA H .....	III-53
12	Barrier Feasibility and Reasonableness Checklist - NSA I .....	III-54



I. 8.

I.

**RECORD  
OF  
DECISION**

I.

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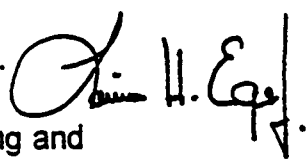


Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

MEMORANDUM

TO: Mr. Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

FROM: Louis H. Ege, Jr.   
Deputy Director  
Office of Planning and  
Preliminary Engineering

DATE: April 25, 1996

SUBJECT: Contract No. M 401-156-372 P  
I-270 at MD 187 and I-270 Spur at Democracy Boulevard  
PDMS No. 151112

RE: Alternatives Selection Meeting

A Project Planning Team Meeting for this project was held on March 28 in the Training Assembly Room at the State Highway Administration's Office of Traffic and Safety building in Hanover, MD. The purpose of the meeting was to select a combination of alternatives for which to seek Location Approval, and to identify issues that need to be resolved to reach that goal. The following were in attendance:

- |                     |   |
|---------------------|---|
| Mr. Hal Kassoff     | Administrator - Maryland State Highway Administration |
| Mr. Neil Pedersen   | SHA Director OPPE                                     |
| Mr. Doug Rose       | SHA Chief Engineer                                    |
| Mr. Charlie Watkins | SHA District 3 Engineer                               |
| Mr. Jim Wynn        | SHA Project Planning Division                         |
| Mr. Thomas K. Folse | SHA Project Planning Division                         |
| Mr. Bill Carver     | SHA Project Planning Division                         |
| Ms. Anne Elrays     | SHA Project Planning Division                         |
| Mr. Steven Foster   | SHA Highway Design Division                           |
| Mr. Mark Crampton   | SHA Highway Design Division                           |
| Ms. Mona Sutton     | SHA Travel Forecasting                                |
| Mr. Glen Smith      | SHA Regional Planning                                 |

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. Neil J. Pedersen  
Page 2  
April 25, 1996

Mr. Dennis Simpson	SHA Regional Planning
Mr. Saed Rahwanji	SHA Office of Traffic and Safety
Mr. Richard Ravenscroft	SHA R/W District 3
Mr. Steve Silva	SHA Bridge Design Division
Mr. Greg Cooke	SHA Engineering Access Permits Division
Mr. Albert Hinojosa	Federal Highway Administration
Ms. Renee Sigel	Federal Highway Administration
Ms. Pamela Stephenson	Federal Highway Administration
Mr. Bob Simpson	Montgomery County DOT
Mr. Richard Hawthorne	M-NCPPC
Mr. Chris Gay	Bellomo-McGee, Inc.
Mr. Joseph DeMent	The Wilson T. Ballard Company
Mr. Mark Lotz	The Wilson T. Ballard Company

### **Project Background and Schedule**

Copies of the materials that were distributed, including level of service and cost summaries, are attached. Mr. Folsie opened the meeting with a brief overview of the project purpose and schedule. The goal for obtaining Location and Design Approvals is the Summer of 1996.

### **Recommendation of Alternatives**

Mr. Folsie presented the recommended combination of alternatives which, subsequent to the public hearing in December, 1995, has been developed based on a series of core team work sessions and meetings with Montgomery County DOT and M-NCPPC. The study team endorsed the recommended combination of alternatives on March 14, and the Montgomery County Planning Board endorsed the recommended combination of alternatives on March 21. The recommended combination, along with comments made during the discussion, is summarized as follows:

#### **ALTERNATIVE 2D** (I-270 at MD 187)

##### **Description of Improvement:**

- Proposes the widening, to two-lanes, of all four left turns associated with this diamond interchange.
- Proposes that the MD 187 bridge over I-270 be widened approximately 51'.

- Revised subsequent to the public hearing to include "trap" lanes on northbound and southbound MD 187 to allow additional storage for the left turn movements onto I-270 and to provide an additional through lane on northbound MD 187 through the interchange area. These revisions do not result in any additional impacts to the St. Mark Church property.

**Comments:**

- Mr. Silva reported that the MD 187 bridge is in need of redecking; however, with a sufficiency rating of 80, the need is not urgent. It appears that redecking would be extremely disruptive without widening to provide lanes for maintenance of traffic.

**ALTERNATIVE 3E** (New Rockledge Drive Connector at I-270)

**Description of Improvement:**

- Proposes direct access to and from Rock Spring Park using a new diamond interchange, north of MD 187, which would connect I-270 to Rockledge Drive.
- Would operate in tandem with an improved I-270/MD 187 interchange (Alternative 2D) and result in LOS E or better at all intersections associated with the I-270 interchanges.
- Without completely rebuilding the MD 187 bridge, the left and right shoulders of northbound and southbound I-270 would need to be reduced to 4' to 5' to accommodate the auxiliary lanes associated with 3E.

**Comments:**

- Mr. Kassoff stated the following:
  - ⇒ 3E in combination with 2D is the best solution at this location; there would be no weave sections and it can be signed adequately. Two entrance points onto southbound I-270, as shown, is appropriate since it will not concentrate all traffic entering I-270 at one location.

⇒ The cost of 3E is too high; value engineering needs to be performed, considering refinements in wall design and alternative materials. Right-of-way dedication or donation should be sought throughout. The combined 2D and 3E cost needs to be brought down into the low \$20 million range.

- Several major issues related to 3E need to be addressed (see "Other Issues,...")

**ALTERNATIVES 4A-SIGNALIZED AND 4C (I-270 Spur at Democracy Boulevard)**

**Description of Improvement:**

- On the east side of the interchange, the northbound to westbound loop ramp would be retained (representing a modification to the 4A design presented at the public hearing). The northbound to eastbound ramp would be widened to two lanes within 600' - 800' of Democracy Boulevard and a signal installed at this intersection.
- The auxiliary lane on westbound Democracy Boulevard would be extended to the ramp to northbound I-270 Spur.
- The Democracy Boulevard bridge over the I-270 Spur would be widened to accommodate a deceleration lane for the eastbound to northbound loop ramp, a double left turn bay for the westbound to southbound movement, and an acceleration lane for the northbound to westbound loop.
- On the west side of the interchange, the southbound ramp off of I-270 Spur would be widened to allow double lefts onto eastbound Democracy Boulevard. The southbound to westbound ramp would be reconstructed, closer to I-270 Spur, with a smaller turning radius to allow more weaving distance between the ramp and the entrance to Montgomery Mall. These improvements are identical to the Alternative 4C improvements presented at the public hearing.

**Comments:**

- The FHWA questioned retaining the northbound to westbound loop ramp which creates a weave on northbound I-270 Spur.

Mr. Neil J. Pedersen  
Page 5  
April 25, 1996

- The SHA position is that the operations along this portion of I-270 Spur are a function of the mainline through-lanes and not of the interchange.

**ALTERNATIVE 5C (I-270 Spur at Fernwood Road)**

**Description of Improvement:**

- Proposes a one-lane reversible median ramp connecting the north side of the Fernwood Road bridge to the median I-270 Spur HOV lanes south of the Y-Split.
- A similar ramp south of Fernwood Road has also been studied and determined to be feasible; however, this southern connection will not be included at this time as part of the Selected Alternative.

**Comments:**

- Of all of the alternatives recommended, this provides the smallest contribution to the improved levels of service for the study area, and is therefore recommended as the lowest in priority.

**Other Issues, Additional Analysis and Coordination:**

- 1. Pedestrian Mobility:** Mr. Kassoff directed that pedestrian considerations be incorporated with all improvements, particularly 2D and 3E. The study team will work with the Office of Environmental Design, M-NCPPC and Montgomery County DOT to develop concepts for pedestrian-friendly features, such as a wider sidewalk along MD 187, a trail system through the vacant northeast quadrant, of the I-270/MD 187 interchange, sidewalk along the northbound ramp between MD 187 and the Rockledge Connector, and sidewalk on the Rockledge Connector bridge.
- 2. Adjacent Intersection Improvements:** LOS analysis associated with the interchanges has determined that the MD 187 intersections with Tuckerman Lane, Rock Spring Drive and Democracy Boulevard, as well as the Democracy Boulevard intersection with Fernwood Road will reach failing levels of service before the year 2020, with or without the recommended interchange alternatives in place. Improvements along MD 187 and Democracy Boulevard that will yield satisfactory levels of service have been developed conceptually. Mr. Pedersen recommended that these improvements, generally consisting of additional lanes along MD 187 between Tuckerman Lane and Democracy Boulevard and at the Democracy

Boulevard intersection with Femwood Road, be a requirement for Montgomery County to construct along with SHA-sponsored interchange improvements. In

addition, Mr. Pedersen recommended that the Rockledge Drive extension be funded by developers from existing Rockledge Drive to a point approximately 100' outside existing right-of-way. This issue of funding responsibilities will be discussed at upcoming meetings of the Fast Action Response Team (FRAT).

3. **I-270 Spur at Democracy Boulevard Interchange:** The Wilson T. Ballard Company (WTB Co.), and BMI will complete a comparison of the costs, and level of service, and traffic operations issues associated with Alternative 4A-Signalized, as recommended, versus the original design that would have eliminated the northbound to westbound loop ramp, as supported by FHWA. FHWA requested that this analysis be discussed in the Interstate Access Point Approval Request (IAPAR).
4. **Walls on the Windermere side of the Alternative 3E ramp:** Mr. Folse will schedule a meeting with the affected residents to obtain input on this issue. It may not be feasible to support the ramps using fill slopes in the community association property because of the WSSC water main that is proposed through this property. Coordination will be continued with the Bridge Design and Landscape Architecture divisions regarding less expensive and more aesthetic wall or slope alternatives that could be implemented.  
*Note: A subsequent meeting with WSSC on April 9 revealed that the water main project is currently in the pre-design phase, and is tentatively scheduled to be constructed in the year 2000. The water main design can incorporate the fill slopes, and may not need to include reinforcement to accommodate the extra weight of the fill.*
5. **MD 187 Bridge over I-270:** A complete range of information will be compiled (by WTB Co., Highway Design, Bridge Design, etc.) regarding the issues related to bridge widening versus replacement such as design exceptions needed with widening, long term acceptability of a simple span bridge and possible profile adjustments needed with two span reconstruction.
6. **Noise:** It was reported that reevaluation of this project using new SHA and FHWA criteria indicates that several barriers in the study area, with a total cost of \$6 million to \$8 million, meet reasonability and feasibility requirements. Mr. Pedersen directed that these findings be reviewed in detail by the Environmental Design Division.  
*Note: A subsequent meeting with Mr. Charles Adams, Director of the Office of Environmental Design and Ms. Sigel and Ms. Stephenson of FHWA revealed*

Mr. Neil J. Pedersen  
Page 7  
April 25, 1996

*differing interpretations of the new noise barrier policy. The noise barrier feasibility will be re-analyzed.*

**7. Significant Impact (FONSI):** Mr. Pedersen directed that an aggressive schedule be pursued in the concurrent preparation of the IAPAR and FONSI.

If you have any questions regarding the above summary, please contact the project manager, Thomas K. Folse, at (410) 545-8543.

**CONCURRENCE:**

I concur with the information contained in this memorandum:

Neil J. Pedersen  
Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

4/28/96  
Date

- cc: Attendees  
Mr. Charles Adams  
Mr. Robert D. Douglass  
Mr. Joseph Finkle  
Mr. Earle S. Freedman  
Mr. Thomas Hicks  
Mr. John Hummel  
Mr. Joseph Kresslein  
Mr. William MacLeod  
Mr. Kirk McClelland  
Mr. Harvey Muller  
Mr. Callum Murray  
Mr. Todd Nichols  
Mr. Ken Polcak  
Mr. Bill Richardson  
Mr. Randall Scott  
Mr. Majid Shakib





II. 17

II.

**COMPARISON  
OF  
ALTERNATIVES**

II.

I-270 AT MD 187 AND I-270 TURN AT DEMOCRACY BOULEVARD  
**TABLE 1 - SUMMARY OF IMPACTS FOR THE SELECTED ALTERNATIVE**

Analysis Item	ALT 1 (NO BUILD)	ALT 2D MODIFIED	ALT 3E	ALT 4A SIGNALIZED MODIFIED	ALT 4C	ALT 5C	TOTAL - SELECTED ALTERNATIVE
<b>Socioeconomic</b>							
<b>1. Relocation (Total Takes)</b>							
a. Residence	0	0	0	0	0	0	0
b. Business	0	0	0	0	0	0	0
c. Church/School	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2. Number of Properties Affected</b>							
a. Residential	0	0	0	0	0	0	0
b. Business	0	2	3	0	0	1	4
c. Church/School	0	1	0	0	0	0	1
d. Parkland or Recreation Area	0	0	0	0	0	0	0
e. Historic/Archeological Sites	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>
<b>3. Right-of-Way Required - hectares (acres)</b>							
a. Residential	0	0	0	0	0	0	0
b. Business	0	0.6 (1.4)	1.8 (4.4)	0	0	0.1 (0.3)	2.5 (6.1)
c. Church/School	0	0.04 (0.1)	0	0	0	0	0.1
<b>Total</b>	<b>0</b>	<b>0.6 (1.5)</b>	<b>1.8 (4.4)</b>	<b>0</b>	<b>0</b>	<b>0.1 (0.3)</b>	<b>2.5 (6.2)</b>
<b>4. Consistent with area land use plans</b>	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Natural Environment</b>							
1. Number of stream reloc. - meters(Linear Ft. - LF)	0	0	1-88 (290)	0	1-84 (275)	0	2-172 (565)
2. Number of stream crossings	0	0	3	0	2	0	5
3. Affected threatened or endangered species	0	0	0	0	0	0	0
4. Area of prime farmland affected	0	0	0	0	0	0	0
5. 100-year Floodplain impacted - hectares (acres)	0	0	0.04 (0.1)	0.0	0.16 (0.4)	0	0.20 (0.5)
6. Wetlands affected - hectares (acres)	0	0	0.32 (0.8)	0	0.0	0.0	0.32 (0.8)
7. Waters of the U.S. affected - meters (Linear Ft.)	0	0	11 (35)	0	20 (50)	0	31 (80)
8. Woodlands impacted - hectares (acres)	0	0	4.8 (11.9)	0.05 (0.1)	1.2 (2.9)	0	6.0 (14.9)
<b>Noise</b>							
Number NSA's exceeding abatement criteria or increasing 10 dBA or more over ambient	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9
<b>Air Quality</b>							
CO violations of 1-hr or 8-hr standards	0	0	0	0	0	0	0
<b>Cost (Millions)</b>							
<b>TOTAL</b>	<b>0</b>	<b>\$6.4</b>	<b>\$20.6</b>	<b>\$0.3</b>	<b>\$8.8</b>	<b>\$9.4</b>	<b>\$45.5</b>

I-II

Note: Properties affected columns do not add to the total because there is overlap in properties affected between Alt. 2D and 3E.

III.

SUMMARY  
OF  
ACTIONS  
AND  
RECOMMENDATION

### III. SUMMARY OF ACTIONS AND RECOMMENDATION

#### A. Background

##### 1. Project Location

The I-270 interchange at MD 187 (Old Georgetown Road) and the I-270 Spur interchange at Democracy Boulevard are located in Montgomery County, Maryland, northwest of Washington, D.C. (See Figures 1 and 2). I-270, within the study limits, is occasionally referred to as the I-270 East Segment, as it links mainline I-270, from Rockville, to I-495, east of MD 355. MD 187 is the only interchange on I-270 within this 3.89 kilometer (2.42 mile) stretch of interstate highway, between I-270 mainline and I-495. The I-270 Spur, occasionally referred to as the I-270 West Spur, connects mainline I-270 from Rockville to I-495, west of MD 187. Democracy Boulevard is the only interchange within this 2.59 kilometer (1.61 mile) stretch of interstate highway, between I-270 mainline and I-495. These two interchanges provide access between I-270 and Rock Spring Office Park, Montgomery Mall, and surrounding residential and commercial developments (See Figure 2).

The I-270 (East Segment) and the interchange at MD 187 were both opened to traffic in 1959 as part of the construction of the mainline of I-270 to the north. I-270 in this area is a 6-lane highway divided by jersey barrier. I-270 at MD 187 is a diamond-type interchange, requiring signal control for the left-turn and through movements associated with the interchange. I-270 Spur is a 4-lane divided highway that was constructed in 1963. The interchange configuration is part diamond (southbound side) and part cloverleaf (northbound side).

##### 2. Purpose and Need for the Project

The purpose of this project is to provide adequate capacity within the I-270 at MD 187 and I-270 Spur at Democracy Boulevard interchanges to accommodate, safely and efficiently, existing traffic and traffic expected to be generated by planned development. Under existing conditions, frequent and severe traffic congestion occurs at these interchanges, and continued planned growth is expected in the study area in accordance with current zoning and Master Plan recommendations. Traffic congestion will intensify in the future since traffic volumes in the study area are projected to increase for the no-build condition. Current unsafe conditions, such as the lack of merge areas, deceleration lanes and left-turn lane storage, result in a high accident rate. The alternatives under

21

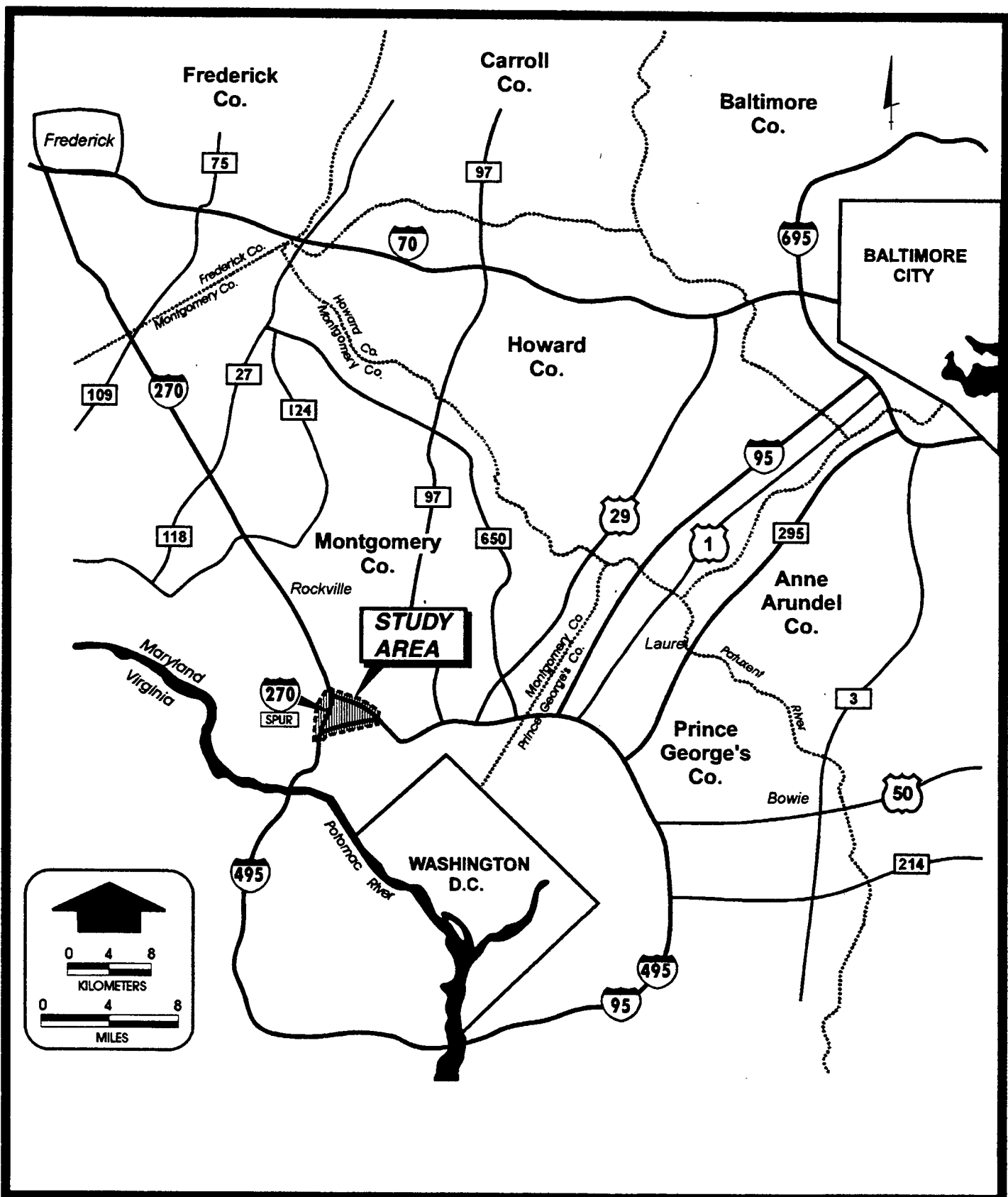
consideration will provide improvements intended to alleviate the adverse conditions caused by inadequate capacity and safety deficiencies at the I-270 interchanges at MD 187 and Democracy Boulevard.

In the immediate vicinity of the subject interchanges, there are several properties slated for planned growth in office, residential and commercial development in accordance with current zoning or through modifications to zoning recommended in the Master Plan. Most significantly, the Rock Spring Office Park could potentially experience an increase in gross floor area of 288,000 square meters (3.1 million square feet), approximately 60% more than exists today. Approximately 86% of the traffic accessing Rock Spring Office Park uses or travels through the subject interchanges.

The study area interchanges are strategically located near the junction of I-270 and I-495, and any hindrance to the free movement of traffic, caused by these interchange ramps, has an effect on two interstate systems, extending into both suburban Maryland and Virginia. The changing demographics of several surrounding regions impact the subject interchanges. In the past ten years, there has been a rapid rate of growth in population, households and employment in the region surrounding the study area, Montgomery County and the other counties associated with the Washington, D.C. metropolitan area. This trend is expected to continue through the year 2020. Based on the Metropolitan Washington Council of Governments (MWCOG) Round 5.1 forecasts, the number of households within the Montgomery County portion of the I-270 corridor<sup>1</sup> is expected to increase by 44% over 1993 levels, from 87,100 to 125,400 by the year 2020. Employment within this same region is expected to increase 62% between 1993 and 2020.

In Montgomery County, the population grew from 579,000 in 1980 to 757,000 in 1990, an increase of 31%, making it the state's most populous jurisdiction. By the year 2020, the County's population is expected to reach 1,000,000 people, an increase of 32% over 1990. Employment in the County is expected to reach 697,000 by 2020, an increase of 36% over 1990 values. Based on 1990 data, of the 429,700 county workers, 16 years and over, 68% drove alone to work and 13% rode in carpools, with an overall mean travel time to work of 29.5 minutes.

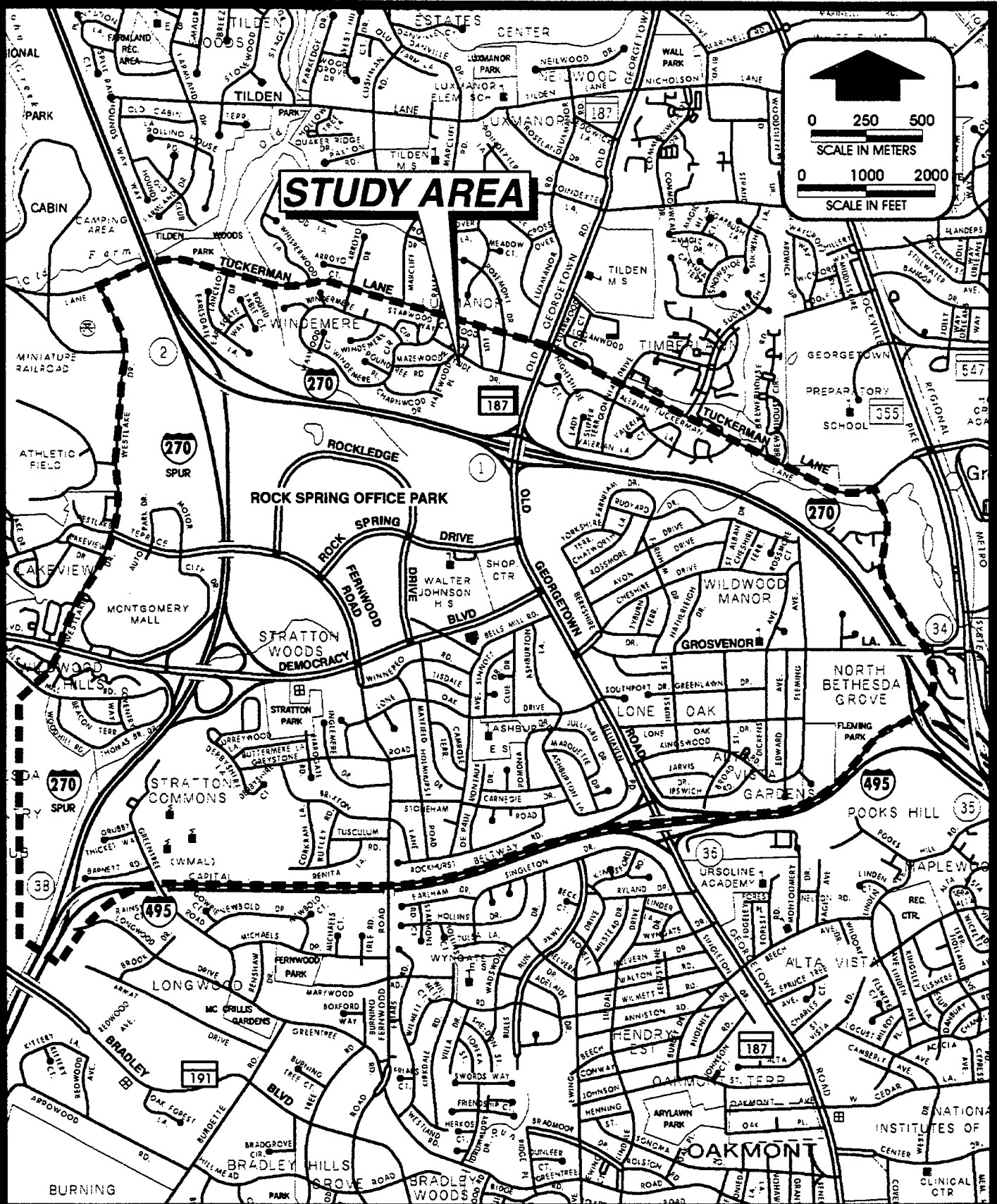
<sup>1</sup> Includes the following Planning Area: North Bethesda, Rockville, R&D Village, Derwood/Needwood/Wash. Grove, Gaithersburg, Montgomery Village/Airpark, Germantown East and Germantown West.



**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**PROJECT LOCATION  
MAP**

**FIGURE 1**



**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**STUDY AREA MAP**

**FIGURE 2**



The I-270 East Segment and I-270 Spur interchanges are also impacted by traffic outside of Montgomery County, in areas that are also experiencing sustained and significant growth. Frederick County, which feeds the northern end of the I-270 corridor, is projected to experience a population growth from 150,200 to 267,100, or 78%, between 1990 and 2020. Similarly, Frederick County employment is expected to grow from 71,800 to 114,900, or 60% between 1990 and 2020. The Fairfax/Arlington/Alexandria County region in Virginia is projected to experience a growth in households of 185,300 units, or 43%, between 1990 and 2020. A substantial number of the commuters from these areas use the subject interchanges to access the Rock Spring Office Park.

Along with this continued growth in population, housing, and employment, traffic volumes in the study area are projected to increase, thereby pointing to the need to improve capacity and safety at the I-270 interchanges at MD 187 and Democracy Boulevard. Since severe traffic congestion already occurs under existing conditions at the I-270 interchanges at MD 187 and Democracy Boulevard, the growth potential in the study area could lead to an intensification of the current operational problems resulting from capacity and safety deficiencies within the existing interchanges.

**Traffic Conditions**

Other than an overall shortage of capacity, summarized below, particular characteristics leading to operational problems at the I-270 interchange at MD 187 include the limited amount of left turning vehicle storage capacity on the MD 187 bridge over I-270 and the lack of merge areas on MD 187. At the I-270 Spur interchange with Democracy Boulevard, the northbound to westbound loop ramp and northbound to eastbound ramp are high accident locations, primarily due to the lack of merge areas on Democracy Boulevard.

Table 2 provides a summary of the 1994 Existing Conditions and 2020 No-Build Average Daily Traffic (ADT) Volumes.

25

TABLE 2

## 1994-2020 AVERAGE DAILY TRAFFIC VOLUME COMPARISON

Location	1994 Existing Conditions ADT	2020 No Build ADT	Compounded Annual Growth
I-270 N. of Y-Split	185,500	302,000	1.89%
I-270 (E. Segment) W. of MD 187	85,600	125,000	1.47%
I-270 (E. Segment) E. of MD 187	83,000	117,000	1.33%
I-270 Spur N. of Democracy Blvd.	99,900	177,000	2.22%
I-270 Spur S. of Democracy Blvd.	99,000	180,000	2.33%
MD 187 N. of I-270 (E. Segment)	66,800	73,000	0.34%
MD 187 S. of I-270 (E. Segment)	66,200	87,000	1.06%
Democracy Blvd. W. of I-270 Spur	51,950	62,000	0.68%
Democracy Blvd. E. of I-270 Spur	57,850	71,000	0.79%
Rock Spring Dr. W. of MD 187	23,200	55,000	3.38%

**Level of Service - Signalized Intersections**

Level-of-service (LOS) for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Qualitatively, level-of-service criteria are stated as follows:

LOS A describes operations with very low delay.

LOS B describes operations where delay just starts to be noticeable.

LOS C describes operations with an average amount of perceived delay.

LOS D describes operations where delays begin to approach the acceptable levels and congestion becomes more noticeable.

LOS E describes operations considered to be the limit of acceptable delay.

LOS F describes operations which are considered to be unacceptable to most drivers (generally greater than 1 minute). This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

**Level of Service - Ramps and Merge Areas**

Level-of-service for ramps and merge areas is defined in terms of driving turbulence.

LOS A represents unrestricted operations. Merging and diverging maneuvers are carried out without disruption to through vehicles. There is no noticeable turbulence in the ramp influence area.

At LOS B, minimal levels of turbulence exist. Merging and diverging maneuvers become noticeable to through drivers as speeds must be adjusted by merging and diverging drivers to smoothly fill available gaps and make lane changes within the ramp influence area. Speeds of vehicles in the influence area begin to decline slightly.

At LOS C, the level of merging or diverging turbulence becomes noticeable and the average speed within the ramp influence area begins to decline. Driving conditions are still relatively comfortable at this level.

At LOS D, virtually all vehicles slow to accommodate merging or diverging maneuvers as turbulence levels become intrusive. Some ramp queues may form, but freeway operation remains stable.

At LOS E, speeds reduce to 50± miles per hour as the turbulence of merging and diverging maneuvers becomes intrusive to all drivers in the influence area. Both ramp and freeway queues begin forming as flow levels approach capacity limits.

LOS F represents breakdown, or unstable, operation. Queues have visibly formed on the freeway and on-ramps as approaching demand flows exceed the discharge capacity of the downstream freeway.

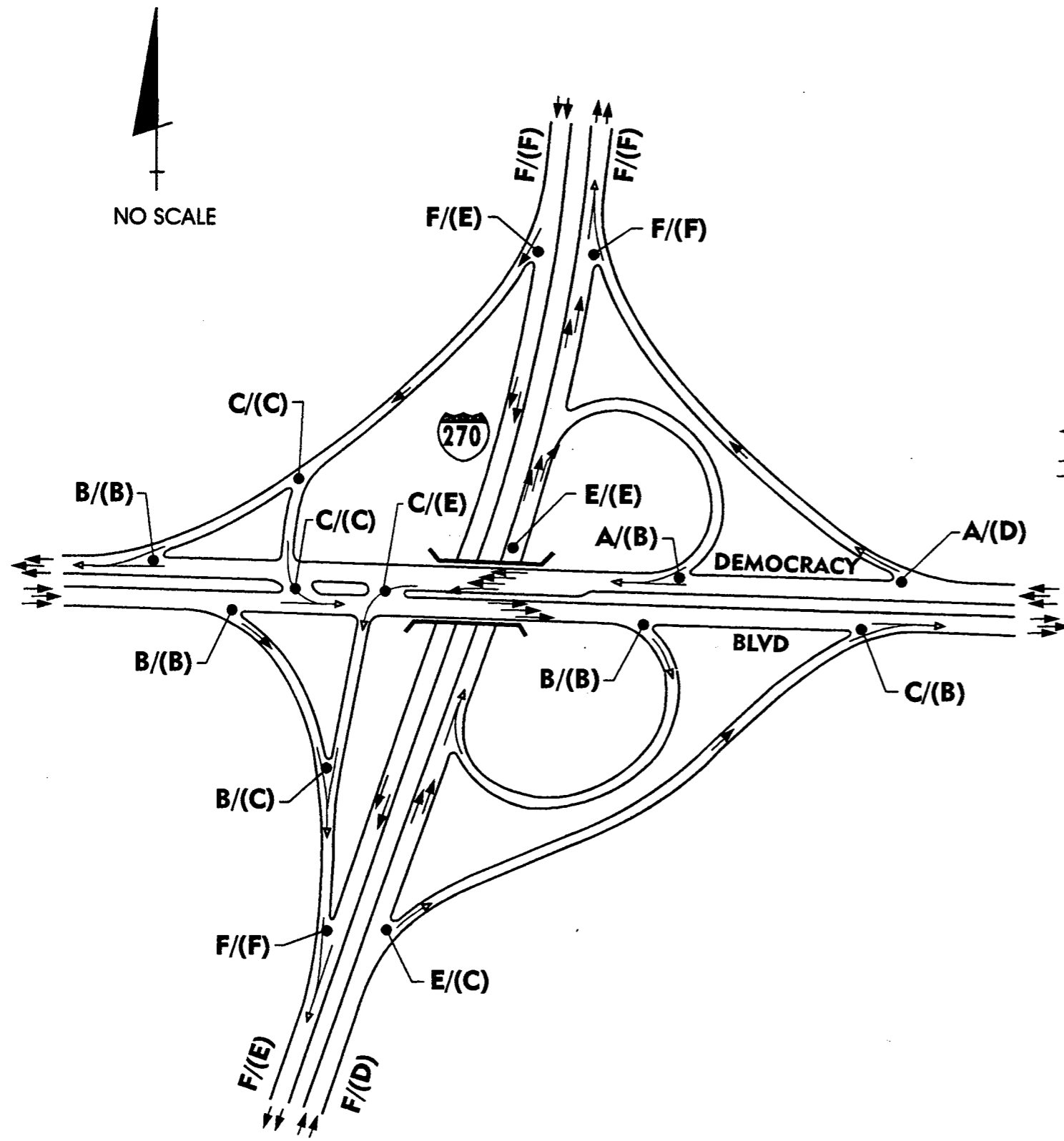
Levels of service at the I-270 interchanges at MD 187 and Democracy Boulevard, A.M. and P.M. peak hours, for 1994 existing and 2020 no-build conditions are shown in Figures 3 and 4, respectively. Under the 2020 no-build conditions, levels of service at all analyzed locations (e.g., intersections, ramps, merges and diverges) at the I-270/MD 187 interchange are projected to be at LOS E or F. Similarly, at the I-270 Spur/Democracy Boulevard interchange, all analyzed locations are projected to be at LOS F, except for the ramp from Democracy Boulevard westbound onto I-270 Spur northbound (LOS E - A.M.).

As demonstrated by traffic projections and analyses performed in the study area, growing traffic volumes will increasingly exceed the capacity of the subject interchanges through the year 2020. With increases in the frequency and duration of heavily congested periods, the probability of increases in the rate of accidents is also anticipated. The Master Plan recognizes the need for transportation improvements and recommends that additional roadway capacity be provided. In order to efficiently handle the projected traffic growth, improvements are needed in the form of additional lanes at the I-270 interchanges at MD 187 and Democracy Boulevard and additional direct interchange connections between I-270 and Rockledge Drive and between I-270 Spur and Fernwood Road.

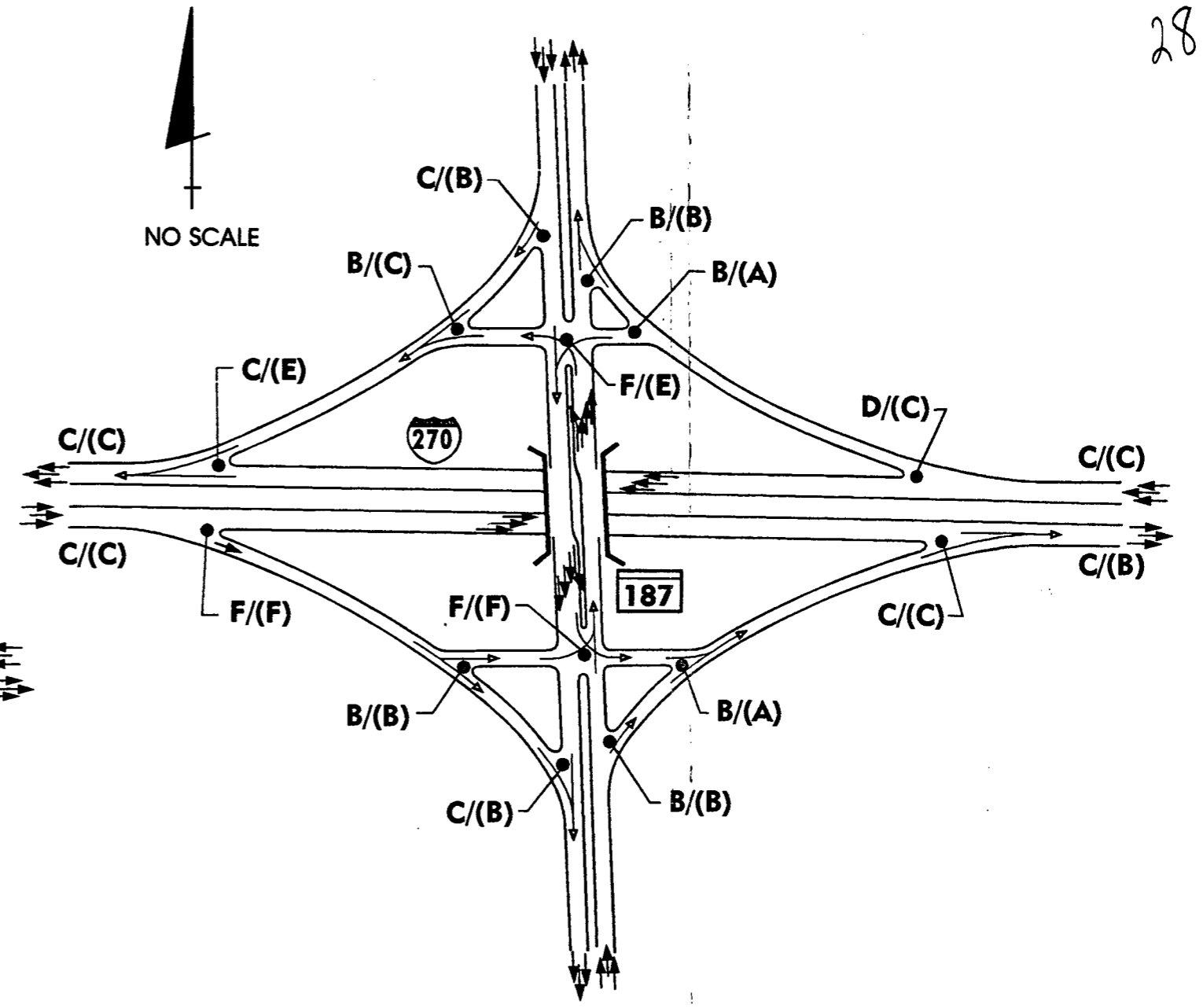
**Accident Statistics**

During the period from January 1, 1990 to December 31, 1992, 233 accidents occurred within the I-270/MD 187 Interchange. Of these accidents, 159 occurred on MD 187, 64 occurred on I-270, and 10 occurred on the ramps. For the 0.87 kilometer (0.54 mile) segment of MD 187 included in the accident study, the accident rate was 513.1 accidents per one hundred million vehicle miles (ACC/100 MVM), which is significantly higher than the statewide average of 269.9 ACC/100 MVM for similar State maintained highways. There was one fatal accident, which occurred in 1992, and 95 injury accidents along this stretch of MD 187 during the study period. The accident rates along this segment of MD 187 for accidents resulting from angle, rear end, and left-turn collisions which occurred during the study period are significantly higher than the statewide average rates for similar State maintained highways.

For the 0.56 kilometer (0.35 mile) segment of I-270 included in the accident study of the MD 187 interchange, the accident rate was 210.0 ACC/100 MVM, which is significantly higher than the statewide average rate of 54.7 ACC/100 MVM for similar State maintained highways. During the



**I-270 SPUR AT DEMOCRACY BLVD**

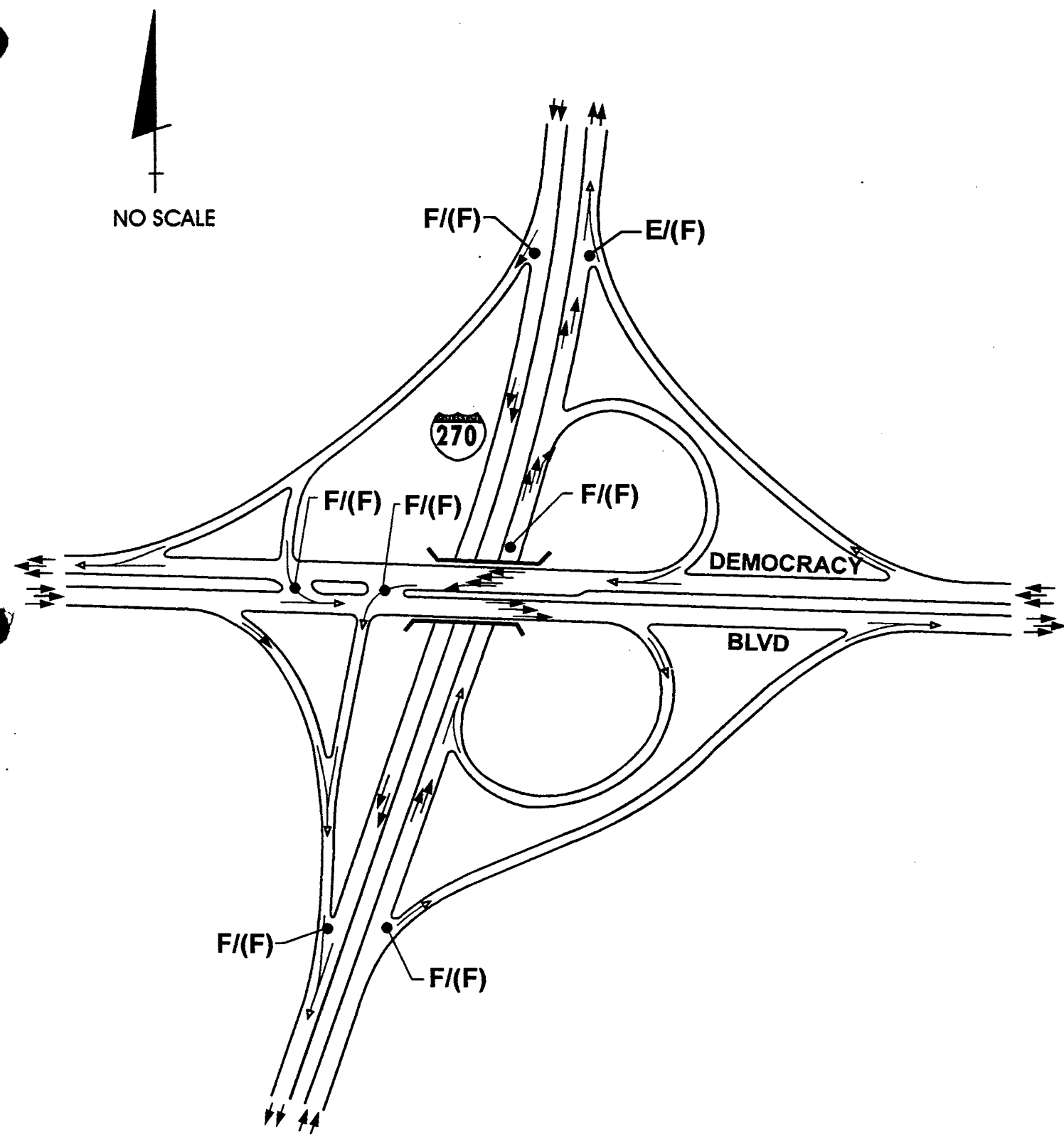


**I-270 AT MD 187**

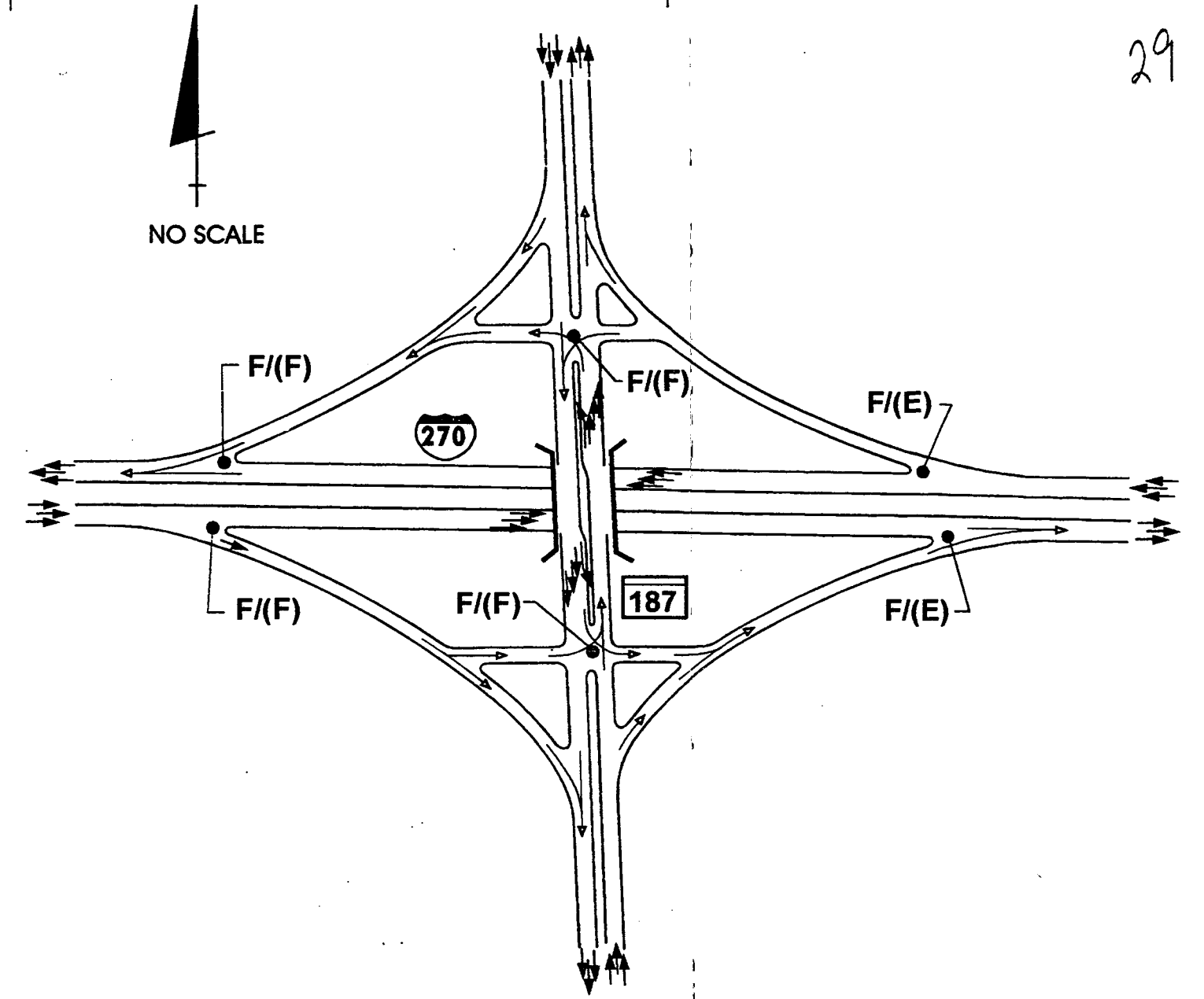
**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**1994 EXISTING INTERCHANGE LOS  
AM / (PM)**

**FIGURE 3**



**I-270 SPUR AT DEMOCRACY BLVD**



**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**2020 NO-BUILD  
INTERCHANGE LOS  
AM / (PM)**

**FIGURE 4**

study period, there were no fatal accidents, but there were 36 injury accidents along this segment of I-270. Accident rates during the study period for rear end, fixed object, parked vehicle, and other collisions along this segment of I-270 are significantly higher than the statewide average rates for similar State maintained highways.

There were no High Accident Locations designated along the mainline sections of the I-270/MD 187 Interchange. High Accident Locations are those intersections and sections of road deemed to be most hazardous locations as stratified by number of accidents and ADT. The interchange ramps located in the northeast and southwest quadrants of the interchange were designated as High Accident Interchange Ramps. A High Accident Interchange Ramp is a ramp where three or more accidents occur within a one year period or five or more accidents occur on the ramp within a three year period.

Within the I-270 Spur/Democracy Boulevard Interchange, there were 199 accidents from January 1, 1990 to December 31, 1992. One hundred thirty-six accidents occurred on Democracy Boulevard, 29 accidents on I-270 Spur, and 34 accidents on the ramps.

For the 1.34 kilometer (0.83 mile) portion of Democracy Boulevard included in the accident study, the accident rate was 300.9 ACC/100 MVM. Since Democracy Boulevard is a County-maintained road, the statewide average rate for similar State maintained highways is considered not applicable for comparison and is not listed. There were no fatal accidents along this portion of Democracy Boulevard during the study period, but there were 88 injury accidents.

For the 0.63 kilometer (0.39 mile) segment of I-270 Spur included in the accident study of the Democracy Boulevard interchange, the accident rate was 69.0 ACC/100 MVM, as compared to the statewide average rate of 54.7 ACC/100 MVM for similar State maintained highways. There was one fatal accident, which occurred in 1991, and 16 injury accidents along this portion of the I-270 Spur during the study period. Accident rates along this segment of I-270 Spur for angle, rear end, and opposite direction collisions that occurred during the study period are significantly higher than the statewide average rates for similar State maintained highways.

There were no High Accident Locations designated along the mainline sections of the I-270 Spur/Democracy Boulevard Interchange. The ramps from northbound I-270 Spur to westbound Democracy Boulevard and from northbound I-270 Spur to eastbound Democracy Boulevard were designated as High Accident Interchange Ramps.

Specifically, factors contributing to the high accident rates at these locations include:

- High traffic volumes
- Lack of merge areas
- Inadequate acceleration and deceleration lane lengths

The Selected Alternative addresses the High Accident Interchange Ramps by including the following interchange ramp improvements:

- Accel lane for the ramp from northbound I-270 to northbound MD 187
- Double right-turn, with signal control, for the southbound I-270 movement onto southbound MD 187
- Accel lane for the ramp from northbound I-270 Spur to westbound Democracy Boulevard
- Double right-turn, with signal control, for the northbound I-270 Spur movement onto eastbound Democracy Boulevard

### 3. Project History

The need for improved connections between I-495 and I-270 was addressed in two previous project planning studies, for which Location/Design Approval was obtained in 1989 from the Federal Highway Administration to provide an additional lane and accommodate High Occupancy Vehicles (HOV) in each direction on I-270 (East Segment) and I-270 Spur. These improvements will accommodate projected through traffic growth on this portion of mainline I-270; however, the capacity needs of the existing interchanges in these segments would still remain. It was determined, as a part of the two aforementioned studies, that more efficient access was needed between I-270



(East Segment)/I-270 Spur and the adjacent land uses. Improvements to MD 187 and Democracy Boulevard interchanges have been under study since early 1994, and previously during 1988.

Within the study area, there are several projects that have been recently completed, or are in various stages of design or construction. A brief description of each of the projects follows:

**I-270 HOV Ramps at the Y-Split**

Construction of this project began in Spring, 1995. It will provide High Occupancy Vehicles (HOV) median ramp connections for all four movements between I-270 north of the Y-Split and the East Segment and Spur.

**I-270 Spur Widening and Reconstruction of the Interchange with I-495**

Construction of this project began in Spring, 1995. It will provide an additional median lane for HOV's in each direction and reconstruct the Spur interchange with I-495 to improve the alignment and accommodate HOVs. This project will also include an additional lane at the gore associated with the westbound I-495/northbound I-270 interchange.

**Fernwood Road Bridge, Westlake Terrace to Rockledge Drive**

This project was completed in May, 1995 by Montgomery County and provides a bridge over the I-270 Spur at Fernwood Road. The bridge and roadway are four lanes wide with a median.

**I-270 (East Segment) Widening and HOV Lanes from the Y-Split to I-495**

Construction of this project was completed in 1994. Inside widening of this portion of I-270 was provided with improvements of the auxiliary lanes at the MD 187 and I-495 interchanges.

33

This project planning study has been included in the Maryland Department of Transportation's Consolidated Transportation Program (CTP) since 1988, with STIP number 374-19, and is included in the Development and Evaluation Program of the CTP for 1996-2001. Funding is programmed for project planning, design and right-of-way acquisition, but not for construction.

**B. Alternatives**

**1. Alternatives Presented at the Location/Design Public Hearing on December 12, 1995**

**a. Alternative 1 (No-Build)**

The no-build alternative was presented for each of the existing and proposed interchange locations under evaluation in this study. Assumed to be in place as part of the no-build were several projects, described in the previous section, that are currently under construction in the project area, including: the I-270 HOV ramps at the Y-Split, the I-270 Spur Widening and the I-270 Spur/I-495 interchange reconstruction. Otherwise, the no-build alternative assumed that no major improvements to increase capacity or safety would have been undertaken at the existing interchanges within the study limits. Normal highway maintenance and safety improvements would have still occurred. The no-build alternative was not selected because it would not provide any improvement to capacity or operations at either the I-270/MD 187 or I-270 Spur/Democracy Boulevard interchanges. By the year 2020, a failing level of service would be experienced for all components of the two interchanges (e.g., ramps, merges and signalized intersections), some as much as 70% over capacity. The no-build alternative is not consistent with the master plan.

**Improvements to the Existing I-270/MD 187 Interchange**

**b. Alternative 2C**

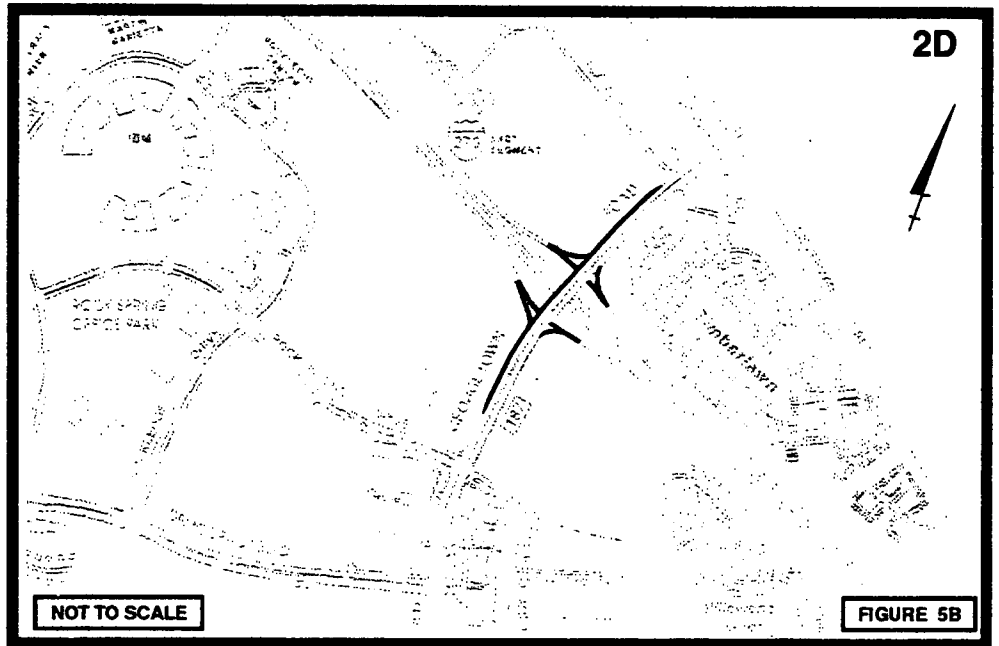
**Alternative 2C** was a minor upgrade of the existing I-270/MD 187 interchange. The left-turn approaches for the northbound I-270 to southbound MD 187 and southbound I-270 to northbound MD 187 movements would have been widened from one to two lanes. Alternative 2C was not selected because it would have, by itself, done little more than the no-build alternative

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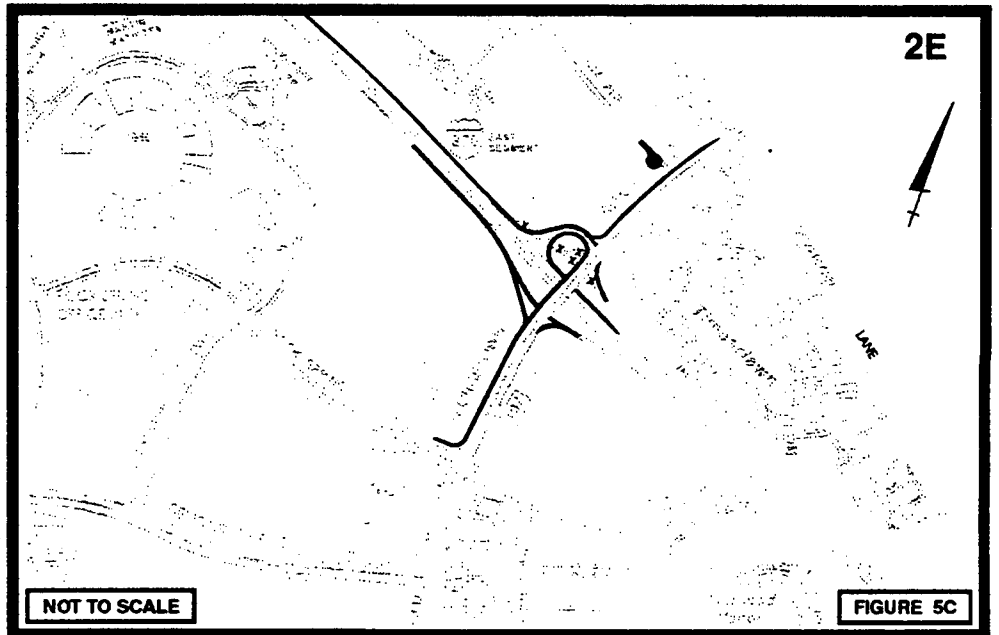
**ALTERNATIVE  
2C**



**ALTERNATIVE  
2D**



**ALTERNATIVE  
2E**



towards providing acceptable levels of service. Even if combined with other alternatives, Alternative 2C would not have provided adequate levels of service at the I-270/MD 187 interchange.

**c. Alternative 2D (Selected with modifications - See Sections III.B.2 and III.B.3)**

Alternative 2D proposed a more extensive improvement of the existing interchange, as compared to Alternative 2C, with all left-turn movements associated with the diamond interchange widened to two lanes. The existing MD 187 bridge would have been widened approximately 11.6 meters (38 feet) to accommodate double-turn lane storage for the entire distance between the wings of the diamond. MD 187 would have been widened and shifted slightly west to minimize impacts along the proposed northbound MD 187 acceleration lane.

**d. Alternative 2E**

Alternative 2E was similar to 2D in the extent of improvement that would have been provided to the existing interchange; however, Alternative 2E replaced the signalized left-turn from northbound I-270 to southbound 187 with a loop ramp in the northwest quadrant. Alternative 2E was not selected because of the amount of wetland impacts (0.61 hectares)[1.5 acres] and because it was not compatible with the Rockledge Drive Connector alternatives which are needed to provide relief to MD 187 in the interchange area.

**I-270 Interchanges with the Proposed Rockledge Drive Connector,  
Maintaining the Existing Connection with MD 187**

Alternatives 3E, 3F, and 3G proposed a direct connection between I-270 and Rock Spring Office Park using a reconstructed and extended Rockledge Drive. Each alternative included a new bridge over I-270, approximately 762 meters (1500 feet) north of the existing MD 187 bridge.

**e. Alternative 3E (Selected - See Section III.B.3)**

Selected Alternative 3E (See Figure 6A) resembles a split-diamond interchange configuration. Interchange ramps from I-270 intersect the north and south ends of the Rockledge Drive Connector bridge forming a diamond interchange at this location. In addition, 2-lane

34

roadways, one in each direction, run parallel to I-270 between the Rockledge Drive Connector and MD 187. Traffic on southbound I-270 exiting onto MD 187 would first need to travel through a signalized intersection at the south end of the Rockledge Drive Connector bridge before continuing on to MD 187. Similarly, vehicles traveling from MD 187 onto northbound I-270 would be required to go through a T-intersection at the north end of the Rockledge Drive Connector bridge. The interchange ramps for the I-270 connections south of MD 187 remain unchanged. Retaining walls are included in the design of the ramp along northbound I-270 to avoid the need for grading outside the existing right-of-way along the Charnwood Drive row of residences.

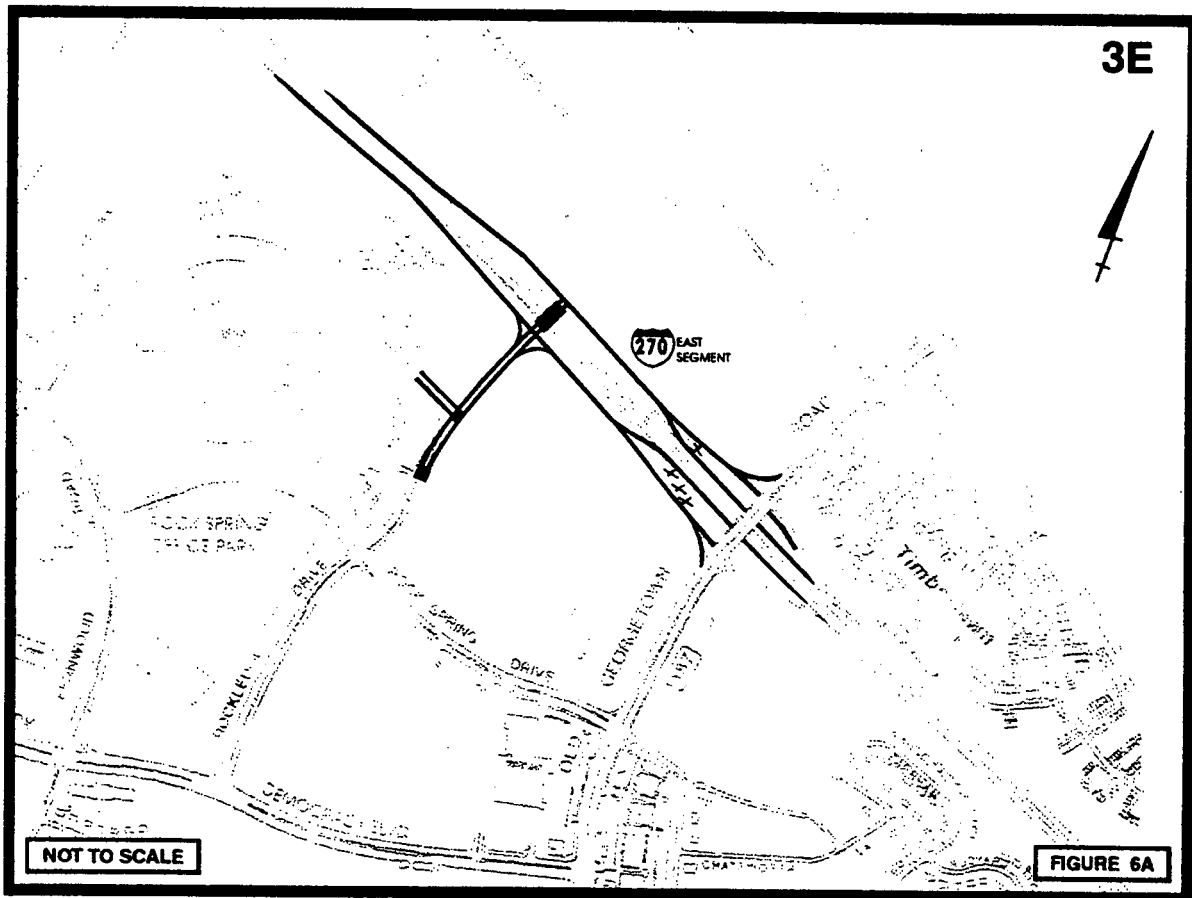
**f. Alternative 3F**

**Alternative 3F** (See Figure 6B) was similar to Alternative 3E, particularly on the northbound side of I-270, where it is nearly identical. Alternative 3F differed from 3E in its accommodation of Rockledge Drive Connector traffic leaving Rock Spring Office Park onto southbound I-270. This traffic would have made a left-turn from the Rockledge Drive Connector onto a grade-separated collector-distributor (C-D) roadway under the Rockledge Drive Connector bridge. This grade-separated C-D roadway eliminated the need for a signal at the south end of the bridge; however, traffic from Rock Spring Office Park going onto southbound I-270 would have weaved across traffic exiting southbound I-270 onto MD 187. The above described left-turn onto the C-D roadway maximized the available distance for the weave. Alternative 3F was not selected because it would have resulted in two closely spaced signalized intersections and tightly constrained weave movements along the Rockledge Drive Connector, just south of I-270.

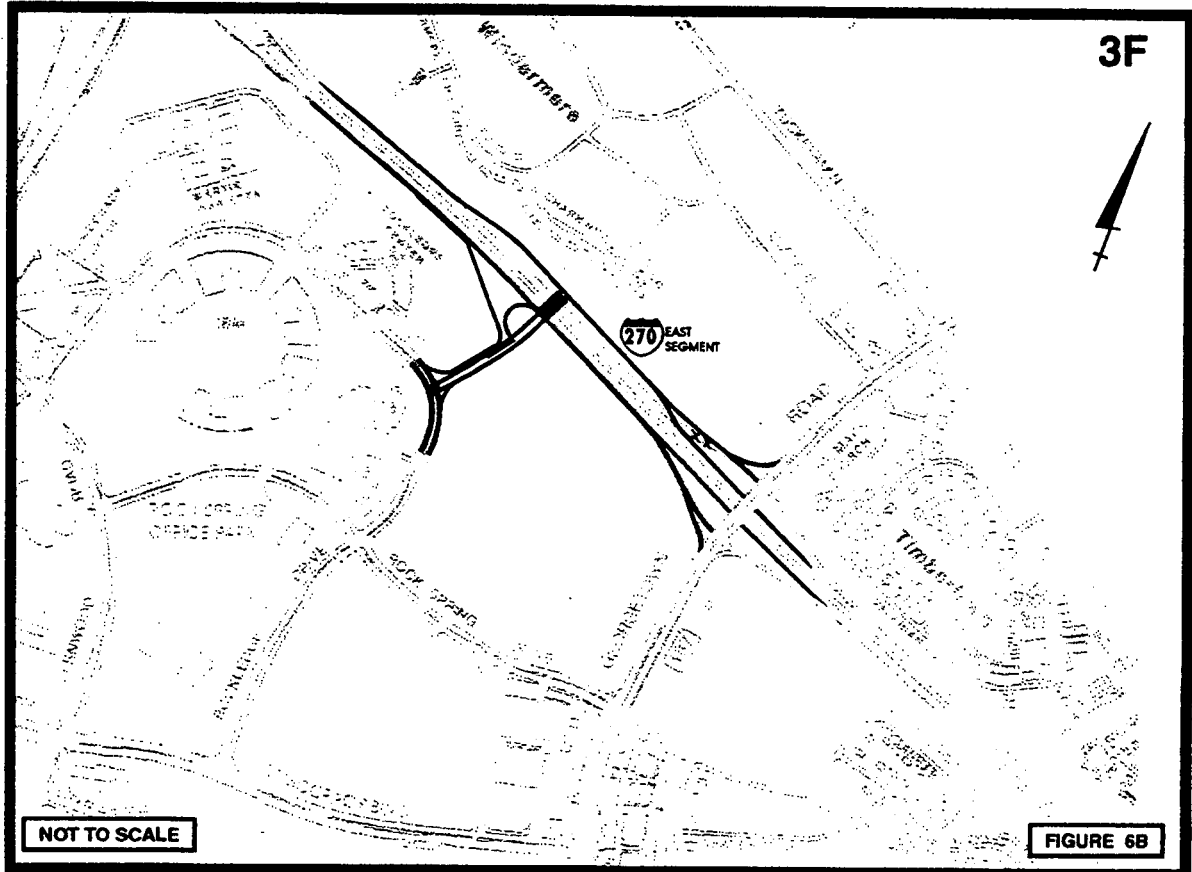
**g. Alternative 3G**

**Alternative 3G** (See Figure 7A) was similar to Alternative 3F (again, nearly identical to Alt. 3E on the northbound side), except that the Rockledge Drive Connector bridge was shifted further north to allow the Rockledge Drive Connector traffic destined for southbound I-270 to turn right onto the C-D road where, as with Alt. 3F, this traffic would have weaved across traffic exiting southbound I-270 for MD 187. The Alternative 3G location of the Rockledge Connector bridge would have necessitated shifting the beginning of the tapers for the southbound I-270 exit ramps to just south of the Y-Split bridge. Alternative 3G was not selected because it would have resulted in the placement of the Rockledge Drive Connector bridge directly opposite the Charnwood Drive homes that are closest to I-270. This alternative would also have resulted in an undesirably close spacing of high volume diverge points, just downstream of the Y-Split.

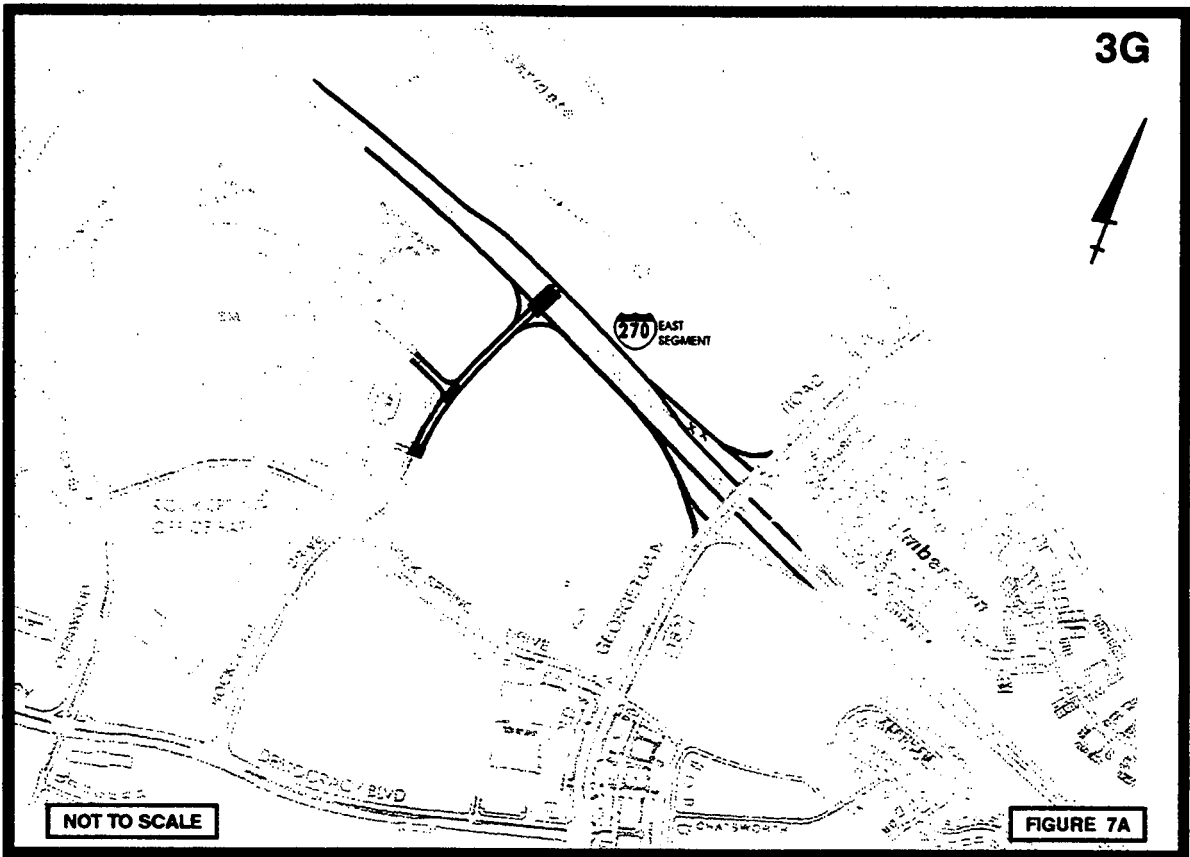
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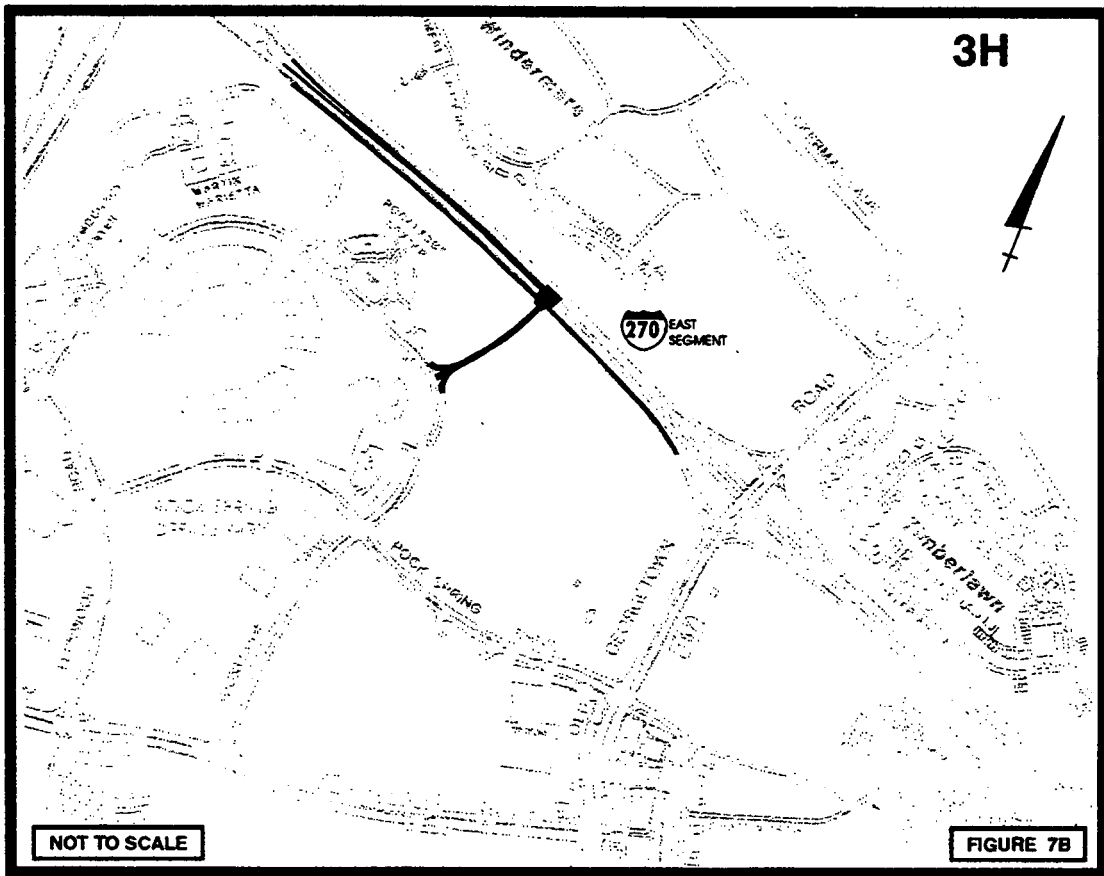
**ALTERNATIVE 3E**



**ALTERNATIVE 3F**



**ALTERNATIVE 3G**



**ALTERNATIVE 3H**

**h. Alternative 3H**

**Alternative 3H** (See Figure 7B) proposed a one-lane reversible median ramp connecting the north side of a partial Rockledge Drive Connector bridge (over southbound I-270 only) with I-270. This ramp would have connected with both northbound and southbound I-270 and be gate controlled to allow southbound I-270 HOV traffic to reach Rockledge Drive during the morning peak and allow traffic leaving Rock Spring Office Park during the evening peak to access northbound I-270. The southbound I-270 mainline roadway was to be shifted as much as 7.6 meters (25 feet) ±, between the Y-Split and MD 187, to accommodate the median ramp which would be supported by retaining walls. Alternative 3H was not selected because of cost and, due to the low forecasted usage of an HOV ramp at this location, it would not make a significant improvement in level of service over the no-build alternative. Alternative 3H would not have been compatible with other more beneficial Rockledge Drive Connector alternatives.

**Improvements to the Existing I-270 Spur/Democracy Boulevard Interchange**

**Alternatives 4A, 4B, 4C and 4D** propose the reconstruction of the I-270 Spur interchange at Democracy Boulevard. Various combinations of these alternatives could be combined to provide a composite interchange.

**i. Alternative 4A (Selected with modifications - See Sections III.B.2 and III.B.3)**

**Alternative 4A** (See Figure 8A) would have replaced the northbound I-270 Spur loop ramp connection to westbound Democracy Boulevard with double left turn lanes. The removal of this ramp would have eliminated the weave on the northbound I-270 Spur and eliminated the merge on westbound Democracy Boulevard which is a High Accident Location. The existing ramp connecting northbound I-270 Spur with eastbound Democracy Boulevard would have been widened away from the Stratton Woods Community to accommodate the additional westbound vehicles. Democracy Boulevard would have been widened on both sides between the I-270 Spur and Fernwood Road to provide auxiliary lanes thereby addressing a high accident merge location on eastbound Democracy Boulevard. (Note: In the Final Design Phase, consideration will be given to implementing a variation of Alternative 4A, as described above, without modifications described in Sections III.B.2 and III.B.3.)



40

An option was developed which provided a two-lane ramp and signal control to accommodate the heavy volume of traffic from northbound I-270 Spur onto eastbound Democracy Boulevard, which subsequently weaves into the left-turn lanes at Fernwood Road. This option was incorporated into the Selected Alternative, as described in Sections III.B.2 and III.B.3.

**j. Alternative 4B**

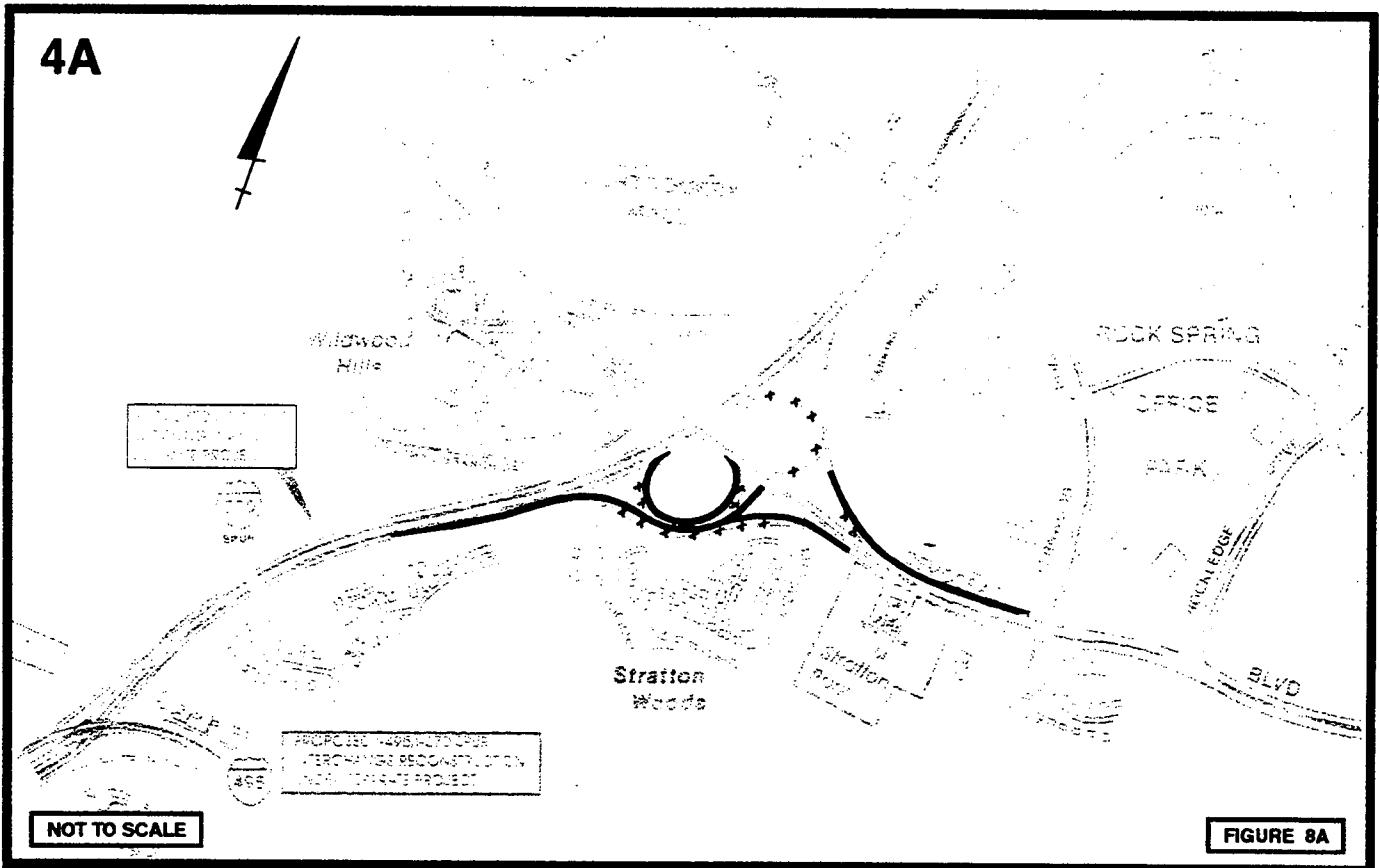
The objectives of **Alternative 4B** (Figure 8B) were similar to 4A in addressing the High Accident Locations where I-270 Spur ramps merge with Democracy Boulevard. To improve the northbound-to-westbound merge, Alternative 4B proposed widening the Democracy Boulevard bridge 3.7 meters (12 feet) to provide an acceleration lane. East of the I-270 Spur, eastbound Democracy Boulevard would have been widened 3.7 meters (12 feet) to provide an acceleration lane for the northbound-to-eastbound movement. Alternative 4B addressed the limited weaving distance between the loop ramp entrance in the southeast quadrant and the loop ramp exit in the northeast quadrant by proposing the construction of a C-D road outside the northbound I-270 Spur roadway. This solution would have placed the weave on the C-D road, separated from the I-270 Spur mainline, but it required the reconstruction and lengthening of the easternmost span of the Democracy Boulevard bridge.

As with Alternative 4A, a signalized northbound I-270 spur to eastbound Democracy Boulevard ramp option was being considered.

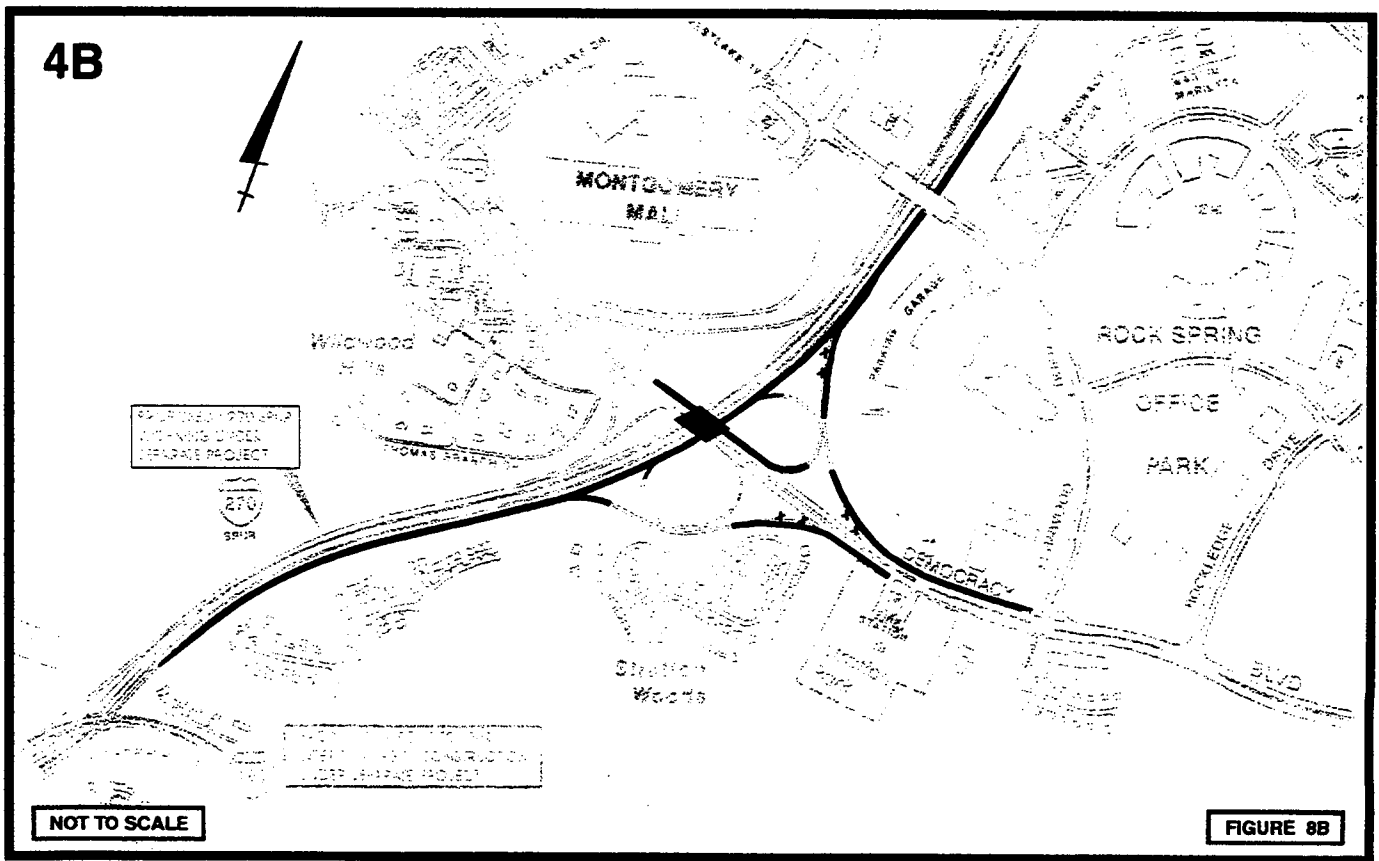
Alternative 4B was not selected because of cost and stream impacts which were not justifiable in relation to Alternative 4A.

**k. Alternative 4C (Selected - See Section III.B.3)**

**Selected Alternative 4C** (Figure 9A) proposes the reconstruction of the ramp off of southbound I-270 Spur at Democracy Boulevard. The exit ramp would be shifted to the east to increase the distance between the ramp terminal along westbound Democracy Boulevard and the entrance to Montgomery Mall. This relocated ramp provides a double left turn lane for the southbound-to-eastbound movement. The westbound-to-southbound movement would be widened from a single left turn to a double left turn. This alternative also addresses the High Accident Location where the northbound I-270 Spur loop ramp merges onto westbound Democracy Boulevard

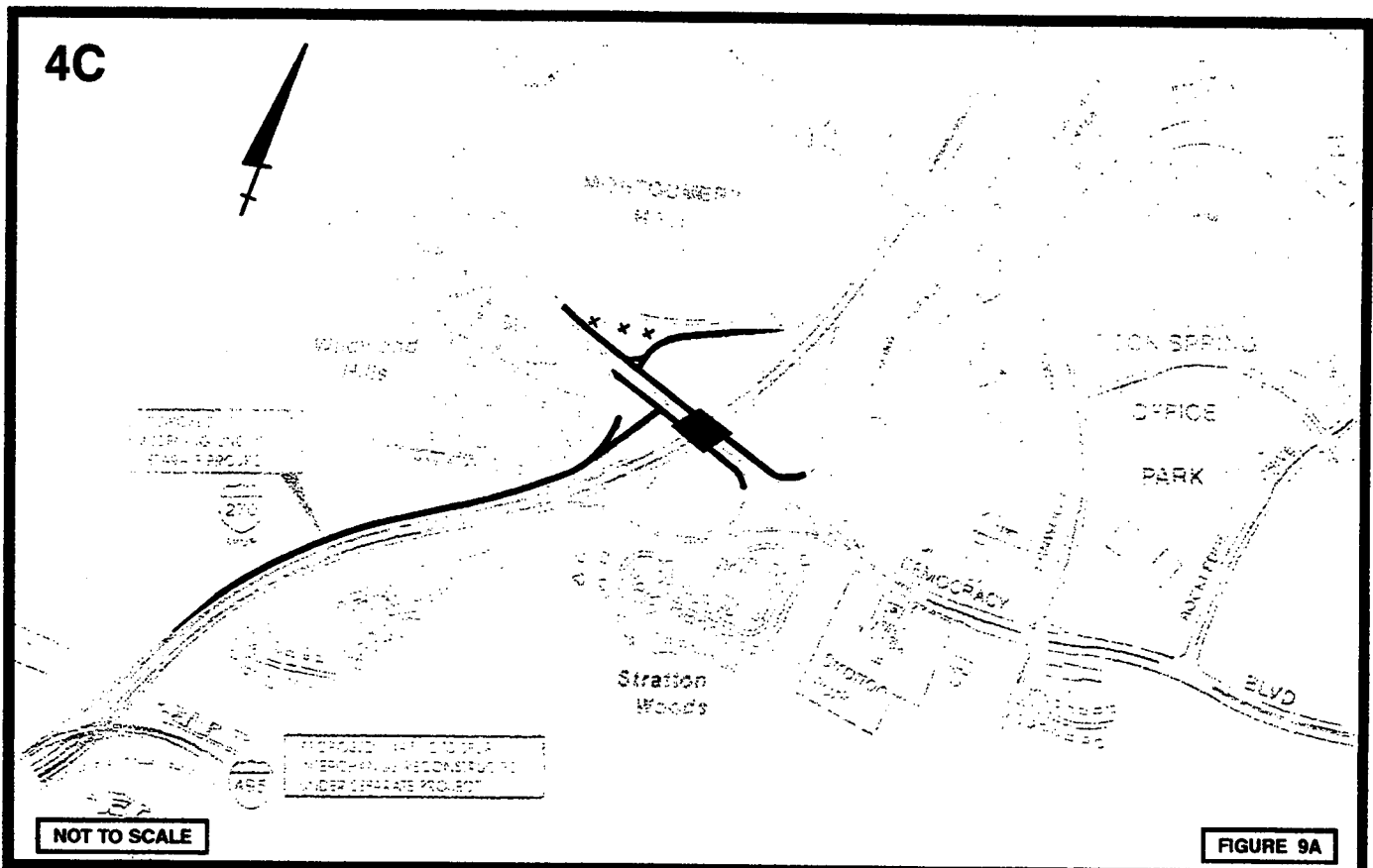


**ALTERNATIVE 4A**



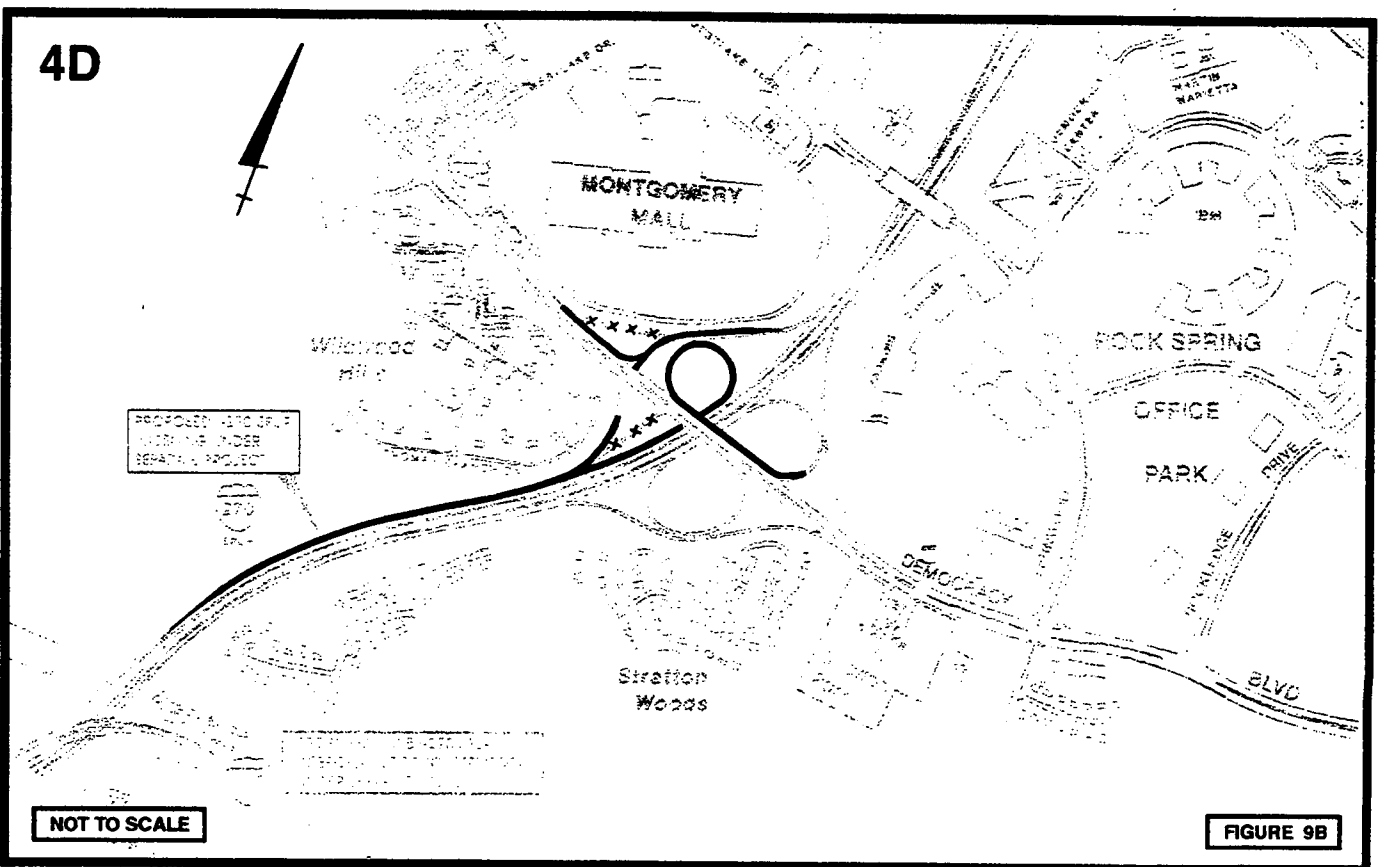
**ALTERNATIVE 4B**

4C



ALTERNATIVE 4C

4D



ALTERNATIVE 4D

with the addition of an acceleration lane. Alternative 4C requires widening the Democracy Boulevard bridge approximately 3.7 meters (12 feet) on both sides.

**l. Alternative 4D**

The objectives of **Alternative 4D** (Figure 9B) were similar to Alternative 4C in addressing the ramp movements in the western half of the interchange. Alternative 4D would have provided a loop ramp for the westbound-to-southbound movement instead of left turn lanes. This would have eliminated a signal-controlled intersection. Construction of this loop would have required the widening of the Democracy Boulevard bridge and the modifications of its end span. The bridge widening would have provided an acceleration-deceleration lane along westbound Democracy Boulevard and the end span modification would allow the loop ramp to pass between the western bridge pier and abutment. The southbound I-270 Spur ramp at Democracy Boulevard would have been reconstructed to increase the distance between the merge point and the Montgomery Mall entrance and to provide a double left turn onto eastbound Democracy Boulevard. Alternative 4D was not selected because of impacts to an existing stormwater management pond and because the loop ramp would have required a lower design speed than is generally recommended for new interstate ramps.

**I-270 Spur at Fernwood Road**

**m. Alternative 5B**

**Alternative 5B** (Figure 10A) would have consisted of a half-diamond interchange between the I-270 Spur and Fernwood Road, with ramps oriented to and from the north. Ramps would have intersected Westlake Terrace and Fernwood Road to the outside of the I-270 Spur roadways. The Fernwood Road Bridge would have been widened to provide a double left turn bay to access the northbound ramp. This alternative would have been compatible with all Democracy Boulevard alternatives with the exception of Alternative 4B. Alternative 5B was not selected because of cost, and it would preclude any implementation of median HOV ramps.

**n. Alternative 5C (Selected - See Section III.B.3)**

**Selected Alternative 5C** (Figure 10B) consists of a ramp connection between Fernwood Road and the northbound and southbound I-270 Spur median HOV lanes. This ramp intersects the north side Fernwood Road overpass near the center of its span over the I-270 Spur. This connection would operate as HOV-only, at least during the peak hours.

An optional add-on to Alternative 5C was considered which included an I-270 Spur reversible median ramp connection to the south of Fernwood Road. This connection would have operated as HOV-only, at least during the peak hours. This option is feasible from an engineering standpoint, but was not included with the Selected Alternative due to lack of need to meet design year requirements, given the improvements associated with the Selected Alternative.

**New Northbound I-270 Spur Connection with Rockledge Drive**

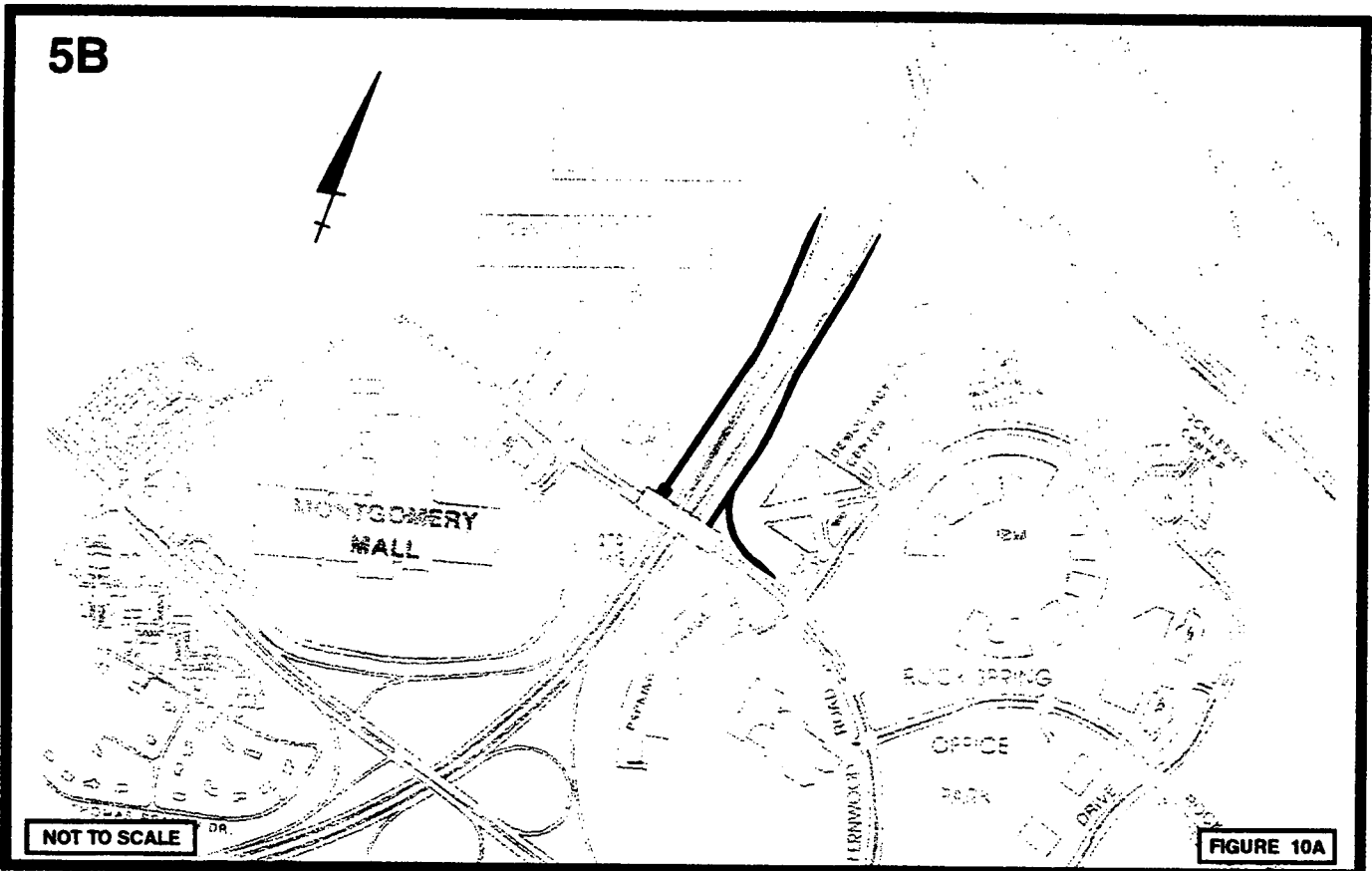
**o. Alternative 6B**

**Alternative 6B** (See Figure 11) would have provided a route, in addition to Democracy Boulevard, for northbound I-270 Spur traffic to access the Rock Spring Office Park. This alternative proposed a ramp off of the northbound I-270 Spur, north of Fernwood Road, that ran parallel to I-270, behind Lockheed Martin, and intersected Rockledge Drive, adjacent to one of the Rockledge Drive Connector alignments (3E, 3F, or 3G). This alternative could only have been constructed with Alternative 3E, 3F, or 3G, requiring traffic using the Alternative 6B ramp to turn right onto westbound Rockledge Drive. Alternative 6B was not selected because it is only capable of providing relief for one movement -- northbound I-270 Spur into the Rock Spring Office Park. Selected Alternative 4A - Signalized Ramp Option addresses this movement at a lower cost.

**2. Alternatives Modified Following the Location/Design Public Hearing**

In response to comments received at the Location/Design Public Hearing, and based on traffic analyses performed on various combinations of alternatives presented at the hearing, several alternatives were modified subsequent to the hearing.

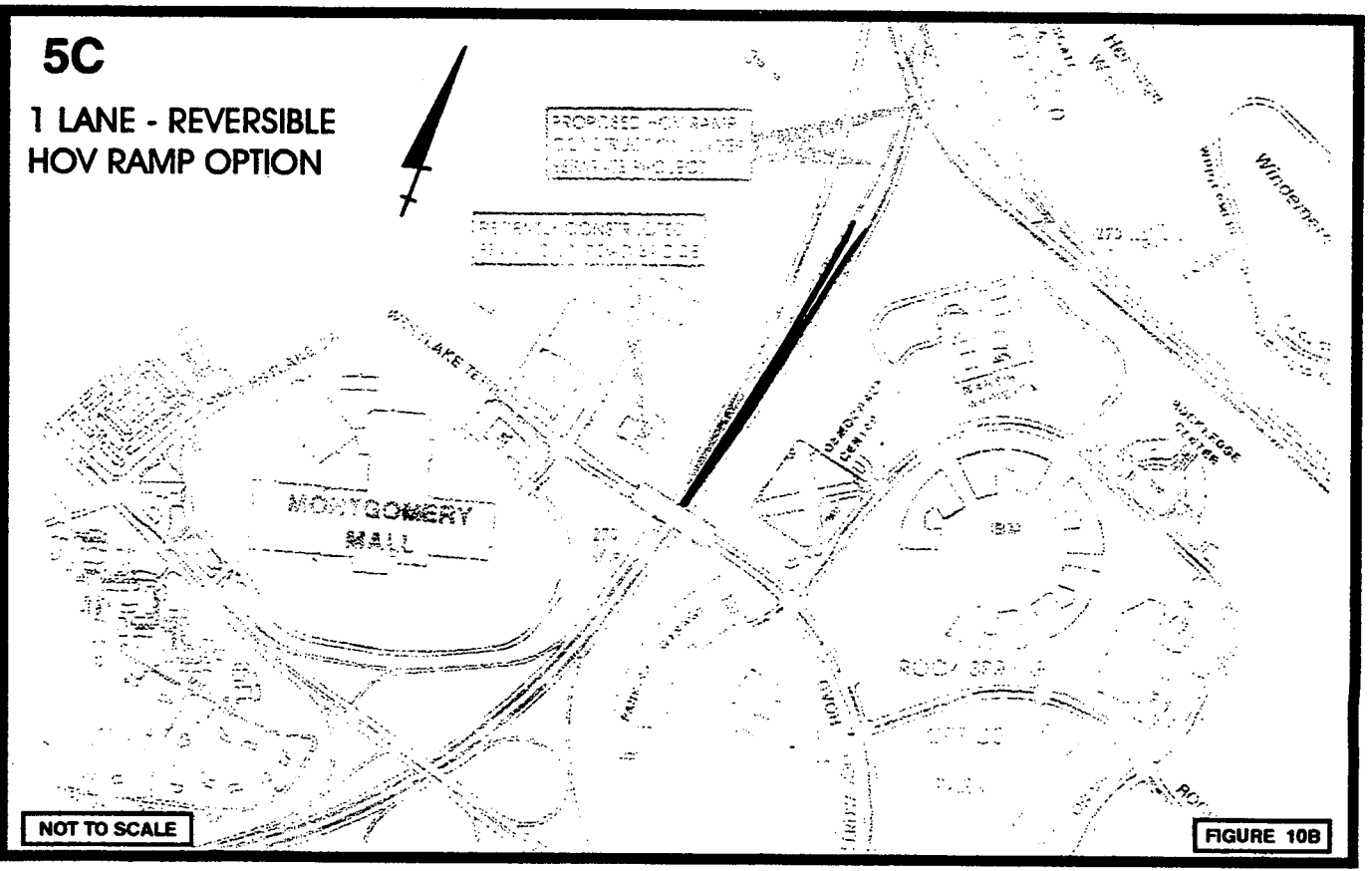
5B



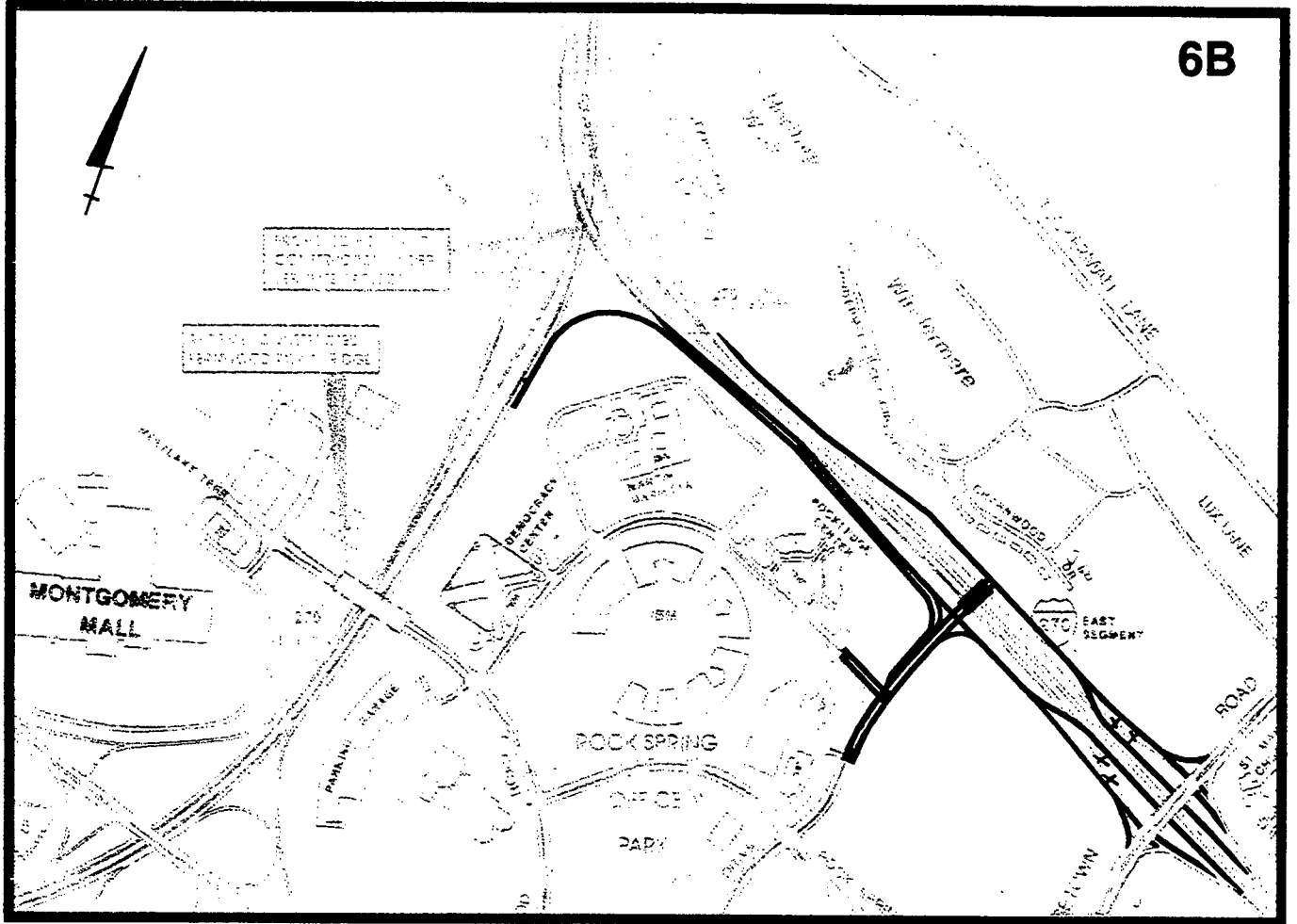
ALTERNATIVE 5B

5C

1 LANE - REVERSIBLE  
HOV RAMP OPTION



ALTERNATIVE 5C



NOT TO SCALE

ALTERNATIVE 6B

FIGURE 11

**a. Alternative 2D**

Even when combined with Alternative 3E, Alternative 2D, as presented at the public hearing, would not provide satisfactory levels of service at the MD 187 intersections with the I-270 diamond interchange ramps. It was determined that an additional northbound lane on MD 187 through the interchange area would be required. Two options for providing this additional lane were considered. The first option would consist of widening MD 187 to the east from south of I-270 to north of I-270. To avoid any additional right-of-way acquisition from St. Mark Church, no acceleration lane would be provided for the northbound I-270 ramp onto northbound MD 187. The additional northbound lane would meet the existing exclusive right-turn lane south of the Tuckerman Lane intersection.

The second option would consist of constructing all MD 187 widening to provide double left turns in each direction and the additional northbound lane to the west side of MD 187 through the interchange area. This would result in no additional impacts for St. Mark Church, beyond the original Alternative 2D impact, and still allow an acceleration lane for the northbound I-270 to northbound MD 187 ramp. The only additional impact associated with this shift is an additional 0.20± acre required from the Davis parcel in the northwest quadrant of the interchange.

Given that the second option for providing a fourth northbound MD 187 lane allows an acceleration lane from I-270 with only minor additional impact and cost (\$50,000 higher than Option 1), the first option was dropped from consideration.

**b. Alternative 4A - Signalized Ramp Option**

It was determined that the option of a two-lane ramp and signal control would be required to accommodate the heavy volume of traffic from northbound I-270 Spur onto eastbound Democracy Boulevard, which subsequently weaves into the left-turn lanes at Fernwood Road. This ramp will transition from one lane to two lanes approximately 137 meters (450 feet) from the signal control.

Replacing the northbound I-270 Spur loop ramp connection to westbound Democracy Boulevard with a two-lane exit ramp, double left-turn lanes, and a signalized intersection on Democracy Boulevard would be dropped from consideration. The loop ramp would remain as is with a minor shift to accommodate the additional lane on westbound Democracy Boulevard. Improvements to the eastbound Democracy Boulevard to northbound I-270 Spur loop ramp



associated with widening the northbound I-270 Spur to eastbound Democracy Boulevard ramp to a two-lane exit would no longer be required.

**c. Alternative 4C**

Alternative 4C was modified slightly subsequent to the public hearing to include extension of the acceleration lane for the northbound I-270 Spur to westbound Democracy Boulevard loop ramp to connect with the acceleration lane from the southbound I-270 Spur to westbound Democracy Boulevard ramp. This will provide a continuous through travel lane and eliminate the merge on westbound Democracy Boulevard, which is a High Accident Location.

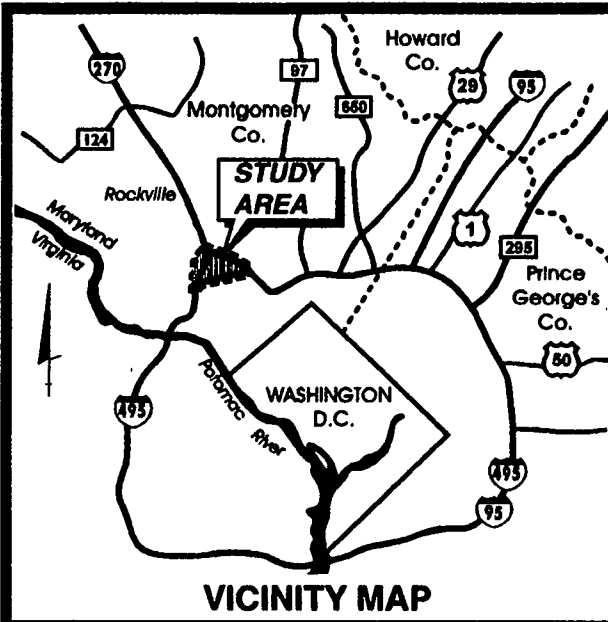
**3. The Selected Alternative: Alternatives 2D - Modified, 3E, 4A - Signalized - Modified, 4C and 5C (Figures 12-16)**

The Selected Alternative is a combination of build alternatives 2D, 3E, 4A - Signalized and 5C.

The Alternative 2D portion of the Selected Alternative (See Figures 14A, 14B and 14C) incorporates modifications to its public hearing design, as discussed above, with MD 187 widening to the west through the interchange area, resulting in three through lanes southbound, four through lanes northbound and double left turns for all interchange movements, including "trap" lanes to provide additional storage for the MD 187 left-turn movements onto I-270. The MD 187 bridge over I-270 would be widened approximately 15.5 meters (51 feet).

The Alternative 3E portion of the Selected Alternative (See Figures 14A, 14B and 14C) would operate in tandem with the improved interchange at I-270/MD 187 (Alternative 2D - Modified) and provide direct access to and from Rock Spring Park, using a new diamond interchange, north of MD 187, which would connect I-270 to Rockledge Drive.

The Alternative 4A - Signalized portion of the Selected Alternative (See Figures 15A and 15B) would incorporate modifications made subsequent to the public hearing, retaining the loop ramp connecting northbound I-270 Spur with westbound Democracy Boulevard. The northbound to eastbound ramp would become signalized at its intersection with Democracy Boulevard and transition from one to two lanes within 180 to 245 meters (600 to 800 feet) of Democracy Boulevard.



**ALT. 5C:  
CONSTRUCTION OF A  
1-LANE REVERSIBLE  
HOV RAMP AT  
I-270SPUR/  
FERNWOOD RD.**

PROPOSED HOV RAMP  
CONSTRUCTION UNDER  
SEPARATE PROJECT \*

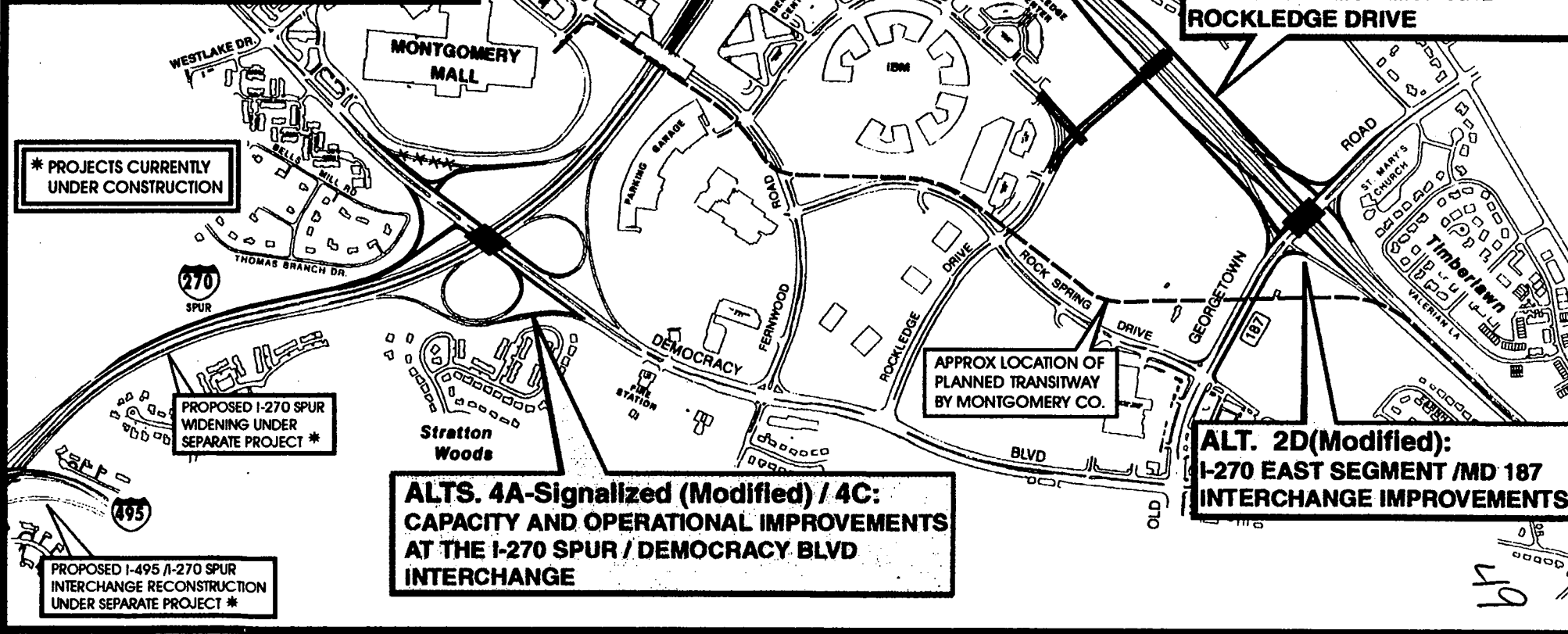
**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD  
SELECTED ALTERNATIVE  
KEY MAP**

NOT TO SCALE FIGURE 12

**ALT. 3E:  
CONSTRUCTION OF A DIAMOND  
INTERCHANGE TO PROVIDE A  
DIRECT CONNECTION BETWEEN  
I-270 EAST SEGMENT AND  
ROCKLEDGE DRIVE**

RECENTLY CONSTRUCTED  
FERNWOOD ROAD BRIDGE

\* PROJECTS CURRENTLY  
UNDER CONSTRUCTION



**ALTS. 4A-Signalized (Modified) / 4C:  
CAPACITY AND OPERATIONAL IMPROVEMENTS  
AT THE I-270 SPUR / DEMOCRACY BLVD  
INTERCHANGE**

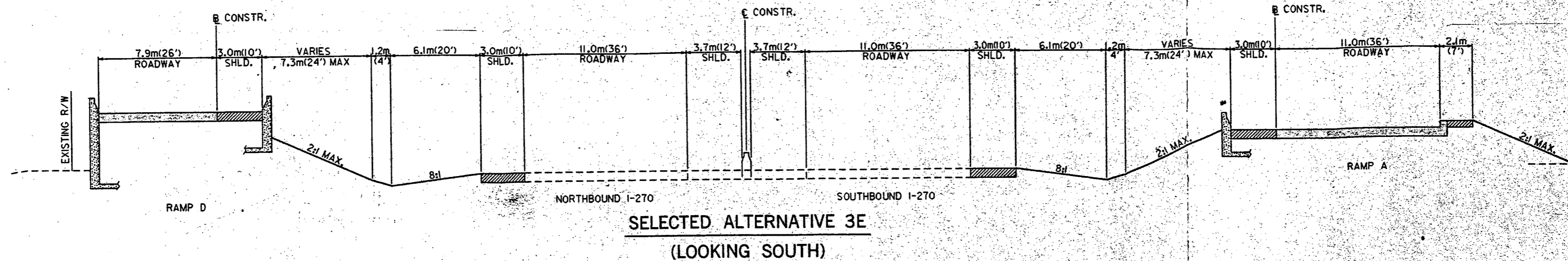
**ALT. 2D(Modified):  
I-270 EAST SEGMENT / MD 187  
INTERCHANGE IMPROVEMENTS**

PROPOSED I-495 / I-270 SPUR  
INTERCHANGE RECONSTRUCTION  
UNDER SEPARATE PROJECT \*

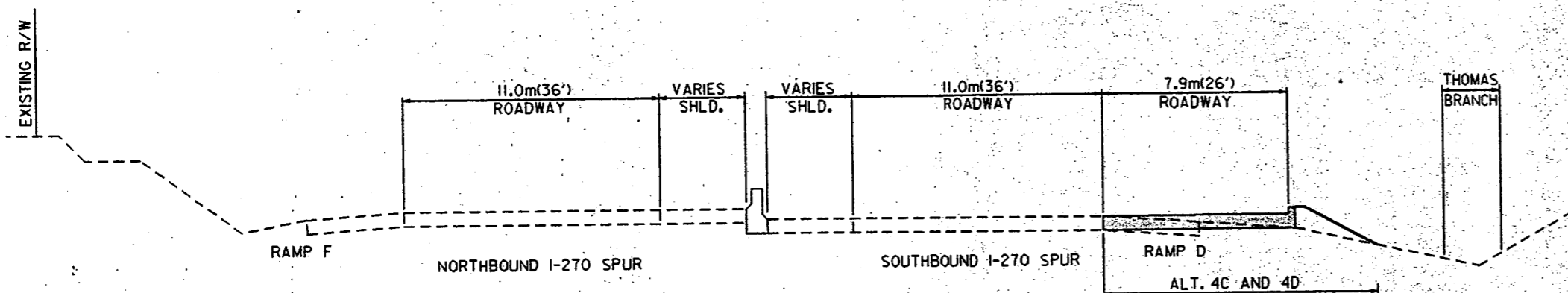
PROPOSED I-270 SPUR  
WIDENING UNDER  
SEPARATE PROJECT \*

APPROX LOCATION OF  
PLANNED TRANSITWAY  
BY MONTGOMERY CO.

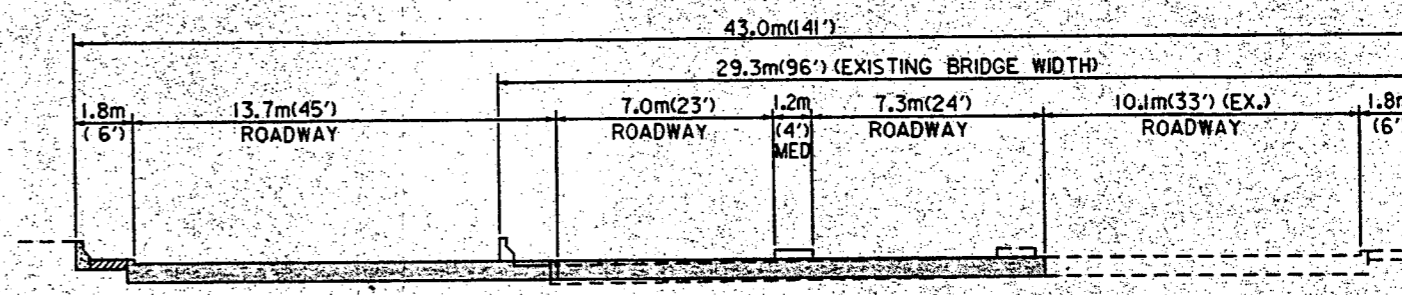
19



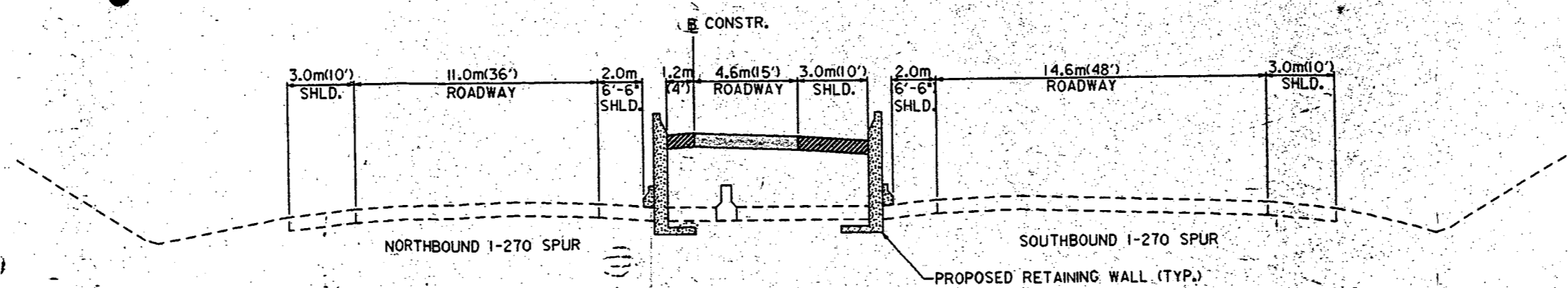
**SELECTED ALTERNATIVE 3E**  
(LOOKING SOUTH)



**SELECTED ALTERNATIVE 4C-MODIFIED**  
(LOOKING SOUTH)



**SELECTED ALTERNATIVE 2D-MODIFIED**  
MD 187 BRIDGE OVER I-270 EAST SEGMENT  
(LOOKING NORTH)



**SELECTED ALTERNATIVE 5C**  
(LOOKING SOUTH)

LEGEND		
	- PROPOSED SHOULDER	
	- PROPOSED ROADWAY	
	- PROPOSED BARRIER/RETAINING WALL	
	- EXISTING ROADWAY/SOULDER	
STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>TYPICAL SECTIONS - SELECTED ALTERNATIVE</b>		
DATE: JAN. 1997	NOT TO SCALE	FIGURE 13

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



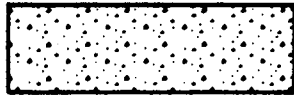
PROPOSED ROADWAY IMPROVEMENT 51



PROPOSED BRIDGE REDECKING



PROPOSED BRIDGE WIDENING



PROPOSED NEW STRUCTURE



PAVEMENT TO BE REMOVED



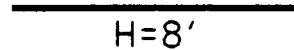
PROPOSED CULVERT EXTENSION



PROPOSED SIDEWALK



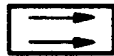
PROPOSED CURB & GUTTER



PROPOSED RETAINING WALL



PROPOSED CONCRETE BARRIER



PROPOSED LANE CONFIGURATION



PROPOSED RIGHT OF WAY



EXISTING RIGHT OF WAY



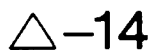
SLOPE LIMITS



PROPERTY LINE



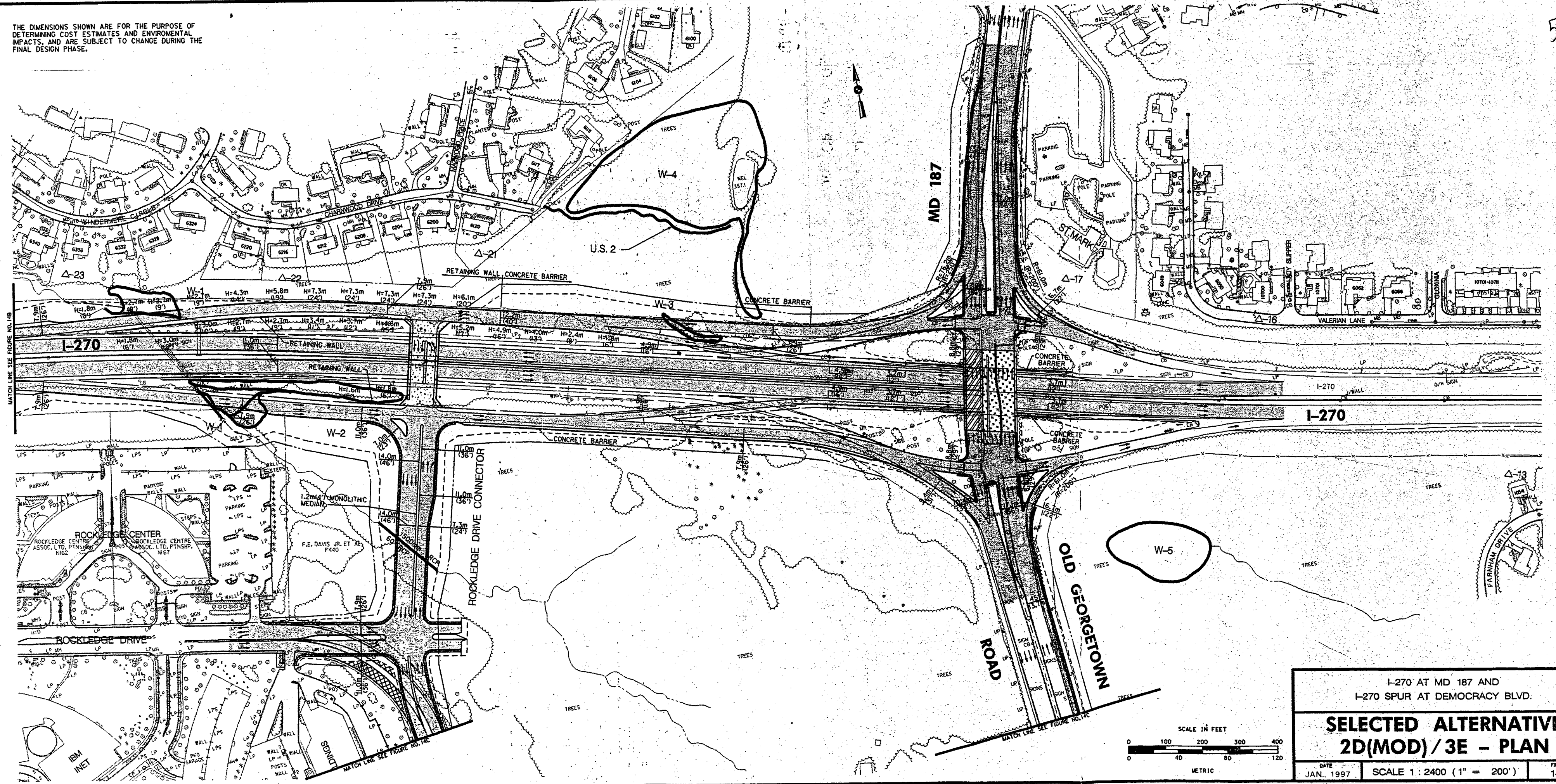
WETLAND BOUNDARY



AIR & NOISE RECEPTOR LOCATION

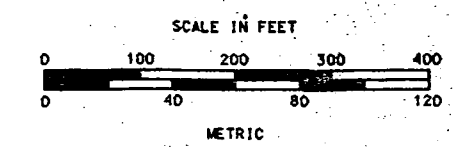
STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>LEGEND - PLAN SHEETS</b>		
NOT TO SCALE		

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



MATCH LINE SEE FIGURE NO. 14B

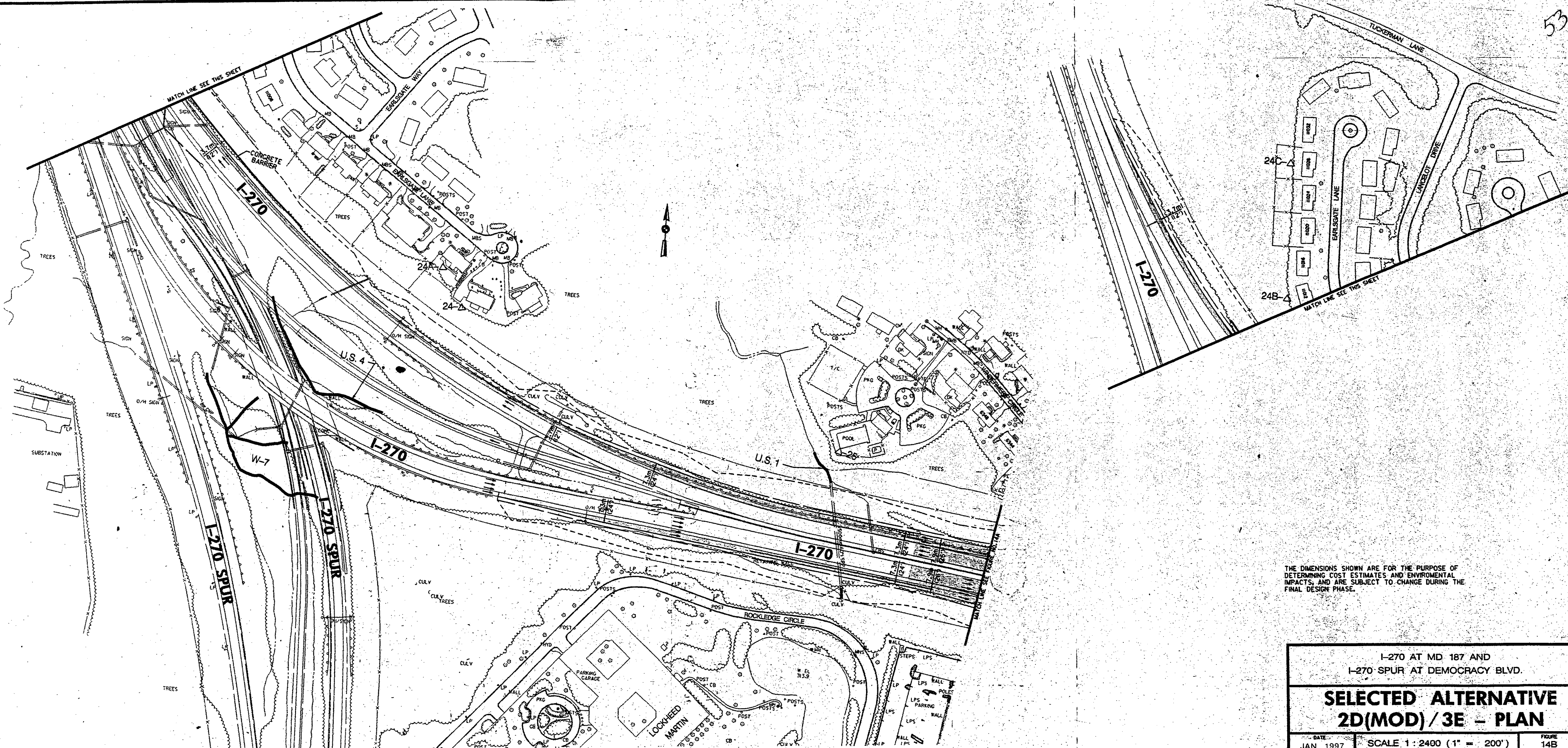
MATCH LINE SEE FIGURE NO. 14C



I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

**SELECTED ALTERNATIVE  
 2D(MOD) / 3E - PLAN**

DATE JAN. 1997	SCALE 1 : 2400 (1" = 200')	FIGURE 14A
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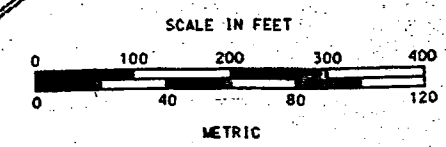
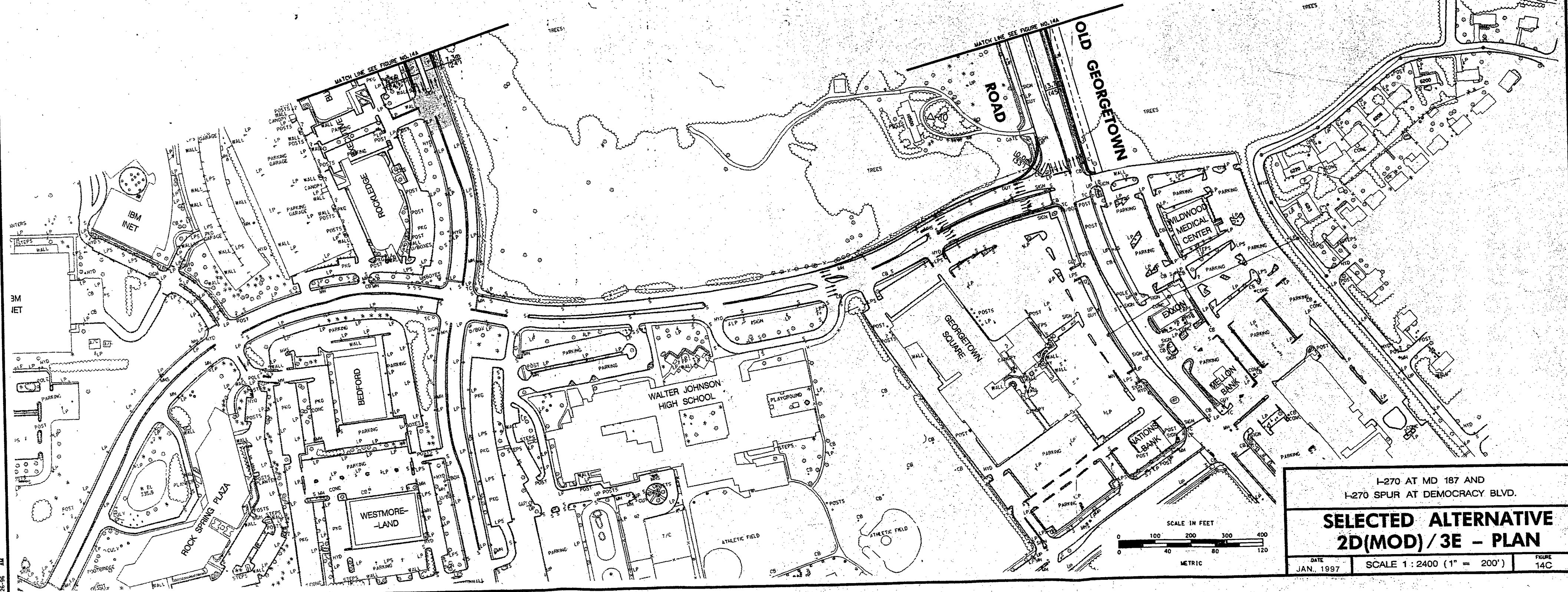
THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.

**SELECTED ALTERNATIVE  
2D(MOD) / 3E - PLAN**

DATE: JAN. 1997      SCALE: 1" = 200'      FIGURE: 14B

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

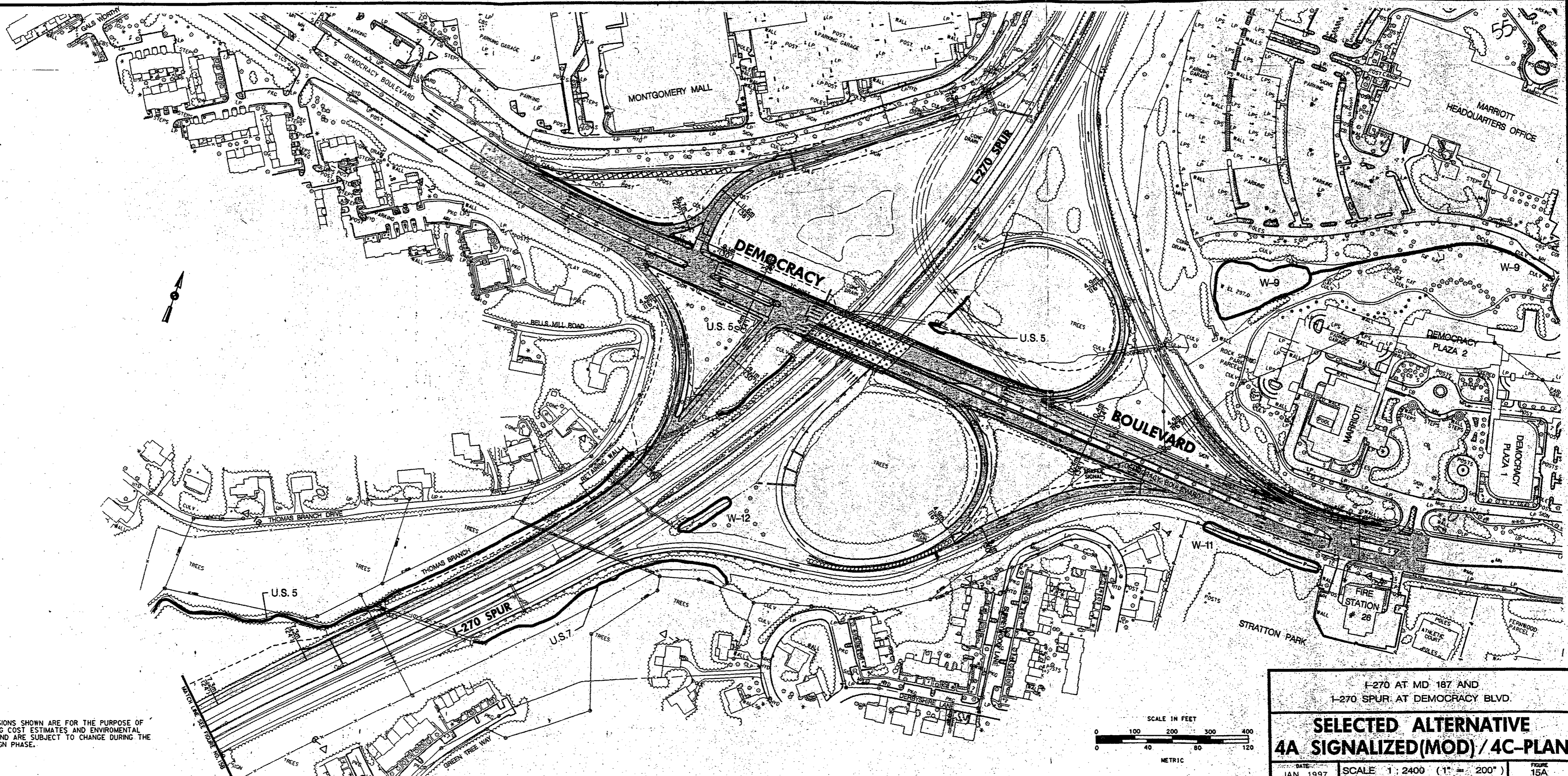


I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

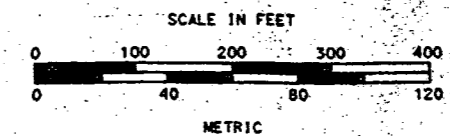
**SELECTED ALTERNATIVE  
 2D(MOD) / 3E - PLAN**

DATE JAN. 1997	SCALE 1 : 2400 (1" = 200')	FIGURE 14C
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E. NO. P548270.DGN  
16-26-96 AM



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



I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.

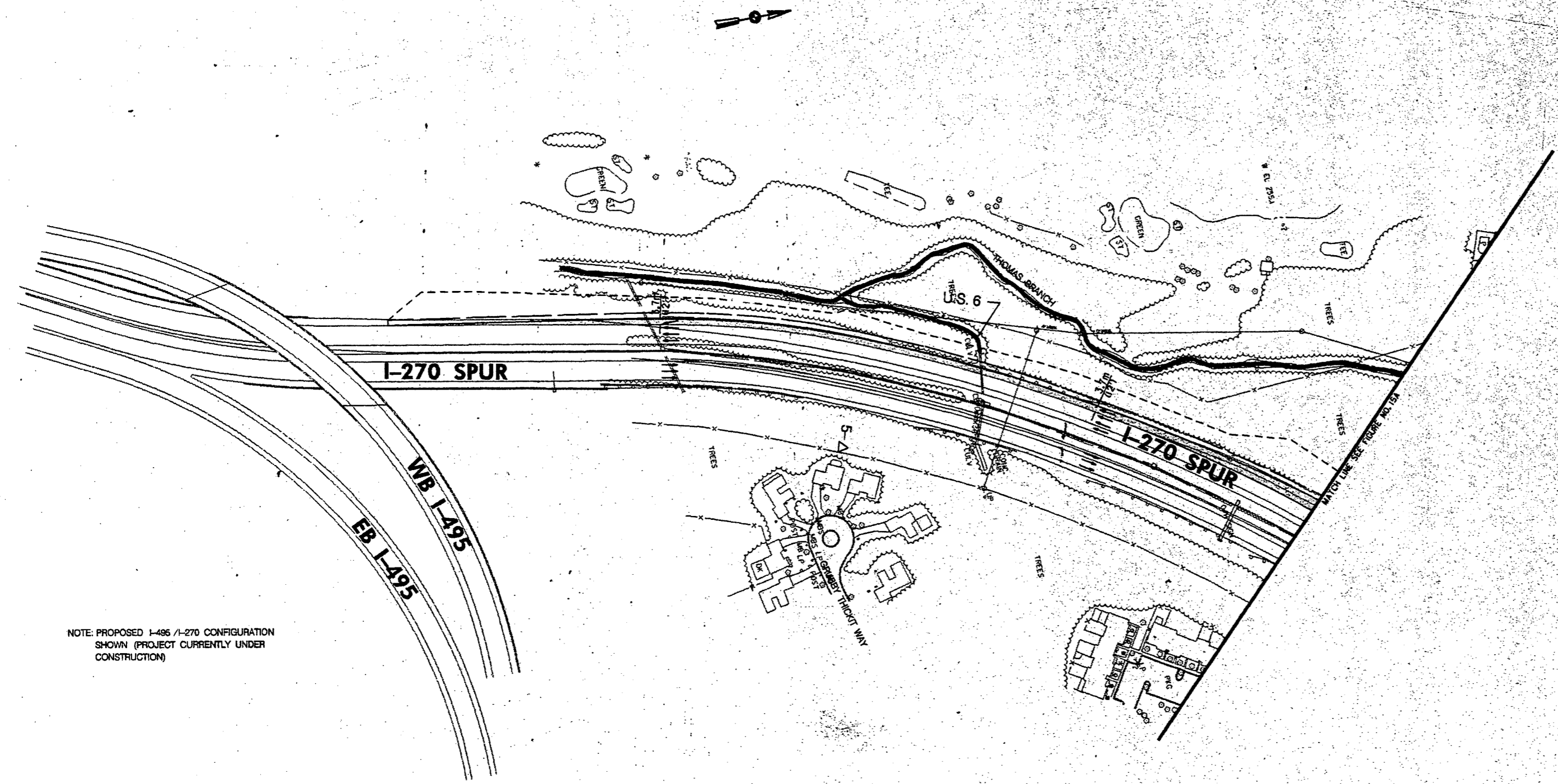
**SELECTED ALTERNATIVE  
4A SIGNALIZED(MOD) / 4C-PLAN**

DATE: JAN. 1997 SCALE: 1" = 200' FIGURE: 15A

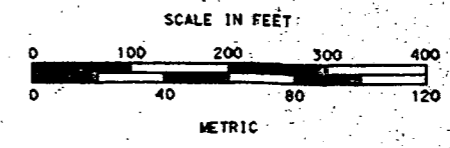
FILE NO. PS48270.DGN  
09-26-96 AM



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



NOTE: PROPOSED I-495 / I-270 CONFIGURATION SHOWN (PROJECT CURRENTLY UNDER CONSTRUCTION)

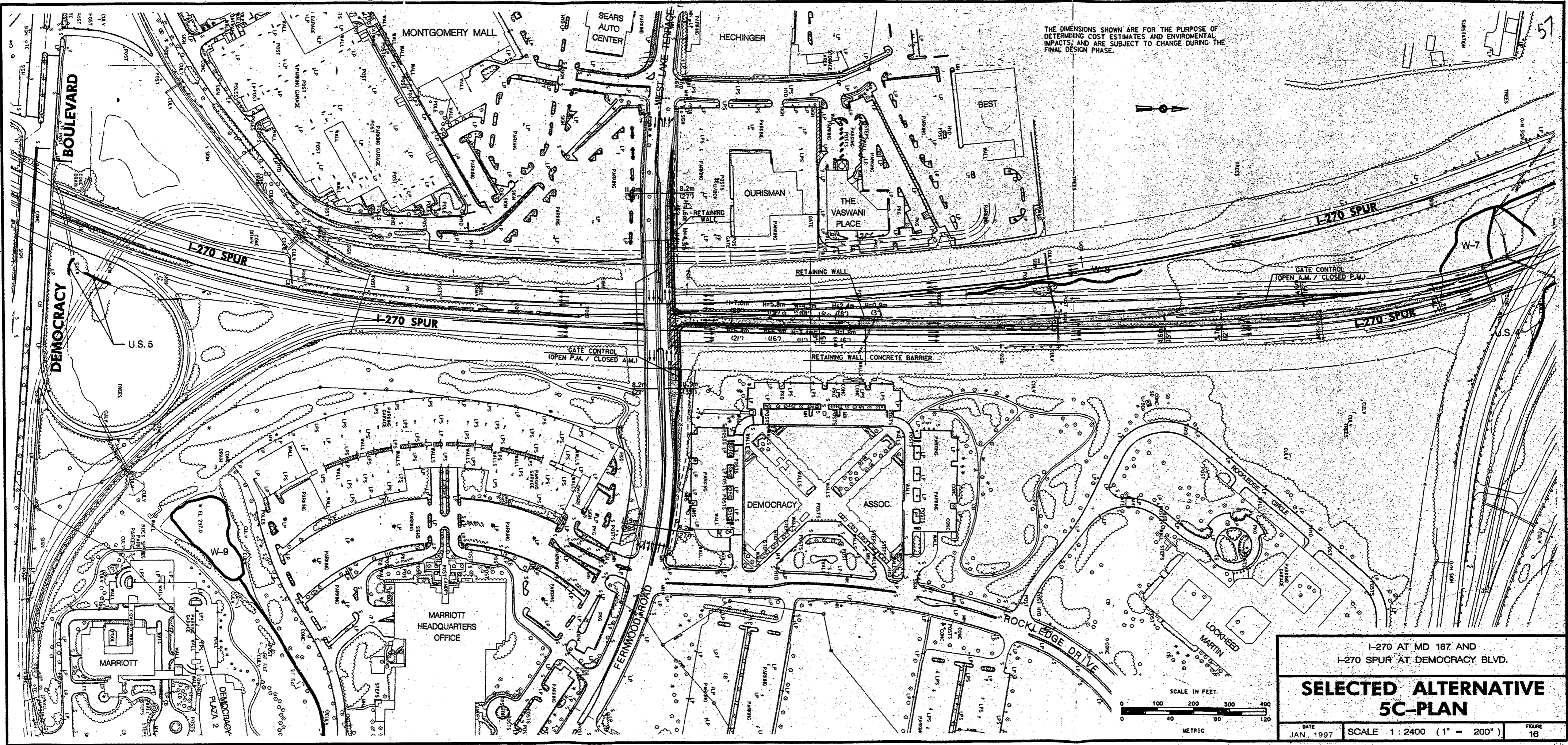


I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

**SELECTED ALTERNATIVE  
 4A SIGNALIZED(MOD) / 4C-PLAN**

DATE JAN. 1997	SCALE 1 : 2400' (1" = 200')	FIGURE 15B
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FILE NO. PS50270DGN  
09-26-96 AM

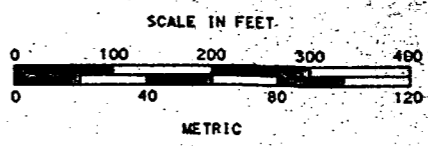


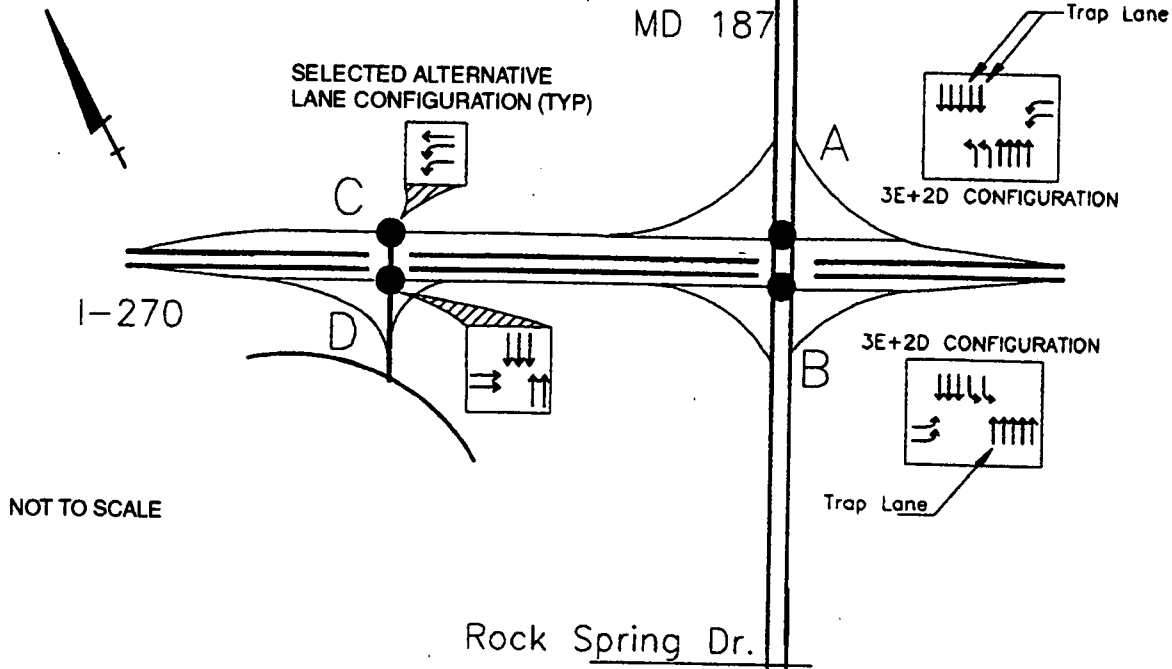
THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS; AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.

I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.

**SELECTED ALTERNATIVE  
5C-PLAN**

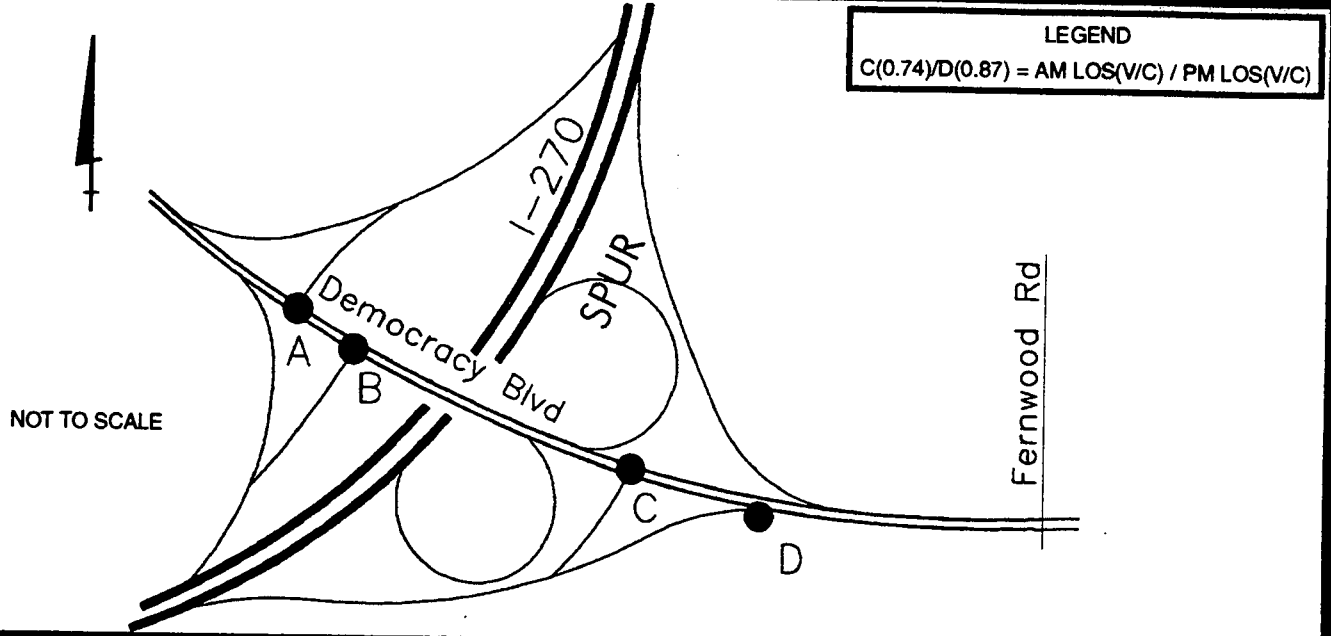
DATE: JAN. 1997  
SCALE: 1:2400 (1" = 200")  
FIGURE: 16





Intersection Analysis Location

Alternative	A	B	C	D
2020 No-Build	F(1.62)/F(1.54)	F(1.08)/F(1.70)	--	--
3E + 2D + 5C	C(0.74)/D(0.87)	B(0.64)/E(0.91)	E(0.94)/C(0.81)	D(0.84)/B(0.63)



Intersection Analysis Location

Alternative	A	B	C	D
2020 No-Build	F(1.23)/F(1.08)	F(1.19)/F(1.20)	--	--
3E + 2D + 4A + 4C + 5C	D(0.84)/B(0.65)	E(0.97)/D(0.86)	--	E(0.98)/A(0.58)

I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD

INTERCHANGE LEVEL  
OF SERVICE COMPARISON  
NO-BUILD vs. SELECTED ALTERNATIVE

FIGURE 17

Alternative 4A - Modified also includes the widening of westbound Democracy Boulevard at, and east of, the bridge over I-270 Spur to provide an acceleration lane for the northbound to westbound loop ramp. (Note: In the Final Design Phase, consideration will be given to implementing a variation of the Alternative 4A-Signalized configuration, as described on p. III-13.)

The Alternative 4C portion of the Selected Alternative (See Figures 15A and 15B) incorporates the minor design revisions, discussed above, developed subsequent to the public hearing. This alternative consists of improvements generally to the western half of the I-270 Spur/Democracy Boulevard interchange. The Democracy Boulevard bridge over the I-270 Spur would be widened to accommodate a deceleration lane for the eastbound to northbound loop ramp, and a double left-turn bay for the westbound to southbound movement. West of I-270 Spur, the southbound ramp off of I-270 Spur would be widened to allow a double left-turn onto eastbound Democracy Boulevard. The southbound to westbound ramp would be reconstructed, closer to I-270 Spur, with a smaller turning radius to allow more weaving distance between the ramp and the entrance to Montgomery Mall.

The Alternative 5C portion of the Selected Alternative (See Figure 16 is identical to what was presented at the public hearing and would consist of a one-lane reversible median ramp connecting the north side of the Fernwood Road bridge to the median I-270 Spur HOV lanes south of the Y-Split.

#### **4. Environmental Consequences of the Selected Alternative**

##### **a. Social/Economic**

##### **1) Displacements and Relocations**

The Selected Alternative would not result in any business or residential displacements.

##### **2) Right-of-Way Requirements**

The Selected Alternative requires the acquisition of a total of 2.51 hectares (6.2 acres) of right-of-way from five different property owners (seven parcels) as summarized in Table 3 below.

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**TABLE 3**

**RIGHT-OF-WAY ACQUISITION**

<b>Property Owner</b>	<b>Land Use Category</b>	<b>Area Required</b>
St. Mark Presbyterian Church	Church/School	0.04 hectare (0.1 acre)
Camalier Ltd. Partnership (parcels 440 and 950)	Business/Commercial	1.9 hectares (4.6 acres)
Aubinoe and Griffith Ltd. Partnership (parcels 382 and 458)	Business/Commercial	0.2 hectare (0.6 acre)
Rockledge Centre Associates Ltd. Partnership	Business/Commercial	0.2 hectare (0.6 acre)
Democracy Associates	Business/Commercial	0.1 hectare (0.3 acre)
<b>TOTAL</b>		<b>2.5 hectare (6.2 acres)</b>

**3) Title VI Statement**

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap in all State Highway Administration program projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way, or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Office of Equal Opportunity of the Maryland State Highway Administration.

**4) Community Disruption**

There is no evidence that minority, elderly, or handicapped populations will be adversely affected by the Selected Alternative.

Since I-270, I-270 Spur, MD 187 and Democracy Boulevard and the associated interchanges are existing facilities, the Selected Alternative, which is basically modifications of these facilities, would not cause the separation of residents from other residents or community facilities, nor produce any adverse changes in social interaction, or disrupt community cohesion.

Construction of the Selected Alternative would have effects on adjacent communities in the following ways. During construction, there would be a temporary increase in noise from heavy equipment and fugitive dust. Alternative 3E would require up to 7.3 meter (24 feet) high retaining walls along the existing right-of-way line behind some of the homes in the Windermere community, thereby affecting visibility to the southwest from these properties. Although these retaining walls would be located within existing right-of-way, the proposed edge of roadway, adjacent to the walls, would be as much as 27.4 meters (90 feet) closer to the 15± homes whose property lines abut the 15.2 meter (50 foot) wide community association-owned buffer immediately adjacent to I-270.

Traffic patterns for the area residents would basically remain unchanged by the Selected Alternative. There could actually be less traffic on study area arterials such as MD 187 and Democracy Boulevard, as compared to the no-build alternative, as a result of more direct access to and from the interstate system. For example, Alternative 5C provides more direct access to and from Montgomery Mall and Rock Spring Office Park, and Alternative 3E provides more direct access to and from Rock Spring Office Park. Other improvements associated with the Selected Alternative simply modify the location, configuration or number of lanes associated with some of the ramp movements.

The Selected Alternative would not require the acquisition of any land from a residential property. Several of the affected properties, such as those owned by Aubinoe and Griffith Limited Partnership and Camalier Limited Partnership, are zoned and planned residential; however, since they are currently vacant, have not yet been subdivided and are entirely owned by the respective Limited Partnerships, these properties have been given the land use category Business/Commercial in this document.

#### **5) Accessibility to Existing Services and Facilities**

The impacts on the means of access to existing services and facilities resulting from the

102

Selected Alternative would be minor. The Selected Alternative would, to varying degrees, improve mobility from the various communities to and from I-270. Alternative 2D - Modified proposes the extension of the acceleration lane on northbound MD 187, north of I-270. The extension of this acceleration lane would improve the merge on northbound MD 187 and result in an improved deceleration area for the right turn into the St. Mark Church entrance. On southbound MD 187, Lux Lane would remain open for right-in, right-out movements. The most substantial access improvement that would result from the Selected Alternative is for southbound I-270 traffic entering the Rock Spring Office Park, and the associated return movement. With the proposed Alternative 3E interchange, southbound I-270 traffic would travel as much as 1.4 kilometers (0.9 mile) less distance to reach a given point within the Rock Spring Office Park, as compared to current conditions.

Alternative 4A - Signalized Ramp Option - Modified proposes resurfacing Democracy Boulevard, east of the I-270 Spur, in the area in front of the Bethesda Fire Department Station No. 26. However, access into and out of the Fire Station would remain as it is currently.

Measures will be included, with the Selected Alternative, to improve pedestrian mobility wherever possible in the study area. New sidewalks to maintain continuity with the existing sidewalk system throughout the project area, including the new Rockledge Drive Connector bridge and the MD 187 and Democracy Boulevard bridge widenings, are included in the Selected Alternative.

As seen on Figure 17, the Selected Alternative would result in Level of Service E or better at all intersections associated with the improved interchanges.

## **6) Regional and Local Economic Impacts**

The I-270 corridor is a vital, growing extension of the Washington Metropolitan regional economy. Named the I-270 Technology Corridor, this interstate continues to be a focal point of major commercial development.

The Selected Alternative would address the growth needs of the County and have a positive effect on regional business activities. This alternative would alleviate congestion at the existing interchanges, thereby reducing travel time to and from the study area employment centers, and

provide increased traffic capacity to accommodate planned commercial growth, and the attraction of that planned growth which would translate to increased employment opportunities in the area.

The Selected Alternative would not require the displacement of any business in the study area. Other benefits associated with the build alternatives would be the improved levels of service for the individual interchange movements and corresponding decreases in delays. More direct access to and from I-270 to Rock Spring Office Park, as proposed with Alternative 3E, would make this strategic location even more attractive as a corporate headquarters location.

Retaining walls would be included to minimize the amount of right-of-way required from any parcel. Any right-of-way required would be in vacant areas and would not impact any buildings, parking areas or access roadways.

Any improvements in capacity and levels of service at the I-270 Spur/Democracy Boulevard interchange would be beneficial to Montgomery Mall, as many of its patrons are likely to use this interchange.

**b. Land Use and Growth Management**

The 1992 North Bethesda-Garrett Park Master Plan, which covers most of the study area, has recognized the need to increase the capacity of the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges to accommodate the planned future growth and to relieve existing traffic. Future land use and development densities planned in the County and study area are based on increased traffic capacity. The Selected Alternative, therefore, would not alter the ultimate intensity pattern of land use development and redevelopment.

The Selected Alternative, therefore, is consistent with the County's Master Plan for the area which recommends one or more direct access ramps from I-270 and/or I-270 Spur to Rock Spring Office Park and a direct access HOV ramp from I-270 Spur to Rock Spring Office Park. The Master Plan includes sketches of a future I-270/Rockledge Drive interchange near MD 187 that closely resemble Alternative 3E.

Although the Selected Alternative would enhance operational characteristics of the interchanges, it is not expected that they would place additional development pressure on low growth



64

areas in the general vicinity, nor cause or encourage land uses that are not compatible with area Master Plans.

**c. Cultural Resources**

By letter dated August 29, 1995 (Concurrence dated October 4, 1995 - See Section V.A.), the State Historic Preservation Officer (SHPO) has concurred that no sites on or eligible for listing on the National Register of Historic Places were identified within the study area.

A Phase I archeological survey was performed by the State Highway Administration for the anticipated right-of-way associated with the Selected Alternative. The SHPO has concurred (See letter dated August 29, 1995 in Section V.A.) that no archeological resources were identified in the project area.

Therefore, the Selected Alternative would not impact cultural resources.

**d. Natural Environment**

**1) Topography, Geology and Soils**

**a. Topography and Geology**

The Selected Alternative would not substantially change the existing topographic conditions along I-270, I-270 Spur, MD 187 or Democracy Boulevard. The grades of the Selected Alternative closely follow the existing grades in all cases except Alternative 3E, at the Rockledge Connector Bridge and Alternative 5C at the Fernwood Road Bridge where a new ramp, supported by retaining walls, would intersect an elevated bridge. This would create a new physical and visual overview of the existing landscape. However, the new landscape would not block the view of any scenic or important physical features, or create undesirable drainage patterns. No impacts to the underlying geological structures will occur as a result of the Selected Alternative. Some cut and fill would be required to construct ramps to adjust for the auxiliary lane and ramp widenings; cut depths will be less than 3.0 meters (10 feet), and fill heights will be a maximum of approximately 7.6 meters (25 feet).

**b. Soils**

Implementation of the Selected Alternative would result in some disturbance of soils, notably erosion and sedimentation during construction. The soil series found in the project area belong to the Glenelg-Manor-Chester and are listed as susceptible to erosion. The removal of vegetation from the construction area would expose soils and increase the probability of runoff. Removal of vegetation also would reduce the beneficial effects of the vegetation's ability to intercept sediment loaded runoff.

The potential for soil erosion and sedimentation would become greater as soils are disturbed. The highest potential for sedimentation to receiving waters would occur where these soils are in close proximity to surface waters. Therefore, it is important that soil erosion and sedimentation be minimized as much as possible. Measures to mitigate these effects include structural, vegetative and operational methods. These methods will be developed as part of a Soil Erosion and Sediment Control Plan for the project, which will be prepared in accordance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control. Long-term impacts to the soils in the project area would be negligible. Introduction and establishment of grasses and herbaceous vegetation would stabilize the soils as soon as possible after construction is completed. The Selected Alternative would not impact Prime Farmland Soils or Soils of Statewide Importance as the study area does not contain any such soils.

**2) Water Resources**

Impacts to water resources under the Selected Alternative are not significant and can be minimized using standard mitigation measures during construction and operation:

- Watershed effects would be minimized through a limited construction schedule and adherence to storm management and sediment and erosion control measures.
- Effects to the water quality in the study area would be minimized by the use of Best Management Practices (BMP's).
- The Selected Alternative would require filling of and/or retaining wall construction within some of the floodplain associated with Old Farm Creek, Thomas Branch and

666

their tributaries.

Water resources in the project area are limited to Old Farm Creek, Thomas Branch and their tributaries, which are the only streams being crossed. These streams are designated Use I (water contact, recreation, aquatic life and water supply) by the Department of the Environment.

The ramps associated with the Alternative 3 portion of the Selected Alternative crosses Old Farm Creek at two locations, requiring extensions of existing I-270 culverts. The existing 1,524 millimeter (60-inch) diameter culvert (670.6 meters [2,200 feet] north of MD 187) would require a 36.6 meters (120 linear feet) $\pm$  extension and the existing 1,524 millimeter (60-inch) diameter culvert (914.4 meters [3,000 feet] north of MD 187) would require a 10.7 meters (35 linear feet) $\pm$  extension. Culverts and/or pipes within the project would be extended no farther than the limits of the proposed slopes.

Alternative 3E would require a new crossing of Old Farm Creek on the proposed Rockledge Connector. The proposed culvert length which would be required is 61.0 meters (200 LF) $\pm$ .

Alternative 4C - Modified crosses Thomas Branch on I-270 Spur at two locations. One of the locations would require a 9.1 meters (30 linear feet) $\pm$  extension of an existing 2,438 mm (96-inch) diameter culvert and the other location would require a 3.0 meters (10 linear feet) $\pm$  extension of an existing 3.6 meters (11 feet - 10 inches) x 2.3 meters (7 feet - 7 inches) arch culvert. There would be no new stream crossings on the I-270 Spur.

Culvert modifications would be in accordance with practices (e.g., check dams, culvert invert depression) that would maintain an aquatic habitat.

**a. Surface Water**

For the Selected Alternative under study, highway runoff is a potential source of pollutants to surface water resources. The long-term effects on the water quality from the Selected Alternative would be minimal. Generally, the Selected Alternative would require the extension of existing drainage culverts under I-270 or I-270 Spur. The Selected Alternative would also include retaining walls on stream banks to limit stream impacts as much as possible, and would require minor stream relocations, as indicated in Table 1 and the following discussion.

67

Old Farm Creek, on the I-270 East Segment, would be impacted by Alternative 3E and would require 88.4 meters (290 linear feet)  $\pm$  of stream relocation -- 30 meters (100 linear feet) would be upstream, and 58 meters (190 linear feet) would be downstream of I-270.

Thomas Branch, on the I-270 Spur, would be impacted by Alternative 4C - Modified and would require 83.8 meters (275 LF)  $\pm$  of stream relocation.

Since stream waters in the study area are designated Use 1, in-stream construction will be prohibited from March 1st to June 15th. A Waterway Construction Permit will be required from the Maryland Department of the Environment (MDE), Water Management Administration.

Best Management Practices (BMP's), to control stormwater runoff, and sediment and erosion control measures would be applied to protect stream quality. BMP's which would be considered for use include extended detention, infiltration, ponds and grassed swales. If necessary, any increased runoff to the streams caused by the increase in impervious area due to additional pavement would be addressed with quantity control stormwater management.

The increase in runoff of pollutants such as soils, nutrients, organics, heavy metals, lead, petroleum, and other highway salts resulting from the increase in traffic would be addressed with quality control stormwater management. The increase in impervious surface area resulting from the proposed improvements will produce a proportionate increase in the amount of roadway runoff carrying vehicle generated pollutants (i.e., oil, coolants, brake lining, rubber, etc.). Infiltration of stormwater runoff would be investigated as a means to provide quality control by filtering the runoff through the soil.

Water quality indices (e.g., parameters that quantify sediment, nutrients, bacteria, oxygen demand, etc.) for all streams affected should remain in the permissible range. The use of Best Management Practices (BMP's) to provide sound stormwater management would be implemented where any disturbance could affect water quality in the corridor.

Stormwater runoff for the project will be managed in accordance with the State of Maryland Department of the Environment's "Stormwater Management Guidelines for State and Federal Projects". These regulations will require stormwater management practices in the following order of preference:

- 68
- On-site infiltration;
  - Flow attenuation by open vegetated swales and natural depressions;
  - Stormwater retention structures; and
  - Stormwater detention structures.

It has been demonstrated that these measures can substantially reduce pollutant loads and control runoff. Stormwater management areas will be identified during the final design phase.

To minimize water quality impacts, final design for the proposed improvements will include plans for grading, sediment and erosion control, and stormwater management, in accordance with State and Federal laws and regulations. Final plans require review and approval by the Maryland Department of the Environment (MDE), Water Management Administration. Sediment and erosion control measures will be designed and implemented in accordance with the "1991 Maryland Standards and Specifications for Soil Erosion and Sediment Control". Typical temporary sediment control measures which are installed in a project of this type include straw bale structures, slope silt fence, sediment traps, rip-rap linings, fiberglass erosion stops, dikes and swales, soil stabilization matting and stabilized construction entrances. The area disturbed by the construction will be held to a minimum and revegetated promptly after grading to minimize the potential for erosion and sedimentation.

#### **b. Groundwater Effects**

It is not anticipated that the proposed interchange improvements associated with the Selected Alternative would have any adverse affect on groundwater in the study area. Efforts to provide protection for groundwater in the vicinity of proposed highway improvements would include Stormwater Best Management Practices (BMP). To promote the maintenance of groundwater quality, BMP's are designed to provide a natural filtering of roadway pollutants that are present in runoff before the runoff enters surface water courses and aquifers. BMP's are implemented through the Maryland Department of the Environment. Practices to be considered include infiltration, vegetated swales, and retention and detention ponds. Final design and construction effects would comply with MDE standards and specifications.

Based on field survey and land use examination, the Selected Alternative will not impact any area having the potential for hazardous waste contamination.

### 3) Floodplains

The Selected Alternative would require 0.20 hectare (0.5 acre) of fill in the 100 year floodplains of Old Farm Creek and Thomas Branch.

Impacts to Old Farm Creek would be 0.04 hectare (0.1 acre) on the east side of I-270 approximately 610 meters (2,000 feet)± north of MD 187, resulting from a 6.1 meters (20 linear feet)± culvert extension and 45.7 meters (150 linear feet)± of channel relocation.

Impacts to Thomas Branch would be 0.16 hectare (0.4 acre), inside the northeast quadrant of the I-270 Spur/Democracy Boulevard Interchange and along southbound I-270 Spur, south of Democracy Boulevard. These impacts result from 91.4 meters (300 linear feet)± of channel relocation at the interchange and 3.0 meters (10 linear feet) of arch culvert extension and retaining wall along the southbound I-270 Spur.

In accordance with the requirements of 23 CFR 650 and Executive Order No. 11988, the impacts of each encroachment have been evaluated to determine if any are significant encroachments. A significant encroachment would involve one of the following:

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

Preliminary analyses indicate that, because construction within the 100-year floodplains of Old Farm Creek and Thomas Branch would be minimal (e.g. extension of existing culverts, and outfall channel improvements), no significant floodplain impacts are expected to occur as a result of the Selected Alternative. Further analyses, in compliance with agency requests (see 7/13/95

Interagency Field Review Minutes in Section V. Correspondence), will be completed in final design to ensure that no significant encroachment would occur.

#### 4) Terrestrial and Aquatic Habitats

##### Terrestrial

The most substantial effect of the Selected Alternative on wildlife along the corridor would be in the removal and alteration of vegetation. The destruction of naturally existing vegetation -- hedgerows, deciduous forest and fields -- along the road affects erosion and sediment control and alters the habitat for birds, mammals and insects. The loss of habitat is typically accompanied by a proportional loss in wildlife populations inhabiting these areas based upon its holding capacity.

Reduction in populations and diversity of species due to the Selected Alternative would be minimal, given that the improvements consist of modifications to an existing facility and so much of the study area is already developed. The disturbed habitat would not be densely populated due to its proximity to the existing highway.

The Selected Alternative would impact a total of 6.0 hectares (14.9 acres) of wooded area.

The State Forest Conservation Act of 1991 includes Section 2 (the "Reforestation Act") which requires the minimization of cutting or clearing trees, replacement of wooded areas affected and/or contributions to a Reforestation Fund for highway construction projects. The Selected Alternative would comply with the Forest Conservation Act.

The State Reforestation Program calls for woodlands to be replaced at a 1:1 ratio on site if possible at a cost not to exceed \$4,356 per acre. If on-site reforestation is not possible, off-site replacement within the same watershed or county is permitted. If no suitable replacement area is available, a contribution of \$4,356 for each acre that is deforested, is to be deposited in a reforestation fund of the Maryland Department of Natural Resources.

71

The Maryland Department of Natural Resources Fish Heritage and Wildlife Administration confirmed that they have no records for Federal or State rare, threatened or endangered plants or animals within the project site.

### Aquatic (Wetlands)

Pursuant to Executive Order 11990, Protection of Wetlands, twelve palustrine and riverine wetland areas were identified in the project study area by use of Routine On-Site Procedures as described in the "Federal Manual For Identifying and Delineating Jurisdictional Wetlands," (1987). National Inventory Wetlands (USFWS) maps and hydric soils maps were used to support and confirm the findings. A summary of the wetlands, in the vicinity of the Selected Alternative, listing the locations, quality, classifications and values of the wetlands is shown on Table 4. Approximately 0.32 hectares (0.8 acres) from three wetlands will be unavoidably impacted by the Selected Alternative. Concurrence with these wetland boundaries has been confirmed during field investigations on July 13, 1995, with representatives from the U.S. Army Corps of Engineers, the Maryland Department of Natural Resources, the U.S. Fish and Wildlife Service. Minutes of the wetland field review meeting are included in the Correspondence Section.

As discussed below, due to the geometric requirements of the interstate ramps, the shape and location of the wetlands in relation to existing I-270 and the proximity of existing development to existing I-270, total avoidance of wetlands was not feasible or reasonable.



TABLE 4

WETLANDS SUMMARY

WETLAND SYSTEM	LOCATION	SITE DESCRIPTION	COWARDIN CLASSIFICATION	VALUE	DOMINANT VEGETATION
W-1	North and South Sides of I-270, 670.6 meters (2200 feet) ± West of MD 187	Stream Channel on South Side of I-270; Stream Channel and Adjacent Low Area on North Side of I-270	Palustrine, forested broadleaved deciduous with a temporary water regime (PF01A)	Medium	Black Willows, Elderberries, Red Maples, Sycamores, Spicebush, Viburnum, Green Ash, Sedges, Joe-Pye Weed, Sensitive Fern
W-2	South Side of I-270 West of Old Georgetown Road	Intermittent Stream/Drainage Ditch and Associated Topographical Depression	Palustrine forested broadleaved deciduous, (PF01A)	Medium	Red Maples, Black Willows, Sycamores, Spicebush, Sedges, Sweet Gum Sensitive Fern
W-3	North Side of I-270, 213.4 meters (700 feet) ± West of MD 187	Drainage Channel	Palustrine, emergent, persistent vegetation, temporary water regime (PEM1A)	Medium	Black Willows, Elderberries, Cattails, Soft Rush
W-4	Northwest of the I-270/ MD 187 Interchange	Diked lowland fresh meadow, fresh water pond	Palustrine emergent persistent (PEM1A), Palustrine open water impoundment (POWZh), Palustrine Forested Broad Leaved	High	Sedges, Rushes, Willows, Sycamores, Spicebush, Sweet Gum, Sensitive Fern
W-5	Southeast of I-270 at Old Georgetown Road	Intermittent streams and associated wooded floodplains	Palustrine forested broadleaved deciduous, (PF01A)	High	Tulip Poplars, Red Maples, Spicebush
W-6	South Side of I-270 at Fleming Avenue	Stream Channel	Palustrine emergent, persistent, temporarily flooded (PEM1A)	High	Box Elders, Red Maples, Tulip Poplars, Sycamores, Specked Alders, Black Willows, Spicebush, Elderberries

22

TABLE 4 (Cont'd)

WETLANDS SUMMARY

WETLAND SYSTEM	LOCATION	SITE DESCRIPTION	COWARDIN CLASSIFICATION	VALUE	DOMINANT VEGETATION
W-7	Just West of the Y-Split Bridge Along the Southbound I-270 Spur Ramp	Unnamed Drainage Channels	Riverine, intermittent, streambed, cobble/gravel with a seasonally flooded regime (R4SBIC)	High	Skunk Cabbage, Touch-Me-Nots
W-8	In the I-270 Spur Median, 304.8 meters (1000 feet) ± South of the Y-Split	Unnamed Drainage Channel	Riverine, lower perennial, emergent non-persistent with a seasonally flooded regime (R2EM2C)	Low	Soft Rushes, Cattails, Green Bulrushes
W-9	East of I-270 Spur at Democracy Boulevard	Stream and Storm water Management Pond	Palustrine Open Water Impoundment (POWzh)	Medium	Black Willows, Cattails, Common Reeds, Sedges
W-10	East of Fernwood Road	Stream and Associated Wooded Floodplain	Palustrine forested broadleaved deciduous, (PF01A)	Medium	Sycamores, Black Willows, Red Maples, Silver Maples
W-11	West of Fire Station on Democracy Boulevard	Intermittent Stream/Ditch and Associated Lowland	Palustrine forested broadleaved deciduous (PF01A)	Low	Black Willows, Red Maples, Tulip Poplars
W-12	In the Southeast Quadrant of the I-270 Spur/Democracy Boulevard Interchange	Drainage Channel Along Northbound I-270 Spur	Palustrine emergent, persistent vegetation, temporary water regime (PEM1A)	Medium	Black Willows, Cattails, Soft Rush, Sedges

13

WETLAND W-1

Wetland 1 (W-1) is located on the north and south sides of I-270, approximately 670.6 meters (2,200 feet) west of MD 187. It consists of a stream channel (Old Farm Creek) and associated forested floodplain and is classified as palustrine forested broadleafed deciduous (PF01A), and is of medium value. The soil is saturated and has low chroma.

The Alternative 3E portion of the Selected Alternative will impact W-1 as a result of the embankment for the proposed ramp connecting MD 187/Rockledge Connector to northbound I-270 and the proposed ramp connecting southbound I-270 to Rockledge Connector/MD 187. Alternative 3E will impact 0.06 hectares (0.15 Ac.) of W-1 on the north side of I-270 and 0.06 hectares (0.15 Ac.) on the south side of I-270. Lengthening the existing 1,524 millimeters (60-inch) RCP under I-270 and rechannelization will also be required into the wetland area.

Avoidance of the northern segment of W-1 could be accomplished by a southerly shift of the proposed 2-lane ramp carrying traffic from MD 187/Rockledge Connector onto northbound I-270. A horizontal realignment adjacent to existing northbound I-270 would require construction of a 91.4 meters (300 feet) ± long by 7.3 meters (24 feet) average height retaining wall at a cost of \$700,000 north of the proposed ramp and construction of a 76.2 meter (250 feet) ± long by 2.1 meter (7 feet) (average height) retaining wall at a cost of \$300,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

Avoidance of the southern segment could be accomplished by a northerly shift of the proposed ramp carrying traffic from southbound I-270 onto Rockledge Connector/MD 187. A horizontal realignment adjacent to existing southbound I-270 would require construction of a 61.0 meter (200 feet) ± long by 3.7 meter (12 feet) average height retaining wall at a cost of \$300,000 north of the proposed ramp and construction of a 61.0 meter (200 feet) ± long by 7.3 meter (24 feet) (average height) retaining wall at a cost of \$500,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

For Alternative 3E, the northern segment W-1 impact could be minimally reduced by heightening the proposed retaining wall and eliminating grading slopes behind the proposed wall. Construction of the 91.4 meter (300 feet) ± long by additional 3.7 meter (12 feet) (average height) retaining wall would cost \$300,000. This option is not considered feasible due to excessive cost.

The southern segment impact could be reduced by replacing the proposed curb and gutter with construction of a 61.0 meter (200 feet) ± long by 7.9 meter (26 feet) (average height) retaining wall at a cost of \$500,000. This option is not considered feasible due to excessive cost.

WETLAND W-2

Wetland 2 (W-2) is located adjacent to the southern half of W-1, 548.6 meters (1800 feet) ± west of MD 187 along the southbound I-270 roadway. The wetland is an intermittent stream/ditch and associated topographic depression adjacent to a recently constructed retaining wall and is of medium value. It is classified as palustrine forested broadleaved deciduous (PF01A) and contains evidence of soil saturation.

The Alternative 3E portion of the Selected Alternative impacts to wetland W-2 will result from the embankment required for the ramp from southbound I-270 to the Rockledge Connector Bridge. Alternative 3E will impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.

Avoidance of W-2 could be accomplished by maintaining the existing retaining wall and construction of an additional 121.9 meter (400 feet) ± long by 1.2 meter (4 feet) (average height) retaining wall at a cost of \$300,000 adjacent to I-270. Avoidance would also require construction of a 182.9 meter (600 feet) ± long by 7.6 meter (25 feet) (average height) retaining wall at a cost of \$1,500,000 adjacent to the ramp carrying traffic from southbound I-270 to the Rockledge Connector. Due to excessive cost, this option is not considered feasible.

A slight (less than 0.004 hectares (0.01 Ac.)) reduction in impacts to W-2 could be accomplished by replacing the proposed open section with curb and gutter and/or reducing backing, safety grading or slope ratios.

WETLAND W-3

Wetland 3 (W-3) is located on the north side of I-270, 213.4 meters (700 feet) ± west of MD 187. This wetland is a drainage channel, classified as palustrine emergent persistent (PEM1A) and is of medium value. Soils are saturated with low chroma and mottles.

76

Alternatives 3E and 3F are identical in the area of W-3 and would require ramp construction covering the entire wetland W-3 area. Alternatives 3E and 3F impact 0.04 hectares (0.1 Ac.) of W-3 on the north side of I-270.

Avoidance of wetland W-3 could be accomplished by a northerly shift of the proposed 2-lane ramp carrying traffic from MD 187 to Rockledge Connector/Northbound I-270. The horizontal realignment requires construction of a 61.0 meter (200 feet)  $\pm$  long by 4.0 meter (13 feet) (average height) retaining wall at a cost of \$300,000 and would result in 0.06 hectares (0.14 acre) of wetland W-4 being impacted. Avoidance also requires a horizontal realignment of the proposed 1-lane ramp carrying northbound I-270 traffic to the Rockledge Connector, resulting in construction of a 61.0 meter (200 feet)  $\pm$  long by 2.7 meter (9 feet) (average height) retaining wall at a cost of \$250,000. This option is not considered feasible due to the 0.06 hectares (0.14 Ac.) of additional impact to W-4 and to excessive cost.

Construction of a 61.0 meter (200 feet) long by 3.0 meter (10 feet) average height retaining wall at a cost of \$300,000 adjacent to the ramp carrying traffic from MD 187 to Rockledge Connector/northbound I-270 and a 61.0 meter (200 feet) long by 2.7 meter (9 feet) (average height) retaining wall at a cost of \$250,000 adjacent to the ramp carrying northbound I-270 traffic to the Rockledge Connector. This option is not considered feasible due to excessive cost.

### WATERS OF THE U.S.

The Selected Alternative will result in a total of 31 meters (80 linear feet) of impact to Waters of the U.S. at two locations: The first, at U.S. 1, is the 11 meter (35 foot) upstream extension of the existing 1500 mm (60-inch) SPP, 457 meters (1500 feet) north of the proposed Rockledge Drive Connector on I-270. The second, at U.S. 5, is the 20 meter (50 foot) upstream extension of the culvert in the northeast quadrant of the I-270 Spur/Democracy Boulevard interchange.

### Mitigation

Wetland and stream replacement, if required, would be in accordance with permit conditions present during the design phase of the project. Wetland mitigation would consist of replacement or enhancement. Enhancement could include fencing to allow revegetation, the addition of plantings, or preservation.

**e. Air Quality**

A detailed air quality analysis of the No-Build and Selected Alternatives have been performed. The air quality analysis indicates that carbon monoxide (CO) impacts resulting from the implementation of the Selected Alternative would not result in a violation of the 1-hour or 8-hour State/National Ambient Air Quality Standards (S/NAAQS) in the completion year 2000 or the design year 2020 (See Table 5) . The Air Quality Analysis was circulated to EPA, MDE and FHWA.

The project is located in Montgomery County, which is a serious ozone nonattainment area, but is not in a non-attainment area for carbon monoxide (CO). The Selected Alternative conforms with the State Implementation Plan (SIP), as it originates from the conforming Transportation Improvement Program (TIP).

**f. Noise Impacts**

**1) Noise Prediction Methodology**

**a. Federal Highway Administration Standards/SHA Guidelines**

The effects of noise from the proposed roadways are judged in accordance with the Federal Highway Administration criteria as established by 23 Code of Federal Regulations (CFR) part 772. The Noise Abatement Criteria (NAC) are specified for different land uses and are the basis for determining the need to study noise abatement. All locations within the I-270 study area are land use category B (e.g., residences, schools, churches, libraries, playgrounds), which has an exterior design noise level of 67 dBA.

For this analysis, the I-270 improvements are considered a Type I project because the proposed construction will physically alter the existing horizontal and vertical alignments of I-270 at interchanges and ramps.

According to the procedures described in 23 CFR, Part 772, noise impacts occur when

**TABLE 5**  
**I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BOULEVARD, 2000 AND 2020 CARBON MONOXIDE**  
**(CO) CONCENTRATIONS, PARTS PER MILLION (PPM) FOR THE NO-BUILD AND SELECTED ALTERNATIVES**

RECEPTOR	YEAR 2000				YEAR 2020			
	NO-BUILD		SELECTED ALTERNATIVE		NO-BUILD		SELECTED ALTERNATIVE	
	1-HOUR (AM/PM)	8-HOUR	1-HOUR (AM/PM)	8-HOUR	1-HOUR (AM/PM)	8-HOUR	1-HOUR (AM/PM)	8-HOUR
R-1	7.4/8.0	3.9	7.4/8.3	4.0	7.3/8.1	4.1	7.5/8.1	4.3
R-1a	6.2/6.4	3.4	6.2/7.0	3.5	6.0/6.5	3.4	6.2/6.8	3.5
R-2	8.6/9.4	4.5	8.8/9.3	4.4	8.8/9.3	4.6	8.9/9.2	4.4
R-3	6.5/7.0	3.6	6.5/7.7	3.8	6.7/7.2	3.9	6.8/7.9	4.1
R-4	8.3/8.9	4.2	8.9/9.9	4.5	8.9/8.8	4.2	9.5/10.0	4.5
R-5	7.2/7.3	3.9	7.4/8.7	4.2	7.2/7.2	4.1	7.3/8.7	4.5
R-6	6.0/6.0	3.2	6.0/6.7	3.4	6.0/6.0	3.4	6.0/6.5	3.5
R-7	7.1/6.9	3.9	7.1/6.9	3.9	7.0/6.9	4.0	7.1/6.8	4.1
R-8	8.3/9.2	4.2	9.4/10.2	4.6	8.7/9.2	4.3	10.0/10.1	4.7
R-9	9.4/12.6	5.1	10.3/12.3	5.2	10.0/13.2	5.8	11.3/12.4	5.3
R-10	9.8/9.3	4.9	9.9/9.3	4.8	11.1/14.1	5.9	11.2/14.3	5.9
R-11	8.4/8.5	4.0	9.9/8.7	4.1	8.2/8.5	4.0	9.4/10.4	4.2
R-12	7.8/7.5	3.7	8.4/7.9	3.9	7.5/7.6	3.8	7.9/8.9	3.8
R-12a	7.1/6.8	3.6	7.2/7.1	3.6	6.9/6.8	3.6	7.0/7.7	3.6
R-13	7.8/7.7	3.8	8.6/8.0	3.8	7.6/7.7	3.6	8.5/9.3	3.8
R-14	7.0/6.7	3.5	7.2/7.0	3.6	7.4/7.5	3.7	7.0/7.7	3.5
R-15	7.3/7.2	3.7	7.9/7.1	3.7	7.7/7.7	3.8	7.6/8.3	3.6
R-16	8.0/7.9	3.9	8.4/8.0	3.9	7.9/8.2	4.1	8.5/8.9	3.8
R-17	8.7/8.5	4.2	10.0/9.1	4.4	9.4/10.7	4.7	10.0/10.2	4.2
R-18	14.4/12.9	7.3	14.4/14.1	7.8	13.5/12.8	7.9	13.3/16.1	7.4
R-19	12.6/10.7	5.9	12.7/12.4	6.1	12.7/14.0	6.1	12.0/14.6	6.0
R-20	6.7/6.6	3.4	6.7/6.5	3.5	6.9/8.7	3.8	6.6/7.1	3.4
R-21	7.1/6.9	3.5	7.5/7.3	3.6	7.0/7.8	3.7	7.5/7.5	3.9
R-21a	7.1/6.9	3.5	7.9/7.6	3.6	7.0/7.8	3.6	8.2/7.6	4.0
R-22	7.3/7.2	3.7	8.4/7.9	3.9	7.4/7.8	3.7	8.0/8.5	3.9
R-23	7.6/7.3	3.7	8.0/7.6	3.7	7.4/7.8	3.8	8.0/8.5	3.8
R-24	7.0/7.0	3.7	7.5/7.6	3.9	6.8/7.1	3.7	7.8/8.1	3.9
R-24a	6.3/6.4	3.5	6.8/6.8	3.6	6.4/6.6	3.5	7.0/7.3	3.6
R-25	7.3/7.4	3.6	7.7/7.5	3.7	7.4/7.4	3.7	7.4/8.1	3.6

Notes: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.

8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

78

predicted noise levels for the design year approach or exceed the noise abatement criteria for a particular land use category, or when predicted noise levels are substantially higher than existing ambient noise levels. The Maryland State Highway Administration defines “approach” as 66 dBA or above, and uses a 10 dBA increase to define a “substantial” increase. Under State Highway Administration’s current noise policy, once an impact has been identified, the following factors are evaluated to determine whether mitigation is feasible and reasonable:

- Date of the development in relationship to the date of original highway construction. Whether an effective and feasible method is available to reduce the noise. Feasibility is defined as a 7-10 dBA minimum reduction in noise levels (insertion loss) for the first row receptors, or any sensitive receptor with noise levels equal to or greater than 66 dBA, receiving a 3 dBA or greater reduction noise levels.
- Whether No-Build vs. Selected Alternative noise levels increase by 3 dBA or more, considering the cumulative effects of highway improvements over time. If noise levels equal or exceed 72 dBA at impacted receptors, SHA will consider noise abatement reasonable for any proposed improvement that will increase noise levels.
- Whether the cost of mitigation is cost-effective for those receptors that are benefited - \$50,000 per benefited residence. A residence is considered benefited if it is impacted and receives at least a 3 dBA reduction (insertion loss) in noise level *or*, if not impacted, it experiences a 5 dBA reduction in noise level as a result of the mitigation.
- Whether the noise abatement is acceptable to 75% of the impacted and benefited residents
- The noise abatement measures can be constructed, considering pedestrian and vehicular access, drainage, utilities, Section 4(f) and other environmental resources

An effective barrier must provide a 7-10 dBA reduction in noise levels (insertion loss) as a primary design goal for “first row” residences. Cost reasonableness is determined by dividing the total number of benefited residences in a noise sensitive area into the total cost of noise abatement measure. A cost of \$178.03 per square meter (\$16.54 per square foot) is assumed to estimate barrier cost. This cost figure is based upon current costs of panels, footings, and installation. Based on



SHA criteria, a church counts as 5 residences.

**b. Noise Prediction Methodology Using FHWA Model**

Noise level modeling for this analysis was performed with the computer adaptation of the FHWA noise model, STAMINA 2.0/OPTIMA. Traffic counts were taken during the 15-minute ambient measurements and were used for calibration. Projected traffic information for the design year (2020) was obtained through the Maryland State Highway Administration, Project Planning Division. The combination of traffic volume, truck percentages and travel speeds which produced the worst hourly noise levels was used in this study. For this analysis, the worst case condition was the Design Hour Volume (DHV).

**2) Noise Prediction Results**

Noise levels, predicted for the baseline condition (4-lane highway with LOS-E traffic) and for the design year (2020), for the selected alternative and no-build alternative, are shown in Table 6. All predicted noise levels are exterior maximum Leq noise levels. At NSA's impacted by traffic noise on I-270, mitigation was investigated by analyzing noise barriers. Results of noise barrier analysis, including feasibility and cost-effectiveness, are shown in Tables 6 thru 12.

**Noise Sensitive Area A (See Figures 15A, 15B and 18)**

NSA A, consisting of receptors R1, R1A, and R2, represents residences located in the Wildwood Hills community, adjacent to I-270 West Spur, south of Democracy Boulevard. The area is affected by Alternative 4C. Design year, exterior, ground level noise levels at receptors R1 and R1A exceed the noise abatement criteria and warrant investigation of mitigation measures. R2 receptors, built in 1985, are not impacted at or above 66 dBA. The no-build condition consists of a 6-lane divided highway; however, the original roadway at this location was a 4-lane divided highway, constructed in the early 1960's. The 2020 build noise levels are equal to the 2020 no-build noise levels, and are less than 3 dBA above the worst case noise levels for the original 4-lane (baseline) highway. However, residences adjacent to I-270 Spur were built in the 1950's, prior to the construction of the 4-lane highway, and are therefore eligible for Type II consideration.

Due to the close proximity of the residences to the roadway, berms were not analyzed at this location. A noise barrier 429.6 meters (1,409 feet) long and 5.5-7.3 meters (18-24 feet) high, constructed at a cost of \$463,940, would reduce first row receptor noise levels by up to 11 dBA. The cost per residence for the 7 residences impacted and benefited at 3 dBA and 2 residences not impacted but benefited at 5 dBA is \$51,550. Although a barrier at this location is slightly above the cost per residence reasonableness criteria, it does meet all feasibility criteria and the reasonableness criteria of at least 3 dBA cumulative increase in build/no-build noise levels. For a detailed listing of feasibility and reasonableness, refer to Table 7. If not included in the Type II program, this barrier will be considered further in the design phase of the Selected Alternative.

**Noise Sensitive Area B-1 (See Figures 15A and 18)**

NSA B-1, consisting of receptors R3 and R4, represents townhouse residences located in the Stratton Woods community, on Surreywood Lane, adjacent to northbound I-270 Spur, south of Democracy Boulevard. This area is affected by Alternative 4A-Signalized (Modified). Design year, exterior, ground level noise levels at these receptors exceed the noise abatement criteria and warrant investigation of mitigation measures. The no-build condition consists of a 6-lane divided highway; however, the original roadway at this location was a 4-lane divided highway, constructed in the early 1960's. The 2020 build noise levels are less than 3 dBA above the worst case noise levels for both the original 4-lane (baseline) highway and the no-build condition. The residences were built after the construction of the 4-lane highway, but prior to the construction of the 6-lane highway.

Due to the close proximity of the residences to the roadway, berms were not analyzed at this location. A noise barrier 338 meters (1,108 feet) long and 4.8-7.9 meters (16-26 feet) high, constructed at a cost of \$388,800, would reduce first row receptor noise levels by up to 9 dBA. The cost per residence for the 24 residences impacted and benefited at 3 dBA is \$16,200. Although a barrier at this location is feasible and meets the cost per residence reasonableness criteria, it does not meet the reasonableness criteria of at least 3dBA cumulative increase in build/no-build noise levels. For a detailed listing of feasibility and reasonableness, refer to Table 8. Considering that the barrier is not reasonable due to a lack of significant increase between build and no-build noise levels, mitigation will not be considered further. (Note: Consideration will be given, during the final design stage, to implementing a variation of the Alternative 4A-Signalized configuration. At that time, noise barrier feasibility and reasonability will be be reevaluated with the appropriate interchange configuration and ramp widths.)

82

**Noise Sensitive Area B-2 (See Figures 15A, 15B and 18)**

NSA B-2, consisting of receptors R5 through R7, represents townhouse and single family residences adjacent to northbound I-270 Spur, south of Democracy Boulevard. This location was within the limits of improvements associated with the original Alternative 4A, but is outside the limits of construction of the Selected Alternative, and investigation of build noise levels and mitigation measures is not warranted.

**Noise Sensitive Area C (See Figures 15A and 18)**

NSA C, consisting of receptors R8 and R9, represents single family residences adjacent to Democracy Boulevard and Fernwood Road. This location was within the limits of improvements associated with Alternative 4B, but is outside the limits of construction of the Selected Alternative and investigation of build noise levels and mitigation measures is not warranted.

**Noise Sensitive Area D (See Figures 14C and 18)**

NSA D, consisting of receptor R10, represents a residence adjacent to Old Georgetown Road at the I-270 interchange. The 2020 build level at this location, equal to 64 dBA, does not exceed the Noise Abatement Criteria and investigation of noise abatement measures is not warranted.

**Noise Sensitive Area E (See Figures 14A and 18)**

NSA E, consisting of receptors R11 through R13, represents single family residences located in the Wildwood Manor community, adjacent to I-270, east of Old Georgetown Road. This location was within the limits of improvements associated with Alternative 3F, but is outside the limits of construction of the Selected Alternative, and investigation of build noise levels and mitigation measures is not warranted.

**Noise Sensitive Area F-1 (See Figure 18)**

NSA F-1, consisting of receptors R14 and R15, represent townhomes located adjacent to I-270 in the Timberlawn Community east of Old Georgetown Road. This location was within the limits of Alternative 3F, but is outside the limits of construction of the Selected Alternative, and

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83  
investigation of build noise levels and mitigation measures is not warranted.

**Noise Sensitive Area F-2 (See Figures 14A and 18)**

NSA F-2, consisting of receptors R16 and R17, represents townhouse residences located adjacent to I-270 in the Timberlawn community east of Old Georgetown Road and, also, St. Mark Church. This area is affected by Alternative 2D (Modified). Design year, exterior, ground level noise levels at these receptors exceed the noise abatement criteria and warrant investigation of mitigation measures. The no-build condition consists of a 6-lane divided highway; however, the original roadway at this location was a 4-lane divided highway, constructed in the late 1950's. The 2020 build noise levels are less than 3 dBA above the worst case noise levels for both the original 4-lane (baseline) highway and the no-build condition. The residences were built after the construction of the 4-lane highway, but prior to the construction of the 6-lane highway.

Due to the close proximity of the residences to the roadway, berms were not analyzed at this location. A noise barrier 305 meters (999 feet) long and 4.3-7.9 meters (14-26 feet) high, constructed at a cost of \$345,620, would reduce first row receptor noise levels by up to 8 dBA. The cost per residence for the 15 residences impacted and benefited at 3 dBA is \$23,040. Although a barrier at this location is feasible and meets the cost per residence reasonableness criteria, it does not meet the reasonableness criteria of at least 3 dBA cumulative increase in build/no-build noise levels, and only a small portion (the Church building) of the NSA exceeds 72 dBA for the build condition. For a detailed listing of feasibility and reasonableness, refer to Table 9. Considering that the barrier is not reasonable due to a lack of significant increase between build and no-build noise levels, mitigation will not be considered further.

Additional barrier analysis was performed based on the finding that no difference in noise levels would occur between the no-build and build conditions at any residence; only St. Mark Church would experience an increase with the Selected Alternative. In addition, the increase in noise levels with the Selected Alternative is from 71 dBA to 73 dBA. A noise barrier for St. Mark Church that is 136 meters (447 feet) long and 6.7-7.3 meters (22-24 feet) high, constructed at a cost of \$165,993, would reduce noise levels at the Church by up to 8 dBA. The cost per residence (with the Church counting as five residences) impacted and benefited at 3 dBA is \$33,197. This barrier is feasible and meets the reasonableness criteria of build noise levels higher than no-build and exceeding 72 dBA. For a detailed list of feasibility and reasonableness, refer to Table 10. This

84

barrier will be considered further in final design.

**Noise Sensitive Area G (See Figure 18)**

NSA G, consisting of receptors R18 and R19, represents single family residences adjacent to the Old Georgetown Road/Tuckerman Lane intersection. This location is outside the limits of construction of the selected alternatives and investigation of build noise levels and mitigation measures is not warranted.

**Noise Sensitive Area H (See Figures 14A, 14B and 18)**

NSA H, consisting of receptors R20 through R23 and R25, represents residences located adjacent to I-270 in the Windermere community, west of Old Georgetown Road. This area is affected by build Alternative 3E. Design year noise levels at these receptors exceed the noise abatement criteria and warrant investigation of mitigation measures. The current no-build condition consists of a 6-lane divided highway; however, the original roadway at this location was a 4-lane divided highway, constructed in the late 1950's. The 2020 build noise levels are less than 3 dBA above the worst case noise levels for both the original 4-lane (baseline) highway and the no-build condition. The residences were built after the construction of the 4-lane highway, but prior to the construction of the 6-lane highway.

The proposed ramps at this location are elevated and the required retaining wall between mainline I-270 and the residences provides noise mitigation to the residences at the east end of the community. A noise barrier 532.2 meters (1,746 feet) long and 1.2-5.5 meters (4-18 feet) high, constructed at a cost of \$399,700, would reduce first row receptor noise levels by up to 10 dBA. A portion of this barrier would be on top of the retaining wall. The cost per residence for the 11 residences impacted and benefited at 3 dBA and 17 residences not impacted but benefited at 5 dBA is \$23,510. Although a barrier at this location is feasible and meets the cost per residence reasonableness criteria, it does not meet the reasonableness criteria of at least 3dBA cumulative increase in build/no-build noise levels. For a detailed listing of feasibility and reasonableness, refer to Table 11. Considering that the barrier is not reasonable due to a lack of significant difference between build and no-build noise levels, mitigation will not be considered further.

**Noise Sensitive Area I (See Figures 14B and 18)**

NSA I, consisting of receptors R24 through R24C, represents residences located adjacent to I-270 at the west end of the Windermere community, west of Old Georgetown Road. This area is affected by build Alternative 3E. Design year, exterior, ground level noise levels at these receptors exceed the noise abatement criteria and warrant investigation of mitigation measures. The current no-build condition consists of a 6-lane divided highway; however, the original roadway at this location was a 4-lane divided highway, constructed in the late 1950's. The 2020 build noise levels are less than 3 dBA above the worst case noise levels for both the original 4-lane (baseline) highway and the no-build condition. The residences were built after the construction of the 4-lane highway, but prior to the construction of the 6-lane highway.

Due to the close proximity of the residences to the roadway, berms were not analyzed at this location. A noise barrier 1,053 meters (3,453 feet) long and 6.1 meters (20 feet) high, constructed at a cost of \$1,142,115, would reduce first row receptor noise levels by up to 12 dBA. The cost per residence for the 30 residences impacted and benefited at 3 dBA and 9 residences not impacted but benefited at 5 dBA is \$29,290. Although a barrier at this location is feasible and meets the cost per residence reasonableness criteria, it does not meet the reasonableness criteria of at least 3 dBA cumulative increase in build/no-build noise levels. And although build noise levels equal or exceed 72 dBA, there is no increase between no-build and build levels. For a detailed listing of feasibility and reasonableness, refer to Table 12. Considering that the barrier is not reasonable due to a lack of increase between no-build and build noise levels, mitigation will not be considered further.

**3) Other Mitigation Measures**

In addition to noise walls, other abatement measures were considered.

**a. Traffic Management Measures**

Traffic management measures which could be used include traffic control devices and signing for prohibition of certain vehicles (heavy trucks), time use restrictions for certain types of vehicles, modified speed limits and exclusive lane designations. It is not possible to prohibit heavy trucks from the types of facilities associated with the subject interchanges, as they are on interstate highways and principal arterials.

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**b. Alterations of Horizontal and Vertical Alignment**

This may not be feasible due to the proximity of existing development and grade-separated crossings at other roadways. However, additional study will be completed during the final design of the project.

**c. Acquisition of Real Property or Property Rights to Establish Buffer Zones**

Existing residential/commercial development adjacent to I-270, I-270 Spur, MD 187 and Democracy Boulevard makes it infeasible to acquire substantial amounts of property for buffer areas.

**d. Earth Berms**

This also may not be feasible due to the proximity of existing development. Neither noise walls or earth berms are considered reasonable.

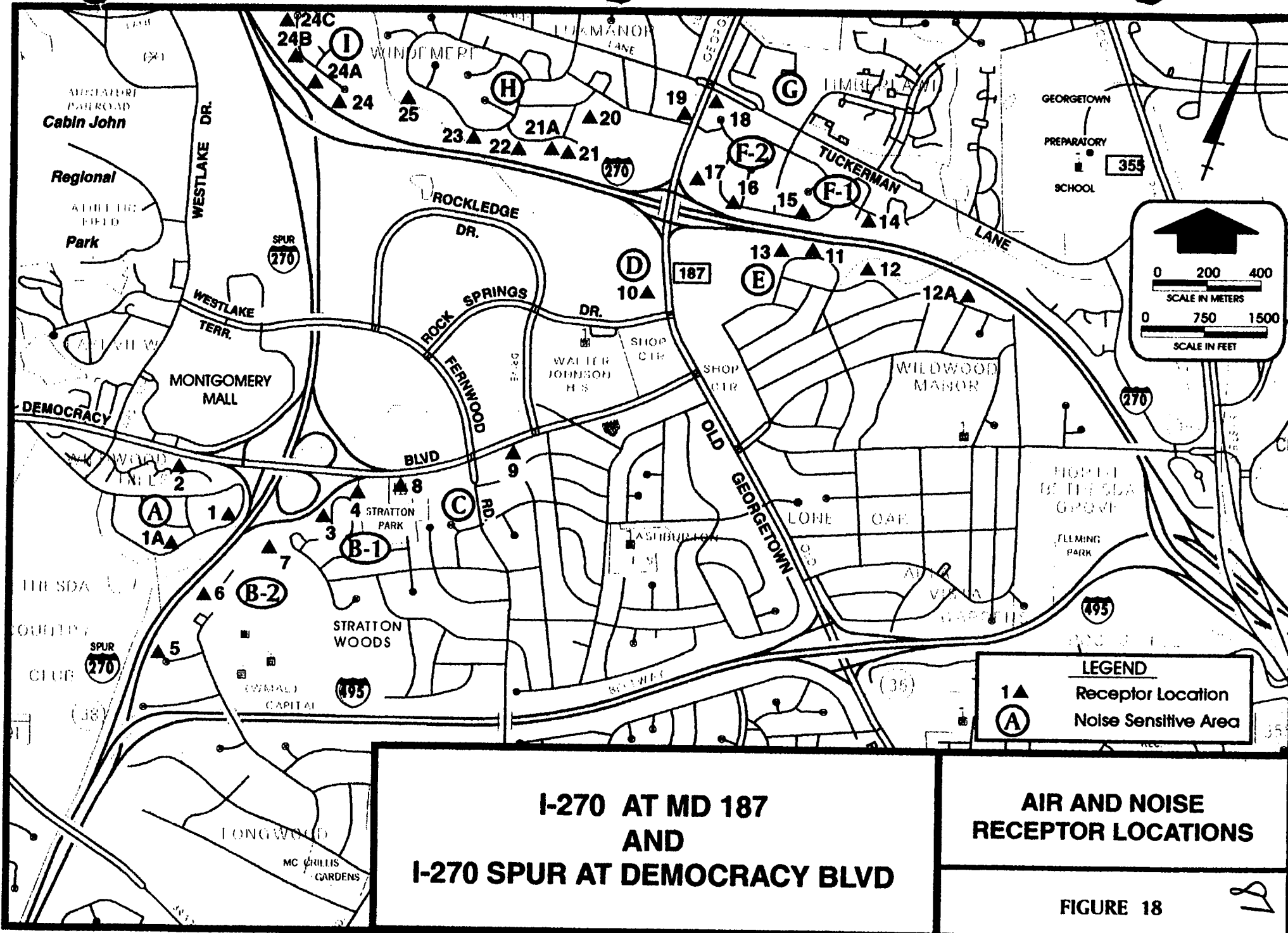
**4) Construction Noise**

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

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

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

Maintenance of construction equipment will be regular and thorough to minimize noise



**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**AIR AND NOISE  
RECEPTOR LOCATIONS**

**FIGURE 18**

12



emissions because of inefficiently tuned engines, poorly lubricated moving parts, ineffective muffling systems, etc.

Temporary fencing will be considered in residential areas, where feasible, to screen construction activities.

**5) Conclusion/Summary**

Although barriers are feasible at NSA's B-1, H and I, they do not meet reasonableness criteria of at least 3 dBA cumulative increase for the Selected Alternative noise levels over baseline or 3 dBA increase in projected Selected Alternative noise levels over projected no-build noise levels. NSA A is eligible for Type II consideration; if not included in the Type II program, a barrier at NSA A will be considered further during final design of the Selected Alternative. A barrier at NSA-F2, along the St. Mark Church property, meets feasibility criteria and the reasonableness criterion of build levels equal to or greater than 72 dBA, with an increase over no-build. This barrier will be considered further in the final design stage.

**TABLE 6  
NOISE ANALYSIS SUMMARY**

NSA	ESTIMATED DATE BUILT	RECEPTOR	SEL. ALT.	2020 BLD. LEVEL	BASELINE* NOISE LEVEL	CNG. OVER BASELINE	2020 NO-BUILD	INCR. OVER 2020 NO-BLD	BLD. WITH BARRIER	INSERTION LOSS	BARRIER ANALYSIS IMPACTED @ 66 dBA	
A	1950-1957	R1	4C	72	See Note	>3	72	0	61	11	L = 1,409' HT = 16'-26' COST = \$463,940	Impacted @ 66 dBA = 7 Imp. & Ben. @ 3dBA = 7 Not imp. but Ben. @ 5dBA = 2 Total Benefited = 9 \$51,550/Res Note: Receptors 1 and 1A existed prior to the construction of I-270 Spur
	1956/1959	R1A	4C	66	See Note	>3	66	0	61	5		
	1985	R2	4C	65	65	0	65	0	65	0		
B-1	1975	R3	4A SIG	69	68	1	68	1	62	7	L = 1,108' HT = 16'-26' COST = \$388,800	Impacted @ 66 dBA = 24 Imp. & Ben. @ 3dBA = 24 Not imp. but Ben. @ 5dBA = 0 Total Benefited = 24 \$16,200/Res
	1978	R4	4A SIG	71	69	2	70	1	62	9		
D-2	1973	R5					74				Note: Receptors at this location are outside the limits of the Selected Alternative	
	1979	R6					72					
	1978	R7					69					
C	1955	R2A					68				Note: Receptors at this location are outside the limits of the Selected Alternative	
	1955	R2B					71					
D	1950	R10	2D	64			64	0			No Residences are impacted @ 66dBA	
E	1960	R11					76				Note: Receptors at this location are outside the limits of the Selected Alternative	
	1960	R12					73					
	1960	R12A					71					
	1965	R13					74					
F-1	1985	R14	2D				72				Note: Receptors at this location are outside the limits of the Selected Alternative	
	1983	R15	2D				70					
F-2	1982	R16	2D	71	69	2	71	0	63 (71)	8 (0)	L = 999' (447) HT = 14'-26' (22'-24') COST = \$345,620 (\$165,993)	Impacted @ 66 dBA = 15 (5) Imp. & Ben. @ 3dBA = 15 (5) Not imp. but Ben. @ 5dBA = 0 (0) Total Benefited = 15 (5) \$23,400/Res (\$33,197/Res)
	1965	R17	2D	73	71	2	71	2	65 (65)	8 (8)		
Note: Numbers in parenthesis are for the barrier analyzed just along the St. Mark Church property.												
G	1980	R18									Note: Receptors at this location are outside the limits of the Selected Alternative	
	1973	R19										
H**	1970	R20	3E	62	63	-1	65	-3	62	0	L = 1,746' HT = 4'-18' COST = \$399,700	Impacted @ 66 dBA = 11 Imp. & Ben. @ 3dBA = 11 Not imp. but Ben. @ 5dBA = 6 Total Benefited = 17 \$23,510/Res
	1977	R21***	3E	52	68	-16	60	-8	52	0		
	1977	R21A***	3E	55	68	-13	63	-8	55	0		
	1977	R22	3E	64	71	-7	73	-9	62	2		
	1976	R23	3E	70	71	-1	73	-3	61	9		
	1971	R25	3E	71	69	2	71	0	61	10		
I	1984	R24	3E	75	73	2	75	0	63	12	L = 3,453' HT = 20' COST = \$1,142,115	Impacted @ 66 dBA = 30 Imp. & Ben. @ 3dBA = 30 Not imp. but Ben. @ 5dBA = 9 Total Benefited = 39 \$29,290/Res
	1983	R24A	3E	73	72	1	73	0	64	9		
	1984	R24B	3E	74	72	2	74	0	63	11		
	1981	R24C	3E	71	69	2	71	0	59	12		

\* LOS E WITH 2 LANES IN EACH DIRECTION  
 \*\* ANALYSIS INCLUDES EFFECTS OF RAMP, RETAINING WALLS AND TRAFFIC BARRIERS  
 \*\*\* INCLUDES EFFECTS OF OWNER-CONSTRUCTED BERM

89

90

**TABLE 7  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST**

**NSA A**

<b>Feasibility Criteria</b>		<b>Yes</b>	<b>No</b>
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
<b>Reasonableness Criteria</b>		<b>Yes</b>	<b>No</b>
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction	X	
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater	X	
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited		X
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no-build levels.		X

\* Not considered at this time

91

**TABLE 8  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST**

NSA B-1

<b>Feasibility Criteria</b>		<b>Yes</b>	<b>No</b>
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
<b>Reasonableness Criteria</b>		<b>Yes</b>	<b>No</b>
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction	X	
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater		X
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited	X	
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no-build noise levels		X

\* Not considered at this time

TABLE 9  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST

NSA F-2

Feasibility Criteria		Yes	No
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
Reasonableness Criteria		Yes	No
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction	X	
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater		X
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited	X	
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no-build noise levels		X

\* Not considered at this time

93

**TABLE 10  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST**

**NSA F-2  
(Barrier along St. Mark Church property only)**

<b>Feasibility Criteria</b>		<b>Yes</b>	<b>No</b>
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
<b>Reasonableness Criteria</b>		<b>Yes</b>	<b>No</b>
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction	X	
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater		X
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited	X	
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no build levels	X	

\* Not considered at this time, although through preliminary coordination with church representatives, it was determined that the church may not approve a barrier along the MD 187 portion of the property. (See October 24, 1994 Memorandum in the Section V. Correspondence).

94

**TABLE 11  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST**

NSA H

<b>Feasibility Criteria</b>		<b>Yes</b>	<b>No</b>
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
<b>Reasonableness Criteria</b>		<b>Yes</b>	<b>No</b>
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction		X
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater		X
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited	X	
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no-build noise levels		X

\* Not considered at this time

95

**TABLE 12  
BARRIER FEASIBILITY AND REASONABLENESS CHECKLIST**

**NSA I**

<b>Feasibility Criteria</b>		<b>Yes</b>	<b>No</b>
1.	Noise levels can be reduced by at least 7-10 dBA	X	
2.	Placement of barrier will not restrict pedestrian or vehicular access	X	
3.	Barrier will not cause a safety or maintenance problems	X	
4.	Barrier can be constructed given topography, drainage, utilities, etc.	X	
5.	Barrier will not adversely impact drainage patterns or systems	X	
6.	Barrier will not have a significant impact on Section 4(f) resources	X	
<b>Reasonableness Criteria</b>		<b>Yes</b>	<b>No</b>
1.	The majority of impacted residences will receive at least a 7-10 dBA noise reduction	X	
2.	At least 75% of impacted and benefited residents approve of proposed noise abatement	*	*
3a.	A 3 dBA or greater change in design year build noise levels over design year no-build noise levels will result from the proposed action		X
3b.	OR, the cumulative effect of highway improvements on the design year noise levels at receptors that existed when prior improvements were made is 3 dBA or greater		X
4.	The cost of noise abatement is equal to or less than \$50,000 per residence benefited	X	
5.	Build noise levels are 72 dBA or greater and there is any increase in build noise levels over no-build noise levels		X

\* Not considered at this time



**C. Summary of Public Involvement**

An Alternates Public Meeting was held on March 3, 1988 at Walter Johnson High School in Bethesda, Maryland. Ten build alternatives for interchanges at MD 187, a new Rockledge Drive connector, Democracy Boulevard and Fernwood Road were presented to the public for its review and comment. Approximately 100 citizens attended the meeting. In general, citizens recognized the need for the project, but objected to the proposed development in the Davis Tract. Citizens requested that noise barriers and landscaping be provided to minimize noise impacts at several locations, including the St. Mark Church.

After the Alternate Public Meeting, Montgomery County initiated a new Master Plan study for the area. SHA put the project on hold until that study was completed in 1992.

A Supplemental Alternates Public Meeting was held on June 8, 1994 at Walter Johnson High School in Bethesda, Maryland. Twelve build alternatives and the no-build alternative for interchanges at MD 187, a new Rockledge Drive connector, Democracy Boulevard, Fernwood Road and the I-270 Y-Split were presented to the public for its review and comment. Approximately 150 citizens attended the meeting. Alternatives 3A, 3B, 6A and 6B were more supported than Alternatives 4A, 4B, 4C, and 4D. Citizens requested that noise barriers be provided to minimize noise impacts at several locations, including the St. Mark Church. Citizens requested that pedestrian access be considered at MD 187 and at Rock Spring Drive. They also requested that a transit option be considered.

An Informational Public Workshop was held on November 14, 1995, at the Tilden Middle School/Woodward Center in Rockville, Maryland. Fifteen alternatives, including one no-build, for interchanges at MD 187, a new Rockledge Drive connector, Democracy Boulevard, Fernwood Road and the I-270 Y-Split were presented to the public for its review and discussion. As a result of agency coordination, public involvement and detailed engineering analysis, a significant number of revisions had been made to the alternatives since the June, 1994, Supplemental Alternates Public Meeting.

A combined Location/Design Public Hearing was held on December 12, 1995, at The Tilden Middle School/Woodward Center in Rockville, Maryland. Fifteen alternatives for interchanges at MD 187, a new Rockledge Drive connector, Democracy Boulevard, Fernwood Road, and the I-270 Y-Split were presented to the public for its review and formal testimony. Comments included:

97

concerns with noise/request abatement, support for the project, concerns that MD 187 congestion was not addressed, support for a new Alternative 7, opposition to Alternatives 3E, 3F and 3G, requests to link this study with I-495 Major Investment Study (MIS), and opposition to 4A and 4B.

#### **D. Positions Taken**

Approximately 100 citizens attended the public hearing. Fifteen individuals gave testimony. A total of 24 written comments were received at or immediately following the hearing. In addition, several comments from elected officials and agencies were received, as summarized below.

#### **Elected Officials**

Montgomery County Executive Douglas M. Duncan expressed strong support for improved access to Rock Spring Park, particularly Alternative 5C. The County Executive urged timely implementation of the Fernwood Road interchange at I-270 Spur and offered County funding for the non-federal share of interchange construction costs.

Representative Jean W. Roesser (15th Legislative District, Montgomery County) requested that she obtain, when available, information regarding new SHA noise abatement policy and guidelines and that a meeting be arranged between SHA and the Wildwood Citizens Association.

#### **Agencies**

The U.S. Army Corps of Engineers reconfirmed that it is not necessary to carry the project through the NEPA/404 process and that the Corps would not be providing any comments on the Environmental Assessment.

The Montgomery County Department of Police were in support of proposals being considered to alleviate traffic congestion within the study area portion of I-270. In particular, they supported Alternatives 3E and 3F.

#### **Business Associations**

The Transportation Action Partnership of North Bethesda and Rockville supported the

interchange improvements in general, with particular support for those that provide direct access to Rock Spring Park. Interchanges that provide incentives for HOV vehicles were also recommended.

**Businesses**

NationsBank supported Alternatives 3E or 3G, 5B and 6B, and encouraged that design and construction be expedited to maintain Rock Spring Park as a desirable corporate office location.

**Civic Groups**

The North Bethesda Congress of Citizens Associations indicated that congestion on MD 187 should be addressed with the proposed alternatives and that decisions regarding alternatives consider the results of the Capital Beltway Major Investment Study (MIS).

The Alta Vista Gardens, North Bethesda Grove Community Association supported the North Bethesda Congress of Citizens Association's positions. They also requested local neighborhood safety measures, measures to deal with more noise and air pollution and allocation of Montgomery County's fair share of Transportation Trust funding for road improvements.

The Luxmanor Citizens Association offered the possibility that a strip of Community Association property may be available for use in providing noise mitigation. They were also concerned that congestion on MD 187 was not addressed, Rock Spring Park developers were not meeting Adequate Public Facilities Ordinance requirements.

The Neighborhoods Organized for Improved Sound Environment (N.O.I.S.E.) requests that noise barrier construction along I-270 and I-495 be made a priority in the State of Maryland. They also requested input during the State's noise policy revision process.

The Bethesda Place Community Council opposed Alternatives 4A and 4B. If something must be built, they preferred 4B with planning and budgeting for noise barriers.

**Citizens**

Ten individuals were concerned with noise levels and requested that noise abatement be provided.

99

Five individuals were generally in favor of improvements.

Three wanted more consideration of MD 187 congestion.

Four supported a new Alternative 7 which would provide right-in/right-out ramps to provide direct access into and out of Rock Spring Park from I-270 and I-270 Spur.

Three were opposed to Lux Lane closure as proposed with Alternative 2E.

Three opposed Alternatives 3E, 3F and 3G.

One person was opposed to Alternatives 4A and 4B.

IV. 100

IV.

**PUBLIC  
HEARING  
COMMENTS**

IV.

#### IV. PUBLIC HEARING COMMENTS

The following is a summary of the statements made at the December 12, 1996, Combined Location/Design Public Hearing and the responses given by the State Highway Administration. The purpose of the hearing was to present the results of the engineering and environmental studies and to receive public comment on the project. Twenty-one people spoke at the hearing.

A complete transcript of all comments made at the hearing is available for review at the Project Planning Division Offices, State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202. Written comments received subsequent to the Public Hearing are included in the Public Hearing Comments Section.

#### Citizens

1. Jerrold Garson, Citizen.

Recommends Alternative 7 ramps; no HOV lanes; Alts. 4A, 4B, 4C and 4D are not needed because ramps backup is from Virginia; crosshatch Democracy Boulevard right lane.

#### Response:

Alternative 7, as described, would consist of four ramps:

Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;

Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;

Ramp C, southbound I-270 to the Rockledge Drive Connector;

Ramp D, Rockledge Drive Connector to southbound I-270

The study team believes that this alternative would not meet all of the project needs since, although ramps B and C would act as a complementary pair, the return movements for ramps A and D would require using existing ramps at MD 187 and at Democracy Boulevard, which are already over capacity. Alternative 4C or 4D would be required to provide adequate capacity for the return movements. Alternative 7 would also create a weaving section on the northbound I-270 Spur, north of Democracy Boulevard in an area identified in the comment as an existing capacity problem. Crosshatching the westbound right lane on Democracy Boulevard through the interchange area would eliminate one of the through lanes and lead to less efficient operation at signalized and already congested intersections.

- 2. John Viner, North Bethesda Congress of Citizens Associations.

Concerned with traffic volumes; opposed Davis Tract MXPDP rezoning; five intersections on I-270 over-burdened; no option solves congestion at all five locations; I-270 study should be linked to beltway MIS study.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. Along with this selection, the Administrator recommended that specific intersection improvements along MD 187, recently developed by the study team, be implemented by others, as a separate project. These intersection improvements would bring the four failing intersections in the vicinity of the I-270/MD 187 interchange to level-of-service E or better through the design year 2020.

Improvements currently under consideration on the Capital Beltway would have only a minor effect on the levels of service at the MD 187 intersections in the vicinity of I-270. The variation of these effects by alternative, in combination with Capital Beltway improvements, would be insignificant.

- 3. August Alzona, Vice-President North Bethesda Congress of Citizens Associations.

Coordinate efforts with MIS; requests local neighborhood traffic safety measures; requests noise barriers.

Response:

The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria established by 23 Code of Federal Regulations (CFR) part 772 and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2.

Improvements currently under consideration on the Capital Beltway would have only a minor effect on the levels of service at the MD 187 intersections in the vicinity of I-270. The variation of these effects by alternative, in combination with Capital Beltway improvements, would be insignificant.

4. Ken Hurdle, Luxmanor Citizens' Association.

Requests noise barriers; strip of community property along Charnwood Road could be used for noise barriers; only two intersections improved so congestion will not be decreased; concerned that the Davis Property doesn't comply with the Adequate Public Facilities Ordinance (APFO).

Response:

The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria established by 23 Code of Federal Regulations (CFR) part 772 and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2..

Improvements currently under consideration on the Capital Beltway would have only a minor effect on the levels of service at the MD 187 intersections in the vicinity of I-270. The variation of these effects by alternative, in combination with Capital Beltway improvements, would be insignificant.

5. Arlene Polangin, Citizen.

Other alternatives need to be developed; believes more roads mean more traffic; wants noise and traffic impacts at Walter Johnson High School addressed.



Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C, and addresses the needs based on master plan approved development through the design year 2020. The alternatives address concerns in the vicinity of Walter Johnson High School. The new Rockledge Drive Connector will reduce traffic volumes on Rock Spring Drive considerably as compared to the no build alternative. Noise analysis was not performed at the school since it is outside the limits of the roadway improvements proposed as part of the Selected Alternative.

6. Sheldon Kahalas, Citizen.

Against options 3E, 3F, and 3G; I-270 ramps would be 110 feet from his house; noise concerns; against Lux Lane closure.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C which do not include the closing of Lux Lane. The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria, established by 23 Code of Federal Regulations (CFR) part 772, and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA'S A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2.

7. Mary Balow, N.O.I.S.E.

Requests noise barriers along I-270 and I-495; concerned about safety on MD 187; MD 187 widening would be unsafe for pedestrians.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria, established by 23 Code of Federal Regulations (CFR) part 772, and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2.

MD 187 capacity and safety concerns have been incorporated into this study. The Selected Alternative will improve MD 187 in the vicinity of the I-270 interchange. In combination with intersection improvements along MD 187, which have been recommended by the SHA Administrator to be implemented by others as a separate project, the Selected Alternative would bring the four failing intersections in the vicinity of the I-270/MD 187 interchange to level-of-service E or better through the design year 2020. Pedestrian considerations have also been addressed as part of this study. The MD 187 widening with the Selected Alternative is in the immediate vicinity of I-270 where two signalized intersections will assist in accommodating pedestrian movements. Sidewalk will be provided with the improvements to maintain continuity with the existing sidewalks. The appropriate pedestrian signing and pavement markings (e.g, crosswalks) will be incorporated with the improvements. In addition, studies are on-going to provide a trail alignment that would accommodate north-south pedestrian flow across I-270 on the new Rockledge Drive Connector bridge in addition to the MD 187 bridge.

8. Jason Vogel, Citizen.

Concerned about options 3E, 3F, and 3G - will only support options if sound and visual barriers are built; against Lux Lane closure.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications),

106

3E, 4A (with modifications), 4C and 5C which do not include the closing of Lux Lane. The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria, established by 23 Code of Federal Regulations (CFR) part 772, and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2. Studies are on-going to investigate the feasibility of providing some type of visual screening between the proposed Rockledge Drive Connector bridge and ramps, and Charnwood Drive residences.

9. Harry Lerch, Citizen.

Agrees noise protection is needed; supports I-270 direct access to the Rock Spring Office Park; wants construction done in increments; wants Rockledge connector ramps given high priority; strongly supports 5B, 5C, and 6B; supports Georgetown Road interchanges; supports 4C with 4-way intersection.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C, thereby providing direct access to Rock Spring Office Park. Alternative 3G was not selected because it would have resulted in the placement of the Rockledge Drive Connector bridge directly opposite the Charnwood Drive homes that are closest to I-270. This alternative would also have resulted in less desirable spacing of high volume diverge points, just downstream of the Y-Split, as compared to the Selected Alternative. Alternative 6B was not selected because it was only capable of providing relief for one movement--northbound I-270 Spur into Rock Spring Office Park--a movement addressed adequately with lower costs and impacts by Alternative 4A - Signalized Ramp Option. The Alternative 4C modification suggested was studied and dismissed because of the additional costs of ramp construction and relocation of the recently constructed stormwater management pond, and because it was found to have few, if any, operational advantages over the selected Alternative 4C configuration.

10. J.T. Holt, Citizen.

Supports Alt. 7, 5B and 2D; totally against Alt. 3 in its present form; recommends lowering ramps to ground level.

Response:

Alternative 7, as described by another citizen, would consist of four ramps:

- Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;
- Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;
- Ramp C, southbound I-270 to the Rockledge Drive Connector;
- Ramp D, Rockledge Drive Connector to southbound I-270

These improvements have been estimated to cost \$3.3 million to construct, not including right-of-way acquisition. The study team believes that this alternative would not meet all of the project needs since, although ramps B and C would act as a complementary pair, the return movements for ramps A and D would require using existing ramps at MD 187 and at Democracy Boulevard, which are already over capacity. Alternative 4C or 4D would be required to provide adequate capacity for the return movements. Alternative 7 would also create a weaving section on the northbound I-270 Spur, north of Democracy Boulevard in an area identified in the comment as an existing capacity problem.

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C which do not include the closing of Lux Lane. The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria, established by 23 Code of Federal Regulations (CFR) part 772, and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2. However, studies conclude that earthwork supporting the elevated ramp adjacent to northbound I-270 with Selected Alternative 3E would serve as a barrier against noise and errant vehicles from I-270. In addition, studies are on-going to investigate the feasibility of

providing some type of visual screening between the proposed Rockledge Drive Connector bridge and ramps, and Charnwood Drive residences

11. Susan Cohen, Citizen.

Concerned about the quality of life, requests information on Davis Tract; opposes Davis Tract; concerned with speeding on Democracy Boulevard.

Response:

The purpose of this project is to provide adequate capacity within the I-270 at MD 187 and Democracy Boulevard interchanges to accommodate, safely and efficiently, existing traffic and traffic expected to be generated by planned development. A description of the master plan approved development contributing to the traffic volumes on which this study was based is included in the Environmental Assessment (Section I.C.3.c.). Speeding along Democracy Boulevard is a law enforcement issue. The Selected Alternative will not change the geometrics, character or width of Democracy Boulevard enough to affect the speed at which it is traveled.

12. Nancy Pentz, Citizen.

Wants planning on noise abatement started.

Response:

The effects of noise from the proposed roadways were judged in accordance with the Federal Highway Administration criteria, established by 23 Code of Federal Regulations (CFR) part 772, and State Highway Administration guidelines. Design year, exterior, ground level noise levels at the receptors referenced in the comment exceed the federal noise abatement criteria and warrant investigation of mitigation measures. Although a barrier at several of the receptor locations is feasible, it is not reasonable at any areas except NSA's A and F-2 due to the lack of significant increase (3dBA or greater) between the no-build and Selected Alternatives; therefore, mitigation will only be considered further at NSA's A and F-2.

13. Burton Hoffman, Citizen.

Opposes 4A and 4B; requests budgeting and planning for noise barriers.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. The Alternative 4A portion of the Selected Alternative has been modified subsequent to the Location/Design Public Hearing to include a signal where the northbound-to-eastbound I-270 Spur ramp meets Democracy Boulevard and to include no paving that brings traffic closer to residences adjacent to the existing ramp.

14. Charles Markell, Citizen.

Quality of life concerns; maximize traffic flow efficiency; prefers 4C or 4D, especially accel lane northbound to westbound, opposes 4A; supports Alternate 7 consideration.

Response:

The Selected Alternative consists of a combination of Alternative 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. The Alternative 4C portion of the Selected Alternative includes an acceleration lane for the northbound I-270 Spur to westbound Democracy Boulevard loop ramp. The Alternative 4A portion of the Selected Alternative has been modified subsequent to the Location/Design Public Hearing to include a signal where the northbound-to-eastbound I-270 Spur ramp meets Democracy Boulevard and to include no paving that brings traffic closer to residences adjacent to the existing ramp.

Alternative 7, as described by another citizen, would consist of four ramps:

- Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;
- Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;
- Ramp C, southbound I-270 to the Rockledge Drive Connector;
- Ramp D, Rockledge Drive Connector to southbound I-270

These improvements have been estimated to cost \$3.3 million to construct, not including right-of-way acquisition. The study team believes that this alternative would not meet all of the project needs since, although ramps B and C would act as a complementary pair, the return movements for ramps A and D would require using existing ramps at MD 187 and at

Democracy Boulevard, which are already over capacity. Alternative 4C or 4D would be required to provide adequate capacity for the return movements. Alternative 7 would also create a weaving section on the northbound I-270 Spur, north of Democracy Boulevard in an area identified in the comment as an existing capacity problem.

- 15. Margaret Juneau, Citizen.

Concerned about safety, especially at Rock Spring Drive and Old Georgetown Road, wants to delay Davis Tract construction until SHA has time to review MD 187 from Tilden Middle School.

Response:

MD 187 capacity and safety concerns have been incorporated into this study; the Selected Alternative will improve MD 187 in the vicinity of the I-270 interchange. In combination with intersection improvements along MD 187, which have been recommended by the SHA Administrator to be implemented by others as a separate project, the Selected Alternative would bring the four failing intersections in the vicinity of the I-270/MD 187 interchange to level-of-service E or better through the design year 2020. Pedestrian considerations have also been addressed as part of this study. The MD 187 widening with the Selected Alternative is in the immediate vicinity of I-270 where two signalized intersections will assist in accommodating pedestrian movements. Sidewalk will be provided with the improvements to maintain continuity with the existing sidewalks. The appropriate pedestrian signing and pavement markings (e.g, crosswalks) will be incorporated with the improvements. In addition, studies are on-going to provide a trail alignment that would accommodate north-south pedestrian flow across I-270 on the new Rockledge Drive Connector bridge rather than the MD 187 bridge.

V. III

V.

**CORRESPONDENCE**

V.



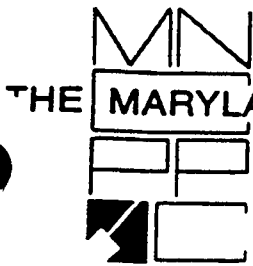
**V. CORRESPONDENCE**

**A. Interagency Meetings/Agency Coordination**

The project was discussed at two Quarterly Interagency Meetings. On October 21, 1992, a project update was presented. SHA indicated that additional traffic data was being developed for the interchanges and would be included in the project purpose and need in the future. Representatives from National Marine Fisheries Service, Maryland Historical Trust, Environmental Protection Agency, and Baltimore Metropolitan Council were present. The agencies requested a status update of the inside widening projects occurring within the same location and any development plans.

On October 19, 1994, the project purpose and need and preliminary alternates were presented. The alternates included 2A, 2B, 3A, 3B, 4A, 4B, 4C, 4D, 5B, 5C, 6A, 6C, and HOV connections from Grosvenor Lane bridge to I-270. Representatives from Environmental Protection Agency, the U.S. Army Corps of Engineers, the Maryland Office of Planning, the Department of Natural Resources, and the Maryland Historical Trust were present. SHA requested agency concurrence that the combined NEPA/404 process would not be required.

The U.S. Army Corps of Engineers requested quantification of length of stream impacted, and subsequently concurred that the combined NEPA/404 process would not be required (see correspondence) conditioned upon a field review and further consultation with SHA. While an interagency field review was conducted in December, 1994, a wetland jurisdictional field review was held on July 18, 1995 (See correspondence).



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION  
8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

113

January 23, 1986

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

BUREAU OF  
PROJECT PLANNING  
JAN 21 9 22 AM '86

RE: Contract No. M 401-153-372 (N)  
I-270, west segment from Y-split  
to south of Maryland Route 191  
P.D.M.S. No. 151104

Dear Mr. Ege:

In response to your letter of January 13, 1986 regarding the above referenced item, I am providing the following material:


1. Copy of our property survey of Stratton Local Park;
2. Copy of our facilities map showing the layout and types of equipment present in the park. This map should give you a good idea as to how this park is used;
3. Copies of our recorded deeds to the parcels which make up the park; and
4. A copy of a street map showing Stratton Park and the neighborhood it is intended to serve.

With regards to your question of what funding sources were used in creating this park, be advised that both Maryland's Program Open Space and HUD's Open Space Land Program contributed monies to acquire this parkland. Commission bond monies were used to fund the development while maintenance costs are covered by the Commission's operating budget.

In response to your question of the significance of Stratton Park to the local community and whether or not it is critical to the community's recreational needs, I can only respond by saying that Stratton Park is indeed both significant and critical to the recreation needs of the community it serves. Stratton Park is the only local park serving the residential neighborhood of Bethesda which is bounded on the north by Democracy Boulevard, on the east by Old Georgetown Road, on the south by the Capital Beltway, and on the west by I-270. This situation is evident when looking at the enclosed street map which has these major roadways highlighted in yellow.

If I can provide additional information concerning this matter, please let me know.

Sincerely,

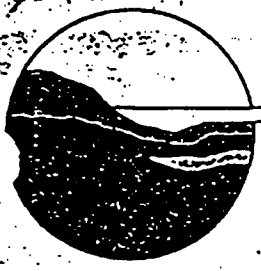
  
Myron B. Goldberg, Chief  
Park Planning, Engineering  
and Design

\_ MBG:WEG:lmk

Enclosures

cc: Don Cochran, Director of Parks

115



Maryland Department of Natural Resources

Water Resources Administration  
Tawes State Office Building  
Annapolis, Maryland 21401  
Telephone: (301) 974-2265

William Donald Schaefer  
Governor

Torrey C. Brown, M.D.  
Secretary

James W. Peck  
Director

July 23, 1987

Mr. Ronald T. Burns, P.E.  
Johnson, Mirmiran and Thompson, P.A.  
810 Gleneagles Court - Suite 200  
Baltimore, MD 21204

Re: Interstate 270 at MD Route 187  
Rock Spring Center  
JMT Job No. 86132

Dear Mr. Burns:

This is in response to your inquiry if a Waterway Construction Permit is required on the above referenced project.

We have reviewed the information you submitted and have determined this watershed is Class I Waters and the size of the drainage area for this project is less than 400 acres. We have also examined the Flood Insurance Rate Map for Montgomery County and do not find any of the project area included in an area identified as having a special flood hazard.

Based on these considerations, a Waterway Construction Permit is not required from the Water Resources Administration.

Thank you for allowing us an opportunity to review and provide comments on this project.

Sincerely,

*S. Wong*

Stan Wong  
Chief, Waterway Permits Division

SW:MMG:das

cc: WRA Enforcement Division

*Cathy Pecora*

V-4

DNR TTY for Deaf: 301-974-3683

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JOHNSON, MIRMIAN & THOMPSON

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*Check for ME*



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Parris N. Glendening  
Governor

Maryland Department of Natural Resources  
Fish, Heritage and Wildlife Administration  
Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

December 7, 1995

Mr. Neil J. Pedersen  
Director  
Office of Planning and Preliminary Engineering  
MARYLAND DEPARTMENT OF TRANSPORTATION  
State Highway Administration  
PO Box 717  
Baltimore, MD 21201-0717

RE: Contract No. M 401-156-372  
I-270 at MD 187 and  
I-270 Spur at Democracy Boulevard  
Environmental Assessment  
PDMS No. 151112

Dear Mr. Pedersen:

The Fish, Heritage and Wildlife Administration has no records for Federal or State rare, threatened or endangered plants or animals within this project site. This statement should not be interpreted as meaning that no rare, threatened or endangered species are present. Such species could be present but have not been documented because an adequate survey has not been conducted or because survey results have not been reported to us.

Sincerely,

Robert L. Miller, Coordinator  
FHWA - Environmental Review

RLM: fmb  
ER#95.1418.MO

V-5



United States Department of the Interior

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

August 7, 1987

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JOHNSON, MIRMIRAN & THOMPSON

86132

Mr. Ronald T. Burns  
Johnson, Mirmiran and Thompson, P.A.  
810 Gleneagles Court  
Baltimore, Maryland 21204

Dear Mr. Burns:

This responds to your July 9, 1987 request for information on the presence of Federally listed endangered or threatened species within the area of the proposed interchange improvements to I-270 at Maryland Route 187, Montgomery County, Maryland.

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

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

Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Judy Jacobs of our Endangered Species staff at (301) 269-5448.

Sincerely yours,

G. A. Kinser

Glenn Kinser  
Supervisor  
Annapolis Field Office

Don Sparklin

118



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
PROJ. BOX 1715  
BALTIMORE, MD. 21203-1715  
DEVELOPMENT  
DIVISION

REPLY TO  
ATTENTION OF

JAN 5 9 11 AM '94

Operations Division JAN 5 9 11 AM '94

Subject: MD SHA/I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD

Maryland State Highway Administration  
Attn: Mr. Louis Ege, Jr.  
707 North Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Ege:

I am replying to the December 1, 1994 field review which was conducted by State Highway Administration (SHA) representatives to discuss the I-270 spur upgrade at Democracy Boulevard and Old Georgetown Roads, in Montgomery County, Maryland.

After reviewing potential impacts to waters of the United States, including wetlands, occurring from the subject project, this office has concluded that it will not be necessary to carry the project through the NEPA/404 process.

We entreat the SHA to continue future presentations of proposed projects at monthly Interagency meetings so that a determination, such as the subject project, can be achieved as to whether the project needs to follow the NEPA/404 process.

Although the subject project will not require NEPA/404 review, it does not exempt SHA from acquiring a Section 404 permit for activities in waters of the United States, including wetlands.

If you have any questions concerning this matter, please call Mr. Arthur Coppola of this office at (410) 962-1723.

Sincerely,

*Paul R. Wittauer*

for Keith A. Harris  
Chief, Special Projects  
Permits Section

cc: MD, DNR  
FWS  
MDE  
MHT



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MD 21203-1715

PROJECT  
DEVELOPMENT  
DIVISION

119

REPLY TO  
ATTENTION OF

JAN 5 1 51 PM '96

Operations Division

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and Preliminary Engineering  
Room 312  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Ege:

I am responding to your letter dated November 13, 1995, requesting comments on the Environmental Assessment (EA) for I-270 at MD 187 and the I-270 Spur at Democracy Boulevard (CENAB-OP-RX(MD SHA/I-270 Spur) 94-66125). As stated in our letter dated January 3, 1995, it is not necessary to carry this project through the NEPA/404 process. Therefore, we will not be providing any comments on this document. We will review this project through the Department of the Army permit process upon receipt of your application.

If you have any questions concerning this matter, please call Ms. Meg Gaffney-Smith of this office at (410) 962-6083.

Sincerely,

For Keith A. Harris  
Chief, Special Projects  
Permit Section





MARYLAND *Office of Planning*

120

Parris N. Glendening  
Governor

Ronald M. Kreimer  
Director

March 26, 1996

Mr. Neil J. Pedersen  
Director  
Office of Planning and Preliminary Engineering  
Maryland Department of Transportation  
State Highway Administration  
P.O. Box 717  
Baltimore, MD 21203-0717

State Application Identifier: MD951128-1143  
Project Description: EA/I-270 at MD 187 and I-270 Spur at Democracy Boulevard  
State Clearinghouse Contact: La Verne Gray

Dear Mr. Pedersen:

We are forwarding the enclosed comment made by Montgomery County regarding the referenced project for your information. They state that the project is generally consistent with their plans, programs, and objectives, but have submitted qualifying comments for your consideration. A copy of these comments are included with this letter. Based on these comments, the Maryland Office of Planning states that consistency with the Local Comprehensive Plan is needed to be consistent with the Planning Act of 1992. Alternative 5B does not comply with the 1992 North Bethesda - Garrett Park Master Plan. However, this Office, will default to the County's opinion in this matter.

If you need assistance or have questions concerning this review, please contact the staff person noted above.

This concludes the review of this project. Thank you for your cooperation.

Sincerely,

William G. Carroll  
Manager, Plan and Project Review

WGC:LG:okk  
Enclosure

V-9

**Project Review Checklist**

**I-270 at MD 187 and at Democracy Boulevard**

**Tier 1**

1. The proposed improvements would result in the modification of the location, configuration of or the addition of turn lanes associated with ramp movements at the existing I-270 interchange at MD 187 and the I-270 Spur at Democracy Boulevard. New capacity would be created with construction of new interchanges on I-270 at Rockledge Drive and the I-270 Spur at Fernwood Road.
2. The project is consistent with the planned development identified in the county master plan.

**Tier 2**

1. The project is consistent with the land use growth patterns identified in the North Bethesda-Garrett Park Master Plan (1992). The plan identifies rapid growth in population, households and employment in the region surrounding the study area, Montgomery County and the other counties associated with the Washington DC metropolitan area. I-270 and the I-270 Spur in the project area provides connections to I-495, and also for through traffic from Maryland suburbs to the east, and traffic to and from Virginia. The plan recognizes the importance of these connections at the MD 187 and Democracy Boulevard interchanges and recommends that additional roadway capacity be added along with transit and transportation demand management policies emphasizing pedestrian and bicycle use.
2. The I-270 corridor is a growing extension of the Washington metropolitan area and continues to be a focal point for major commercial/residential development. The project area contains a substantial amount of existing residential development as well as commercial/retail and office development with much anticipated commercial growth. By enhancing capacity, congestion and travel time would be reduced and safety would be increased. Direct access to commercial/employment centers in the study area will support continued, planned development and attract planned growth. The project will not alter the existing pattern of land use development and redevelopment (see attached comments/responses from Montgomery County DOT [dated 7/1/96 and 3/13/96] and officials [dated 2/15/96, 1/17/96, 5/26/96, 4/27/95, and 3/31/95]).

A number of build and no-build options were studied as part of the project planning study. It was determined that one archeological site was previously disturbed and is not National Register eligible. Impacts to wetlands and natural habitat will be one acre, and twelve acres, respectively. These impacts will be minimized or mitigated as required through permit requirements consistent with federal, state and local regulations. (see attached comments dated 1/5/95)

4. N/A
5. Because the project is compatible with transit, pedestrian and bicycle use and provides direct access into nearby major commercial and industrial complexes, it promotes the design and development of energy efficient travel patterns



123

DEPARTMENT OF TRANSPORTATION

Douglas M. Duncan  
County Executive

March 13, 1996

Mr. Louis H. Ege, Jr., Deputy Director  
Office of Planning and Preliminary Engineering  
Maryland State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Ege:

The purpose of this letter is to provide comments on the I-270 at MD 187 and I-270 Spur at Democracy Boulevard project planning study. As you know, Montgomery County has a significant interest in this study as evidenced by our funding partnership to expedite its programming. We plan to be represented at the forthcoming Team Recommendation Meeting and Administrator Selections meetings as well.

The attachments provide our specific comments on both the project Environmental Assessment and the Location Design Public Hearing information. You will note our interest in implementing these projects in such a manner that both interim improvement to traffic flow is provided, as well as improvement for the forecast year. Please contact me if you have any questions on this matter. Thank you for providing this opportunity to comment.

Sincerely,

John J. Clark, Director  
Office of Planning & Project Development

JJC:jmc  
Attachments

cc: Thomas K. Folse, SHA Baltimore  
Neil J. Pederson, SHA Baltimore  
Charlie Watkins, SHA Greenbelt

LVOPFD-002.CLS

V-12

Office of Planning and Project Development

101 Monroe Street • Rockville, Maryland 20850 • 301/217-2145, TTY 279-1083

124

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION  
COMMENTS ON  
MARYLAND STATE HIGHWAY ADMINISTRATION  
PROJECT PLANNING STUDY  
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BOULEVARD  
CONTRACT NO. M-401-156-372-P  
PDMS NO. 15112

Environmental Assessment (Report No. FHWA-MD-EA-95-02-D)

The Environmental Assessment for this project appears to completely document anticipated environmental impacts and is accurate with respect to internal consistency. We have no further comments on it.

Proposed Location and General Project Design

1. Alternative 1 (No-Build) does not resolve existing problems and by the forecast year 2020 those problems will worsen. Not only will congestion increase but there is a potential for degraded safety conditions. Therefore, a combination of build alternatives is necessary.
2. The major plan calls for a direct connection between I-270 east spur and Rock Spring Drive. Such a connection is included as part of Alternatives 3E, 3F, 3G, and 3H. The information presented at the public hearing included the fact that Alternative 2E could not be combined with Alternatives 3E, 3F, or 3G. Since Alternative 2E would ultimately preclude a master plan recommendation, it is not an acceptable option.
3. The master plan calls for ramps between Fernwood Road Bridge and I-270 west spur to/from the north. Although the master plan language states that such ramps "would be suitable for HOV-only use", MNCPPC staff has said that this is not a binding condition that these ramps must be HOV-only. Therefore, the master plan does not dictate that Alternative 5C (HOV-only) must be used.
4. The master plan calls for a high capacity transit connection between Grosvenor Metrorail Station and Montgomery Mall. Montgomery County DOT has studied "North Bethesda Transitway" which crosses MD 187 in the vicinity of the I-270 interchange, and crosses I-270 west spur in the vicinity of Fernwood Road Bridge. The alternatives should be selected in such a way as to avoid precluding the further planning and implementation of this transit facility.

5. The master plan calls for a new bike path (Class I bikeway) linking Democracy Boulevard and Rock Spring Park with Tuckerman Lane and the residential area north of I-270, including an overpass of I-270. This bikeway crossing of I-270 should be a specific feature included in and part of the interchange project design and construction. Likewise, the master plan calls for retention of the existing bike lanes (Class II bikeway) across I-270 west spur on the Fernwood Road Bridge. This project should take into account retention of these bike lanes and enhancing the safety of the bicyclists using them. Finally, a bike path (Class I bikeway) is master planned along Democracy Boulevard. This project should specifically include design and construction of the bike path within project limits preferably along the north side of Democracy Boulevard.

6. Three issues that also require consideration during project design and implementation, regardless which alternatives or combinations are chosen, are pedestrian access and safety, noise, and adjacent land use safety. With regard to pedestrians safety at ramp crossings should be emphasized and, to the extent possible, the number of new ramps should be minimized to lessen potential conflicts. Noise barriers and other attenuation measures should also be emphasized to mitigate negative impacts to existing residential areas. Finally, during the public hearing there was some testimony that existing residential areas would be subject to increased safety hazards due to the relative elevations of the roadway and the adjacent land uses. Again, to the extent that this is true, the project design should minimize such hazardous exposure, and mitigate any that remains with such safety devices as may be appropriate.

7. Montgomery County is concerned that this project provide interim improvements, as well as the ultimate benefits for the forecast year 2020. Staging of implementation is necessary in our view. We have already offered funding for expedited construction of the Fernwood Road Bridge ramps, whichever alternative (5b or 5c) is selected. Similarly, it may be necessary to construct the Rock Spring Drive Connector interchange prior to the Democracy Boulevard interchange reconstruction if insufficient funds are available in the future to implement both improvements at the same time. Montgomery County is interested in seeing the improvements identified through this project planning study process implemented as rapidly as possible, and in a manner that relieves traffic congestion and enhances safety, while at the same time minimizing negative impacts to the adjacent residential communities.



*Maryland Department of Transportation  
State Highway Administration*

126  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

July 1, 1996

Re: I-270 at MD 187 and  
I-270 Spur at Democracy Boulevard

Mr. John Clark, Director  
Office of Planning and Project Development  
Montgomery County  
Department of Transportation and Public Works  
101 Monroe Street  
Rockville MD 20850

Dear Mr. Clark:

Thank you for your March 13 letter with comments on the Environmental Assessment and other issues associated with this project.

This is a response to each of your concerns:

1. **No-build Alternative.** We agree that the no-build alternative will not accommodate existing and projected traffic volumes. On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. Your office was represented at this meeting. The Administrator also determined that improvements to other intersections in the study area should be implemented by Montgomery County or developers. These intersection improvements, in combination with the selected alternatives, would bring all of the intersections in the study area to an acceptable level of service through the design year 2020.
2. **Alternative 2E.** As you suggested, Alternative 2E was not selected because it would have precluded any of the general use alternatives for an interchange on I-270 at Rockledge Drive.
3. **HOV Ramp at Fernwood Road.** We believe that since the proposed reversible ramp connecting Fernwood Road and the I-270 Spur to and from the north will merge with and diverge from the proposed HOV lanes on the I-270 Spur, the ramp should be open only to HOV traffic during the hours when the HOV lanes on the I-270 Spur will be restricted to HOV traffic. When the I-270 Spur HOV lanes are open to general use traffic, the ramp can also be open to general use traffic.

V-15

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, MD 21202

Mr. John Clark  
7/1/96  
Page 2

- 4. **North Bethesda Transitway.** Although the selected combination of alternatives was not specifically planned to avoid potential conflicts with the proposed North Bethesda Transitway, none of the proposed improvements would preclude further planning and implementation of the transitway.
- 5. **Bikeways.** The selected alternative for the Rockledge Drive interchange precludes the reasonable implementation of an exclusive bikeway and pedestrian bridge across I-270 between Rockledge Drive and MD 187. We may be able to incorporate bicycle and pedestrian access across I-270 on the proposed Rockledge Drive bridge, however, the proposed retaining wall adjacent to the ramp north of the bridge would be an obstacle.

We have determined that a vegetated slope is feasible in place of the retaining wall adjacent to the ramp. The slope would require an easement or acquisition of a portion of the Heritage Walk Homes Corporation property (Parcel 999), but would not require the acquisition of any land from Chamwood Drive homeowners. We are currently working with the Washington Suburban Sanitary Commission (WSSC) to resolve some potential conflicts between our proposed slope and their proposed water line which will pass through Parcel 999. After we determine whether or not the water line can be placed under the slope, we will investigate the bikeway possibilities further. The Democracy Boulevard and Fernwood Road bikeways will also be investigated in the design phase.

- 6. **Pedestrian Access, Noise, and Safety.** The selected alternatives have been modified since the preparation of the Environmental Assessment so that more pedestrian crossings of ramps will be signalized.

Our noise analysis has identified several noise sensitive areas as candidates for noise barriers, however, our new noise barrier policy has not been approved by the Federal Highway Administration. After the noise policy is approved, we can determine where to construct noise barriers, where to investigate other mitigation options, and where to take no further action.

The potential safety hazard referenced at the public hearing involves the height of the ramp from MD 187 and Rockledge Drive to northbound I-270 with respect to the houses on Chamwood Drive. A traffic barrier or earthwork berm will be located adjacent to this ramp to minimize the potential hazards that could occur if a vehicle were to accidentally leave the ramp.



128

Mr. John Clark  
7/1/96  
Page 3

7. **Staging.** We anticipate that construction will be staged to provide short-term relief. Possible staging plans were discussed at a June 11 meeting between our offices. A draft staging plan will be sent to your office under separate cover.

We appreciate your suggestions. We look forward to working with you in accommodating your concerns. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543, or toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Montgomery County Planning Board  
Office of the Chairman

March 27, 1996

Mr. Hal Kassoff, Administrator  
Maryland Department of Transportation  
State Highway Administration  
P.O. Box 717  
Baltimore, MD 21203-0717

RE: Mandatory Referral  
SHA Project Planning Study  
I-270 at Democracy Boulevard and at Old  
Georgetown Road

Dear Mr. Kassoff:

The Montgomery County Planning Board, at its regularly scheduled meeting of March 21, 1996, reviewed the referenced project. The intent of that review was first to provide comments to your agency regarding the consolidation of alternatives to carry forward into the next, more detailed stage of your project planning study. The second intent was to identify concerns which the Board feels are critical to providing a project that meets the transportation needs and has the least possible negative impact on the adjacent communities and residences.

The Board endorses the process which identifies alternatives 2D, 3E, 4A, 4C and 5C as detailed by Tom Folse, Project Manager for SHA, at the Planning Board session of March 21, 1996. This is in keeping with your Team's recommendation and is supported by our staff. In addition, The Board feels strongly that the following conditions be addressed in the next phase of the study and included in the final design of the project:

1. **A clear delineation of implementation responsibilities, specifically where the project assumes implementation by the County or others.**

From an economic development perspective, the Rock Spring Office Park is one of the most important areas in the entire state and we believe state funding priorities should reflect this. We oppose the use of County funds for improvements on State roadways, except where such funds have been programmed or where funds have been earmarked as a result of the development process.

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V-18

130

2. **The inclusion of pedestrian and bicycle facilities.**

Making communities more livable by incorporating pedestrian and bicycle facilities into highway improvements is an important goal found in our Master Plans throughout the County. Projects such as this one will have a significant impact on the adjacent areas for many years into the future. We strongly recommend that your designs include pedestrian and bicycle facilities that provide safe travel for local residents and which do not create barriers to more regional bikeway options. These should be designed to protect the adjacent properties and save pedestrians and bicyclists, while also providing areas for landscaping. Our staff will provide a map to you depicting pedestrian and bicycle circulation patterns in the areas where the alternatives are located to assist you in this effort.

3. **The inclusion of landscaping and architectural treatment of features such as sound walls.**

The Planning Board was most impressed with your recent presentation to us regarding innovative design features being considered in the ICC study process. We encourage you to use this process as a model in incorporating buffering/transition features early in the design process.

4. **A clear identification of the impacts of each alternative, in particular the impact on adjacent properties with respect to right-of-way and noise, and on neighborhood streets.**


5. **Specific measure to lessen or negate the impacts identified in #1 above.**

6. **An evaluation of phasing both in terms of specific project elements by phase and the impacts of such phasing.**

7. **The continued involvement of M-NCPPC staff members of the Study Team.**

8. **Further review by the Planning Board at the conclusion of this stage of the study, with briefings as deemed necessary by M-NCPPC staff.**

Sincerely,



William H. Hussmann  
Chairman

WHH:JH:kcw



**Maryland Department of Transportation  
State Highway Administration**

131  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

April 15, 1996

William H. Hussmann, Chairman  
Montgomery County Planning Board  
Maryland-National Capital Park and Planning Commission  
8787 Georgia Avenue  
Silver Spring MD 20910-3760

Dear Mr. Hussmann:

Thank you for your recent letter regarding our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard.

Your letter asks us to address eight issues. While we plan to do so in the upcoming phase of the project, I wanted to make several comments:

1. *A clear delineation of implementation responsibilities, specifically where we believe improvements should be implemented by others.*

We will work with your staff and MCDOT staff to identify the limits of state funding for this project. We would expect that improvements on county roads and improvements made on state highways to accommodate development will be funded by the county or developers. This may include improvements to intersections on MD 187 which, while beyond the limit of this project, have been identified as necessary to accommodate traffic which future development in and near Rock Spring Park will generate.

2. *The inclusion of pedestrian and bicycle facilities.*

We will work with M-NCPPC staff to include reasonable enhancements to bicycle and pedestrian facilities within the project area.

3. *The inclusion of landscaping and architectural treatment of features such as noise walls.*

All structures will be designed considering aesthetics, and we will look for opportunities to provide landscaping. We will work with your staff on both issues during the design phase.

V-20

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

132

Mr. William H. Hussmann  
April 15, 1996  
Page Two

4. *A clear identification of the impacts of each alternative, in particular the impact on adjacent properties with respect to right-of-way and noise, and on neighborhood streets.*

and

5. *Specific measures to lessen or negate impacts.*

The final environmental document will identify impacts and mitigation efforts.

6. *An evaluation of phasing both in terms of specific project elements by phase and the impacts of such phasing.*

We expect this project to be built in phases.

7. *The continued involvement of M-NCPPC staff members of the study team.*

and

8. *Further review by the Planning Board at the conclusion of this stage of the study, with briefings as deemed necessary by M-NCPPC staff.*

We welcome the participation of M-NCPPC staff and input from the Planning Board during the design phase. We look forward to working with you to ensure that all of the issues which you have identified are satisfactorily addressed.

We appreciate the very constructive input that your staff has provided during the study process. I feel that we have been able to develop a selected alternative that meets our mutual objective for this area.

If you have any questions or further suggestions, please feel free to call me or Neil Pedersen, our Director of Planning and Preliminary Engineering. Neil can be reached at (410) 333-1110.

Sincerely,

*Elysheth L. Horner, Deputy*

for Hal Kassoff  
Administrator

V-21

cc: Mr. Robert D. Douglass  
Mr. Neil J. Pedersen



DEPARTMENT OF POLICE

133  
PACUENT  
DEVELOPMENT  
DIVISION  
JAN 5 1 49 PM '96

Douglas M. Duncan  
County Executive

December 20, 1995

Mr. Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and Preliminary  
Engineering, Room 312  
State Highway Administration  
707 North Calvert Street  
Baltimore, MD 21202

Dear Mr. Ege:

Thank you for allowing members of our department to review the Environmental Assessment Contract #M-401-156-372 and to provide comments on roadway construction proposals at I-270 at MD 187 and I-270 spur at Democracy Boulevard. I am pleased that there are proposals being considered to alleviate traffic congestion in this heavily traveled corridor of I-270 within my area of geographical responsibility.

I directed my staff and Traffic Squad to review and make comments of the alternatives associated with this study. I was advised that this review has focused on the Alternatives 3 (E-F) which specifically focus on traffic concerns away from Democracy Boulevard to create a roadway with direct access to the Rockledge Drive area. Our selection focuses on Alternative 3F for the following reasons:

1. Viable alternatives that remove traffic from Old Georgetown Road (MD 187) and Democracy Boulevard.
2. Assists with traffic both northbound and southbound at I-270 in the area between the I-270 split and MD 187.
3. Direct entrance/exit from I-270 to Rockledge Drive area.
4. Provides for greater movement of traffic on I-270 in/out of the Rockledge area.

V-22

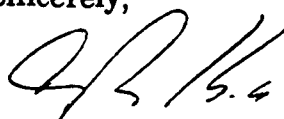
134

PAGE TWO  
Mr. Louis H. Ege, Jr.

I appreciate having this opportunity to provide comments. Our recommendation aids us in our mission of the safe movement of traffic and increased capacity to and from the Rockledge Drive area and assist in solving current problems at Democracy Boulevard and Old Georgetown Road.

Thank you for your attention to this matter.

Sincerely,



Captain Alan G. Rodbell, Commander  
Bethesda District

AGR/dfb/mob



**Maryland Department of Transportation  
State Highway Administration**

135  
David L. Winstear  
Secretary  
Hal Kassoff  
Administrator

June 20, 1996

Captain Alan G. Rodbell  
Commander Bethesda District  
Montgomery County Department of Police  
2350 Research Boulevard  
Rockville MD 20850-3294

Dear Captain Rodbell:

Thank you for your December 20, 1995, letter about the study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard. I apologize for the delay in the response.

Your letter recommended Alternative 3F to provide direct access to and from I-270 at Rockledge Drive. Alternative 3F was not selected because it would not have provided sufficient distance for vehicles to maneuver in heavy traffic from southbound I-270 to the proposed Rock Spring Centre development via the Rockledge Drive Connector.

The State Highway Administrator recently selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. These intersection improvements, in combination with the selected alternatives, would bring all of the intersections in the study area to an acceptable level of service through the design year 2020. A brochure from the public hearing is enclosed for reference.

V-24

My telephone number is \_\_\_\_\_

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



136

We appreciate your interest in our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543, or toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Enclosure

137

**THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117**

**OFFICE MEMORANDUM**

**DATE TYPED:** July 18, 1995

**PROJECT:** I-270 at MD 187 and I-270 Spur at Democracy Boulevard

**FILE:** 0100-190.05

**SUBJECT:** Wetland Jurisdictional Field Review held on July 13, 1995

**PRESENT:**

Mr. Tom Folsie	State Highway Administration - PPD
Mr. Bill Carver	State Highway Administration - PPD
Ms. Anne Elrays	State Highway Administration - PPD
Mr. Mike Callahan	State Highway Administration - Env. Prog.
Mr. Art Coppola	Army Corps of Engineers
Mr. Greg Golden	DNR Env. Review
Mr. Al Wiedmann	MDE/WMA
Mr. John Nichols	NMFS
Dr. Howard Erickson	The Wilson T. Ballard Company
Mr. Mark Lotz	The Wilson T. Ballard Company

A Wetland Jurisdictional Field Review was held on July 13, 1995, starting at 10:00 a.m. This review allowed participants an opportunity to provide comments on wetland and Waters of the U.S. boundaries, established by The Wilson T. Ballard Company, and the alternatives developed in this study. A handout indicating the wetlands, Waters of the U.S., the alternatives and their impacts was provided.

As a general comment, Mr. Golden inquired as to whether this project would include any stormwater management retrofitting. Mr. Lotz responded that the Spur widening project will include a pond filling most of the vacant northwest I-270 Spur/Democracy Blvd. quadrant. The East Segment widening, completed last year, included several infiltration locations.

Mr. Coppola stated that the Corps of Engineers wants to be on record in its request for 1:1 replacement for all Waters of the U.S., and 2:1 or 1:1 replacement for all wetlands, depending upon classification.

The field review began at the Democracy Blvd. interchange, along SB I-270 Spur, proceeded along the NB I-270 Spur to Democracy Blvd., and then to the East Segment. Comments pertaining to each wetland and Waters of the U.S. location are summarized as follows:

### U.S. 1

Participants felt it unnecessary to view this location. The upstream side of this stream which is the outfall for the Marietta pond was observed without comment.

### W-1 and W-2

W-1 is located at the upstream and downstream ends of an existing 60" pipe which would be lengthened under the Alt. 3's. Mr. Coppola requested that these two segments be given separate designations. W-2 is strictly along the south side, adjacent to the recently constructed retaining wall. It appears that the stream channel at the outfall (north side of I-270) is not shown accurately on photogrammetry. The existing channel is actually close to where the alternatives displays indicate the stream would be relocated. Therefore, stream relocation may not be required as part of the Alt. 3's. At this location and in general, pipe inverts should be depressed when extended to allow fish passage. Rip-rap should not be placed in the stream channel. There are concerns at this location regarding water quality and fish passage; DNR would like to see water and fish sampling made as part of any further studies. It appears that minnows and/or micro invertebrates may be present.

Pipe extensions should be avoided if possible. DNR and COE support the use of the south side (near W-2 location) for stormwater management retrofit. In-stream stormwater management may be advisable, as clearing for stormwater management is a concern. Participants concurred on delineation.

### W-3

W-3 would be impacted by 2E, 3E, 3F or 3G. Mr. Coppola questioned the need for a two to three lane ramp as part of the 3's. (Based on heavy SB MD 187 and NB I-270 movement into Rock Spring Park.) This would be a good location for stormwater management retrofit including a shallow marsh with vegetation. Participants concurred on delineation.

### W-4 and U.S. 2

W-4 is a high quality wetland in the northwest I-270/MD 187 quadrant that would be impacted by Alt. 2E only. Mr. Coppola requested that this alternative be modified to reduce impacts and that other alternatives be developed. Alternatives 2D, 3E, 3F and 3G are all alternatives to 2E. Given a choice, agencies would support impacting W-1/W-2 to build the 3's vs. impacting W-4 to build 2E. Several questions arose concerning this site that affect how impacts should be addressed: 1) What is the history of the pond? (Determines who has jurisdiction – if pond is old, it is exempt from COE jurisdiction); has it been recently recreated? and 2) Would it need to be restored if impacted? Mr. Coppola stated that the COE would take jurisdiction over this wetland. Mr. Nichols concurred. Participants concurred on delineation.

139

**W-5, W-6 and U.S. 3**

These areas, located east of MD 187 and south (or west) of the I-270 SB roadway, were not viewed as they are well outside the area affected by any alternative.

**Unnamed and Undelineated channel upstream of W-1**

Participants viewed this area which is the potential location for the Rockledge Drive Connector roadway with Alt. 3E, 3F or 3G. These alternatives would require a new culvert and possibly some stream channel relocation. This area was observed to be a high quality headwaters location, although it would not have a Waters of the U.S. or wetland designation. Further investigation will be made into the use of retaining walls to avoid stream relocation.

Mr. Coppola stated that this study's delineations should include all wetlands associated with the Davis Tract and that these wetlands should be listed as secondary impacts caused by the Alt. 3's. Mr. Folse explained that these areas would not be affected by the I-270 interchange improvements. The areas are being addressed as part of the Davis Tract development process.

**U.S. 4, W-7, and W-8**

These areas, located in the vicinity of the Y-Split, were not viewed as they are located outside the areas affected by any alternative.

**W-9 and W-10**

These areas, located east of I-270 Spur and north of Democracy Blvd., were not viewed as they are located outside the areas affected by any alternative.

**W-11 (and new Waters of the U.S. area)**

W-11 is located along the south side of Democracy Blvd., east of I-270 Spur. A portion of the stream channel along the NB to EB ramp, from the western edge of W-11 to 150' west of the W-11 edge, is to be designated as Waters of the U.S. Retaining walls to avoid impacts to W-11 will be investigated. Mr. Nichols requested that, if regrading is required along the drainage channel outside the NB to EB ramp, the regraded area be revegetated.

U.S. 5 and W-12

These areas are located in the vicinity of the I-270 Spur/Democracy Blvd. Interchange. W-12 does not satisfy all wetland criteria; therefore, its designation should be changed to Waters of the U.S. In general, the concrete channels in the interchange area should be replaced with vegetated swales and check dams to limit velocities. Agency representatives concluded that the main culvert under I-270 Spur and Democracy Blvd. is probably not passable for fish. A small additional wetland area (150' x 10') was found in the drainage ditch along NB I-270 Spur between the NB to EB ramp and the EB to NB loop. In general, the culverting, channel bank retaining wall construction and stream rechannelizations that may be necessary for Thomas Branch (U.S. 5) with Alternatives 4C or 4D are objectionable to the agencies. Mr. Coppola requested that minimization measures such as mainline alignment shifts (reduce I-270 median) and fewer lanes on ramps be investigated. Mr. Golden requested that ramps cantilevered over the stream be considered. If culvert outfalls into Thomas Branch are extended, the inverts should be depressed to accommodate fish passage. Implementation of baffles may also be beneficial. Ideally, the channel itself should be left alone and banks stabilized as necessary.

U.S. 7

Comments at this location (stream channel along NB I-270 Spur) were very similar to those provided at Thomas Branch (U.S. 5). The potential impacts from Alt. 4A or 4B are quite objectionable to the agencies. If, as a last resort, stream relocation is required, the "Razdan" method may need to be considered. If this meandering method is found to result in too many impacts or not be feasible, check dams should be implemented. Alternatives 4A and 4B will be evaluated to determine how well they will operate if the retaining/jersey wall that is currently under construction along the NB roadway is left at its current location.

By Mack D. [Signature]

MDL  
cc: attendees



Maryland Department of Transportation  
State Highway Administration

PROJECT  
DEPARTMENT  
DIVISION

SHA  
EX/TEAM

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

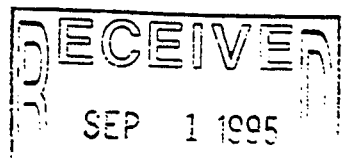
198

OCT 10 10 48 AM '95  
August 29, 1995

9502278

RE: Contract No. M 401-156-372 (P)  
I 270 at MD 187 and  
I-270 Spur at Democracy Boulevard  
Montgomery County MD

Mr. J. Rodney Little  
State Historic Preservation Officer  
Maryland Historical Trust  
100 Community Place  
Crownsville MD 21032-2023



Dear Mr. Little:

The State Highway Administration is proposing to reconfigure and/or modify the existing I-270 interchanges at MD 187 and at Democracy Boulevard, modify the Y-Split at I-270 and I-270 Spur, and construct a connector between I-270 and existing Rockledge Drive. These proposed improvements are included within the study area of a Project Planning Study which occurred in the late 1980's (I-270, from the Y-Split to I-495, M 401-154-372). The locations of these proposed improvements are noted on Enclosures 1 and 2.

The area of potential effect for historic standing structures is identified on Enclosure 2. It was subject to an historic sites reconnaissance conducted for the I-270 project (Y-split to I-495). There is one historic standing structure within the APE and it was identified in the previous study--the Davis Farm (M30/19). Our offices concurred that it would not meet the criteria for listing in the National Register of Historic Places. The April 4, 1986 letter concerning that earlier project is included as Enclosure 4.

Recent inspection and inquiries concerning the property, indicates that deleterious changes have occurred. Its immediate environs has been subject to intense development, in the form of office, educational, commercial and residential construction. All of the buildings on the Davis property (see photographs), with the sole exception of a residence constructed in the second quarter of the twentieth century, have been removed or destroyed. The acreage which remains of the property is only a small portion of the original farm which is the current location of a major development known as the Rock Spring Office Park. The environs of the twentieth century dwelling is the location of the final installment of the

1926  
Enclosures 1A.  
Kraftman prior determination  
of not eligible 10/2/95 EAM

v-30 Rockville : Kensington  
Archives: 1A Bc 10/14/95

My telephone number is \_\_\_\_\_  
Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

142

Mr. J. Rodney Little  
Page Two

complex. The site has not been utilized for agriculture for many years and all agricultural buildings have been removed. The current state of the property confirms our earlier assessment that it would not meet the criteria for listing in the National Register of Historic Places. The July 25, 1995 letter from a representative of the owner is included as Enclosure 6.

The area of potential effect for archeological resources is depicted on Figures 7a, 7b and 7c in the Phase Ib Archeological Survey Report prepared by John Milner Associates, included as Enclosure 7. Alternates which propose construction within existing right-of-way, or extend into disturbed areas immediately adjacent to existing right-of-way, were excluded from the Phase IB reconnaissance.

Current plans included Alternates 2A, 2B, 3A, 3B, 4A, 4B, 4C, 4D, 5B, 5C, 6A, and 6B, which were presented at a Supplemental Alternates Public Meeting on June 8, 1994. Subsequent to the meeting, Alternate 2B was modified and renamed Alternate 2E; Alternate 2C, 2D, 3E, 3F, 3G, HOV-1, and HOV-2, were added. Since that time, Alternates 2A, 3A, 3B, 6B, and HOV-2 have been dropped from study. Consequently, Alternates 2C, 2D, 2E, 3E, 3F, 3G, 4A, 4B, 4C, 4D, 5B, 5C, 6B, and HOV-1, have been retained for study. These alternates are depicted in Enclosure 3.

Prior to the initiation of archeological studies, the project area was assessed for archeological potential by Mary F. Barse. The assessment included several field visits and informal walk-over of all the alternate corridors. Based upon observations of field conditions and the scope of work planned under each alternate scenario, several alternates were deleted from the archeological survey universe. Alternates which propose construction within existing right-of-way, or extend into disturbed areas immediately adjacent to existing right-of-way, were excluded from the Phase IB survey due to low archeological potential. Excluded alternates are: 2C, 4A, 4B, 4C, 4D, 5B, and 5C. Alternates retained for study which propose construction within new right-of-way and were subject to archeological survey are: 2D, 2E, 3E, 3F, 3G, 6B, and HOV-1.

The enclosed draft technical report (Enclosure 5) presents the findings and recommendations of the archeological survey for your review and comment. No archeological sites were identified. Our comments on the draft report itself are appended as Enclosure 7. Aside from some minor changes to the report, we believe our consultant has adequately documented an absence of archeological resources within this project's proposed area of potential effects, and no additional archeological work is warranted.

We seek your concurrence that the proposed project encompassing Alternates 2C, 2D, 2E, 3E, 3F, 3G, 4A, 4B, 4C, 4D, 5B, 5C, 6B, and HOV-1 will have no effect on National Register eligible historic standing structures or archeological resources. Please document your agreement in this determination by signing the concurrence line below, and returning this correspondence by September 25, 1995.

143

Mr. J. Rodney Little  
Page Three

Thank you for your consideration. Should you have any questions or wish additional information, please feel free to contact Ms. Rita Suffness for structures at (410) 333-1183, or Ms. Mary Barse for archeology at (410) 321-2213.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Cynthia D. Simpson  
Cynthia D. Simpson  
Deputy Division Chief  
Project Planning Division

Concurrence:

Ephraim J. Cole  
State Historic Preservation Officer

10/4/95  
Date

LHE:MFB/RMS

Enclosures (7)

- cc: Ms. Mary F. Barse
- Ms. Anne Elrays
- Mr. Tom Folse
- Mr. Bruce M. Grey
- Dr. Charles L. Hall
- Ms. Rita M. Suffness





2094  
**RECEIVED** 144

JAN 24 1996

OFFICE OF THE COUNTY EXECUTIVE  
 ROCKVILLE, MARYLAND 20850

SECRETARY DEPARTMENT  
 OF TRANSPORTATION

Douglas M. Duncan  
 County Executive

January 17, 1996

cc: Hal K.

Honorable David L. Winstead  
 Secretary  
 Maryland Department of Transportation  
 P. O. Box 8755  
 BWI Airport, Maryland 21240-0755

PLEASE PREPARE RESPONSE  
 FOR SECRETARY'S SIGNATURE

cc: BW  
 Fred

Dear Mr. Winstead:

As you know, the Rock Spring Park is of major economic importance to Montgomery County and indeed to the State of Maryland as well. Ultimately, this major activity center will be the home of 38,000 jobs, as well as planned retail space of up to 220,000 square feet, and a base housing component of more than 1,000 dwelling units. As you also know, the current access to the site from surrounding Interstate highways is deficient. The present Development and Evaluation (D&E) Study, which SHA has underway, is the first step in finding a solution to provide the needed relief. In recognition of this, the County has provided half of the funding for this study to proceed.

At recent public meetings, SHA staff have outlined the estimated timetable for completing the remainder of project planning for the D&E Study. We are pleased to learn that selection of a preferred Alternate by the State Highway Administrator for Location/Design Approval is slated for April 1996, and that submission of the Final Environmental Impact Statement and the actual approvals are targeted to occur shortly thereafter. On a less optimistic note, SHA staff was forthright in acknowledging that the design phase was lengthy and that construction was dependent on securing the necessary funding.

It is with respect to this latter item that I am writing to propose that SHA move forward with the design and construction of ramps from Fernwood Road to the I-270 Spur as soon as a preferred alternate is selected and the environmental document approved. I am aware that these ramps (currently identified as alternates 5B and 5C in the D&E Study) are only a portion of the overall solution. We feel that the benefits to traffic circulation in the North Bethesda area and significant relief to congestion in this area of continued economic vitality provide a sound rationale for rapid implementation of the preferred alternate for these ramps once project planning is complete. SHA staff have noted that staged implementation of the overall project is possible and these ramps are certainly compatible with most other project alternates.

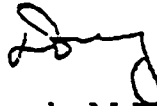
145

Honorable David L. Winstead  
January 17, 1996  
Page 2

In order to facilitate a faster track for implementation in this specific location, I would like to alert you of the possibility for funding participation by Montgomery County using funds from a developer. We would be willing to consider utilizing local transportation funds to support the non-Federal share, if MSHA could program and dedicate the Federal share. We welcome the opportunity to discuss this matter in further detail with you and your staff. Please have your staff contact Mr. John J. Clark, Director, Office of Project Development, Department of Transportation, at 301/217-2145 at your convenience to explore the details of our proposal.

Thank you for your consideration.

Sincerely,



Douglas M. Duncan  
County Executive

DMD:jmc

1412

**B. Elected Officials**



OFFICE OF THE COUNTY EXECUTIVE  
ROCKVILLE, MARYLAND 20850

Douglas M. Duncan  
County Executive

May 26, 1995

cc both letters - jff  
David W. Fred R.  
Hal K. Ber S.  
~~Neil P.~~ FYI TD  
**RECEIVED**

JUN 5 1995

DEPUTY SECRETARY

Mr. Thomas Osborne  
Deputy Secretary  
Maryland Department of Transportation  
Post Office Box 8755  
Baltimore Washington International Airport  
Maryland 21240-0755

Dear Mr. Osborne:

Thank you for your favorable comments on our Rock Spring Office Park in your April letter. I am pleased that your department recognizes Rock Spring as one of the "premier office locations" in the state, and I am grateful that you have assigned a high priority to completing the interchange study necessary to improve the access to the park.

I will expect the study to be completed in "approximately one year" and that your department will vigorously pursue construction-funding for this important project.

I appreciate your continued attention to our transportation needs.

Sincerely,

Douglas M. Duncan  
County Executive

DMD:jmc



**Maryland Department of Transportation**

The Secretary's Office

Parris N. Glendening  
Governor

David L. Winstead  
Secretary

Thomas L. Osborne  
Deputy Secretary

February 15, 1996

The Honorable Douglas M. Duncan  
Montgomery County Executive  
Executive Office Building  
101 Monroe Street  
Rockville MD 20850

  
Dear County Executive Duncan:


Thank you for your recent letter about the State Highway Administration's (SHA) study of I-270/MD 187 and the I-270 Spur/Democracy Boulevard.

We appreciate your offer to fund the non-federal share of the Fernwood Road interchange. At this time, all federal funds we expect to receive over the next six years have been fully programmed in the development of our Consolidated Transportation Program. In order to make federal funds available to match the developer's funds, we would have to remove other projects from our six-year program, something we are not in a position to do. I am pleased, however, to tell you we were able to include funding in our program for right-of-way acquisition for both the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges.

While the State Highway Administration has not yet selected an alternative or combination of alternatives to proceed to final design, we do expect a selection this Spring. After the selection is made, a final environmental document based on the selected alternative(s) must be prepared and submitted to the Federal Highway Administration (FHWA) for approval. In addition, any new access to the Interstate System must also be approved by FHWA as a separate action. Final design is scheduled to begin this Summer.

Thank you again for writing. If you need any detailed information, please feel free to call Mr. Neil Pedersen, Director of SHA's Office of Planning and Preliminary Engineering, at (410) 333-1110.

Sincerely,



David L. Winstead  
Secretary

cc: Mr. Hal Kassoff  
Mr. Neil J. Pedersen  
Mr. Frederick Rappe  
Ms. Beverly Swaim-Staley

V-36

My telephone number is (410)- 859-7600

TTY For the Deaf: (410) 684-6919

Post Office Box 8755, Baltimore/Washington International Airport, Maryland 21240-0755





#1732

149

OFFICE OF THE COUNTY EXECUTIVE  
ROCKVILLE, MARYLAND 20850

Douglas M. Duncan  
County Executive

March 31, 1995

RECEIVED

APR 4 1995

Mr. David Winstead, Secretary  
Maryland Department of Transportation  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21203

*Hal,  
Please prepare  
a response for  
David's signature*

DEPARTMENT OF TRANSPORTATION

RE: Rock Spring Centre, Zoning Case G-713

*Duc*  
Dear ~~Mr.~~ Winstead:

I am writing to you to request clarification of certain highway issues which recently arose before the Montgomery County Planning Board. These involve the rezoning request for the 54 acre undeveloped parcel in Rock Spring Park known as Rock Spring Centre. An application was filed in November of 1994 to rezone the site from the residential highrise (R-H) to the mixed-use planned development (MXPDP) zone. The property was subjected to extensive studies during the County's North Bethesda/Garrett Park Master Plan proceedings. The Approved and Adopted Master Plan designated the property for the MXPDP zone. It also provided that if the property is rezoned to the MXPDP zone, land must be dedicated for ramp access into Rock Spring Park.

Rock Spring Park is a vitally important area of Montgomery County. This premier office park is home to some of our most important employers including Marriott, IBM/Loral, COMSAT and Lockheed/Martin. It enjoys a convenient and prestigious location in terms of visibility, access to major transportation networks, and proximity to both the Baltimore-Washington corridor and Virginia. The Park provides the gateway for the I-270 Technology Corridor. The 54 acre site is planned to provide the "village center" not only for the Park, but also for the North Bethesda community.

We believe that it is extremely important that the MXPDP zoning, which was recommended by the Master Plan, be approved for this strategic property in a judicious and timely manner. Our observations regarding office parks nationwide indicate that the most successful ones are those which include a mixture of uses, especially support retail services. In order to maintain its competitive edge, and to continue to lure high caliber tenants to Maryland, it is important that this park evolve into a mixed-use office park in accordance with the Master Plan. Otherwise, even with new construction it may be viewed as an "older generation" office park. If this were to happen, this property, the County and the state could lose important employers to competing jurisdictions, particularly those in Virginia.

David Winstead, Secretary

March 31, 1995

Page 2

150

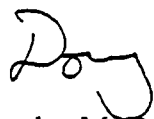
By way of background, you will recall that the State Highway Administration was engaged in a study of road improvements to this area when the County began its consideration of the North Bethesda/Garrett Park Master Plan in 1989. SHA deferred its studies pending the conclusion of the Master Plan proceedings in order to take into account the plans' recommendations.

After the Master Plan was adopted, the SHA resumed its studies. The County contributed half of the funding for the study because of the importance we place on providing improvements to the road network in this strategically important area of Montgomery County. We understand that the studies have evaluated the need for improvements to the highway system in conjunction with the Master Plan recommendations and have determined that a need clearly exists for road network improvements. We further understand that these studies have included a preliminary environmental analysis, and have found no significant environmental impediments to road improvements such as access ramp connections to Rock Spring Park. We also understand that these studies have included preliminary cost analysis of several different alternatives.

Pursuant to the requirements of federal law, we know SHA is required to engage in further evaluations of the engineering feasibility of alternative road improvements and alignments. NEPA also requires that the "no-build" option be included in the analysis until completion of the study. While we know that you cannot, therefore, provide any absolute conclusions regarding specific road improvements at this time, we understand that it is reasonably probable that needed improvements will be made to the road network in the vicinity of Rock Spring Park in the foreseeable future. While we do not expect you to say at this time exactly what improvements will be made, or when they will be completed, we trust that you can provide assurance that needed improvements are reasonably foreseeable.

Again, the importance of this strategic area is well known by both the County and the state. We know that the State Highway Administration supports improvements to the road infrastructure in this area. With the cooperative efforts of the County, state and federal authorities, road improvements will be made to enhance access to Rock Spring Park, and to address safety issues on the area highway system. I request that you convey to the Montgomery County Council, the Montgomery County Planning Board, and the Hearing Examiner that improvements to I-270 in this area are probable. This will help insure that the rezoning process can proceed, thus preserving an important right-of-way for access to Rock Spring Park, as well as making certain that this location will retain its strong position into the 21st century.

Sincerely,



Douglas M. Duncan  
County Executive

DMD/rm

V-38



Maryland Department of Transportation

The Secretary's Office

M.W.O.

151

Parris N. Glendening  
Governor  
David L. Winstead  
Secretary  
Thomas L. Osborne  
Deputy Secretary

April 27, 1995

The Honorable Douglas M. Duncan  
Montgomery County Executive  
Office of the County Executive  
101 Monroe Street  
Rockville MD 20850

Post-it® Fax Note	7671	Date	# of pages ▶
To: <i>Neil</i>		From: <i>Judy</i>	
Co./Dept.		Co.	
Phone #		Phone #	
Fax #		Fax #	

Dear County Executive Duncan:

Thank you for your recent letter regarding the pending rezoning of the 54-acre Rock Spring Centre parcel in Rock Spring Park.

We understand your position that Rock Spring Park is one of the premier office locations in Montgomery County and in Maryland. As a result, our study of the interchanges serving Rock Spring Park has been assigned a high priority, with completion of the planning phase due in approximately one year.

Your letter accurately stated that our study to date has found no significant environmental features that would preclude a new interchange serving Rock Spring Park and that there is a need for such improvements. Given this fact and the County's continued support for this project, the project will remain a priority. However, as you stated in your letter, we are required to follow the provisions of the National Environmental Policy Act.

We will continue our planning study in order to reach decisions regarding alternatives and to make the selected improvements eligible for final design. As you note, NEPA requires that the No Build Alternative must be evaluated, however, the preliminary indications are that it would not meet the objectives of the project's requirements.

Again, please be assured that we are aware of the importance of this strategic area to the State of Maryland. If we can provide any additional information, please contact Mr. Neil Pedersen, Director of the Office of Planning and Preliminary Engineering for the State Highway Administration. Neil can be reached at (410) 333-1110.

Sincerely,

Thomas Osborne  
Deputy Secretary

- cc: The Honorable Derick Berlage
- Mr. William Hussman
- Mr. Creston J. Mills, Jr.
- Mr. Neil J. Pedersen
- Secretary David L. Winstead

V-39



PROJECT  
DEVELOPMENT  
DIVISION

JAN 19 9 00 AM '96

6200 Chamwood Drive  
Rockville, Md., 20852  
January 12, 1996

152

Maryland Department of Transportation  
State Highway Administration  
Project Planning Division (Attn: Tom Folse)  
P. O. Box 717  
Baltimore, Maryland, 21203

Dear Mr Folse,

This letter addresses State Highway Administration (SHA) plans for I-270 and MD Route 187 in North Bethesda and amplifies and expands the statements I made at the Public Hearing held December 12, 1995.

First, I and my family truly are grateful that you are not presently planning to try to confiscate part of our backyard for one of your roadways. We are grateful for this at least temporary change, but this gratitude is similar to that felt by kidnap victims who find that they may not be immediately killed. In both cases one may be grateful, in a relative sort of way, but one may still find considerable fault with even the relatively preferred option.

One major fault of the Maryland SHA in general is the obnoxious procedure by which SHA plans are draw up with no consideration given to noise or noise barriers which may or - more usually - may not be added "later". If SHA plans did include such barriers - from the start - whenever major roads were being widened, much hostility from affected residents could be foregone.

Both as a resident affected by traffic and as a taxpayer, I again recommend right-turn only ramps that would connect Rock Springs Office Park with I-270 northbound (at Fernwood Road) and I-270 southbound (at Rockledge Drive). I suggested these to your office back in March, 1988 and they were included again in my homeowners' association\* letter to you dated September, 1994. Another person at the recent public hearing suggested these as an "Alternative 7". I believe that two (or possibly three) right-turn-only ramps could take so much traffic from Old Georgetown Road, could cost so little, and could have been done so quickly that it amazes me that they have never been built while much more costly, complex, and intrusive alternatives are studied endlessly. I have two specific questions about this alternative:

- o How much does the SHA believe that these (simple) ramps should cost?
- o What percent of the daily traffic going into and out of Rock Springs Office Park does the SHA believe could use such ramps?

\* Windermere, aka Heritage Walk.

153

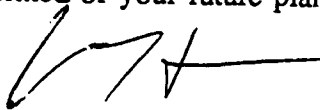
I find that SHA Alternatives 3E, 3F, and 3G are better than your earlier, similar, alternatives because you would stay on your own land rather than trying to steal mine. Your road would thus be further away and could be out of sight if constructed in the right way. As usual however, the devil is in the details - which details seem to show a roadway elevated needlessly high behind my property - so that the road could not only be heard but would be seen and could present safety problems. In 1976 we purchased our particular new house (out of all those being constructed on Charnwood Drive) precisely because it had the most land - and that land included a hill that shielded us from viewing I-270 traffic and shielded our house and yard from being viewed by I-270 traffic. Because the top of this hill appears to be about 30 feet above the present I-270 surface, I do not believe that it should be necessary for you to build a roadway that would be 24 feet higher still. Yet that is what SHA diagrams seemed to show and the figure "24 feet" was mentioned in the SHA presentation. I oppose such an elevated trafficway because it would intrude upon our privacy, and it would of course be noisy.

I believe that it would be possible to add an I-270 traffic lane behind my house within the present I-270 right-of-way at a lower altitude than envisioned by the SHA and to screen same with an earthen berm which could lie upon our homeowners' association property (the 50 feet nearest I-270). This berm would have to be high and strong both to screen the view of the roadway from Windermere and to contain such autos, trucks, buses and motorcycles as may come careening off the roadway from time to time; we do not want such vehicles to roll down into our yards and houses. As you know, such a proposal was first conceived by my neighbor Mr Vogel. I find the idea intriguing although it may not be applicable everywhere in Windermere. Certainly our homeowners' association would have to approve of such use of our common land but I could support such a plan if properly drawn up and executed. Please let me know the status of SHA thinking about such a plan.

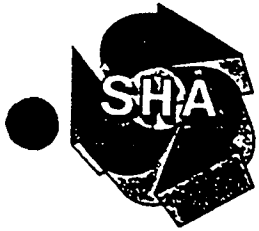
I would also like to suggest that, if necessary, the existing I-270 roadway could be moved further south - towards Rock Springs Office Park - and the existing I-270 roadway could be lowered (i.e., by digging) to lessen the need for elevation in any roadway located close to our property.

I also oppose all alternatives that would cut off Lux Lane at Old Georgetown; for our section of Windermere, this is the most-used exit and entrance, for Tuckerman traffic often prevents entry for long periods of time. Thus I oppose Alternative 2E.

I hope this lets you know how one Charnwood family feels. Please let us know what you think on these matters and keep us informed of your future plans.



James T. Holt



**Maryland Department of Transportation  
State Highway Administration**

154  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

June 19, 1996

Mr. James T. Holt  
6200 Charmwood Drive  
Rockville MD 20852

Dear Mr. Holt:

Thank you for writing to us and presenting testimony at the public hearing for our study of I-270 at MD 187, and I-270 Spur at Democracy Boulevard. I apologize for the delay in the response.

You favored a concept proposed by another citizen who testified at the public hearing. He proposed a new alternative that he named Alternative 7 consisting of four ramps as shown on the enclosed drawing:

Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;  
Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;  
Ramp C, southbound I-270 to the Rockledge Drive Connector, and  
Ramp D, Rockledge Drive Connector to southbound I-270.

We have estimated the cost of this alternative at \$3.3 million to construct, not including right-of-way acquisition. We believe that Alternative 7 would provide only short-term relief for a few selected movements. Traffic analyses conducted after the public hearing indicated that no combination of the alternatives presented at the public hearing would have facilitated traffic operations at an adequate level of service by the year 2020. Some modifications were necessary to improve projected traffic operations.

The State Highway Administrator recently selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard.

We understand your concerns about safety and noise associated with the Rockledge Connector interchange (Alternative 3E). As a result of suggestions from you and others about our original Rockledge Connector alternatives (3A and 3B), the study team developed the alternatives presented at the public hearing, which would not require right-of-way from homeowners on Charmwood Drive or the Heritage Walk Homes Corporation, and would allow Lux Lane to remain open at MD 187.

V-42

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

155

Once constructed, the traffic volume on the ramp closest to your house would be much lower than the traffic volume on I-270. We believe that the earthwork supporting this elevated ramp would serve as a barrier against noise and errant vehicles from I-270. In comparison to I-270 traffic the relatively lower traffic volumes and speeds on the ramp would generate less noise, and, in combination with a concrete barrier guardrail adjacent to the ramp, may result in a lower probability of vehicles leaving the roadway.

We have determined that a vegetated slope is feasible in place of the 24-foot high retaining wall adjacent to the ramp. The slope would require an easement or acquisition of a portion of the Heritage Walk Homes Corporation property (Parcel 999), but would not require the acquisition of any land from Chamwood Drive homeowners. We are currently working with the Washington Suburban Sanitary Commission (WSSC) to resolve some potential conflicts between our proposed slope and their proposed water line which will pass through Parcel 999. After we determine whether or not the water line can be placed under the slope, we will contact you and the affected homeowners on Chamwood Drive to discuss the aesthetic features of the slope or wall.

We appreciate your interest in our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543, or toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Enclosures

Supplemental Response:

A meeting was held on November 12, 1996, with residents along Chamwood Drive, at which SHA and WSSC representatives presented landscape/retaining wall concepts that would be compatible with the proposed water line. Residents expressed a preference for the 24-foot high retaining wall adjacent to the ramp rather than a vegetated 2:1 slope. Coordination with area residents and WSSC concerning this issue will be carried into the final design stage.

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

PROJECT DEVELOPMENT DIVISION

156

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
I-270 AND I-270 SPUR

JAN 11 10 19 AM '96

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME Eric Larsen DATE 1/2/96  
ADDRESS 9010 Mohawk La  
CITY Bethesda STATE MD ZIP CODE 20817

PLEASE PRINT

I/We wish to comment or inquire about the following aspects of this project:

Location	Alternative
I-270 & Rt 187	2E
Rodedge Dr	3F
Democracy Blvd	4D
Fernwood Rd Bridge	5B

- Please add my/our name(s) to the Mailing List. \*
- Please delete my/our name(s) from the Mailing List.

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List



Maryland Department of Transportation  
State Highway Administration

157

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

June 19, 1996

Mr. Eric Larsen  
9010 Mohawk Lane  
Bethesda MD 20817

Dear Mr. Larsen:

Thank you for your January 2 letter about the study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard. I apologize for the delay in the response.

On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. A copy of the brochure from the public hearing is enclosed for reference.

Alternative 2E was not selected because it could not be constructed in combination with any of the general use Rockledge Drive Connector alternatives (3E, 3F, or 3G). An interchange at the Rockledge Drive Connector will be needed to accommodate future traffic demand to and from Rock Spring Park. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard. Alternative 4D was not selected because it would have included a very tight loop ramp. Some loop ramps of similar design throughout the state have been replaced recently because of operational and safety problems. Alternative 5B was not selected because it would have served much of the same traffic to and from the north as Alternative 3E. Alternative 5C will facilitate high occupancy vehicle usage to and from Rock Spring Park.

Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Enclosure

V-45

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

PROJECT  
DEVELOPMENT  
DIVISION

JAN 2 10 01 AM '96

158

**NationsBank**

December 23, 1995

Mr. Thomas K. Folse, Project Manager  
Maryland State Highway Administration  
Project Planning Division  
P.O. Box 717  
Baltimore, Maryland 21203-0717

Re: SHA 12/12/95 PUBLIC HEARING ON I-270 INTERCHANGE  
IMPROVEMENTS TO ROCK SPRING PARK

Dear Mr. Folse:

I am sorry that I was not able to attend the December 12th hearing, but I would like to submit the following comments pertaining to the proposed alternates under study for Rock Spring Park.

NationsBank is vitally interested in the I-270 and West Spur interchange improvements. The Bank has a 7 story building at 6610 Rockledge Drive, which is a local headquarters for a number of our business lines. We want to voice our strong support for this project and to express our desire to see these improvements move forward at the earliest possible opportunity.

In 1982, NationsBank located to Rock Spring Park to take advantage of its strategic regional location, excellent highway access and prestigious corporate environment. Unfortunately, these advantages have been somewhat diminished due to traffic conditions which have worsened over time. The increased congestion impairs our business operations at this location and causes hardships for our employees and customers.

We believe that Rock Spring Park is critically important to both Montgomery County and the State's economic development efforts. In addition to NationsBank, the park is home to some of the state's most important employers, including Marriott International, Lockheed Martin, Comsat and IBM/Loral. It has increased the State's and the County's tax base substantially. Park employers provide employment for thousands of Montgomery County residents in well-paying positions. In order to maintain Rock Spring Park's competitive edge, and to

159

continue to lure high caliber employers to Maryland, it is important that the traffic situation be addressed sooner rather than later.

The planned improvements are needed to address the existing high congestion levels of the area and to improve the safety conditions. The improvements become even more critical when one considers the recent expansion of Montgomery Mall and the 15,000 new jobs planned for Rock Spring Park over the next decade.

Of these options being considered, those that will provide direct access to Rock Spring Park from the Interstate will provide the most dramatic improvements to traffic flow. The unacceptable congestion on the local road systems that the community is now experiencing would be relieved by direct access to I-270.

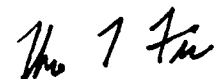
We ask that SHA place the highest priority on the Rockledge Connector direct access options 3E or 3G that provide full northbound and southbound access to I-270. In addition, the ramp access around the back of Martin Marietta as shown on 6B when coupled with 3E or 3G would provide much needed relief to the area road system.

We are also supportive of Alternate 5B, the half-diamond interchange at the new Fernwood Bridge that would provide direct access to and from northbound I-270.

NationsBank urges the State to place the highest priority on finalizing the study and to expedite the construction of these much needed improvements.

Thank you for your attention to this most critical need and for considering our views.

Sincerely,



Thomas T. Firth III  
Senior Vice President



160



**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

June 19, 1996

Mr. Thomas T. Firth  
Senior Vice President  
NationsBank  
Private Client Group  
5550 Friendship Boulevard  
Chevy Chase MD 20815-7201

Dear Mr. Firth:

Thank you for your December 23, 1995, letter about the study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard. I apologize for the delay in the response.

Your letter supported either of the Rockledge Drive Connector direct access alternatives 3E or 3G that would provide full northbound and southbound access to and from I-270; Alternative 6B, the ramp access around the back of the Lockheed Martin property; and Alternative 5B, the half diamond interchange at Fernwood Road that would provide direct access to and from the north via the I-270 Spur.

The State Highway Administrator recently selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. These intersection improvements, in combination with the selected alternatives, would bring all of the intersections in the study area to an acceptable level of service through the design year 2020. A brochure from the public hearing is enclosed for reference.

Alternative 6B was not selected because traffic analyses conducted after the public hearing indicate that Alternative 4A with modifications, and improvements to the Democracy Boulevard intersection at Fernwood Road will serve as an adequate substitute for Alternative 6B, and can be constructed at a lower cost. Alternative 5B was not selected because it would have provided interchange movements that would already be provided under Alternative 3E.

V-48

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street, Baltimore, MD 21202

**C. Citizens' Comments Received Subsequent to Public Hearing**

STATE HIGHWAY ADMINISTRATIVE  
QUESTIONS AND/OR COMMENTS


162

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
I-270 AND I-270 SPUR  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME \_\_\_\_\_ DATE 12/13/95

PLEASE  
PRINT

ADDRESS  Barbara C Mobley  
5909 Rudyard Dr  
Bethesda MD 20814-2233

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

I/We wish to comment ~~on~~ ~~in~~ about the following aspects of this project:

I attended the Public Hearing on December 12.  
Your staff presented a clear overview of the  
project. However, I was particularly impressed  
by the first speaker. He was from Potomac,  
a Mr. Garson (?). He showed two slides which  
he referred to as Alternative 7. His plan had  
2 entrance ramps and 2 exit ramps from  
the I-270 spurs. It showed the least disruption  
to adjoining properties. Furthermore, it appeared  
to be much less costly than other Alternatives des-  
cribed in your brochure. It would be my first choice.  
One additional comment: I do not agree with  
the use of HOV lanes. They are discriminatory to  
those who must drive alone. Since all taxpayers share  
the cost of roadbuilding, they should be entitled to

- Please add my/our name(s) to the Mailing List. \* drive in all lanes of
- Please delete my/our name(s) from the Mailing List. public highways.

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List

1163



**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

June 18, 1996

Ms. Barbara C. Mobley  
5909 Ruyard Drive  
Bethesda MD 20814-2233

Dear Ms. Mobley:

Thank you for your December 13, 1995, letter about our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard. I apologize for the delay in response.

You favored a concept proposed by one of the citizens who testified at the public hearing. He proposed a new alternative that he named Alternative 7 consisting of four ramps as shown on the enclosed drawing:

- Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;
- Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;
- Ramp C, southbound I-270 to the Rockledge Drive Connector; and
- Ramp D, Rockledge Drive Connector to southbound I-270.

We believe that Alternative 7 would provide only short-term relief for a few selected movements. Traffic analyses conducted after the public hearing indicated that no combination of the alternatives presented at the public hearing would have facilitated traffic operations at an adequate level of service by the year 2020. Some modifications were necessary to improve projected traffic operations.

Recently, the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. These intersection improvements, in combination with the selected alternatives, would bring all of the intersections in the study area to an acceptable level of service through the design year 2020. A brochure from the public hearing is enclosed for your reference.

V-51

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Ms. Barbara C. Mobley  
Page 2  
June 18, 1996

1164

Please call the project manager, Thomas K. Folsie, if you would like to discuss this further.  
Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folsie  
Thomas K. Folsie  
Project Manager  
Project Planning Division

Enclosures

165

Comments for I-270 at MD Route 187 and I-270 Spur at Democracy Boulevard Location / Design Public Hearing December 12 1995.

I offer the following comments on eliminating congestion on the two exits and entrances at I-270 and Route 187 and I-270 Spur at Democracy Boulevard and on other roads in the area:

I recommend adding a new alternative that I label Alternative 7. This entails building One Off ramp and One On ramp on the Northbound Western Spur of I-270 into the Rock Springs Office Park, and One Off and One On ramp on the Southbound Eastern Spur into the Rock Springs Office Park as shown in the attached sheet. Is there any reason that all road designs must be symmetrical. Please note that the length of acceleration lane in these proposals is longer than that at Montrose Road or Route 28.

This will accommodate most of the traffic needs of Rock Spring Office Park at a significant cost savings over the State Highway Administration plans and could be completed significantly faster.

We saw the Maryland State Highway Administration create HOV lanes on the Eastern Spur of I-270. Has this helped traffic. No! Traffic has become worse because the need was not for HOV lanes but for additional capacity on the Old Georgetown Road exit. In fact HOV on the Eastern Spur of I-270 should be lifted until the construction on the Western spur is completed.

Much of the problems with the Beltway and I-270 is that the local roads cannot accept the amount of traffic that wants to exit the main roads. Such as the backup on I-270 Southbound is caused by the insufficient capacity of the Old Georgetown Road Exit. Eastbound traffic on I-495 backs up in the morning rush hour to beyond River Road, because the Eastbound Democracy Road exit on I-270 cannot accept the traffic leaving I-270.

The proposal to build any of alternatives 4A, 4B, 4C or 4D is not needed since the problem is not what it appears to be.

The problem with the southbound western spur occurs in Virginia where the Southbound I-495 backs up at the Dulles Toll Road exit because the One lane Exit cannot handle all the traffic that wants to exit onto the Dulles Toll Road. Adding a lane from Southbound I-495 to the Westbound Dulles Toll Road would help. It should be noted that the extension to Leesburg has added extra traffic to the ramp. A little further south Route 123 Southbound cannot handle all the traffic that wants to exit and this causes backups on I-495. This backup in the afternoon often starts at before the Southbound entrance ramp from Democracy Boulevard. The ramp at Democracy Boulevard should not be widened to correct a problem that is occurring in Virginia. This is listed as 4C or 4D and is listed to cost between \$8,100,000 and \$8,800,000. The work should be performed in Virginia.

The problem with the traffic exiting Northbound I-270 then going

1666

Westbound on Democracy Boulevard can be eliminated by painting the right lane of Westbound Democracy Boulevard with White Cross hatching between the entrance to Northbound I-270 and the exit from Northbound I-270 and not permitting traffic in the right lane of the 3 lanes in this location. The addition of the two lanes in each direction on the Westlake Terrace road has changed the volumes on Democracy Boulevard.

The problem with the traffic exiting Northbound I-270 then going Eastbound on Democracy Boulevard can be eliminated by painting the right lane of Eastbound Democracy Boulevard with White Cross hatching between the entrance to Northbound I-270 and the exit from Northbound I-270 and not permitting traffic in the right lane of the 3 lanes in this location. The addition of the two lanes in each direction on the Westlake Terrace road has changed the volumes on Democracy Boulevard.

If you are interested in reducing the traffic on I-495 and I-270. Consideration to building Three or more Bridges over the Potomac River Connecting Maryland and Virginia should be given. This will reduce the volume using I-270 and I-495. The last bridge built over the Potomac was over 25 years ago.

Some possible Bridge locations are as follows:  
Connecting Maryland Route 109 with an extension of VA Route 28.  
Connecting Maryland 112 with Virginia Route 228.  
Connecting an extension of Maryland 189 with local roads in VA.

The cost of some of these bridges will be less than two sets of HOV entrance and exit ramps.

Increasing the Speed Limit on I-270 North of the Split to 65 miles per hour, will increase the capacity of the I-270 by 20% and will result in less accidents since all traffic can move at the same higher speed.

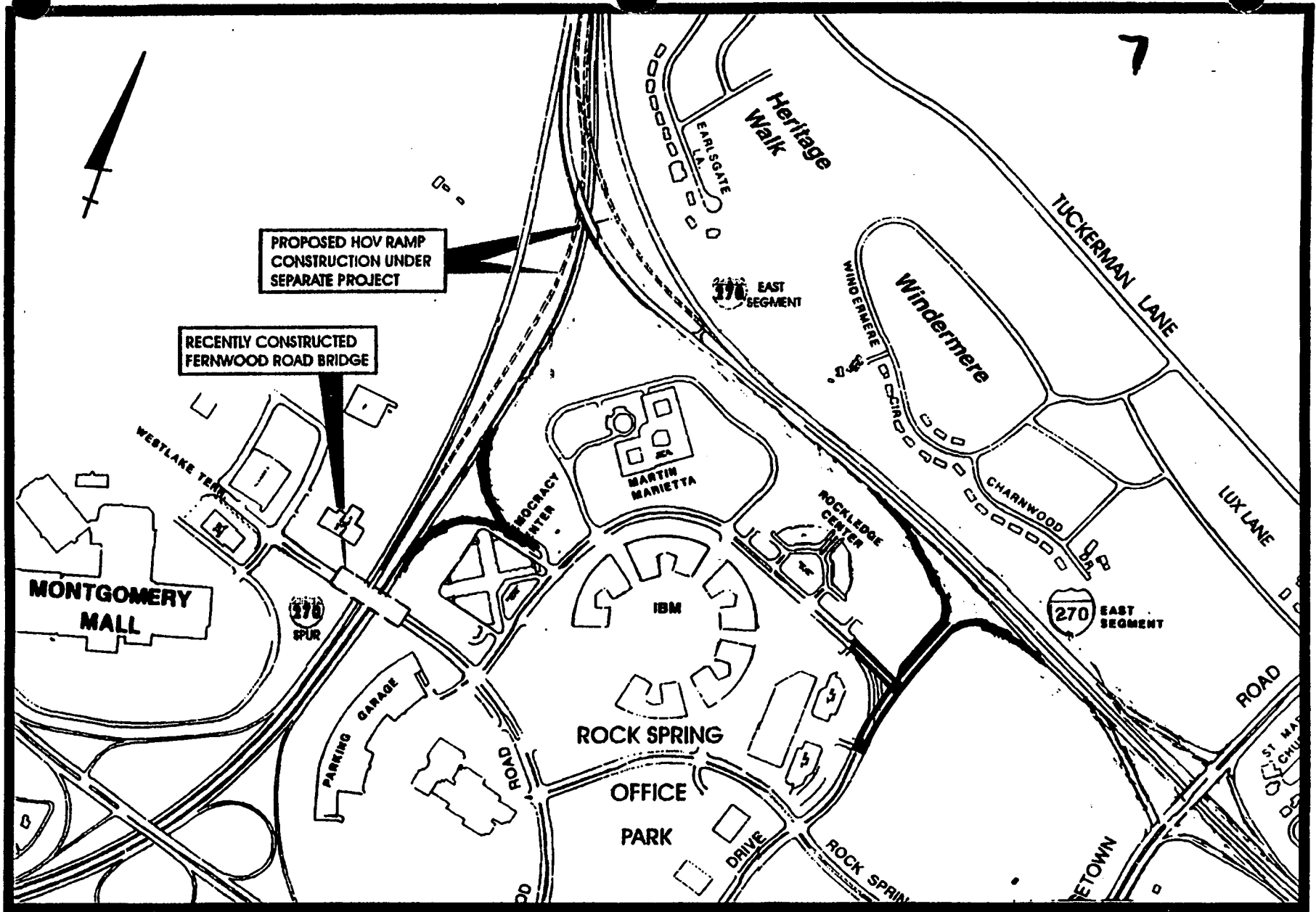
If a no build alternative is decided on Ramp Metering should be provided at the Westbound Democracy Road entrance to Northbound I-270 since over 1,200 vehicles per hour enter the road, This is way beyond the capacity of the road and would require a additional northbound lane on the Western Spur of I-270.

The construction work related to this and all other projects in the area should be performed 6 or 7 Days a Week, 24 hours a day, with the possible exception of Rush hours to minimize disruption to traffic. Contracts should have a major goal of prompt completion of the project, with minimal disruption to traffic flow. This will save money because the contractors will not have to spend time securing and relocating the equipment before and after each shift.

Jerrold Garson  
12901 Missionwood Way  
Potomac, Maryland 20854

(301) 309-0103

December 12, 1995



V-55

NOT TO SCALE

ALTERNATIVE 7

FIGURE

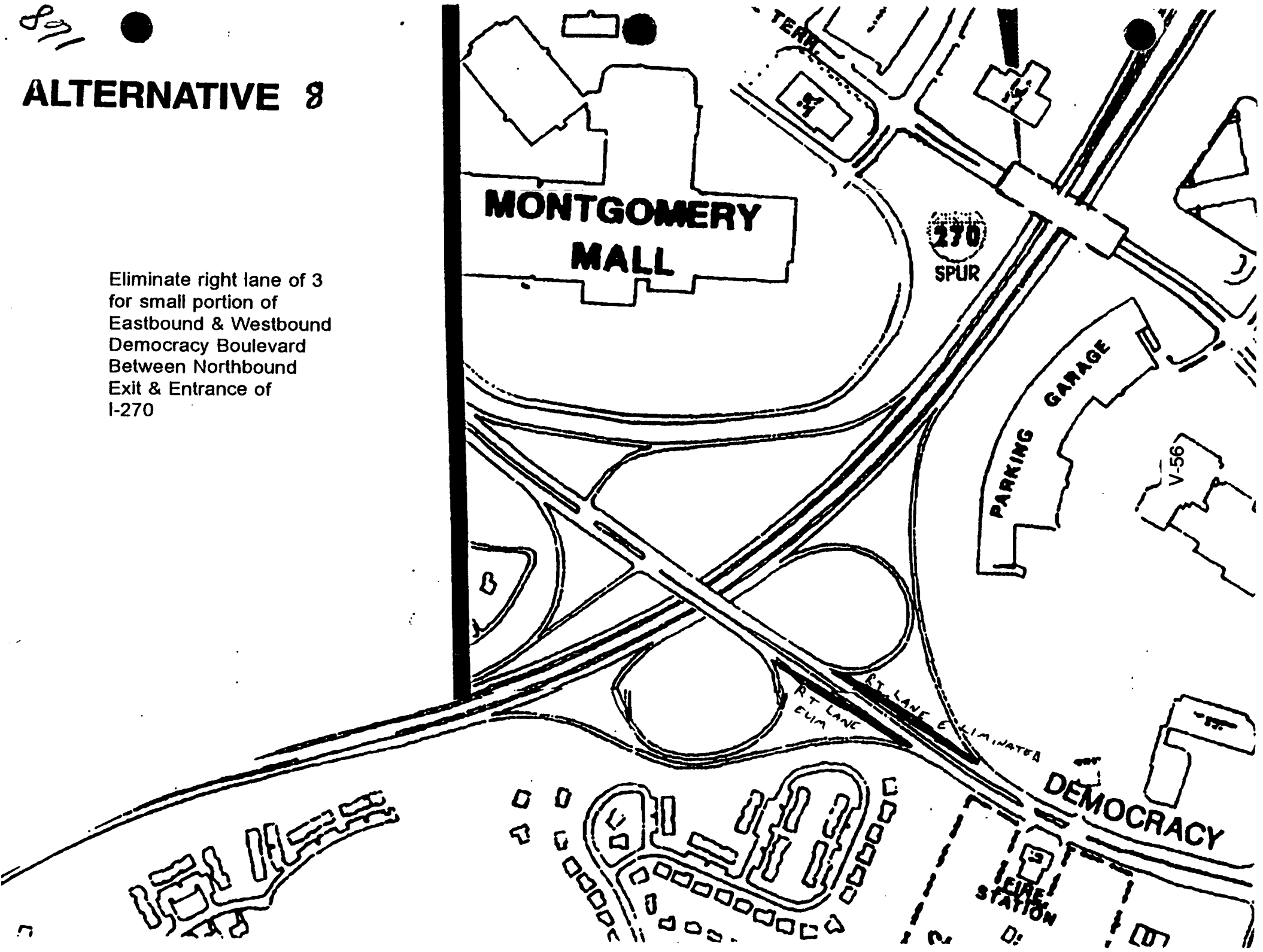
167



891

# ALTERNATIVE 8

Eliminate right lane of 3  
for small portion of  
Eastbound & Westbound  
Democracy Boulevard  
Between Northbound  
Exit & Entrance of  
I-270





**Maryland Department of Transportation  
State Highway Administration**

169  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

April 22, 1996

Mr. Jerrold Garson  
12901 Missionwood Lane  
Potomac MD 20854

Dear Mr. Garson:

Thank you for writing to us and presenting testimony at the public hearing for our study of I-270 at MD 187, and I-270 Spur at Democracy Boulevard.

You proposed a new alternative that you named Alternative 7 consisting of four ramps:

Ramp A, northbound I-270 Spur to Rockledge Drive, north of Fernwood Road;  
Ramp B, Rockledge Drive to northbound I-270 Spur, north of Fernwood Road;  
Ramp C, southbound I-270 to the Rockledge Drive Connector;  
Ramp D, Rockledge Drive Connector to southbound I-270.

Although ramps B and C would act as a complementary pair, return movements for ramps A and D would require using existing ramps at MD 187 and at Democracy Boulevard. Your letter acknowledges insufficient capacity at the MD 187 interchange, but proposes no solution. You also opposed Alternatives 4C and 4D, which would facilitate the return movement for Ramp A. Alternative 7 would also create a weaving section on the northbound I-270 Spur between the ramp from westbound Democracy Boulevard and Ramp A in an area that you have identified an existing capacity problem.

Your letter and testimony provided an enlightening description of the existing traffic congestion problems in the study area and beyond. However, we believe that Alternative 7 would provide only short-term relief for a few selected movements.

Your suggestion to create acceleration and deceleration lanes on Democracy Boulevard for ramps to and from the I-270 Spur by utilizing an existing through-lane in each direction may interfere with the operation of the Democracy Boulevard intersection at Fernwood Road. By forcing through-traffic into the left and center lanes of Democracy Boulevard, queued vehicles would not be distributed evenly among the lanes approaching Fernwood Road, which could lead to less efficient operation of this congested intersection.

V-57

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. Jerrold Garson

Page 2

April 22, 1996

On March 28, the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard.

We appreciate your interest in our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543, or toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

171

To: Mr. Thomas K. Folse  
Project Planning Division  
State Highway Administration  
707 North Calvert Street  
Baltimore, MD 21202

Re: I-270 Spur at Maryland Route 187

My family has been in two traffic accidents in the last six months, one at Rock Spring Drive and Route 187 and one off Route 187, at Tuckerman lane and Arroyo. These resulted in injuries to seven persons including two children. Therefore we are very concerned with traffic safety in the area around the above I-270 spur. We live off Tuckerman Lane and have a great deal of trouble in daily traffic in this area.

The problem with modification to the I-270 exit at Route 187, or with a new exit at Rockledge Drive, is that the latter especially would seem to promise relief for local traffic. The Catch-22 is that this opens up development of the Davis tract and increased density of the Rockledge area and lands us right back into an unsafe excess of traffic.

We would like to go on record as opposing further development at this end of I-270. We would like the same effort put into improved access upcounty in the roads, e.g., in the unfinished connections to Middlebrook Road, as upcounty commuting friends have told us. New commercial development in this area near I-270 would be closer to upcounty residential areas and would reduce I-270 commuting downcounty in the morn, upcounty in the evening which is already overloaded.

We would also wish to have some improvements on Route 187, for example a traffic light in front of Tilden Middle School and a "no right turn on red" southbound on Route 187 at Tuckerman Lane. The latter would improve the safety record of one of the county's worst intersections. Our requests for this have met with no action. How can we sanction growth at I-270 when local road conditions have not been addressed? Already people have learned to exit from I-270 and use local access roads as alternatives when traffic is heavy. More development will reduce our safety.

We am writing not with the idea of "not in my backyard," but with fear for our family's survival in this local traffic. We are getting tired of the ambulances along Route 187, especially at Tuckerman Lane.

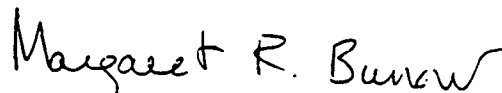
172

Thank you for including our opinion.

Yours sincerely,



Barry Bunow



Margaret R. Bunow  
11207 Buckwood Lane  
Rockville, MD 20852-3607  
December 12, 1995



**Maryland Department of Transportation  
State Highway Administration**

173  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

April 18, 1996

Barry and Margaret R. Bunow  
11207 Buckwood Lane  
Rockville MD 20852-3607

Dear Mr. and Mrs. Bunow:

Thank you for your letter about the study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.


On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. These intersection improvements, in combination with the selected alternatives, would bring all of the intersections in the study area to an acceptable level of service through the design year 2020, even with development of the Davis Tract.

Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-61

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATIVE  
QUESTIONS AND/OR COMMENTS

174

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
**I-270 AND I-270 SPUR**  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME GLEDINARDI DATE 12/12/95

PLEASE  
PRINT

ADDRESS 6320 COUGHURST RD

CITY Beth STATE MD ZIP CODE 20817

I/We wish to comment or inquire about the following aspects of this project:

FAVOR 2E - REDUCES ~~ANNOYING~~  
TRAFFIC SIGNAL

FAVOR 3G - AGAIN, MINIMIZES  
LEFT TURN MOVEMENT,  
MAXIMIZES FLOW  
& SAFETY

FAVOR 4D - AGAIN, <sup>RIGHT</sup> ~~LEFT~~ ~~SIGNAL~~  
BETTER

5B TECHNICAL IDEA

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

175



**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

April 18, 1996

Mr. Greg Dinardi  
6320 Rockhurst Road  
Bethesda MD 20817

Dear Mr. Dinardi:

Thank you for the comments you submitted to us at the public hearing for our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C.

Alternative 2E was not selected because it could not be constructed in combination with any of the general use Rockledge Drive Connector alternatives (3E, 3F, or 3G). An interchange at the Rockledge Drive Connector will be needed to accommodate future traffic demand to and from Rock Spring Park. Alternative 3G was not selected because it would not have provided sufficient distance for vehicles to maneuver in heavy traffic from southbound I-270 to the proposed Rock Spring Centre development via the Rockledge Drive Connector. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard. Alternative 4D was not selected because it would have included a very tight loop ramp. Some loop ramps of similar design throughout the state have been replaced recently because of operational and safety problems. Alternative 5B was not selected because it would have served much of the same traffic to and from the north as Alternative 3E. Alternative 5C will facilitate high occupancy vehicle usage to and from Rock Spring Park.

V-63

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



Mr. Greg Dinardi  
Page 2  
April 18, 1996

176

Please call the project manager, Thomas K. Folse, if you would like to discuss this further.  
Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

177

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
I-270 AND I-270 SPUR  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME LILLIAN VAN SANTEN DATE 12/8/95

PLEASE PRINT

ADDRESS 6501 WINDERMERE Circle

CITY Rockville STATE MD ZIP CODE 20852

I/We wish to comment or inquire about the following aspects of this project:

As a WINDERMERE RESIDENT FOR OVER 20 YRS, I  
HAVE A KNOWLEDGE OF THE AREAS CHANGES AND  
OF THE DRIVING PATTERNS NEARBY. OF COURSE THE  
DENSITY DURING THE 20 YRS HAS REQUIRED RESULTED IN MUCH  
MORE TRAFFIC ON TUCKERMAN (THE TUCKERMAN EXTENSION THRU TO  
ROCKVILLE PIKE & TO THE METRO HAS ALSO PROPERLY INCREASED TRAFFIC)  
AN IMPACT ON <sup>CITY RESIDENTS OF THE</sup> OLD WINDERMERE SECTION IS THAT THEY HAVE BECOME SOMEWHAT  
"IMPRISONED" TRAFFIC WISE (LEFT TURNS ONTO TUCKERMAN ARE A CRAP SHOOT)  
THE <sup>LUX LANE</sup> TUCKERMAN LANE EXIT (ENTRANCE) FROM (AND TO) WINDERMERE ARE IS  
BECOMING MORE USED INCREASINGLY TO AVOID TUCKERMAN BUT MORE IMPORTANTLY TO GET  
OUT, IF EXITING, <sup>WHEN GETTING INTO WINDERMERE</sup> AND TO AVOID BEING ON TUCKERMAN WHILE MAKING A LEFT TURN,  
(OCCASIONALLY ONE CAN HEAR THE CRUNCH OF METAL AS THOSE TURNING LEFT <sup>FROM TUCKERMAN</sup> AT ANY ONE OF  
THE SEVERAL STREETS INTO <sup>WINDERMERE</sup> TUCKERMAN GET IT. THE END POINT IS "DON'T" CLOSE OFF <sup>LUX</sup> TUCKERMAN  
LANE ONTO OLD GEORGETOWN AS IN ALT 2E. AS TO THE OTHER ALTERNATE IMPROVEMENTS  
FAVOR 2D (PREFER 2E except for closing LUX LANE), 3F, 4D & 5B - BUT ENTIRELY THE STIFF

- Please add my/our name(s) to the Mailing List. \*To BE BOLD & ADDRESS THE FUTURE & NOT THE PRESENT.
- Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List V-65



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

178

April 18, 1996

Ms. Lillian van Santen  
6501 Windermere Circle  
Rockville MD 20852

Dear Ms. Santen:

Thank you for your letter about the study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. The MD 187 intersection at Tuckerman Lane is one of these intersections.

The combination of alternatives addresses most of your concerns. Alternative 2D will allow Lux Lane to remain open at MD 187. Alternative 3E will accommodate future traffic demand to and from Rock Spring Park. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard. Alternative 4D was not selected because it would have included a very tight loop ramp. Some loop ramps of similar design throughout the state have been replaced recently because of operational and safety problems. Alternative 5B was not selected because it would have served much of the same traffic to and from the north as Alternative 3E. Alternative 5C will facilitate high occupancy vehicle usage to and from Rock Spring Park.

Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

My telephone number is — V-66 —

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

PROJECT DEVELOPMENT DIVISION

179

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing

DEC 11 11 20 AM '95

I-270 AND I-270 SPUR

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME John VAN SANTEN DATE 12/6/95

PLEASE PRINT ADDRESS 6501 WINDERMERE CIRCLE

CITY Rockville STATE MD ZIP CODE 20852

I/We wish to comment or inquire about the following aspects of this project:

1. Our choice is ALT 2D. We strongly oppose 2E because as a  
Windsorwood resident we have great difficulty getting out of Windsorwood so  
need to have the Lux Lane Exit to Road 187 (old Georgetown) kept open.  
However we would prefer the 2E alternative if the Lux Lane exit is kept open.

2. As to the Rockledge Connector I highly recommend ALT 3F because it  
will address, at least partially, future needs. There will be more density  
on the Lane Tract than estimated.

③ Rec 4B. A priority should be to keep the present 270 north loop to  
Mont Mall as well as have a merge lane. I wish the Democracy  
West Loop on all 7D were added or included in ALT 4B along  
with the elimination of the ramp from Democracy to 270 South.

Lastly - I may be in the minority but I strongly advocate  
building now for the future - and to invest the funding needed  
to do so.

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List



**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

180

April 18, 1996

Mr. John van Santen  
6501 Windermere Circle  
Rockville MD 20852

Dear Mr. Santen:

Thank you for your letter about our study of I-270 at MD 187, and I-270 Spur at Democracy Boulevard.

On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval. 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. The MD 187 intersection at Tuckerman Lane is one of these intersections.

The combination of alternatives addresses most of your concerns. Alternative 2D will allow Lux Lane to remain open at MD 187. Alternative 3E will accommodate future traffic demands to and from Rock Spring Park. Alternative 4A has been modified to retain the loop ramp from northbound I-270 Spur to westbound Democracy Boulevard. Alternative 4D was not selected because it would have included a very tight loop ramp. Some loop ramps of similar design throughout the state have been replaced recently because of operational and safety problems.

Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or toll-free in Maryland, 1-800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-68

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

181

**NORTH BETHESDA CONGRESS OF CITIZENS ASSOCIATIONS**

c/o 6024 Rossmore Drive  
Bethesda, MD 20814

December 6, 1995

**Maryland Department of Transportation  
State Highway Administration**

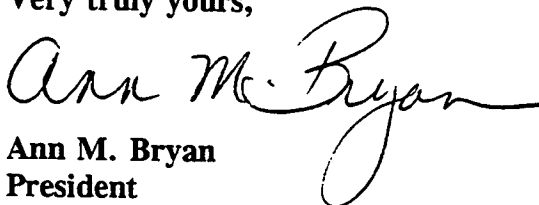
**Re: Location/Design Public Hearing on I-270 at Maryland Route 187 & I-270 Spur  
at Democracy Boulevard, December 12, 1995**

The North Bethesda Congress of Citizens Associations ("NBC") has reviewed various documents prepared by the State Highway Administration ("SHA") regarding various proposals to improve interchanges at I-270 in the North Bethesda Area.

The NBC represents approximately 35,000 residents in Montgomery County, Maryland. NBC has done a preliminary review of the documents and has discussed these issues with SHA representatives.

Enclosed, please find our testimony for your review and consideration. We thank you for all the time and attention you have given to trying to solve our very serious traffic congestion problems in the North Bethesda Area. We look forward to working with you on this project.

Very truly yours,



**Ann M. Bryan  
President**

182

Subject: Location/Design Public Hearing on I-270 at Maryland Route 187  
& I-270 Spur at Democracy Boulevard, December 12, 1995

Traffic congestion is a major concern of the residents of North Bethesda. For example, traffic was the number one citizen concern in the discussions on the Master Plan, and recently over 500 letters in opposition to rezoning the Davis tract to MXPDP have been submitted to the County Hearing Examiner based on traffic concerns.

Data developed for the State Highway Administration (SHA) as part of this study shows these concerns to be well founded. Traffic counts were made at five signalized intersections on Old Georgetown Road; Tuckerman Lane, I-270 Ramp (North), I-270 Ramp (South), Rock Springs Drive, and Democracy Boulevard. All five intersections are failing at Level of Service (LOS) F. In addition, Democracy Boulevard at Fernwood Road is also at LOS F. (See - BMI Draft Report May 1995 Exhibits 18 and 19, and Environmental Assessment Figure II-7).

As expected, the no-build option in this study predicts increased congestion in the analysis year of 2020. The options in this study provide some of the needed relief on Old Georgetown Road at the two intersections at the I-270 ramp (Environmental Assessment page II-14). However, none of the options under consideration are predicted to reduce the congestion at Old Georgetown/Tuckerman, and for Democracy/Old Georgetown the best option is projected to have only a marginal improvement over the no build option in 2020. (PM v/c of 1.43 vs. 1.48 for no build - BMI Exhibits 18 & 19). Such a result means a continuation of unacceptable congestion on Old Georgetown Road and a continued delay of development on the Davis tract, frustrating both citizens and the developer.

Analyses conducted to date in this study wisely assumed that no improvements would be made in the Beltway in the analysis year of 2020. However to make the best choice among the various ramp options in the current SHA study, a "what if" scenario appears to be needed. I.e., what is the predicted impact on the failing intersections on Old Georgetown Road if a solution for the predicted Beltway congestion is (1) found and (2) implemented such that 2020 congestion on the Beltway is no worse than today?

Specifically, information supplied by SHA indicate that the 2020 analysis assumed no change in the configuration of the Beltway resulting in a predicted average peak period Beltway speed of about 20 mph compared to about 40 mph today. This 40 to 20 mph reduction in travel speed causes the model to predict a diversion of traffic which impacts Old Georgetown Road.

This could mean that to best address the major current problem of the five failing intersections on Old Georgetown Road, the preferred ramp option in this study may be linked to the outcome of the Beltway Major Investment Study (MIS) now underway. The issue being diversion of traffic desiring to travel to or from the East on the Beltway to Old Georgetown Road due to Beltway congestion. This is a very real issue for traffic with origins or destinations in Rock Springs Park. The applicant's ITS "Traffic Analysis" submitted with the request for rezoning the Davis tract to MXPDP shows that 21% of the office trips and 25% of the residential trips generated by the Rock Springs development would prefer to use the Beltway from Rockville Pike (MD 355) East.

183

Predictable Beltway congestion would cause large portions of this traffic to choose alternate routes affecting Old Georgetown Road.

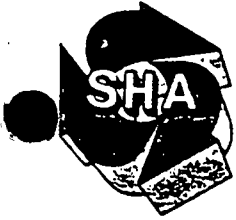
We believe that the most promising study alternatives need to be examined under a scenario in which the average 2020 peak hour travel speed is about 40 mph, the same as the model indicated for current conditions. The most promising option for this scenario may be different than the one selected based on the computer runs conducted to date.

If this is indeed the case, then the selection of the best ramp alternative is *in fact* linked to the outcome of the current Beltway MIS study. However, the best ramp selection cannot then be made before the practicality of Beltway relief in the foreseeable future is determined. At issue is the substantial impact of costs and possible environmental concerns associated with the need for additional right-of-way and relocation of sound barriers in order to widen the Beltway East of MD 355. (See March 3, 1995 letter from Neil J. Pedersen to Ann M. Bryan). Further, the efficacy of alternate means of relieving congestion in this section of the Beltway have yet to be estimated. Delay in a selection of ramp alternatives pending the resolution of these MIS study issues is of little consequence since funding for final ramp design is not yet programed by SHA.

In summary, we recommend that this study examine the possibility that 2020 peak hour Beltway speeds better than ½ the current values can be achieved by implementing the findings of the current MIS study. The scenario analyzed to date by SHA would continue the current unacceptable congestion on Old Georgetown Road and will continue to delay development of the Davis tract. Citizens, developers and County officials concerned with transportation-development balance issues in the Rock Springs area of North Bethesda will benefit from a realistic look at the costs and benefits of providing relief from Beltway congestion.

We greatly appreciate the timely and professional assistance provided by Ms. Mona R. Sutton and Mr. Thomas K. Folse of SHA which enabled us to have a clearer understanding of the traffic implications of the alternatives under consideration.





**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

April 18, 1996

Ms. Ann Bryan  
North Bethesda Congress of Citizens Associations  
6024 Rossmore Drive  
Bethesda MD 20814

Dear Ms. Bryan:

Thank you for your letter and the North Bethesda Congress of Citizens Associations' testimony at the public hearing for our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

We share your concern about current and projected levels of service for the MD 187 intersections at Tuckerman Lane, Rock Spring Drive and Democracy Boulevard, and the Democracy Boulevard intersection at Fernwood Road. However, we believe that any improvements currently under consideration on the Capital Beltway (I-495) would have only a minor effect on the levels of service at these intersections. The variation of these effects by alternative, in combination with I-495 improvements, would be insignificant. We cannot justify the expense of further travel demand modeling, which we believe will not yield useful results.

On March 28 the State Highway Administrator selected a combination of alternatives for which we will seek location approval: 2D (with modifications), 3E, 4A (with modifications), 4C and 5C. At the same time, the Administrator directed that specific intersection improvements recently developed by the study team be implemented by others. These intersection improvements would bring the four failing intersections to level-of-service E or better through the design year 2020.

My telephone number is V-72 \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

183

Ms. Anne Bryan  
Page 2  
April 18, 1996

We would be pleased to discuss our selected combination of alternatives and additional intersection improvements at one of your upcoming meetings. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

186

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
**I-270 AND I-270 SPUR**  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME Jeffrey N. Federman DATE 11/14/95

PLEASE  
PRINT

ADDRESS 6729 Surreywood Lane

CITY Bethesda STATE MD ZIP CODE 20817

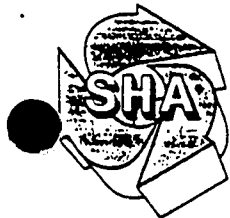
I/We wish to comment or inquire about the following aspects of this project:

- noise levels were measured 5 feet above the ground, however the increased noise will adversely affect homeowners who dwell in homes with second stories well above that height. Additionally noise measurements were taken when the buffer trees still had leaves and the impact will be far greater in the fall and winter.
- I strongly oppose any construction bordering on Surreywood Lane. The increased traffic is due primarily to retail and commercial business located on the opposite side of Democracy Blvd. (the residential areas have been established for quite some time). It follows suit then, that alternatives enhancing the ramps on the other side of Democracy Blvd., and Fernwood (on the business park side) would be more equitable solutions. Construction bordering on Surreywood Lane would have an <sup>unwarranted</sup> adverse affect on property values.

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List



**Maryland Department of Transportation**  
**State Highway Administration**

187

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 15, 1996

Mr. Jeffrey N. Federman  
6729 Surreywood Lane  
Bethesda MD 20817

Dear Mr. Federman:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard.

You expressed strong opposition to alternatives 4A and 4B, which would require reconstructing the ramp from northbound I-270 Spur to eastbound Democracy Boulevard, which is adjacent to Surreywood Lane. No alternative or combination of alternative under consideration will address all of the congested traffic movements to and from I-270 and the I-270 Spur without construction or reconstruction of ramps near residential areas.

You also expressed concern about how and when our ambient noise measurements were conducted. The method used to model noise levels was developed by the Federal Highway Administration (FHWA). This method uses an experimentally and statistically determined reference sound level for each of the 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 a predicted sound level. The adjustments include traffic flow corrections, taking into account the number of vehicles and average vehicle speed; distance adjustments comparing a reference and actual distance between receiver and roadway; and adjustments for ground softness and for various types of physical barriers that would reduce noise transmission from source (the roadway) to the receiver.

The State Highway Administration (SHA) noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, a noise barrier in the Stratton Commons area may be considered.

V-75

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

**Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717**  
**Street Address: 707 North Calvert Street • Baltimore, Maryland 21202**

188

Mr. Jeffrey N. Federman  
Page Two

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Supplemental Response:

Noise barriers have been reevaluated with the Selected Alternative in the Stratton Commons area, based on the current SHA noise policy and guidelines. Since the additional lane proposed for the northbound I-270 Spur to eastbound Democracy Boulevard ramp is to be constructed so that all widening occurs away from the residences, noise levels are projected to be, at most, 1dBA higher than the no-build conditions, and the barrier reasonableness criterion of at least 3dBA increase is not met. Therefore, noise abatement at this location will not be considered further as part of this project.

PROJECT  
DEVELOPMENT  
DIVISION

Nov 31 10 55 AM '95

189

JACK W. BURKART  
LAND DEVELOPMENT MANAGER

November 29, 1995

Maryland Department of Transportation  
State Highway Administration  
Project Planning Division  
P.O. Box 717  
Baltimore, MD 21203

RE: I-270 & I-279 Spur (Interchanges at MD 187 & Democracy Boulevard  
Contract No. M401-156-372P, Alternative 5B

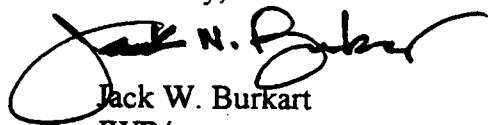
Gentlemen:

As a representative of Boston Properties, Inc, owner of Democracy Center, I wish to express some concerns with regard to alternative 5B of the above referenced project. I attended the informational public workshop on Tuesday, November 15, 1995 and viewed your preliminary plans with specific interest toward the Fernwood Road connections.

I realize that the drawings exhibited on that date are preliminary, but the consideration of alternative 5B does give us concern. I have attached a preliminary layout indicating the site plan for Democracy Center which should help illuminate Boston Properties' possible problem with 5B.

The layout indicates a below-grade garage that appears to be impacted by the access ramp turning north from Fernwood Road to I-270. I had asked an engineer present at the public workshop to forward preliminary plans for our review. Having received nothing, I am forwarding the request for the preliminary plans of alternative 5B so that we can better analyze the impact on our below-grade garage. Similarly, should you require more detailed plans, I would be pleased to forward them to the appropriate evaluating entity. Please enter my name on the mailing list and consider this letter as formal comment regarding the above referenced project.

Sincerely,



Jack W. Burkart  
JWB/anp  
Enclosure

V-77



191



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 14, 1996

Mr. Jack W. Burkart  
Land Development Manager  
Boston Properties, Inc.  
500 E Street, N.W.  
Washington DC 20024

Dear Mr. Burkart:

Thank you for your November 29, 1995, letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You expressed concern about Alternative 5B. Shortly after receiving your letter, our consultant, the Wilson T. Ballard Company, sent you a scale drawing of Alternative 5B for your review.

We believe that Alternative 5B will not impact the underground parking structure at Democracy Center. If Alternative 5B is selected, minor adjustments can be made during final design to avoid the parking structure if necessary.

As you requested, we have placed your name on our project mailing list to receive further information on the progress of the study. Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Supplemental Response:

Alternative 5B was not included as part of the Selected Alternative. Alternative 5C, consisting of a median ramp to and from the north side of Fernwood Road, has been selected.

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-79

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
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STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS PROJECT DEVELOPMENT DIVISION

192

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing Nov 20 9 48 AM '95

I-270 AND I-270 SPUR

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME George Wolford DATE 11/14/95

PLEASE PRINT

ADDRESS 9922 DERBYSHIRE LA. (STRATON WOODS)

CITY BETHESDA STATE MD ZIP CODE 20817

I/We wish to comment or inquire about the following aspects of this project:

While I understand that option 4A appears to be less expensive than 4B, CD, this option will create incredible congestion at Democracy Blvd. headed toward Montgomery Mall. I and the other owners of Straton Woods understand that 4A may move the roadway slightly away from the community but hardly enough to compensate for the noise and pollution with increased traffic volumes. I and the rest of the community vehemently oppose this option, especially without noise abatement. I personally will fight this option if noise abatement is not considered as part of the budget for this option. I will not allow this to affect the community adversely. I apologize for the informality of this letter, but I assure you, it has sincerity!

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

193

February 13, 1996

Mr. George Wolford  
9922 Derbyshire Lane  
Bethesda MD 20817

Dear Mr. Wolford:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You expressed support for Alternative 4B over Alternative 4A and asked about the possibility of constructing noise barriers in the vicinity of the Stratton Woods area.

Detailed noise studies for this project indicate that the Stratton Woods area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

A 4,287 foot long noise barrier with heights ranging from 12 feet to 24 feet was studied for the area along the ramp from northbound I-270 Spur to eastbound Democracy Boulevard. The total estimated cost would be \$1,344,600, and the cost per residence would be \$35,400. Thirty-eight residences would be benefited. This barrier is not considered reasonable as part of this project because the difference between the no-build and build noise levels for the design year 2020 is less than the State Highway Administration (SHA) criteria of five dBA difference.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Stratton Woods area may be reconsidered.

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Supplemental Response:

Noise abatement for the project was completely reevaluated based on current SHA criteria and guidelines and the Selected Alternative, which consists of a modified, scaled-down version of Alternative 4A. Although the noise barrier reasonableness threshold was reduced from a 5dBA to a 3dBA difference between no-build and build noise levels, a barrier at this location remains unreasonable because the proposed improvements will increase noise levels by, at most, 1dBA in the vicinity of Stratton Woods.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-81

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS PROJECT DEVELOPMENT DIVISION

194

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing Nov 20 9 48 AM '95

I-270 AND I-270 SPUR  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME MARC ZLOTNIK DATE 11/10/95  
ADDRESS 9926 Derbyshire LA  
CITY BETHESDA STATE MD ZIP CODE 20817

PLEASE PRINT

I/We wish to comment or inquire about the following aspects of this project:

I strongly support 4B over option 4A. 4A brings more traffic close to residential areas, while 4B keeps one ramp north of Dem Blvd, where there is no residential area. In either case sound barriers would be a big help.

- Please add my/our name(s) to the Mailing List. \*
- Please delete my/our name(s) from the Mailing List.

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

195

February 13, 1996

Mr. Marc Zlotnik  
9926 Derbyshire Lane  
Bethesda MD 20817

Dear Mr. Zlotnik:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You expressed support for Alternative 4B over Alternative 4A and asked about the possibility of constructing noise barriers in the vicinity of the Stratton Woods area.

Detailed noise studies for this project indicate that the Stratton Woods area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

A 4,287 foot long noise barrier with heights ranging from 12 feet to 24 feet was studied for the area along the ramp from northbound I-270 Spur to eastbound Democracy Boulevard. The total estimated cost would be \$1,344,600, and the cost per residence would be \$35,400. Thirty-eight residences would be benefited. This barrier is not considered reasonable as part of this project because the difference between the no-build and build noise levels for the design year 2020 is less than the State Highway Administration (SHA) criteria of five dBA difference.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Stratton Woods area may be reconsidered.

Please call the project manager, Thomas K. Foise, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Supplemental Response:

Noise abatement for the project was completely reevaluated based on current SHA criteria and guidelines and the Selected Alternative, which consists of a modified, scaled-down version of Alternative 4A. Although the noise barrier reasonableness threshold was reduced from a 5dBA to a 3dBA difference between no-build and build noise levels, a barrier at this location remains unreasonable because the proposed improvements will increase noise levels by, at most, 1dBA in the vicinity of Stratton Woods.

by: Thomas K. Foise  
Thomas K. Foise  
Project Manager  
Project Planning Division

V-83

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS PROJECT  
DEVELOPMENT  
DIVISION

196

CONTRACT NO. M 401-156-372 P

Location/Design Public Hearing Nov 15 8 52 AM '95

I-270 AND I-270 SPUR

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME Lee Schroeder DATE 11-14-95

PLEASE PRINT ADDRESS 9821 Singleton Dr.

CITY Bethesda STATE md. ZIP CODE 20817

I/We wish to comment or inquire about the following aspects of this project:

- Project 4B is a good one. I like the 2 loops but to provide access for people going E on democracy access to I-270 should be added. A separate lane w/ a left turn arrow would be better than a 3rd loop as in 4D. I believe it would be safer.
- Project 3E is a good one. It provides the long acceleration/ deceleration lanes for traffic to merge, which hopefully they will! Keeping traffic away from Rock Spring Dr. bordering the GIANT is a plus. That lot is the definition of a parking lot!
- If 2D or 2E are built at least 3E must be done to keep heavy traffic from the Giant, its already crowded enough. If IBM goes in 2E must be built!
- If 6B is done not as much on 4B would need to be done.
- Please do something about going from River Road to I-270N. Crossing over 3 lanes in a short 2mi. is a bear every day. It would make Gaithersburg more attractive.

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List



**Maryland Department of Transportation  
State Highway Administration**

197  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 13, 1996

Mr. Lee Schroeder  
9821 Singleton Drive  
Bethesda MD 20817

Dear Mr. Schroeder:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard.

We note that you favor alternatives 4B and 4C at the I-270 Spur interchange at Democracy Boulevard. As you suggest, if Alternative 6B is selected, Alternative 4B (or 4A) could be down-scaled because traffic from the northbound I-270 Spur to Rock Spring Park could use the Rockledge Drive Connector via Alternative 6B rather than using Democracy Boulevard.

You also wrote in favor of Alternative 3F, with Alternative 3E as a secondary choice, in combination with Alternative 2D or 2E. Alternative 2E cannot be constructed with the Rockledge Drive Connector Alternatives 3E, 3F or 3G, but Alternative 2D is compatible with them.

On a different subject, you asked whether we could do something to help drivers going from River Road (MD 190) to the northbound I-270 Spur via I-495. When completed, the current construction project in that area should ease congestion and facilitate the movement to the I-270 Spur.

We appreciate your interest in our study. Please call the project manager, Thomas K. Folsie, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you have any questions.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Supplemental Response:

The Selected Alternative is a combination of Alternatives 2D, 3E, a modified and scaled-down version of Alternative 4A-Signalized Option, 4C and 5C.

by: Thomas K. Folsie  
Thomas K. Folsie  
Project Manager  
Project Planning Division

V-85

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS PROJECT  
DEVELOPMENT  
DIVISION

198

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing Nov 15 8 52 AM '95  
I-270 AND I-270 SPUR

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

11/14/95  
TUESDAY, ~~DECEMBER 12, 1995~~ 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME BURTON S. HOFFMAN DATE 11/14/95

PLEASE  
PRINT

ADDRESS 6724 SURREYWOOD LANE

CITY BETHESDA STATE MD ZIP CODE 20817

I/We wish to comment or inquire about the following aspects of this project:

I AM AN OFFICER + BOARD MEMBER OF BETHESDA  
PLACE COMMUNITY COUNCIL, INC., WHICH REPRESENTS  
123 HOMEOWNERS WHOSE PROPERTIES ARE LOCATED IN  
THE STRATTON COMMONS SUBDIVISION.

I AM VERY CONCERNED ABOUT ALTERNATIVES  
4A + 4B WHICH BORDER OUR COMMUNITY.

I URGE YOU TO CONSIDER ERECTION OF SOUND  
BARRIERS. I UNDERSTAND THAT THE DECIBEL  
LEVEL AND COST PER RESIDENCE MEET THE  
CRITERIA. I DO NOT BELIEVE THAT WITH  
THE ADDITIONAL TRAFFIC, THE DECIBEL LEVEL  
WILL NOT INCREASE OVER THE PRE-CONSTRUCTION  
LEVEL, AS IS ASSERTED BY THE AUTHORITIES.

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

199

February 12, 1996

Mr. Burton S. Hoffman  
6724 Surreywood Lane  
Bethesda MD 20817

Dear Mr. Hoffman:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You expressed concern about alternatives 4A and 4B and asked about the possibility of constructing noise barriers in the vicinity of the Stratton Commons area.

Detailed noise studies for this project indicate that the Stratton Commons area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

A 4,287 foot long noise barrier with heights ranging from 12 feet to 24 feet was studied for the area along the ramp from northbound I-270 Spur to eastbound Democracy Boulevard. The total estimated cost would be \$1,344,600, and the cost per residence would be \$35,400. Thirty-eight residences would be benefited. Although ambient noise levels were measured in the range of 59 to 67 dBA, this barrier is not considered reasonable as part of this project because the difference between the no-build and build noise levels for the design year 2020 is less than the State Highway Administration (SHA) criteria of five dBA difference.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Stratton Commons area may be reconsidered.

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Supplemental Response:

Noise barriers have been reevaluated with the Selected Alternative in the Stratton Commons area, based on the current SHA noise policy and guidelines. Since the additional lane proposed for the northbound I-270 Spur to eastbound Democracy Boulevard ramp is to be constructed so that all widening occurs away from the residences, noise levels are projected to be, at most, 1dBA higher than the no-build conditions, and the barrier reasonableness criterion of at least 3dBA increase is not met. Therefore, noise abatement at this location will not be considered further as part of this project.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

My telephone number is V-87

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202



STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

200

ROAD DEVELOPMENT DIVISION

CONTRACT NO. M 401-156-372 P

Location/Design Public Hearing '95

I-270 AND I-270 SPUR

INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME JOSE MUNIZ DATE 11.10.95

PLEASE PRINT

ADDRESS 6340 Windermere Circle

CITY Rockville STATE MD ZIP CODE 20852

I/We wish to comment or inquire about the following aspects of this project:

Noise will increase  
due to faster traffic.

PLEASE, WE NEED  
A NOISE BARRIER HERE  
IT IS LONG OVERDUE

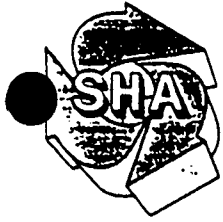
THANK YOU JENNY MUCH  
& KEEP UP THE GOOD  
WORK

Jose Muniz

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are already on the project Mailing List



**Maryland Department of Transportation  
State Highway Administration**

201  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 12, 1996

Mr. Jose Muniz  
6340 Windermere Circle  
Rockville MD 20852

Dear Mr. Muniz:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You asked about the possibility of constructing noise barriers along I-270 in the vicinity of the Windermere area.

Detailed noise studies for this project indicate that the Windermere area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

Three barriers were analyzed for the Windermere area to accommodate the differing projected noise levels of Alternatives 3E (or 3F), 3G and 3H:

- For Alternative 3E (or 3F), a 1746 foot long noise barrier with heights ranging from 4 feet to 18 feet would benefit ten residences. The total estimated cost would be \$399,700, and the cost per residence would be \$40,000.
- For Alternative 3G, a 1425 foot long noise barrier with heights ranging from 12 feet to 18 feet would benefit ten residences. The total estimated cost would be \$394,200, and the cost per residence would be \$39,500.
- For Alternative 3H, a 2245 foot long noise barrier with heights ranging from 22 feet to 24 feet would benefit 22 residences. The total estimated cost would be \$877,700, and the cost per residence would be \$39,900.

All three of these alternative barriers are not considered reasonable as part of this project because the difference between the no-build and build noise levels is less than the State Highway Administration (SHA) criteria of five dBA at locations that would be protected by the barrier.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Windermere area may be reconsidered.

V-89

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

202

Mr. Jose Muniz  
Page Two

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Supplemental Response:

Noise abatement for the project was completely reevaluated based on current SHA criteria and guidelines and the Selected Alternative, which includes a combination of Alternatives 2D and 3E. The above-described barrier was reevaluated; however, this barrier is still not considered reasonable because the difference between no-build noise levels and noise levels with the Selected Alternative is less than 3dBA, the revised threshold according to the current criteria.

STATE HIGHWAY ADMINISTRATION  
PROJECT DEVELOPMENT  
QUESTIONS AND/OR COMMENTS

DIRECT DIAL (301) 657-0161

203

HARRY W. LERCH  
ATTORNEY AT LAW

CONTRACT NO. M 401.  
Location/Design Publication  
I-270 AND I-270

LAW OFFICES  
LERCH, EARLY & BREWER  
CHARTERED

SUITE 380  
3 BETHESDA METRO CENTER  
BETHESDA, MARYLAND 20814-5367  
(301) 986-1300  
FAX (301) 986-0332

INTERCHANGES AT MD 187 AND DE

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

NAME Harry LERCH DATE 11/10/95  
ADDRESS 3 Metro Center (380)  
CITY Bethesda STATE Md ZIP CODE 20814

PLEASE  
PRINT

I/We wish to comment or inquire about the following aspects of this project:

Excellent job on the book and alternatives!!

6B will do a wonderful job - you have  
improved it, and made it more effective and  
efficient, while reducing right of way.

5C should be done now - as part of  
the current spur project.

Enclosed is a Modification of 3C which  
should provide much more room for the weavers  
involved in entering Montgomery Hall as well  
as adding stacking room. If you like it,  
all credit goes to my wife Sharon who drives it  
daily. If you don't like it, it is my fault.  
Tom - Thanks again for all your good work!

Please add my/our name(s) to the Mailing List. \*

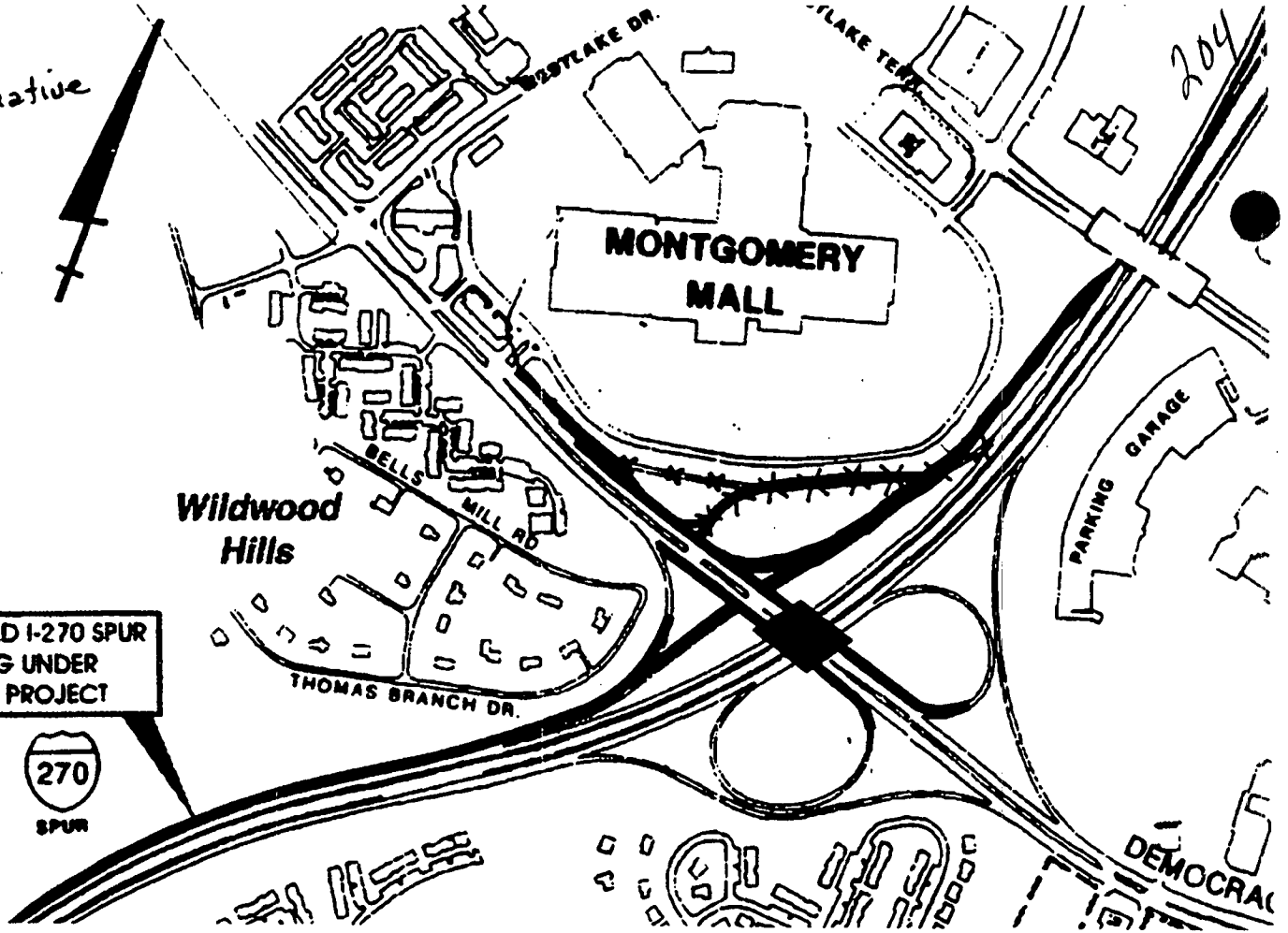
Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List

3C  
Alternative

Harry Lerch  
301 657 0161

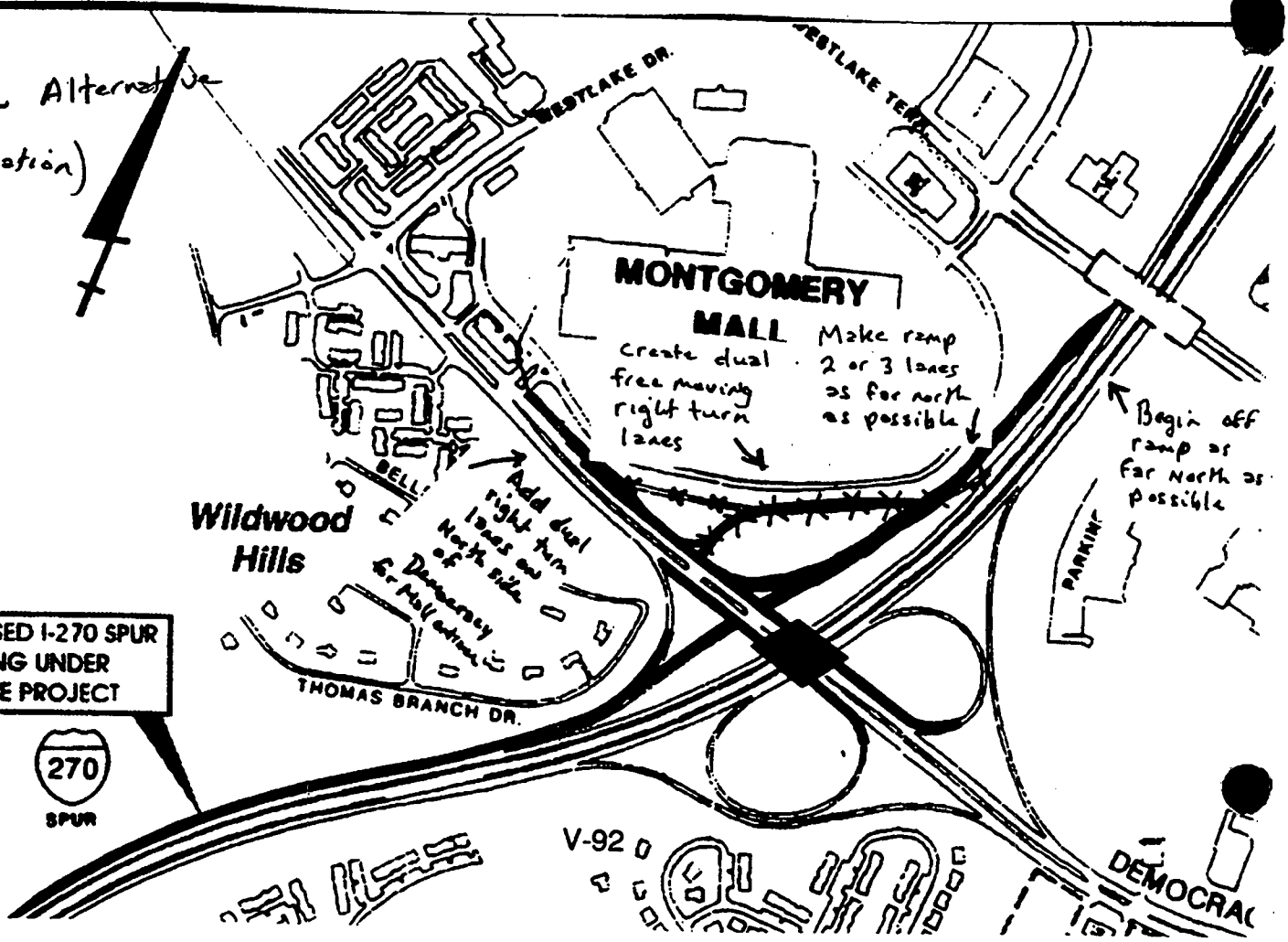
PROPOSED I-270 SPUR  
WIDENING UNDER  
SEPARATE PROJECT



3C Alternative  
(Explanation)

Harry Lerch  
301 657-0161

PROPOSED I-270 SPUR  
WIDENING UNDER  
SEPARATE PROJECT



STATEMENT OF HARRY W. LERCH  
TO THE  
STATE HIGHWAY ADMINISTRATION  
LOCATION DESIGN PUBLIC HEARING  
DECEMBER 12, 1995

Good evening. I am Harry W. Lerch. I am an attorney with the firm of Lerch Early & Brewer in Bethesda. I am also a nearby resident, living just south of Democracy and Greentree. While we represent several property owners in the immediate vicinity of these projects, I am speaking tonight as an individual.

1. I congratulate you on moving forward with the study. Your team of staff and consultants have done an excellent job. Many of the concerns raised in the June 9, 1994, forum have been addressed and resolved, particularly the tightening of right-of-way involved in several of the proposals (i.e. 6B)

2. I strongly support concepts of direct access from I-270 and the Spur to Rock Spring Park wherever feasible and possible. Getting the office park directly into and out of the park from the interstate highways is a win-win situation for residents and workers alike. Conceptually, the connections should probably be undertaken incrementally, as soon as funds exist, starting with the least expensive and complex and working up to the full and final solutions.

3. I believe that the Rockledge Connector ramps (3G or 6B) should be given high priority, and consideration should be given to constructing them in advance of other more expensive projects. I also believe that the ramp connectors between the Spur and the

206

Fernwood Bridge will have an immediate and substantial benefit (5B or 5C), and could be coupled with the Rockledge ramps as a project providing ingress and egress between the entire I-270 corridor and Rock Spring Park.

4. I believe that the ramp around the back of Martin Marietta (as shown on 6B) has substantial merit, especially when coupled with the ramps into Rockledge Drive from eastbound I-270.

5. I support the improved Old Georgetown Road interchange (2C, 2D or 2E) but believe that it should be planned and constructed so as to facilitate the ultimate construction of 6B.

6. I believe that 4C has many benefits. The ramp from the Southbound Spur to Westbound Democracy should be located as far East as possible, preferably coming up to the traffic light opposing the southbound exist ramp and traffic light (his could eliminate the existing light, which could be moved across the Spur if 4A is implemented). The south to west ramp from the Spur to Democracy should have free right turn lanes and maximum weaving distance between this ramp and the Montgomery Mall entrances.

In the future, when ramps are constructed to the Fernwood Bridge, traffic patterns should be restudied, and if enough traffic has been diverted, it would then be good to create the loop ramp from westbound Democracy Blvd onto the southbound Spur.

Again, we sincerely appreciate the cooperation, responsiveness and creativeness of the State Highway Administration staff, particularly Cres Mills, Neil Pedersen, Ron Burns, Tom Folse, Mark Lotz. You have done an excellent job.



Maryland Department of Transportation  
State Highway Administration

207

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 12, 1996

Mr. Harry W. Lerch  
Attorney at Law  
Suite 380  
3 Bethesda Metro Center  
Bethesda MD 20814-5367

Dear Mr. Lerch:

Thank you for writing to us and presenting testimony at the public hearing for our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

We note that you support direct access from I-270 and the I-270 Spur to Rock Spring Park via the Rockledge Drive Connector (Alternatives 3G and 6B), and via Fernwood Road (Alternative 5B or 6B). As you suggest, our preliminary findings indicate that improvements to the I-270 interchange at MD 187, Old Georgetown Road, may be necessary to accommodate projected traffic volumes, however, Alternative 2E (loop ramp from northbound I-270 to southbound MD 187) is not compatible with any of the Rockledge Drive Connector alternatives except 3H (reversible HOV ramp to and from the north).

You also favor Alternative 4C with a suggested modification to relocate the ramp from southbound I-270 Spur to Democracy Boulevard so that it would meet Democracy Boulevard at the same point as the ramp from westbound Democracy Boulevard to the southbound I-270 Spur. This modification idea arose earlier in the study and was dismissed because of the additional cost of relocating a stormwater management pond and more extensive earthwork and paving than the original alternative, however we will reconsider its merits before a final decision is made.

We appreciate your interest in our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free, at 800-548-5026.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-95

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202





**The Greater  
Bethesda-Chevy Chase  
Chamber of Commerce**

Established 1926

A Business Association Devoted to Community Progress

208  
The Landow Building  
7910 Woodmont Avenue  
Suite 1204  
Bethesda, MD 20814  
301/652-4900  
Fax: 301/657-1973

---

January 22, 1996

Mr. Neil Pederson, Director  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Baltimore, MD 21202

Re: I-270 at MD 187; I-270 Spur at Democracy Blvd.

Dear Mr. Pederson:

The Greater Bethesda-Chevy Chase Chamber of Commerce submits these comments on the captioned projects for the record.

The Chamber is a group of business and civic members who are banded together to seek the improvement of the business climate within its area. The Chamber's membership domain extends from Montrose Road on the north, and Rock Creek Park on the east, the Potomac River on the west and the D.C. line to the south. This is a critically important business area for both Montgomery County and our Chamber.

The Chamber has long been aware of the deficit in traffic capacity in the area of Old Georgetown Road, Democracy Boulevard and Rock Spring Park commercial area. After a review of the plans submitted prior to the Location/Design Public Hearing, the Board of Directors of the Chamber supports appropriate build options and urges the State Highway Administration to move expeditiously in funding this project.

The Rock Spring Park area, as well as the adjacent commercial areas, will be hampered in its growth and ability to attract tenants and customers without these improvements.

Mr. Neil Pederson, Director  
January 22, 1996  
Page 2

The Chamber supports the concept of making the improvements to assist the area to grow without significant traffic congestion.

Thank you for the opportunity to submit our comments.

Very truly yours,

  
Bruce B. Drury  
President

cc: Senator Brian Frosh  
Senator Christopher Van Hollen, Jr.  
Mrs. Gail Ewing, President  
Montgomery County Council  
County Executive Douglas M. Duncan



**Maryland Department of Transportation**  
**State Highway Administration**

210

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 7, 1996

Mr. Bruce B. Drury  
The Greater Bethesda-Chevy Chase  
Chamber of Commerce  
7910 Woodmont Avenue, Suite 1204  
Bethesda MD 20814

Dear Mr. Drury:

Thank you for your January 22 letter about our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard. We note that the Chamber of Commerce supports appropriate build alternatives to ease traffic congestion in the study area.

We appreciate your input to our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free within Maryland, at 1-800-548-5026.

Very truly yours,

A handwritten signature in cursive script that reads "Neil J. Pedersen".

Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

cc: Mr. Thomas K. Folse

V-98

My telephone number is (410) 333-1110

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

211

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
I-270 AND I-270 SPUR  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

Added 2-7-96  
36.

NAME Sheila Ellen Gradowski DATE Nov. 6 - 1995

PLEASE PRINT ADDRESS 5934 Rossmore Drive  
CITY Bethesda STATE Md ZIP CODE 20814

I/We wish to comment or inquire about the following aspects of this project:

Please do something about the incredible noise + pollution from all the huge trucks, cars, etc. that are now so close to us in Wildwood Manor. The spur between 459 + Old Geo. road, now newly widened, goes by so close, to so many. We are desperate! At the corner of Rossmore + Fleming it is deafening! The highway is feet from the corner with just a chain-link fence. It's a 60 yrs. old. I've lived here in our home over 30 years. We, on both sides of this spur, (Buchanan Lane + Johnson + Grosvenor + Zion + Hoopes) are desperate for sound barriers. You keep building these roads thru our communities without considering us. Where in these plans mentions "sound barrier" walls? No where! Virginia puts walls up immediately to protect the families. You guys never mention it. Old Farm got a wall! It's so much closer! Please, think of us! Plan for our well-being! Care! Don't just build highway care about the citizens whose lives are desperately impacted. Give us a wall (barrier) between Old Geo. Rd + Grosvenor Lane overpass. Will you care or are we

- Please add my/our name(s) to the Mailing List. \* not to be considered. Life is unfair to be sure, but
- Please delete my/our name(s) from the Mailing List. this really is so mean. There are so many of us who feel we don't matter

\* Persons who have received a copy of this brochure through the mail are already on the project Mailing List  
These roads have robbed us on a daily basis of peace + quiet! Help! Care! Act! who live day in + day out with this god-awful situation  
Please Listen! Please soften the impact to those of us little people



**Maryland Department of Transportation  
State Highway Administration**

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

2/2

February 7, 1996

Mr. & Mrs. Len Gradowski  
5934 Rossmore Drive  
Bethesda MD 20814

Dear Mr. and Mrs. Gradowski:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You asked about the possibility of constructing noise barriers along I-270 in the vicinity of the Wildwood Manor area.

Detailed noise studies for this project indicate that the Wildwood Manor area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

A 3,583 foot long noise barrier with heights ranging from 20 feet to 22 feet would benefit 44 residences in this area. The total estimated cost would be \$1,218,200, and the cost per residence would be \$27,700. This barrier is not considered reasonable as part of this project because the difference between the no-build and build noise levels would be less than one dBA, which is less than the State Highway Administration (SHA) criteria of five dBA difference.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Wildwood Manor area may be reconsidered.

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

**Supplemental Response:**

The Selected Alternative includes a Alternative 2D--an improvement to the existing I-270/MD 187 interchange. Since the limit of the interchange improvement is only 800 feet east of the MD 187 bridge over I-270, there are no roadway improvements proposed as part of this project in the Wildwood Manor area; therefore, noise abatement will not be considered further at this location as part of this project.

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

STATE HIGHWAY ADMINISTRATION  
QUESTIONS AND/OR COMMENTS

213

CONTRACT NO. M 401-156-372 P  
Location/Design Public Hearing  
**I-270 AND I-270 SPUR**  
INTERCHANGES AT MD 187 AND DEMOCRACY BOULEVARD

TUESDAY, DECEMBER 12, 1995 7:00 P.M.  
TILDEN MIDDLE SCHOOL/WOODWARD CENTER  
PDMS NO. 151112

N-----

Neal B. Bobys  
10701 Lady Slipper Terrace  
Rockville, Maryland 20852-3403

DATE 11/3/95

PLEASE  
PRINT

C. \_\_\_\_\_

ZIP CODE \_\_\_\_\_

I/We wish to comment or inquire about the following aspects of this project:

What about sound barriers on  
270, north side, east of 187?  
There were measurements taken in  
my yard earlier this year!?!  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please add my/our name(s) to the Mailing List. \*

Please delete my/our name(s) from the Mailing List.

\*Persons who have received a copy of this brochure through the mail are  
already on the project Mailing List



Maryland Department of Transportation  
State Highway Administration

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

214

February 7, 1996

Mr. Neal B. Bobys  
10701 Lady Slipper Terrace  
Rockville MD 20852-3403

Dear Mr. Bobys:

Thank you for your letter about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard. You asked about the possibility of constructing noise barriers along I-270 in the vicinity of the Timberlawn area.

Detailed noise studies for this project indicate that the Timberlawn area will have predicted noise levels that exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria of 67 dBA in the design year 2020.

A 3,777 foot long noise barrier with heights ranging from 12 feet to 24 feet was studied for this area. The total estimated cost would be \$1,462,600, and the cost per residence would be \$26,600. Fifty-five residences would be benefited. This barrier is not considered reasonable as part of this project because the difference between the no-build and build noise levels is zero to two dBA, which is less than the State Highway Administration (SHA) criteria of five dBA difference.

However, the SHA noise policy and guidelines are currently being reviewed by a panel comprised of state elected officials, FHWA and SHA members. This review panel will be providing their recommendations to SHA in a few weeks. Depending on how the new noise policy is finalized, the noise barrier in the Timberlawn area may be reconsidered.

Please call the project manager, Thomas K. Folse, at (410) 545-8543 or, toll-free in Maryland, at 800-548-5026, if you wish to discuss this further.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

Supplemental Response:

The Selected Alternative includes a Alternative 2D--an improvement to the existing I-270/MD 187 interchange. East of MD 187, the proposed improvements are minor, consisting generally of resurfacing and widening of ramp approaches to MD 187. As a result, there will be no increase in noise levels in the Timberlawn area as a result of the Selected Alternative, and noise barriers remain unreasonable at this location as part of this project.

by: Thomas K. Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

V-102

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

215

*TRANSPORTATION  
ACTION  
PARTNERSHIP*  
of NORTH BETHESDA AND ROCKVILLE, INC

January 10, 1996

Mr. Neil J. Pedersen  
Director, Office of Planning and  
Preliminary Engineering  
State Highway Administration  
707 North Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Pedersen:

I am writing on behalf of TAP, the Transportation Action Partnership of North Bethesda and Rockville. TAP is a Transportation Management Association or TMA that was established in 1987 as a public-private partnership to improve the ease of traffic movement within and through North Bethesda.

I am writing to express our support for the efforts under way to identify alternatives for providing improvements at the I-270 interchanges at Old Georgetown Road and Democracy Boulevard. While TAP is not supporting one specific alternative or set of alternatives over another, we do support the proposals that provide direct access from I-270 and the I-270 spur into Rock Spring Park. Providing direct access to the Park for employees should be a high priority.

We are also encouraged that several of the alternatives under consideration, such as the Fernwood ramps, focus on the need to provide incentives for HOV vehicles. The provision of HOV priority treatments is consistent not only with TAP's mission, but also the goals and objectives of the North Bethesda Transportation Management District that was formally established by action of the County Council this past fall. In addition, with the development of an HOV network along I-270 to the Beltway, the opportunity to provide for HOVs as part of any direct access ramps into Rock Spring Park is especially important.

There is a concern about whether it is realistic to select only an alternative with ramps that are exclusively for HOVs. On the other hand, we believe that priority treatment for HOVs along any direct access ramps that are part of the selective alternative(s) would



Mr. Pedersen  
Page 2  
January 10, 1996

2/16

have a significant contribution to traffic mitigation efforts in the area. As a result we suggest that an analysis be made of the feasibility of re-designing the alternatives under consideration to include HOV priority treatments, perhaps queue jumpers or other innovative solutions, in addition to providing access for non-HOVs.

We appreciate having had the opportunity to share with you our thoughts about this project. Please let us know if we can provide any additional information.

Sincerely,



Charles Camalier  
President

c. Tom Folse



**Maryland Department of Transportation**  
**State Highway Administration**

217  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

February 5, 1996

Mr. Charles Camalier, President  
Transportation Action Partnership  
of North Bethesda and Rockville, Inc.  
11140 Rockville Pike, Suite 104  
Rockville MD 20852

Dear Mr. Camalier:

Thank you for your recent letter supporting our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

We note that you support direct access alternatives from I-270 and the I-270 Spur to Rock Spring Park and priority treatment for high occupancy vehicles (HOV's). If none of the HOV-only alternatives is selected for final design, we will look at the possibility of including HOV priority treatments to the selected alternatives.

We appreciate your input to our study. Please call the project manager, Thomas K. Folsie, if you would like to discuss this further. Tom can be reached at (410) 545-8543 or, toll-free within Maryland, at 1-800-548-5026.

Very truly yours,

*Neil J. Pedersen*

Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

cc: Mr. Thomas K. Folsie

**Supplemental Response:**

The Selected Alternative consists of a combination of Alternatives 2D, 3E, a modified and scaled-down version of Alternative 4A Signalized Option, 4C and 5C. Alternative 3E will provide direct access for general use vehicles, and Alternative 5C will provide an HOV ramp connection to Fernwood Road.

V-105

My telephone number is \_\_\_\_\_

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**Street Address: 707 North Calvert Street • Baltimore, Maryland 21202**

218

6400 Windermere Circle  
North Bethesda, MD 20852  
December 18, 1995

Neil J. Pedersen, Director  
Office of Planning and Preliminary Engineering, State Highway Administration  
707 North Calvert Street  
Baltimore, MD 21202

Dear Mr. Pedersen:

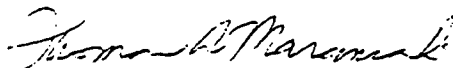
I am one of the residents who will be affected by any highway changes to I-270 at Maryland Route 187 and I-270 Spur at Democracy Boulevard, Contract No. M 401-156-372 P. I regret that I was unable to attend the public hearing at Tilden Middle School on December 12, but I don't seriously regret it: I attended and testified at a similar hearing last year and, as far as I can determine, the testimony of myself and the other residents has been completely ignored. I'd like to repeat the simple requests and comments that I made then.

The impact of any proposed changes on the residents in the area seems to be entirely ignored in the brochure and probably misrepresented. Far more attention seems to be paid to wildlife and the "Natural Environment" than to human taxpayers and voters. The section on "Socio-Economic Environment" doesn't mention any impact upon quality of life of the human residents. There is one cryptic comment that "The projected noise levels for the design year 2020 indicate that the Federal Highway Administration (FHWA) Noise Abatement Criteria (67dBA) is approached or exceeded under both the no-build and build conditions at 8 of the 9 sensitive areas", but no actions are proposed to alleviate this. As a minimum it would seem appropriate for any construction plan to include sound barriers for the bordering residential communities.

The maps for alternatives 3E, 3F, 3G, and 3H misrepresent the relationship of the Windermere Community to I-270. Stating on the maps that they are "not to scale" does not avoid the erroneous message that they convey that the Windermere community is not significantly impacted by the proposed changes. I pointed out this problem at the last hearing, and the persistence of it in this later brochure seems to confirm that the misrepresentation is intentional, not accidental. To be fair to the residents of Windermere, I would either redraw the maps to be accurate or label the inaccurate maps with a bold legend "**NOT TO SCALE: RESIDENTIAL HOMES ARE FAR CLOSER TO I-270 THAN THIS MAP DEPICTS**".

It's very discouraging for taxpayers to be invited to hearings only to have their testimony ignored. You once again have the opportunity to correct that neglect. I trust that you will do so this time.

Sincerely,



Thomas A. Marciniak, M.D.



**Maryland Department of Transportation  
State Highway Administration**

219  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

January 16, 1996

Thomas A. Marciniak, M.D.  
6400 Windermere Circle  
North Bethesda MD 20852

Dear Dr. Marciniak:

Thank you for writing to us about our study of I-270 at MD 187 and the I-270 Spur at Democracy Boulevard.

We recently offered the community two opportunities to view scale drawings of the alternatives under consideration: at an Informational Public Workshop on November 14, 1995, and at the beginning of the Location/Design Public Hearing on December 12, 1995. Both meetings were held at Tilden Middle School. We would be happy to review these drawings with you at your convenience.

The project brochure was not intended to provide a detailed description of the potential environmental impacts of the various alternatives, rather to just present a summary. Additional information on the alternatives under consideration and environmental impacts is available in the Environmental Assessment prepared for the project. The Environmental Assessment is available for review at the Davis and Kensington public libraries.

Please call the project manager, Thomas K. Folsie, if you would like to discuss the project further. Tom can be reached at (410) 545-8543, or toll-free at 1-800-548-5026.

Very truly yours,

*Neil J. Pedersen*

Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

cc: Mr. Thomas K. Folsie

V-107

My telephone number is (410) 333-1110

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Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

220

SHeldon L. KAHALAS  
6216 CHARNWOOD DRIVE  
ROCKVILLE, MD 20852  
(301) 493-6799

December 15, 1995

Mr. Neil J. Pederson  
Office of Planning and Preliminary Engineering  
State Highway Administration  
707 N. Calvert Street  
Baltimore, MD 21202

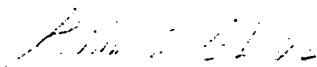
**RE: Alternatives 3E, 3F, 3G. Rockledge Connector**

Mr. Pederson:

On Tuesday, December 12, 1995, I had occasion to present the enclosed material at the State Highway Administration hearing. I believe the State's proposals are unconscionable and a direct threat to my safety and the safety of all the residents living along Charnwood Drive. It is my understanding that neither Luxmanor nor the Heritage Walk Association has made any commitment to provide the common land for a state takeover.

I am sending a copy of my statement to the local papers, as well as to appropriate elected officials. It appears that the State's proposals did not properly consider all aspects of the safety issue and should be reevaluated.

Sincerely,



Sheldon L. Kahalas

221

Prepared to present at  
Public Hearing Tuesday, December 12, 1995  
at Tilden Middle School/Woodward Center

By  
Sheldon L. Kahalas

Good evening. I am Sheldon Kahalas. I live at 6216 Charnwood Drive in Windermere.

By way of credentials, which may be pertinent to what I am going to say, I hold a bachelor's degree from Harvard, a master's from the University of Illinois, and a Doctor's degree from Boston University, all in physics. I have studied fire and explosion hazards and am an expert in detonation phenomenology. I have worked for the Coast Guard on oil spills and the National Aeronautics and Space Administration on liquid hydrogen safety. I have been an expert witness in court on aerodynamic phenomena.

My home backs up to the east branch of 270. Currently the road is about 200 feet away from the back of my home - not to the back of my lot- but to the back of my home. The road is already very close. I have been living there since July, 1977. I bought it in April of that year and at that time the east branch of 270 was a fairly small road, hardly noticeable from my home. Our backyard was a pleasant place. The road has undergone at least two expansions or widenings that I remember since that time. The most recent was last year. Our backyard cannot now be used for quiet activities because of the noise. I point this out because I believe that the proposed expansion of the road, specifically Alternatives 3E, 3F, and 3G by the State Highway Administration are a direct threat to my safety and well being. I think that the expansionary, pro-industrial development attitude of the State Highway Department is a direct threat to me and other innocent citizens who have done nothing to deserve this. The expansion and industrialization of Rock Spring Park, IBM, Marriot, and Martin Marietta, should not be allowed to impact on the safety of area residents, which is exactly what will happen if Alternative 3E, 3F, or 3G is chosen.

I would like now to specifically address the three Alternatives (3E, 3F, and 3G) : The back of my home is about 110 feet away from where the State proposes to erect the right boundary of the new road, the part of the proposed road closest to me. This road would be elevated 24 feet above the ground at that point, which is more like 26 feet high looking from my home, keeping in mind that the ground level slopes upward from my house to the point where the right boundary of the new road is proposed. To give you some idea, the proposed level of the roadway surface would be approximately at the same level as the roof of my home, that is, about at the ceiling level of my second floor. If I look horizontally out my second floor window,

222

about 110 feet away I'd see the roadbed of a highway and truck wheels. I have several objections to this. Probably the greatest is safety, including tanker spill or direct impact to my home. If a large truck veers off the road, it would only have to travel a few trailer lengths before it would plough into the back of my home, where my kitchen and family room are located. If I were in the back yard, I would have no protection. Second, if a vehicle were carrying any hazardous chemicals, gasoline, or petroleum products, they could easily spill and flow down to my home, with the potential for fire or exposure to hazardous, perhaps poisonous fumes. One hundred and ten feet is not a lot of distance. This proposal is so irresponsible, I can hardly believe it's under consideration. It would appear to me that endangered species get better treatment than human beings living in the area.

Besides safety, the noise would also be a concern. With the road elevated 24 feet above the ground, the sources of noise are also elevated. The ambient noise level is often above the EPA limit of 67 Leq, a fact that was already apparent years ago. The aesthetics of the situation should also be a consideration.

Finally, I want to say a word about some of the options that close off Lux Lane. I am totally opposed to them. While Lux Lane is a small road, it affords the residents of Windermere and others direct access to Old Georgetown Road. Blocking it off would force traffic onto Tuckerman and add to the congestion that occurs there, for no good reason.

In summary, I believe that Alternatives 3E, F, G constitute a safety threat to the residents of Windermere whose property backs up to the I-270 Spur. They should not be built.



**Maryland Department of Transportation**  
**State Highway Administration**

223

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

January 3, 1996

Mr. Sheldon L. Kahalas  
6216 Charnwood Drive  
Rockville MD 20852

Dear Mr. Kahalas:

Thank you for writing to us and presenting testimony at the public hearing for our study of I-270 at MD 187 and I-270 Spur at Democracy Boulevard.

We understand your concerns about safety and noise associated with the Rockledge Connector alternatives (3E, 3F, and 3G). As a result of suggestions from you and others about our original Rockledge Connector alternatives (3A and 3B), the study team developed these new alternatives which would not require right-of-way from homeowners on Charnwood Drive or the Heritage Walk Homes Corporation, and would allow Lux Lane to remain open at MD 187.

If any of the Rockledge Connector alternatives were to be constructed, the traffic volume on the ramp closest to your house would be much lower than the traffic volume on I-270. We believe that the earthwork supporting this elevated ramp would serve as a barrier against noise and errant vehicles from I-270. In comparison to I-270 traffic the relatively lower traffic volumes and speeds on the ramp would generate less noise, and, in combination with a concrete barrier guardrail adjacent to the ramp, may result in a lower probability of vehicles leaving the roadway.

If one of the Rockledge Connector alternatives were not to be selected, the next most effective alternative to accommodate projected traffic volumes would be Alternative 2E, the maximum reasonable improvement at the MD 187 interchange, which would require the closing of Lux Lane at MD 187.

**V-111**

My telephone number is (410) 333-1110

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**Street Address: 707 North Calvert Street • Baltimore, Maryland 21202**



Mr. Sheldon L. Kahalas  
Page Two

If any of the Rockledge Connector alternatives is to be selected, we will contact you and your neighbors to discuss aesthetics and other concerns.

We appreciate your input to our study. Please call the project manager, Thomas K. Folse, if you would like to discuss this further. Tom can be reached at (410) 545-8543, or toll-free at 1-800-548-5026.

Very truly yours,

*Neil J. Pedersen*

Neil J. Pedersen, Director  
Office of Planning and  
Preliminary Engineering

cc: Mr. Thomas K. Folse

**VI.**

225

**VI.**

**APPENDICES**

**VI.**

## SELECTED REFERENCES

226

Bolt, Beranek and Newman, Inc., "Fundamentals and Abatement of Highway Traffic Noise", Federal Highway Administration, 1980.

Approved and Adopted North Bethesda - Garrett Park Master Plan Interim Reference Edition, The Maryland-National Capital Park and Planning Commission, December, 1992.

Bowlby, William et. al., "Noise Barrier Cost Reduction Procedure STAMINA 2.0/OPTIMA User's Manual", Federal Highway Administration, Arlington, VA., April, 1982.

FHWA and Maryland State Highway Administration, Environment Assessment for Contract No. M 401-154-372 I-270 East Segment from the Y-Split to I-495, December, 1986.

FHWA and Maryland State Highway Administration, Finding of No Significant Impact for Contract No. M 401-154-372 I-270 East Segment from the Y-Split to I-495, February, 1989.

FHWA and Maryland State Highway Administration, Environmental Assessment for Contract No. M 401-153-372 I-270 West Spur from the Y-Split to I-495 Including I-495 to North of MD 190, August, 1987.

FHWA and Maryland State Highway Administration, Finding of No Significant Impact for Contract No. M 401-153-372 I-270 West Spur from the Y-Split to I-495 Including I-495 to North of MD 190, January, 1989.

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

All State Highway Administration projects must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) as amended by Title IV of the Surface Transportation & Uniform Relocation Assistance Act of 1987 (P.L. 100-17), the Annotated Code of Maryland entitled "Real Property Article" Section 12-112 and Subtitle 2, Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Office of Real Estate administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State laws require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments include replacement housing payments and moving costs. The maximum limits of the replacement housing payments are \$22,500 for owner-occupants and \$5,250 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to these payments, there are also moving expense payments to persons, businesses, farms and non-profit organizations. Actual moving expenses for residences are reimbursed for a move of up to 50 miles or a schedule moving payment of up to \$1,300 may be used.

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, reestablishment expenses limited to \$10,000 or fixed payments "in lieu of" actual moving expenses of \$1,000 to \$20,000. Actual moving expenses may also include actual direct losses of tangible personal property and expenses for searching for a replacement site up to \$1,000.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Payments for the actual reasonable expenses are limited to a 50-mile radius unless the State determines a longer distance is necessary. The expenses claimed for actual cost moves must be supported by firm bids and receipted bills. An inventory of the items to be moved must be prepared in all cases. In self-moves, the State will negotiate an amount for payment, usually lower than the lowest acceptable bid. 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 participate in the move, the cost of actual supervision of the move, replacement insurance for the personal property moved, costs of licenses or permits required and other related expenses.

228

In order to determine the amount of the "in lieu of" moving expenses payment, the average annual net earnings of the business is 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 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, owner's spouse, or dependents during the period. Should a business be in operation less than two years, the owner of the business may still be 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, or certified financial statements, for the tax years in question.

Displaced farms and non-profit organizations are also eligible for actual reasonable moving costs up to 50 miles, actual direct losses of tangible personal property, search costs up to \$1,000 and reestablishment expenses up to \$10,000 or a fixed payment "in lieu of" actual moving expenses of \$1,000 to \$20,000. The State may determine that a displaced farm may be paid a minimum of \$1,000 to a maximum of \$20,000, based upon the net income of the farm, provided that the farm has been relocated or the partial acquisition caused a substantial change in the nature of the farm. 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 a fixed payment or an "in lieu of" actual moving cost payment, in the amount of \$1,000 to \$20,000 based on gross annual revenues less administrative expenses.

A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms and non-profit organizations is available in the "Relocation Assistance" brochure that will be distributed at the public hearing for this project and be given to displaced persons.

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies must be completed by the State Highway Administration before "housing as a last resort" can be utilized.

Federal & State laws require that the State Highway Administration shall not proceed with any phase of a project which will cause the relocation of any persons, 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.

229

EA-

# Environmental Assessment

FOR CONTRACT NO. M 401-156-372

## I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD Montgomery County, Maryland



prepared by:

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA-MD-EA-95-02-D

FEDERAL HIGHWAY ADMINISTRATION  
REGION III

I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BOULEVARD

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

AND

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

SUBMITTED PURSUANT TO: 42 U.S.C. 4332(2)(C); 49 U.S.C. 303  
23 U.S.C. 128(a) and CEQ REGULATIONS (40 CFR 1500 et seq)

HAL KASSOFF  
ADMINISTRATOR

10/26/95  
Date

Neil J. Pedersen/CS  
NEIL J. PEDERSEN, DIRECTOR  
OFFICE OF PLANNING AND  
PRELIMINARY ENGINEERING

11/9/95  
Date

Susan J. Burdick  
FEDERAL HIGHWAY  
ADMINISTRATION  
DIVISION ADMINISTRATOR



**SUMMARY**

**SUMMARY**

**1. Administrative Action**

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

**2. Additional Information Concerning This Project May Be Obtained By Contacting:**

Mr. Louis H. Ege, Jr.  
 Deputy Director  
 Office of Planning and Preliminary  
 Engineering  
 State Highway Administration  
 707 N. Calvert Street  
 Baltimore, Maryland 21202  
 Hours: 8:00 a.m. to 4:30 p.m.  
 Phone: (410) 545-8500

Ms. Mary Huie  
 Planning Research and  
 Environmental Engineer  
 Federal Highway Administration  
 The Rotunda - Suite 711  
 W. 40th Street  
 Baltimore, Maryland 21211  
 Hours: 7:30 a.m. to 4:30 p.m.  
 Phone: (410) 962-4342 ext. 148

**3. Description of Action**

The proposed improvements would increase traffic capacity and improve safety at the I-270 interchange with MD 187 (Old Georgetown Road) and the I-270 Spur interchange with Democracy Boulevard. These two interchanges provide access between I-270 and Rock Spring Office Park, Montgomery Mall and surrounding residential and commercial developments. The objective of the proposed action is to alleviate existing and projected traffic congestion and safely accommodate planned growth in the study area, as well as provide support for other modes of transportation.

Alternatives under consideration include the no-build (Alternative 1); improvements to the existing I-270/MD 187 interchange (Alternatives 2C, 2D and 2E); new Rockledge Drive connections to I-270, combined with the existing I-270/MD 187 interchange (Alternatives 3E, 3F and 3G); a median ramp connection to Rockledge Drive from I-270 for High Occupancy Vehicle (HOV) use (Alternative 3H); improvements to the existing I-270

234

Spur/Democracy Boulevard interchange (Alternatives 4A, 4B, 4C and 4D); a new connection between Fernwood Road and the I-270 Spur to the north, with either general use ramps (Alternative 5B) or a reversible median ramp for HOV use (Alternative 5C); and a new ramp off of the northbound I-270 Spur, that would run parallel to I-270 and connect with Rockledge Drive (Alternative 6B).

Section 4 below provides additional information on the alternatives and includes descriptions of sub-options that are also under consideration, as well as combinations of alternatives that are possible. Figure S-1 indicates the general location of each of the proposed build alternatives.

**4. Alternatives Description**

The alternatives associated with this study for improving the I-270 and I-270 Spur interchanges fall into the following six categories:

- 1) The no-build alternative
- 2) Improvements to the existing I-270/MD 187 interchange
- 3) New I-270 connection to Rockledge Drive, maintaining use of the existing I-270/MD 187 interchange
- 4) Improvements to the existing I-270 Spur/Democracy Boulevard interchange
- 5) New I-270 Spur connection at Fernwood Road
- 6) New northbound I-270 Spur connection with Rockledge Drive

**Alternative 1 (No-Build)**

The no-build alternative is under consideration at each of the existing and proposed interchange locations under evaluation in this study. Assumed to be in place as part of the no-build are several projects that are currently under construction in the project area, including: the I-270 HOV ramps at the Y-Split, the I-270 Spur Widening, the I-270 Spur/I-495 interchange reconstruction and the Fernwood Road Bridge. Otherwise, the no-build alternative assumes that no major improvements to increase capacity would be undertaken at the existing interchanges within the study limits. Normal highway maintenance and safety improvements would still occur. As traffic volumes continue to grow, traffic delays and the length of the peak hours will expand. Detailed traffic analysis reveals that the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges currently operate at unacceptable levels-

of-service (LOS) in the peak hours that will worsen by the design year 2020 under the no-build alternative. These interchanges also include several high accident locations. It can be expected that as the magnitude of the congestion increases over time, the rate of accidents will also increase.

**Alternatives 2C, 2D and 2E (Improvements to the Existing I-270/MD 187 Interchange)**

**Alternative 2C** is a minor upgrade of the existing I-270/MD 187 interchange. The left turn approaches for the northbound I-270 to southbound MD 187 and southbound I-270 to MD 187 movements would be widened from one to two lanes. **Alternative 2D** proposes a more extensive improvement of the existing interchange, with all left turn movements associated with the diamond interchange widened to two lanes. The existing MD 187 bridge would need to be widened approximately 38 feet to accommodate double turn lane storage for the entire distance between the wings of the diamond. MD 187 would be widened and shifted slightly west to avoid impacts to St. Mark Church. **Alternative 2E** is similar to 2D in the extent of improvement that would be provided to the existing interchange; however, Alternative 2E replaces the signalized left turn from northbound I-270 to southbound 187 with a loop ramp in the northwest quadrant.

**Alternatives 3E, 3F, 3G and 3H (New I-270 Connection to Rockledge Drive, Maintaining Use of the Existing I-270/MD 187 Interchange)**

**Alternatives 3E, 3F and 3G** are the Rockledge Drive Connector alternatives, providing an access point off of I-270, northbound and southbound, directly into the Rock Spring Office Park via Rockledge Drive. **Alternative 3E** resembles a "split-diamond" configuration, where traffic on southbound I-270 exiting onto MD 187 would first need to travel through a signalized intersection at the south end of the Rockledge Drive Connector bridge. Similarly, vehicles traveling from MD 187 onto northbound I-270 would need to go through an intersection at the north end of the Rockledge Drive Connector bridge before entering I-270. **Alternative 3F** is similar to Alternative 3E, except that it eliminates the at-grade intersection for the ramp connection from southbound I-270 to MD 187. This traffic would instead travel under the proposed Rockledge Drive Connector bridge towards MD 187 and weave with traffic heading from Rockledge Drive onto southbound I-270. To maximize the length available for this weave section, traffic exiting Rock Spring Park on the

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD  
BUILD ALTERNATIVES  
KEY MAP**

NOT TO SCALE

**ALT. 6B:  
I-270 SPUR /  
I-270 EAST SEGMENT**

**ALTS. 5B, 5C:  
I-270 SPUR/  
FERNWOOD RD.**

PROPOSED HOV RAMP  
CONSTRUCTION UNDER  
SEPARATE PROJECT \*

RECENTLY CONSTRUCTED  
FERNWOOD ROAD BRIDGE

**ALTS. 3E, 3F, 3G, 3H  
I-270 EAST SEGMENT /  
ROCKLEDGE DRIVE**

APPROX LOCATION OF PLANNED  
TRANSITWAY BY MONTGOMERY CO.

\* PROJECTS CURRENTLY  
UNDER CONSTRUCTION

**270**  
SPUR

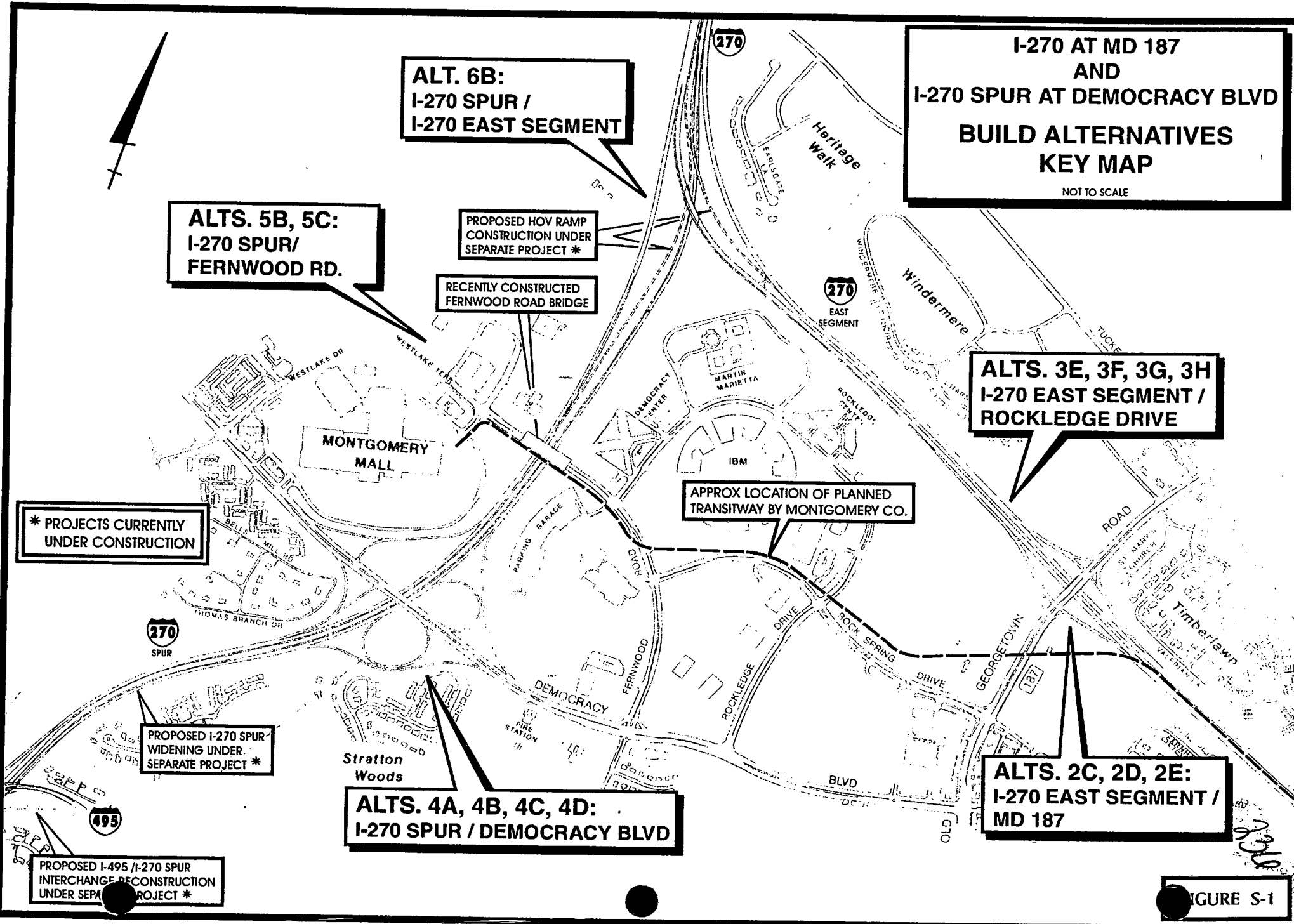
PROPOSED I-270 SPUR  
WIDENING UNDER  
SEPARATE PROJECT \*

**ALTS. 4A, 4B, 4C, 4D:  
I-270 SPUR / DEMOCRACY BLVD**

**ALTS. 2C, 2D, 2E:  
I-270 EAST SEGMENT /  
MD 187**

PROPOSED I-495 / I-270 SPUR  
INTERCHANGE RECONSTRUCTION  
UNDER SEPARATE PROJECT \*

**FIGURE S-1**



Rockledge Drive Connector would turn left onto a loop ramp to enter the weave section heading towards southbound I-270 and MD 187. **Alternative 3G** is similar to Alternative 3F, but would avoid the use of a left turn and loop ramp to accommodate the traffic entering southbound I-270 from the Rockledge Drive Connector by providing a right hand ramp from the Rockledge Drive Connector onto the weave section heading towards southbound I-270 and MD 187. The resulting weave section would be approximately 100 feet shorter than with Alternative 3F.

**Alternative 3H** proposes a one-lane reversible median ramp between I-270 and a proposed bridge over southbound I-270, connecting to Rockledge Drive. It is anticipated that this ramp would be used for southbound I-270 HOV's in the morning peak and northbound I-270 HOV's in the evening peak. The southbound roadway of I-270 would need to be shifted as much as 26 feet to accommodate the median ramp. Retaining walls in the median of I-270 would be needed to support the ramp.

**Alternatives 4A, 4B, 4C and 4D (Improvements to the Existing I-270 Spur/Democracy Boulevard Interchange)**

**Alternatives 4A and 4B** propose modifications to the northbound side of the I-270 Spur/Democracy Boulevard interchange. **Alternative 4A** proposes to eliminate the short weaving distance between the loop in the southeast quadrant and the loop in the northeast quadrant by removing the northeast loop. The northbound-to-westbound loop would be replaced with a signal-controlled, double left turn from the northbound off-ramp onto westbound Democracy Boulevard. **Alternative 4B** proposes to correct the high accident location at the end of the northbound-to-westbound loop ramp via provision of an acceleration lane extending from the end of the ramp. Alternative 4B addresses the short weaving distance between the loop ramps by implementing a northbound Collector-Distributor (C-D) road to accommodate the weave. With either Alternative 4A or 4B, improvements are proposed on Democracy Boulevard, east of I-270 Spur, to improve the merge at the end of the ramp connecting northbound I-270 Spur to eastbound Democracy Boulevard.

**Alternatives 4C and 4D** propose modifications to the southbound side of the I-270 Spur/Democracy Boulevard interchange. **Alternative 4C** addresses the problem in the northwest quadrant of the short distance between the westbound ramp terminal and the

entrance to Montgomery Mall by relocating the ramp terminal eastward to increase this distance. The southbound to eastbound left turn is also to be widened from one to two lanes. The left turn bay for the westbound to southbound movement is proposed to be widened from one to two lanes, requiring widening of the Democracy Boulevard bridge. **Alternative 4D** is similar to 4C except that it would replace the proposed westbound to southbound double left movement with a single lane loop in the northwest quadrant. The Democracy Boulevard bridge would require widening to accommodate the deceleration lane for westbound Democracy Boulevard.

**Alternatives 5B and 5C (New I-270 Spur Connection at Fernwood Road)**

**Alternatives 5B and 5C** consist of ramps connecting the I-270 Spur to the north side of the Fernwood Road overpass which is currently under construction and nearing completion by Montgomery County. **Alternative 5B** proposes a half-diamond interchange between the I-270 Spur and Fernwood Road, with ramps oriented just to and from the north. Ramps would intersect Westlake Terrace and Fernwood Road to the outside of the I-270 Spur roadways. The Fernwood Road Bridge would be widened to provide a left turn bay to access the northbound ramp. **Alternative 5C** proposes a one-lane reversible ramp connection between Fernwood Road and the northbound and southbound I-270 Spur median HOV lanes. This ramp would intersect the north side of the Fernwood Road overpass near the center of its span over the I-270 Spur. This connection would serve HOV's during the peak hours.

**Alternative 6B (New Northbound I-270 Spur Connection with Rockledge Drive)**

**Alternative 6B** would provide a route, in addition to Democracy Boulevard, for northbound I-270 Spur traffic to access the Rock Spring Park. This alternative proposes a ramp off of the northbound I-270 Spur, north of Fernwood Road, that runs parallel to I-270, behind Lockheed Martin, and intersects Rockledge Drive, adjacent to one of the Rockledge Drive Connector alignments (3E, 3F, or 3G). This alternative could only be constructed with Alternative 3E, 3F, or 3G, requiring traffic using the Alternative 6B ramp to turn right onto westbound Rockledge Drive.

239

### Alternatives Combinations

The improvement alternatives being considered with this study are not mutually exclusive; in fact, a wide range of alternatives could be constructed together. As described in subsequent sections, a combination of alternatives would be required to meet all of the needs identified at the two subject interchange locations.

Generally, within a category of Alternatives (e.g., 2's, 3's, etc.), alternatives cannot be combined. The exceptions are 2C, which could be a first stage of the ultimate construction of 2D or 2E, and the 4's, where an alternative to improve one side of the interchange (e.g., 4A or 4B) could be combined with either of the alternatives on the other side of the interchange.

Other combinations of alternatives that cannot be made include: 2E with 3E, 3F or 3G; 4B with 5B or 6B; and 5B with 6B. Alternative 6B can only be built with one of the 3's.

### 5. Summary of Impacts

A summary comparison of impacts associated with the alternatives under consideration is presented in Table S-1, on the following page, and briefly described below:



**TABLE S-1  
COMPARISON OF ALTERNATIVES**

Analysis Item	ALT 1 (NO BUILD)	ALT 2C	ALT 2D	ALT 2E	ALT 3E	ALT 3F	ALT 3G	ALT 3H
<b>Socioeconomic</b>								
1. Relocation (Total Takes)								
a. Residence	0	0	0	0	0	0	0	0
b. Business	0	0	0	0	0	0	0	0
c. Church/School	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2. Number of Properties Affected								
a. Residential	0	0	0	0	0	0	0	0
b. Business	0	0	3	5	4	4	4	1
c. Church/School	0	0	1	1	0	0	0	0
d. Parkland or Recreation Area	0	0	0	0	0	0	0	0
e. Historic/Archeological Sites	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>1</b>
3. Right-of-Way Required - hectares (acres)								
a. Residential	0	0	0	0	0	0	0	0
b. Business	0	0	0.5 (1.3)	5.6 (13.8)	3.0 (7.4)	3.4 (8.3)	2.5 (6.1)	1.1 (2.8)
c. Church/School	0	0	0.04 (0.1)	0.04 (0.1)	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0.54 (1.4)</b>	<b>5.7 (13.9)</b>	<b>3.0 (7.4)</b>	<b>3.4 (8.3)</b>	<b>2.5 (6.1)</b>	<b>1.1 (2.8)</b>
4. Consistent with area land use plans	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Natural Environment</b>								
1. Number of stream reloc. - meters (Linear Ft. - LF)	0	0	0	1 - 106.7 (350)	1 - 88.4 (290)	1 - 243.8 (800)	1 - 121.9 (400)	0
2. Number of stream crossings	0	0	0	3	3	3	3	3
3. Affected threatened or endangered species	0	0	0	0	0	0	0	0
4. Area of prime farmland affected	0	0	0	0	0	0	0	0
5. 100-year Floodplain impacted - hectares (acres)	0	0	0	0	0.04 (0.1)	0.04 (0.1)	0.04 (0.1)	0
6. Wetlands affected - hectares (acres)	0	0	0	0.6 (1.5)	0.3 (0.8)	0.3 (0.8)	0.3 (0.8)	0.2 (0.5)
7. Waters of the U.S. affected - meters (Linear Ft.) <sup>1</sup>	0	0	0	0	10.7 m (35 LF)	10.7 m (35 LF)	10.7 m (35 LF)	10.7 m (35 LF)
8. Woodlands impacted - hectares (acres)	0	0	0	3.2 (7.8)	4.8 (11.9)	5.8 (14.3)	4.7 (11.7)	1.7 (4.3)
<b>Noise</b>								
Number NSA's exceeding abatement criteria or increasing 10 dBA or more over ambient	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9
<b>Air Quality</b>								
CO violations of 1-hr or 8-hr standards	0	0	0	0	0	0	0	0
<b>Cost (Millions)</b>								
<b>TOTAL</b>	<b>0</b>	<b>\$2.1</b>	<b>\$6.8</b>	<b>\$22.4</b>	<b>\$27.1</b>	<b>\$26.7</b>	<b>\$27.9</b>	<b>\$12.7</b>

S-7

<sup>1</sup> Length of Waters of the U.S. affected is included in length of stream relocations.

(CONTINUED)

240

TABLE S-1 (CONT.)  
COMPARISON OF ALTERNATIVES

Analysis Item	ALT 4A	ALT 4B	ALT 4C	ALT 4D	ALT 5B	ALT 5C	ALT 6B
<b>Socioeconomic</b>							
1. Relocation (Total Takes)							
a. Residence	0	0	0	0	0	0	0
b. Business	0	0	0	0	0	0	0
c. Church/School	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2. Number of Properties Affected							
a. Residential	0	0	0	0	0	0	0
b. Business	2	3	0	0	1	1	4
c. Church/School	0	0	0	0	0	0	0
d. Parkland or Recreation Area	0	0	0	0	0	0	0
e. Historic/Archeological Sites	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>4</b>
3. Right-of-Way Required - hectares (acres)							
a. Residential	0	0	0	0	0	0	0
b. Business	0.2 (0.5)	0.3 (0.7)	0	0	0.3 (0.7)	0.1 (0.3)	1.2 (2.9)
c. Church/School	0	0	0	0	0	0	0
<b>Total</b>	<b>0.2 (0.5)</b>	<b>0.3 (0.7)</b>	<b>0</b>	<b>0</b>	<b>0.3 (0.7)</b>	<b>0.1 (0.3)</b>	<b>1.2 (2.9)</b>
4. Consistent with area land use plans	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Natural Environment</b>							
1. Number of stream relocations - meters (Linear Feet)	1 - 182.9 (600LF)	2 - 289.6 (950LF)	1 - 83.8 (275LF)	1 - 83.8 (275LF)	0	0	1 - 22.9 (75LF)
2. Number of stream crossings	2	2	2	3	0	0	3
3. Affected threatened or endangered species	0	0	0	0	0	0	0
4. Area of prime farmland affected	0	0	0	0	0	0	0
5. 100-year Floodplain impacted - hectares (acres)	0.0	0.1 (0.2)	0.2 (0.4)	0.2 (0.5)	0	0	0.0
6. Wetlands affected - hectares (acres)	0.04 (0.1)	0.1 (0.2)	0.0	0.0	0.0	0.0	0.0
7. Waters of the U.S. affected - meters (Linear Feet) <sup>1</sup>	182.9 m (600 LF)	289.6 (950 LF)	83.8 (275 LF)	83.8 (275 LF)	0	0	0
8. Woodlands impacted - hectares (acres)	1.1 (2.6)	2.4 (6.0)	0.8 (2.1)	1.0 (2.4)	1.7 (4.2)	0	1.5 (3.6)
<b>Noise</b>							
Number NSA's exceeding abatement criteria or increasing 10 dBA or more over ambient	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9	8 of 9 <sup>2</sup>
<b>Air Quality</b>							
CO violations of 1-hr or 8-hr standards	0	0	0	0	0	0	0 <sup>2</sup>
<b>Cost (Millions)</b>							
<b>TOTAL</b>	<b>\$9.2</b>	<b>\$15.8</b>	<b>\$8.1</b>	<b>\$8.8</b>	<b>\$10.5</b>	<b>\$9.4</b>	<b>\$11.2</b>

<sup>1</sup> Length of Waters of the U.S. affected is included in length of stream relocations.

<sup>2</sup> Alt. 6B air and noise analyses were made assuming combination with Alt. 3E.

Socioeconomic

The social and economic environment would generally be improved with the build alternatives as a result of increased capacity and safer roadway and pedestrian conditions. Access to adjacent residential communities, commercial establishments and office complexes would be improved. There would be no residential or business displacements under any of the alternatives. The amount of right-of-way needed ranges from 0.0 hectares (0.0 acre) to 7.2 hectares (17.9 acres), depending upon the build alternative or combination of build alternatives selected.

No property from any publicly-owned public parklands would be required with any of the build alternatives. Several of the alternatives propose the widening of Democracy Boulevard along Stratton Park; however, no park property would be required and access to the park would not change.

The State Historic Preservation Officer has determined that there are no sites in the project area that are on or eligible for the National Register of Historic Places. A Phase I archeological survey completed for the project identified one archeological site. It was determined that this archeological site was previously disturbed and is not considered National Register eligible.

The project is consistent with the transportation elements of the Montgomery County Master Plans governing this project area: specifically, the North Bethesda - Garrett Park Master Plan, dated December, 1992; and the Potomac Sub-Region Master Plan, dated May, 1980. Table S-2, on the following page, summarizes the effects of the build alternatives on the socioeconomic environment.

Noise

The projected noise levels for the design year 2020 indicate that the Federal Highway Administration (FHWA) Noise Abatement Criteria (67 dBA) is approached or exceeded under both the no-build and build conditions at 8 of the 9 noise sensitive areas. However, the widening or other modifications proposed with any of the build alternatives result in less than a 5 dBA increase in noise levels in build conditions as compared to the no-build condition in the design year.

Air Quality

The State and National Ambient Air Quality Standards will not be exceeded under the no-build alternative or the build alternatives.

243

TABLE S-2

**SUMMARY OF EFFECTS OF BUILD ALTERNATIVES  
ON THE SOCIAL AND ECONOMIC ENVIRONMENT**

ALTERNATIVE	NO. OF PROPERTIES AFFECTED <sup>1</sup>	RIGHT-OF-WAY AREA REQUIRED	EFFECTS ON SOCIAL AND ECONOMIC ENVIRONMENT
2C	0	0	No Effects - minor ramp widening
2D	4	0.6 ha (1.4 Ac)	Acceleration lane on northbound MD 187 would require minor right-of-way taking from St. Mark Church.
2E	6	5.6 ha (13.9 Ac)	Acceleration lane on northbound MD 187 would require minor right-of-way taking from St. Mark Church. The new ramps in the northwest quadrant of the I-270/MD 187 interchange would reduce the buffer between the Windermere Community homes and the ramps from 228.6 meters (750 feet) to 91.4 meters (300 feet).
3E	4	3.0 ha (7.4 Ac)	Retaining walls as high as 7.3 m (24 feet) would be required along the I-270 side of the Windermere Community. Access to the Rock Spring Office Park from I-270 and MD 187 would be substantially improved allowing its expansion in accordance with current zoning. No residential property would be required, only commercial.
3F	4	3.4 ha (8.3 Ac)	Retaining walls as high as 7.3 m (24 feet) would be required along the I-270 side of the Windermere Community. Access to the Rock Spring Office Park from I-270 and MD 187 would be substantially improved allowing its expansion in accordance with current zoning. No residential property would be required, only commercial.
3G	4	2.5 ha (6.1 Ac)	Retaining walls as high as 7.9 m (26 feet) would be required along the I-270 side of the Windermere Community. Access to the Rock Spring Office Park from I-270 and MD 187 would be substantially improved allowing its expansion in accordance with current zoning. No residential property would be required, only commercial.

<sup>1</sup> Right-of-way acquisition required.

Additional detail regarding these effects is contained in Sections IV.A. and IV.B.

NOTE: All proposed retaining walls would be within or just outside the existing interstate right-of-way (where there is currently fencing), and therefore, would not affect pedestrian access to I-270 or community buildings.

244

TABLE S-2 (Cont'd)

SUMMARY OF EFFECTS OF BUILD ALTERNATIVES  
ON THE SOCIAL AND ECONOMIC ENVIRONMENT

ALTERNATIVE	NO. OF PROPERTIES AFFECTED <sup>1</sup>	RIGHT-OF-WAY AREA REQUIRED	EFFECTS ON SOCIAL AND ECONOMIC ENVIRONMENT
3H	1	1.1 ha (2.8 Ac)	Residential community effects would be negligible, as all widening and retaining wall construction would take place within or west of the existing I-270 median, north of MD 187.
4A	2	0.2 ha (0.5 Ac)	Retaining walls as high as 3.0 meters (10 feet) would be required along the I-270 side of the Stratton Commons Community. Democracy Boulevard widening east of I-270 would require minor right-of-way taking from A.D. Camalier and Marriott Corporation Properties.
4B	3	0.3 ha (0.7 Ac)	Retaining walls as high as 3.0 meters (10 feet) would be required along the I-270 side of the Stratton Commons Community. Democracy Boulevard widening east of I-270 would require minor right-of-way taking from A.D. Camalier and Marriott Corporation. Horizontal ramp realignment in the northeast quadrant would also require minor right-of-way taking from the Marbeth Partnership Property.
4C	0	0	Retaining walls as high as 1.5 meters (5 feet) would be required along the I-270 Spur side of the Wildwood Hills Community to minimize impacts to Thomas Branch.
4D	0	0	The new ramp carrying westbound Democracy Boulevard traffic onto southbound I-270 Spur would reduce the buffer between the Wildwood Hills Community homes and the ramp from 57.9 meters (190 feet) to 54.9 meters (180 feet).

<sup>1</sup> Right-of-way acquisition required.

Additional detail regarding these effects is contained in Sections IV.A. and IV.B.

NOTE: All proposed retaining walls would be within or just outside the existing interstate right-of-way (where there is currently fencing), and therefore, would not affect pedestrian access to I-270 or community buildings.

TABLE S-2 (Cont'd)

**SUMMARY OF EFFECTS OF BUILD ALTERNATIVES  
ON THE SOCIAL AND ECONOMIC ENVIRONMENT**

ALTERNATIVE	NO. OF PROPERTIES AFFECTED <sup>1</sup>	RIGHT-OF-WAY AREA REQUIRED	EFFECTS ON SOCIAL AND ECONOMIC ENVIRONMENT
5B	1	0.3 ha (0.7 Ac)	Retaining walls as high as 4.9 meters (16 feet) would be required along the I-270 side of the Democracy Associates Property and as high as 4.9 meters (16 feet) would be required along the I-270 side of the Ourisman Car Dealership Property. The proposed ramp from Fernwood Road to northbound I-270 Spur would require right-of-way taking from the Democracy Associates Property.
5C	1	0.1 ha (0.3 Ac)	Fernwood Road widening would require minor right-of-way taking from the Democracy Associates Property.
6B	4	1.2 ha (2.9 Ac)	Retaining walls as high as 4.6 meters (15 feet) would be required along the I-270 side of the Rock Spring Office Park. As this alternative would be, by design, combined with one of the Alternative 3's, access to the Rock Spring Office Park from northbound I-270 Spur and I-270 would be improved.

<sup>1</sup> Right-of-way acquisition required.

Additional detail regarding these effects is contained in Sections IV.A. and IV.B.

NOTE: All proposed retaining walls would be within or just outside the existing interstate right-of-way (where there is currently fencing), and therefore, would not affect pedestrian access to I-270 or community buildings.

246

## Natural Resources

Construction would partially occur within the 100-year floodplains of Thomas Branch, Old Farm Creek and several of their tributaries. This construction would be in the form of retaining walls along the stream channel banks, extensions to existing culverts and parallel relocations of stream channels. There may be temporary stream impacts during the construction of the retaining walls. Depending upon the combination of build alternatives selected, encroachment on 100-year floodplains ranges from 0.0 hectares (0.0) to 0.32 hectares (0.8 acres). Additional hydrologic and hydraulic analyses will be undertaken to determine structural designs to minimize impacts to the floodplain and water quality.

No prime farmland soils or soils of statewide importance have been identified in the project area.

The build alternatives would impact from 0.0 hectares (0.0) to 0.65 hectares (1.6 acres) of nontidal wetlands and from 0.0 hectares (0.0) to 324.6 meters (1,065 L.F.) of Waters of the U.S., depending on the alternative or combination of alternatives selected. Wetland replacement, time of year construction restrictions, sediment and erosion control measures, and storm water management practices, approved by the Maryland Department of the Environment, will be strictly enforced during construction to minimize impacts to water quality and wetlands.

No known federal or state listed threatened or endangered species exist within the project area. Any disturbed habitat would not be densely populated due to its proximity to the existing highway.

Construction impacts will include noise, dust sedimentation, access and minor commercial establishment disruption. Mitigation through careful construction timing, revegetation, erosion and sediment control, placement of construction staging areas, and implementation of effective maintenance of traffic plans will minimize both short-term and long-term impacts of this transportation improvement project.

No land use was identified with the potential for hazardous waste contamination.

247

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BOULEVARD**

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 1500.2 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 with the project area or would not be impacted by the proposed action.



248

I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BOULEVARD

ENVIRONMENTAL ASSESSMENT FORM

	YES	NO	COMMENTS
<b>A. Land Use Considerations</b>			
1. Will the action be within the 100 year floodplain?	<u>X</u>	_____	<u>See Section IV.E., page IV-12</u>
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	_____	<u>X</u>	
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	<u>X</u>	_____	<u>See Section IV.E., page IV-15</u>
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	_____	<u>X</u>	
5. Will the action occur on slopes exceeding 15%?	<u>X</u>	_____	<u>See Section III, Figures III-2A, III-2B and III-2C</u>
6. Will the action require a grading plan or a sediment control permit?	<u>X</u>	_____	<u>See Section IV.E., page IV-11</u>
7. Will the action require a mining permit for deep or surface mining?	_____	<u>X</u>	

ENVIRONMENTAL ASSESSMENT FORM (Continued)

		YES	NO	COMMENTS
8.	Will the action require a permit for drilling a gas or oil well?	<u>      </u>	<u>  X  </u>	
9.	Will the action require a permit airport construction?	<u>      </u>	<u>  X  </u>	
10.	Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	<u>      </u>	<u>  X  </u>	
11.	Will the action affect the use of a public recreation area, park forest, wildlife management area, scenic river or wildland?	<u>      </u>	<u>  X  </u>	<u>See Section IV.A., page IV-2</u>
12.	Will the action affect the use of any natural or manmade features that are unique to the county, state, or nation?	<u>      </u>	<u>  X  </u>	
13.	Will the action affect the use of an archaeological or historical site or structure?	<u>      </u>	<u>  X  </u>	<u>See Section IV.D., page IV-6</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 Section IV.E., page IV-8</u>
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250

ENVIRONMENTAL ASSESSMENT FORM (Continued)

		YES	NO	COMMENTS
15.	Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	<u>X</u>	___	<u>See Section IV.E., page IV-24</u>
16.	Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	<u>X</u>	___	<u>See Section IV.E., page IV-8</u>
17.	Will the action require a permit for the drilling of a well?	___	<u>X</u>	
18.	Will the action require a permit for water appropriation?	___	<u>X</u>	
19.	Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	___	<u>X</u>	
20.	Will the project require a permit for the construction and operation of facilities for treatment and/or land disposal of liquid waste derivatives?	___	<u>X</u>	
21.	Will the action result in any discharge into surface or sub-surface water?	___	<u>X</u>	

ENVIRONMENTAL ASSESSMENT FORM (Continued)

	YES	NO	COMMENTS
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	<u>      </u>	<u>  X  </u>	
<b>C. Air Use Considerations</b>			
23. Will the action result in any discharge into the air?	<u>  X  </u>	<u>      </u>	<u>See Section IV.G., page IV-41</u>
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	<u>      </u>	<u>  X  </u>	
25. Will the action generate additional noise which differs in character or level from present conditions?	<u>  X  </u>	<u>      </u>	<u>See Section IV.F., page IV-31</u>
26. Will the action preclude future use of related air space?	<u>      </u>	<u>  X  </u>	
27. Will the action generate any radiological, electrical, magnetic, or light influences?	<u>      </u>	<u>  X  </u>	
<b>D. Plants and Animals</b>			
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 Section IV.E., page IV-31</u>

252

ENVIRONMENTAL ASSESSMENT FORM (Continued)

		YES	NO	COMMENTS
29.	Will the action result in the significant reduction or loss of any fish or wildlife habitats?	___	<u>X</u>	
30.	Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	___	<u>X</u>	
<b>E. Socioeconomic</b>				
31.	Will the action result in a pre-emption or division of properties or impair their economic use?	___	<u>X</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>See Sections IV.A. and IV.B., pages IV-1 and IV-3</u>
33.	Will the action alter land values?	<u>X</u>	___	<u>See Section IV.B., page IV-5</u>
34.	Will the action affect traffic flow and volume?	<u>X</u>	___	<u>See Section II.D., page IV-12</u>
35.	Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	___	<u>X</u>	

ENVIRONMENTAL ASSESSMENT FORM (Continued)

		YES	NO	COMMENTS
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>	
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 Section IV.C., page IV-5</u>
38.	Will the action affect the employment opportunities for persons in the area?	<u>  X  </u>	<u>      </u>	<u>See Section IV.B., page IV-3</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 Section IV.B., page IV-5</u>
40.	Will the action discourage present sources of tax revenue from remaining in the area to attract new sources of tax revenue?	<u>      </u>	<u>  X  </u>	
41.	Will the action affect the ability of the area to attract tourism?	<u>      </u>	<u>  X  </u>	

**F. Other Considerations**

42.	Could the action endanger the public health, safety or welfare?	<u>      </u>	<u>  X  </u>	
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254

ENVIRONMENTAL ASSESSMENT FORM (Continued)

	YES	NO	COMMENTS
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	<u>      </u>	<u>  X  </u>	<u>See Section II.D. &amp; II.E., pages II-8 and II-13</u>
44. Will the action be of statewide significance?	<u>      </u>	<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>      </u>	<u>  X  </u>	
46. Will the action require additional power generation or transmission capacity?	<u>      </u>	<u>  X  </u>	
47. This agency will develop a complete environmental effects report on the proposed action.	<u>      </u>	<u>  X*  </u>	

\* In accordance with the Natural Environmental Policy Act, and 23 CFR 771, this Environmental Assessment has been prepared. This document satisfies the requirements of the Maryland Environmental Policy Act and the National Environmental Policy Act.

255

## TABLE OF CONTENTS



256

**TABLE OF CONTENTS**

**PAGE NO.**

**SUMMARY** ..... S-1

- 1. Administrative Action ..... S-1
- 2. Additional Information Concerning This Project May Be  
Obtained By Contacting: ..... S-1
- 3. Description of Action ..... S-1
- 4. Alternatives Description ..... S-2
- 5. Summary of Impacts ..... S-6

**ENVIRONMENTAL ASSESSMENT FORM** ..... S-14

**I. DESCRIPTION OF PROPOSED ACTION** ..... I-1

- A. Project Location ..... I-1
- B. Project Description ..... I-1
- C. Description of Existing Environment ..... I-1

- 1. Social Environment ..... I-1
  - a. Population and Housing ..... I-1
  - b. Communities Within the Study Area ..... I-3
  - c. Community Facilities ..... I-4
  - d. Parklands ..... I-5

- 2. Economic Environment ..... I-6
  - a. Countywide Employment Characteristics ..... I-6
  - b. Study Area Employment Characteristics ..... I-6

- 3. Land Use ..... I-7
  - a. Existing Land Use in the Study Area ..... I-7
  - b. Hazardous Materials/Waste Sites ..... I-8
  - c. Future Land Use in the Study Area ..... I-8

257

**TABLE OF CONTENTS (Cont'd)**

**PAGE NO.**

4. Historic and Archaeological Resources ..... I-12

    a. Standing Historic Structures ..... I-12

    b. Archaeological Sites ..... I-12

5. Natural Environment ..... I-12

    a. Physiography/Topography, and Geology ..... I-12

    b. Soils ..... I-12

    c. Water Resources ..... I-13

    d. Floodplains ..... I-14

6. Ecological Conditions ..... I-14

    a. Wetlands ..... I-14

    b. Forest Areas ..... I-22

    c. Wildlife, Terrestrial and Aquatic Habitat ..... I-22

    d. Threatened and Endangered Species ..... I-23

7. Existing Noise Conditions ..... I-23

    a. Description of Noise Sensitive Areas ..... I-23

    b. Ambient Noise Level Measurements ..... I-23

    c. Results of Noise Monitoring ..... I-24

8. Existing Air Quality ..... I-24

**II. PURPOSE AND NEED ..... II-1**

    A. Purpose ..... II-1

    B. Background and Need ..... II-1

    C. Existing and Planned Transportation Network ..... II-3

TABLE OF CONTENTS (Cont'd)

PAGE NO.

- 1. Roadways ..... II-3
- 2. Master Plan Recommendations ..... II-5
- 3. Transit Services ..... II-7
- 4. Pedestrian/Bicycle Facilities ..... II-7
  
- D. Traffic Statistics ..... II-8
- E. Accident Statistics ..... II-13
  
- III. ALTERNATIVES CONSIDERED ..... III-1**
  - A. Preliminary Alternates Developed ..... III-2
    - 1. Alternative 1 (No-Build) ..... III-2
    - 2. Alternatives 2A and 2B (I-270 East Segment/MD 187) ..... III-3
    - 3. Alternatives 3A, 3B and 3C (I-270 East Segment/Rockledge Drive Connector/MD 187) ..... III-3
    - 4. Alternatives 4A, 4B, 4C and 4D (I-270 Spur/Democracy Boulevard) ..... III-4
    - 5. Alternatives 5A, 5B and 5C (I-270 Spur/Fernwood Road) ..... III-6
    - 6. Alternatives 6A and 6B (I-270 Spur/I-270 East Segment - the Y-Split) ..... III-7
  
  - B. Alternates Dropped From Further Study ..... III-7
    - 1. Alternatives Presented at the Original and Supplemental Alternates Public Meeting That Were Subsequently Dropped .... III-7
    - 2. Alternatives Developed Subsequent to the Supplemental Alternates Public Meeting and Dropped ..... III-8

259

**TABLE OF CONTENTS (Cont'd)**

**PAGE NO.**

C. Alternatives Retained for Detailed Study ..... III-9

1. Alternative 1 (no-build) ..... III-10

2. Alternatives 2C, 2D and 2E - Improvements to the Existing  
I-270/MD 187 Interchange ..... III-10

3. Alternatives 3E, 3F, 3G and 3H - I-270 Interchanges with the  
Proposed Rockledge Drive Connector, Maintaining the  
Existing Connection with MD 187 ..... III-11

4. Alternatives 4A, 4B, 4C and 4D - Improvements to the Existing  
I-270 Spur/Democracy Boulevard Interchange ..... III-12

5. Alternatives 5B and 5C - New Interchange Connecting  
I-270 Spur and Fernwood Road ..... III-12

6. Alternative 6B - New Ramp Connecting Northbound I-270 Spur  
with Rockledge Drive ..... III-12

D. Combinations of Build Alternatives ..... III-13

**IV. ENVIRONMENTAL CONSEQUENCES ..... IV-1**

A. Social ..... IV-1

1. Disruption of Neighborhoods and Communities ..... IV-1

2. Title VI Statement ..... IV-2

3. Effects on Parks and Recreation Facilities ..... IV-2

4. Effects on Access to Community Services and Facilities ..... IV-3

B. Economic Impacts ..... IV-3

1. Effects on Local Business ..... IV-3

2. Effects on Regional Business ..... IV-4

3. Effects on The Tax Base ..... IV-5

260

TABLE OF CONTENTS (Cont'd)

	PAGE NO.
C. Land Use Impacts .....	IV-5
D. Effects on Historic and Archaeological Resources - Section 106 .....	IV-6
E. Natural Environment .....	IV-7
1. Effects on Geology, Topography, Soils .....	IV-7
a. Geology and Topography .....	IV-7
b. Soils .....	IV-7
2. Water Resources .....	IV-8
a. Surface Water .....	IV-9
b. Groundwater Effects .....	IV-11
3. Floodplains .....	IV-12
4. Effects on Hazardous Materials/Waste Sites .....	IV-14
5. Ecological Conditions .....	IV-15
a. Wetlands .....	IV-15
b. Wildlife, Terrestrial and Aquatic Habitats .....	IV-30
c. Threatened and Endangered Species .....	IV-31
F. Noise Impacts .....	IV-31
1. Noise Prediction Methodology .....	IV-31
a. Federal Highway Administration Standards .....	IV-31
b. Noise Prediction Methodology using FHWA Model ..	IV-34
2. Noise Prediction Results .....	IV-34

261

**TABLE OF CONTENTS (Cont'd)**

	<b>PAGE NO.</b>
3. Construction Noise .....	IV-40
G. Air Quality .....	IV-41
1. Objectives and Type of Analysis .....	IV-41
2. Construction Impacts .....	IV-41
3. Receptor Sites .....	IV-41
4. Results of Microscale Analysis .....	IV-42
5. Conformity With Regional Air Quality Planning .....	IV-42
6. Analyses Inputs .....	IV-43
a. Traffic Data .....	IV-43
b. Vehicular Emissions .....	IV-43
H. Caline3 Analysis .....	IV-44
<b>V. COMMENTS AND COORDINATION</b>	
<b>VI. SELECTED REFERENCES</b>	
<b>VII. APPENDICES</b>	

262

# LIST OF FIGURES

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>FOLLOWS PAGE</u>
S-1	Build Alternatives Key Map	S-2
I-1	Project Location Map	I-1
I-2	Study Area Map	I-1
I-3	Census Tracts	I-2
I-4	Community Facilities and Environmental Features	I-5
I-5	Existing Land Use	I-7
I-6	Existing Zoning	I-9
I-7	Key Vacant or Redevelopable Parcels	I-9
I-8A	Existing Wetlands	I-20
I-8B	Existing Wetlands	I-20
I-9	Air and Noise Receptor Locations	I-25
II-1	1994 Existing Conditions Average Daily Traffic	II-10
II-2	2020 Existing Conditions Average Daily Traffic	II-10
II-3	1994 A.M. Peak Hour Volumes and LOS	II-10
II-4	1994 P.M. Peak Hour Volumes and LOS	II-10
II-5	2020 No Build A.M. Peak Hour Volumes and LOS	II-10
II-6	2020 No Build P.M. Peak Hour Volumes and LOS	II-10
II-7	1994 Existing Interchange LOS (A.M./P.M.)	II-10
II-8	2020 No Build Interchange LOS (A.M./P.M..)	II-10
III-1A	History of Alternatives 2A, 2B, 2C, 2D, 2E	III-9
III-1B	History of Alternatives 3A, 3B, 3C, 3D	III-9
III-1C	History of Alternatives 3E, 3F, 3G, 3H	III-9
III-1D	History of Alternatives 4A, 4B, 4C, 4C Op. 1, 4D	III-9
III-1E	History of Alternatives 5A, 5B, 5C	III-9
III-1F	History of Alternatives 6A, 6B	III-9

263

LIST OF FIGURES (Cont'd)

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>FOLLOWS PAGE</u>
III-1G	History of Alternatives HOV-1, HOV-2, HOV-3, HOV-4, HOV-5	III-9
III-2A	Typical Sections - Build Alternatives	III-13
III-2B	Typical Sections - Build Alternatives	III-13
III-2C	Typical Sections - Build Alternatives	III-13
III-3	Legend - Plan Sheets	III-13
III-4	Alternative 2C	III-13
III-5A	Alternative 2D	III-13
III-5B	Alternative 2D	III-13
III-6A	Alternative 2E	III-13
III-6B	Alternative 2E	III-13
III-6C	Alternative 2E	III-13
III-7A	Alternative 3E	III-13
III-7B	Alternative 3E	III-13
III-8A	Alternative 3F	III-13
III-8B	Alternative 3F	III-13
III-8C	Alternative 3F	III-13
III-9A	Alternative 3G	III-13
III-9B	Alternative 3G	III-13
III-9C	Alternative 3G	III-13
III-10A	Alternative 3H	III-13
III-10B	Alternative 3H	III-13
III-11A	Alternative 4A	III-13
III-11B	Alternative 4A	III-13
III-11C	Alternative 4A Signalized Eastbound Ramp Option	III-13
III-12A	Alternative 4B	III-13
III-12B	Alternative 4B	III-13
III-12C	Alternative 4B	III-13



264

LIST OF FIGURES (Cont'd)

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>FOLLOWS PAGE</u>
III-12D	Alternative 4B Signalized Eastbound Ramp Option	III-13
III-13A	Alternative 4C	III-13
III-13B	Alternative 4C	III-13
III-14A	Alternative 4D	III-13
III-14B	Alternative 4D	III-13
III-15	Alternative 5B	III-13
III-16	Alternative 5C	III-13
III-17A	Alternative 6B	III-13
III-17B	Alternative 6B	III-13

265

# LIST OF TABLES

	PAGE
S-1	Summary Comparison of Impacts . . . . . S-7
S-2	Summary of Effects of Build Alternatives on the Social and Economic Environment . . . . . S-10
I-1	Population and Growth in the Study Area . . . . . I-1
I-2	Wetlands Summary . . . . . I-19
I-3	NSA's and Ambient Noise Levels . . . . . I-25
II-1	1994-2020 Average Daily Traffic Volume Comparison . . . . . II-3
II-2	2020 Level of Service Analysis I-270/MD 187/Rockledge Drive Connector . . . . . II-14
II-3	2020 Level of Service Analysis I-270 Spur/Democracy Boulevard . . . . . II-15
II-4	2020 Level of Service Analysis I-270 Spur/Fernwood Road and I-270 Spur/I-270 . . . . . II-16
II-5	Reported Accidents at I-270/MD 187 and I-270 Spur/Democracy Boulevard -- Jan. 1, 1990 - Dec. 31, 1992 . . . . . II-18
IV-1	Effects on 100-Year Floodplains . . . . . IV-13
IV-2	Affected Wetlands - By Alternative . . . . . IV-27
IV-3	Affected Wetlands - Combinations of Alternatives . . . . . IV-28
IV-4	Affected Wetlands - By Area . . . . . IV-29
IV-5	Affected Woodland/Forested Areas . . . . . IV-30
IV-6	Noise Abatement Criteria . . . . . IV-32
IV-7	Projected Noise Levels . . . . . IV-35
IV-8	I-270 Noise Abatement Analysis Summary for 2020 . . . . . IV-37
IV-9	Year 2000 CO Concentration Estimates (PPM) Alternatives 2C, 2D, and 2E . . . . . IV-47
IV-10	Year 2020 CO Concentration Estimates (PPM) Alternatives 2C, 2D, and 2E . . . . . IV-48
IV-11	Year 2000 CO Concentration Estimates (PPM) Alternatives 3E, 3F, and 3G . . . . . IV-49
IV-12	Year 2020 CO Concentration Estimates (PPM) Alternatives 3E, 3F, and 3G . . . . . IV-50
IV-13	Year 2000 CO Concentration Estimates (PPM) Alternatives 4A, 4B, 4C, and 4D . . . . . IV-51
IV-14	Year 2020 CO Concentration Estimates (PPM) Alternatives 4A, 4B, 4C, and 4D . . . . . IV-52

266

**LIST OF TABLES (Cont'd)**

		<b>PAGE</b>
IV-15	Year 2000 CO Concentration Estimates (PPM) Alternatives 5B, 5C, and 3H .....	IV-53
IV-16	Year 2020 CO Concentration Estimates (PPM) Alternatives 5B, 5C, and 3H .....	IV-54
IV-17	Year 2000 and 2020 CO Concentration Estimates (PPM) Alternative 6B .	IV-55

**I. DESCRIPTION OF PROPOSED ACTION**

268

## **I. DESCRIPTION OF PROPOSED ACTION**

### **A. Project Location**

The I-270 interchange at MD 187 (Old Georgetown Road) and the I-270 Spur interchange at Democracy Boulevard are located in Montgomery County, Maryland, northwest of Washington, D.C. (Figure I-1). I-270, within the study limits, is occasionally referred to as the I-270 East Segment, as it links mainline I-270, from Rockville, to I-495, east of MD 355. MD 187 is the only interchange on I-270 within this 3.89 kilometer (2.42 mile) stretch of interstate highway. The I-270 Spur, occasionally referred to as the I-270 West Spur, connects mainline I-270 from Rockville to I-495, west of MD 187. Democracy Boulevard is the only interchange within this 2.59 kilometer (1.61 mile) stretch of interstate highway. These two interchanges provide access between I-270 and Rock Spring Office Park, Montgomery Mall, and surrounding residential and commercial developments.

### **B. Project Description**

This project planning study was initiated based on the severity of traffic congestion and the high accident rate within and in the immediate vicinity of the I-270 interchanges at MD 187 and Democracy Boulevard and the planned growth in population, employment and office/retail space in the area served by the interchanges. Interchange characteristics that contribute to operational problems include insufficient weave length, insufficient turn lane storage length, lack of merge area, insufficient acceleration/deceleration lane length and substandard interchange ramp geometrics. This study includes an evaluation of existing conditions and alternative methods to improve capacity and safety, considering how efficiently each method provides for planned growth and accommodates other modes of transportation that are proposed in the study area (Figure I-2).

### **C. Description of Existing Environment**

#### **1. Social Environment**

##### **a. Population and Housing**

According to the 1990 U.S. Census, the population of Montgomery County grew by nearly 31 percent, from 579,053 to 757,027 people, during the period 1980-1990, becoming the State's most populous jurisdiction. By the design year 2020, the County's population is expected to reach 1,000,000 people, an increase of 32 percent over 1990.

269

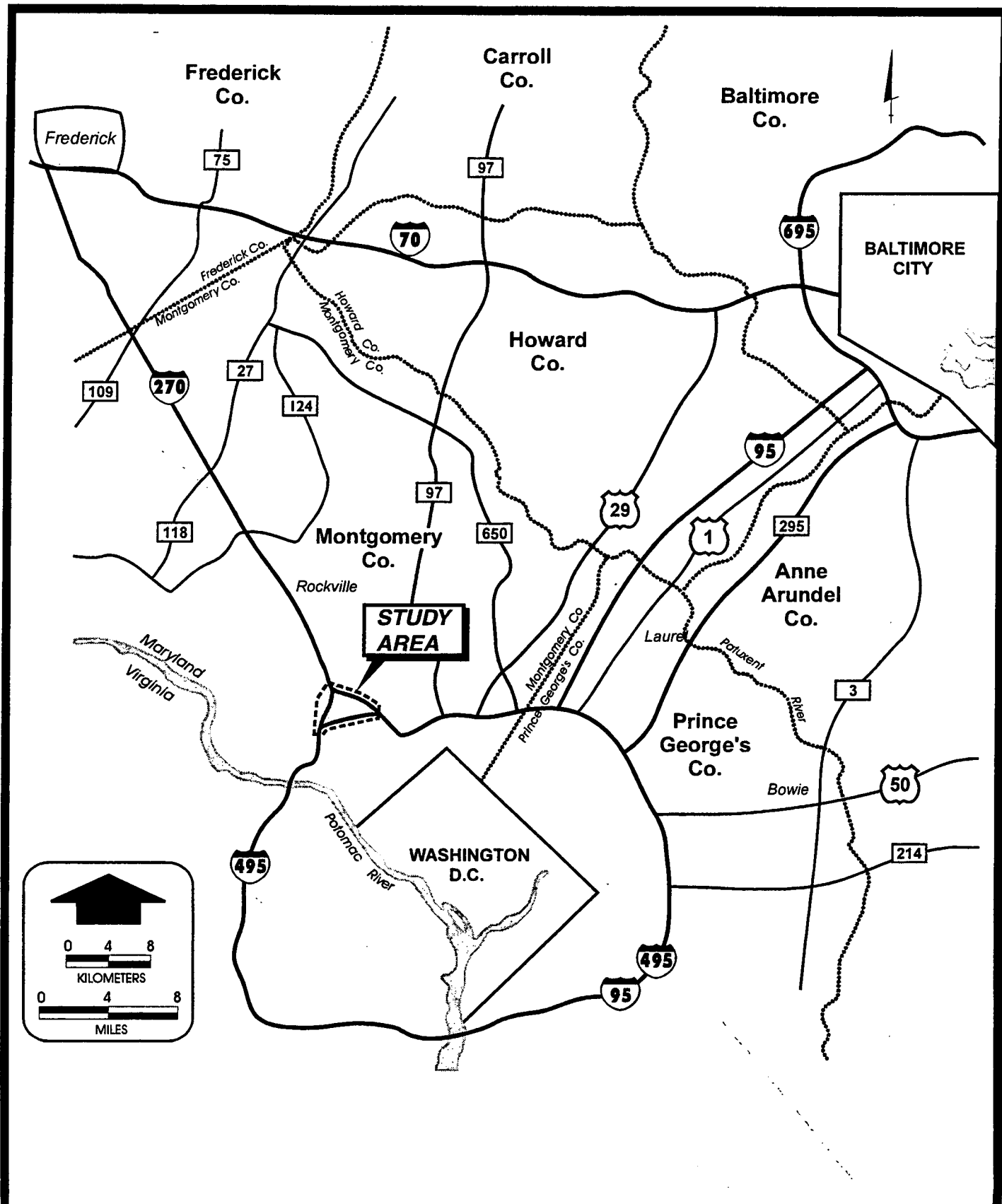
The study area, situated south of Rockville and northwest of Washington, D.C. in Montgomery County, is bounded by Tuckerman Lane to the north, I-495 to the south, the junction of I-270 (East Segment) and I-495 to the east, and Westlake Drive to the west. The area contains a substantial amount of residential development, as well as commercial/retail and office development. There was a rapid rate of urban growth in this region in the 1980's.

The study area consists of Census Tract 7045.01 and portions of Census Tracts 7012.03, 7012.05, 7044.01, and 7060.04, as shown in Figure I-3. Since census information for portions of census tracts is not available, the data available for the census tracts as a whole will be used for the purpose of discussing the socioeconomic aspects of the study area. During the period 1980-1990, the total population in the area defined by these census tracts increased by nearly 29 percent, from 21,917 to 28,223 people. Census Tracts 7012.05 and 7045.01 experienced net declines in population while the other census tracts experienced a growth in population. The population in Census Tract 7012.03 increased by nearly 130 percent. In 1990, the largest portion (36.9 percent) of the total population in the study area census tracts resided in Census Tract 7012.03, and the smallest percentage (9.5 percent) in Census Tract 7044.01. Table I-1 shows population data for the study area for 1980 and 1990.

**TABLE I-1**  
**POPULATION AND GROWTH IN THE STUDY AREA**

Area	1980	1990	% Change
Montgomery County	579,053	757,027	+30.7
<u>Census Tracts</u>			
7012.03	4,532	10,409	+129.7
7012.05	5,981	5,740	-4.0
7044.01	2,657	2,669	+0.5
7045.01	3,912	3,623	-7.4
7060.04	4,835	5,782	+19.6
<b>Total Census Tracts</b>	21,917	28,223	+28.8

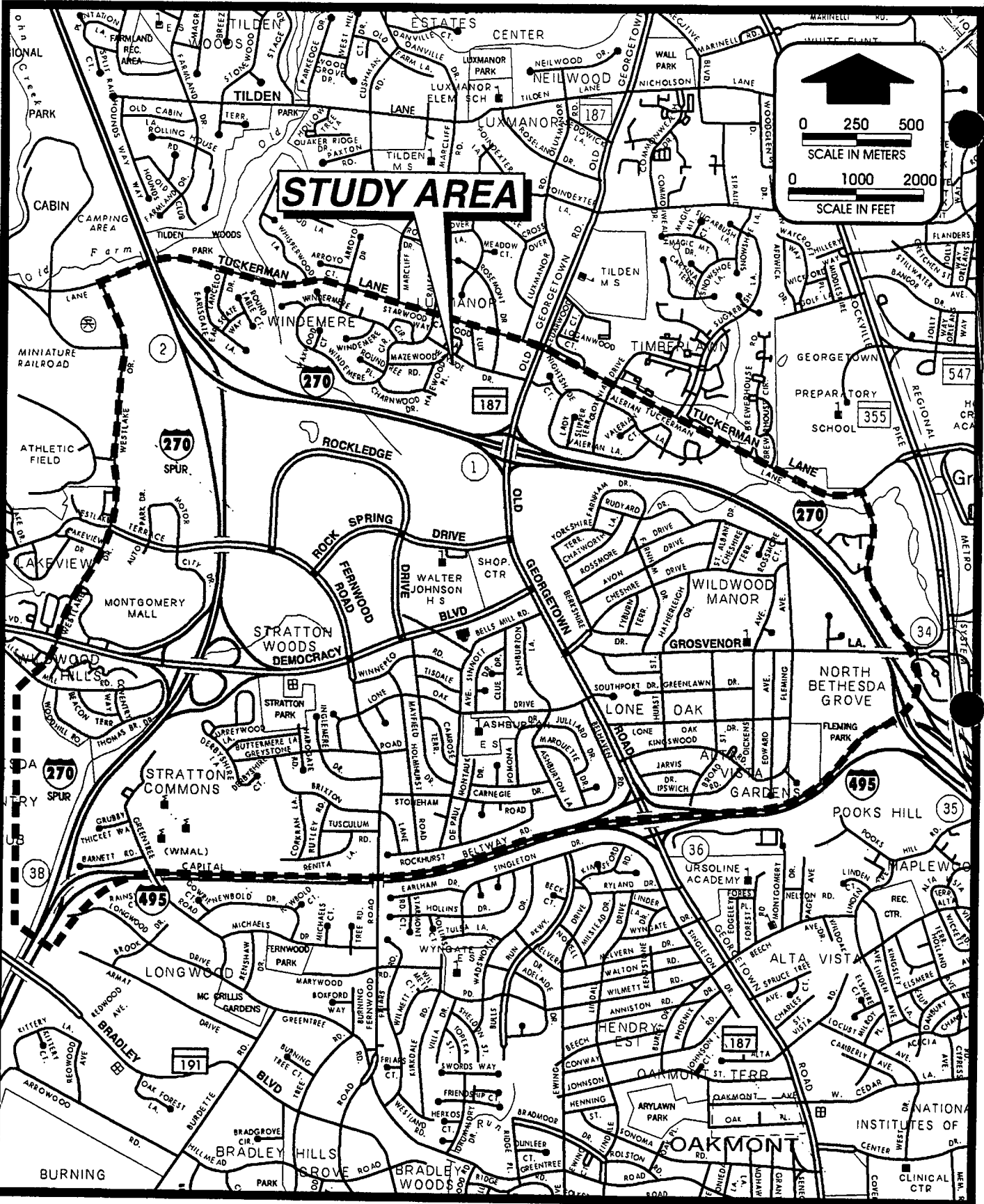
Source: U.S. Bureau of the Census



**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**PROJECT LOCATION  
MAP**

**FIGURE I - 1**

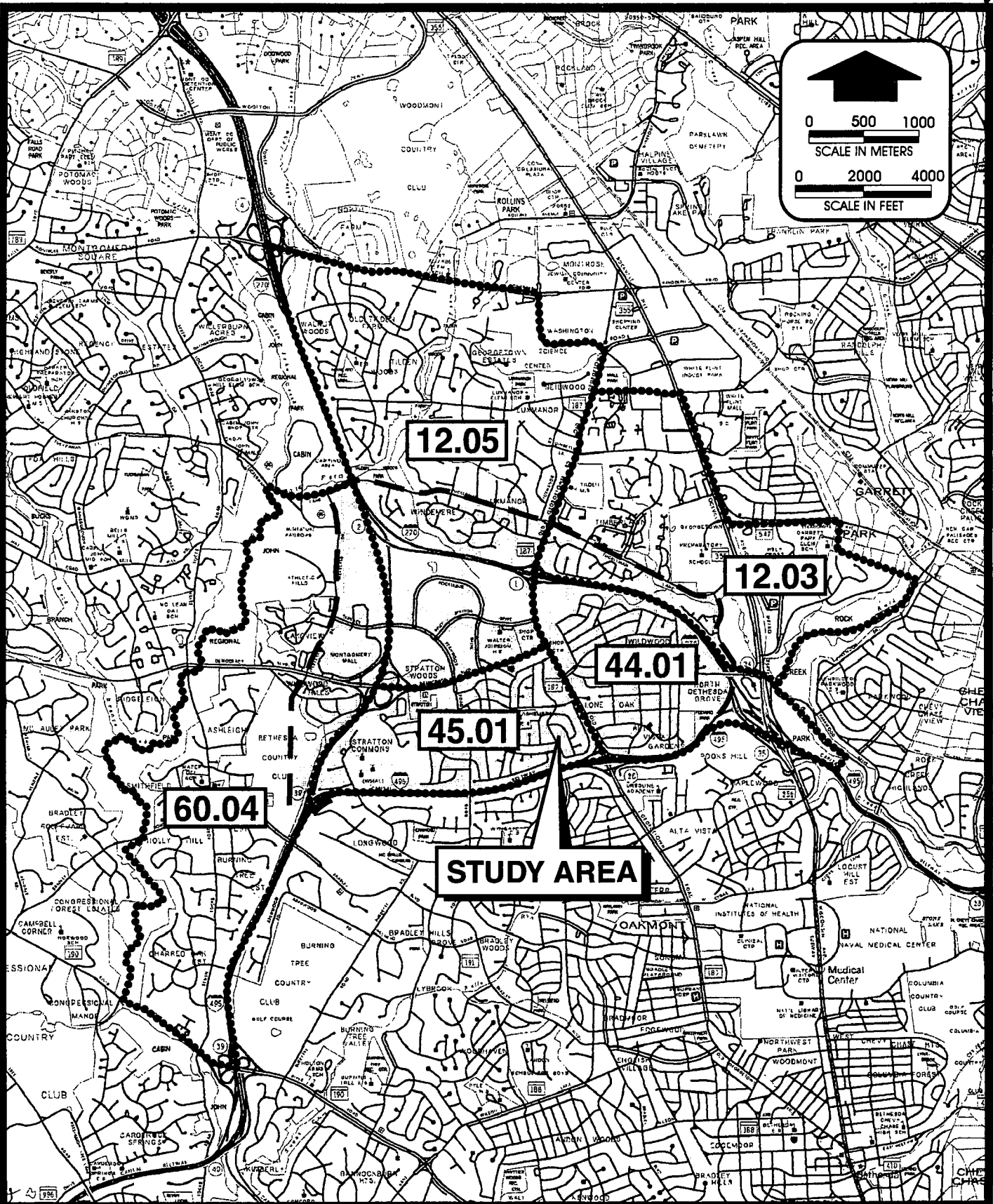


**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**STUDY AREA MAP**

**FIGURE 1-2**





**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**CENSUS TRACTS**

**FIGURE 1-3**

An analysis of 1990 census data indicates that 70.6 percent of the total population in the study area census tracts were persons 16 through 64 years old, and 13.7 percent were persons 65 years and older. The largest percentage of the age group 65 years and older (35.2 percent) appears in Census Tract 7012.03. However, Census Tract 7060.04 has the highest ratio of persons 65 years and older to total number of persons residing in the census tract (17.5 percent). County-wide data from the Maryland Office of Planning indicate that there were 282,228 households in 1990 in Montgomery County, and the average household size was 2.65 persons. By the year 2020, the number of households in Montgomery County is projected to increase by 41.7% to 400,000, with an average household size of 2.47 persons. The total number of housing units in Montgomery County in 1990 was 295,723 units including 13,495 vacant units. By housing type, single family detached units were the most numerous with 153,872 units, or approximately 52% of the total number of housing units in Montgomery County in 1990. Within the study area, residential communities have generally reached the built-out level and the overall number of housing units is not expected to increase significantly.

The 1990 U.S. Census indicates that 21.1 percent of the total population in the study area census tracts were foreign born, with the largest percentage of this group (37.8 percent) residing in Census Tract 7012.03. Census Tract 7045.01 has the highest ratio of foreign born persons to total number of persons residing in the census tract (27.8 percent).

According to the Maryland Office of Planning, in 1990, 76.7% of the total population of Montgomery County were White, 12.2% were African-American, 8.2% were Asian or Pacific Islander, 0.2% were American Indian, Eskimo, or Aleut, and 2.7% were of other races. Persons of Hispanic origin, any race, totalled 7.4% of the County's population.

**b. Communities Within the Study Area**

The study area is comprised of a number of existing residential communities, mostly single-family homes, as shown on Figure I-4. The northern portion of the study area contains Heritage Walk, Windermere, Luxmanor, and Timberlawn. Stratton Commons, Stratton Woods, Fernwood, and Alta Vista Gardens are located in the southern portion of the study area. The eastern section of the study area contains Wildwood Manor, Grosvenor Woods and North Bethesda Grove. Wildwood Hills is located in the western portion of the study area. Rock Spring Office Park, a corporate office center included in the study area that provides over 492,000 square meters (5.3 million square feet) of office space in 21 buildings, and Georgetown Village are located in the central portion of the study area.

**c. Community Facilities (Figure I-4)**

The following services and facilities are contained in the study area:

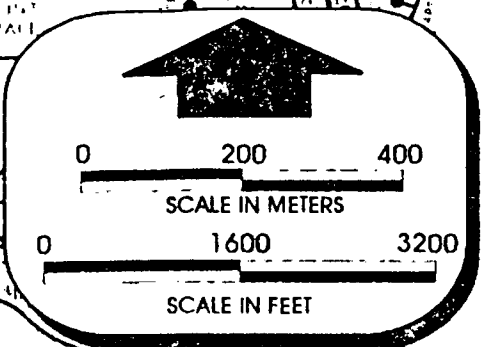
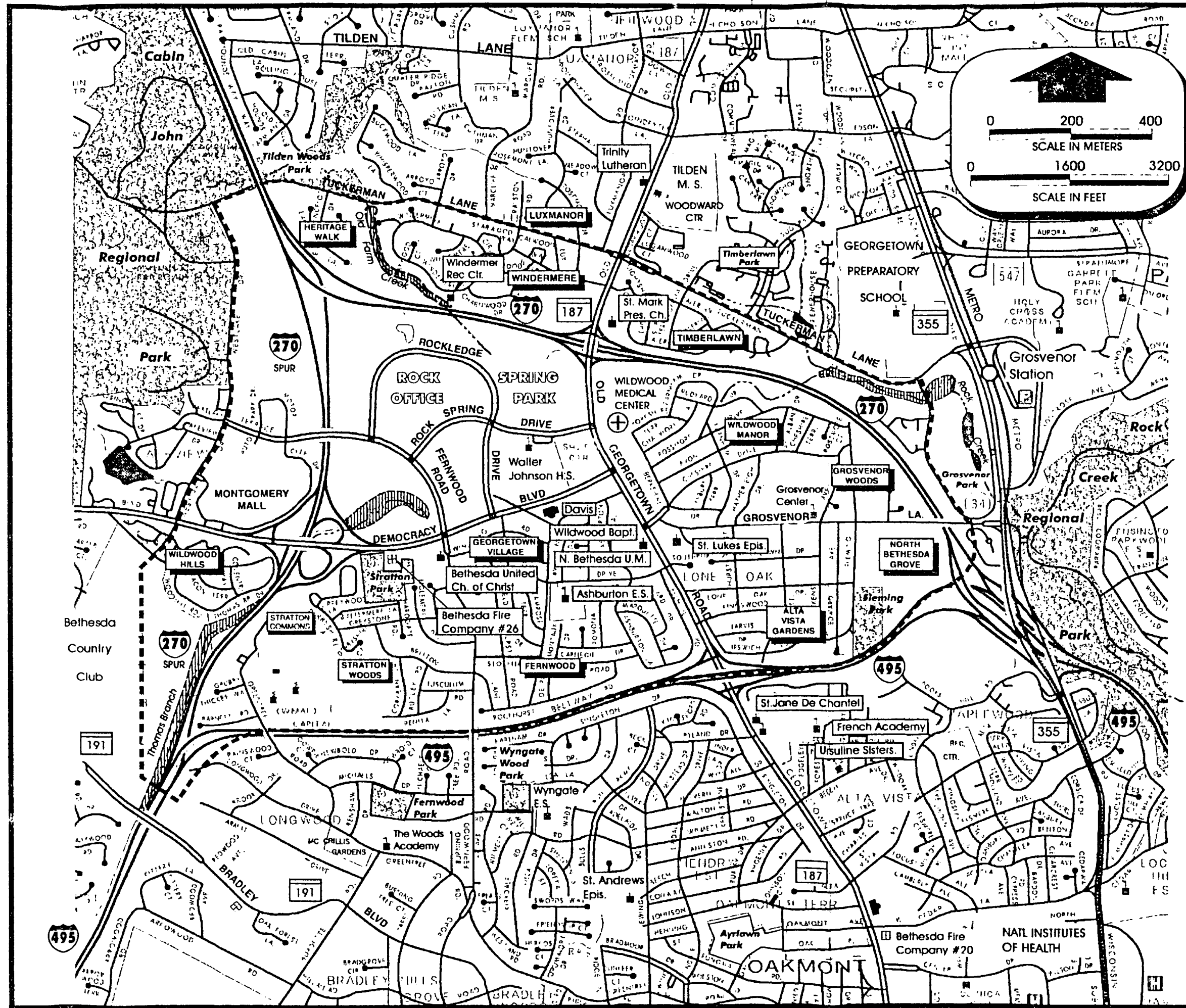
- Schools
  - Ashburton Elementary School
  - Walter Johnson High School
  - Grosvenor Center
  
- Churches
  - Bethesda United Church of Christ
  - St. Luke's Episcopal
  - North Bethesda United Methodist
  - St. Mark Church
  - Wildwood Baptist
  
- Libraries
  - Montgomery County Public Library, Davis Branch
  - Davis Information Center for People with Special Needs
  
- Fire and Ambulance Services
  - Bethesda Fire Department, Company 26
  
- Health Facilities
  - Wildwood Medical Center
  
- Public Transportation
  - Washington Metropolitan Area Transit Authority (regional bus service)
  - Montgomery County Department of Transportation Ride - On Service

**Public Water and Sewer Service**

Additional services and facilities that are available to local residents but are located outside the study area are listed below:

- Schools
  - Georgetown Preparatory
  - Tilden Middle School, Woodward Center
  - Wyngate Elementary
  - The Woods Academy

I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD



**LEGEND**

- PARK
- STREAM
- 100-YEAR FLOODPLAIN
- RECREATION CTR
- SCHOOL
- CHURCH
- LIBRARY
- FIREHOUSE
- Metro

**COMMUNITY FACILITIES  
AND  
ENVIRONMENTAL FEATURES**

FIGURE I-4

- St. Jane De Chantel
- Ursuline Sisters
- French Academy
  
- Churches - Trinity Lutheran
- St. Jane De Chantel
  
- Police Services - Montgomery County Police Department  
(Rockville and Bethesda District Stations)
- Maryland State Police (Rockville Barracks)
  
- U.S. Post Office - West Bethesda Branch
  
- Health Facilities - National Naval Medical Center in Bethesda
- Suburban Hospital in Bethesda
- Shady Grove Adventist in Rockville
  
- Public Transportation - Wash. Metropolitan Area Transit Auth. (Metrorail)
- MARC, Garrett Park (commuter rail service)

**d. Parklands (Figure I-4)**

The following publicly-owned public parks and recreation areas are located in the study area:

- Stratton Park
- Fleming Park
- Windermere Recreation Center (Community owned)

The following parks and recreation areas are located outside the study area but are readily accessible by local residents:

- Cabin John Regional
- Timberlawn
- Tilden Woods
- Rock Creek Regional

- Fernwood
- Wyngate Woods

Stratton Park, located along the south side of Democracy Boulevard, just east of I-270 Spur, is the only publicly-owned public park which borders any of the study area roadways that are the focus of this project. Stratton Park was purchased with Maryland Program Open Space and HUD Open Space Land Program funds and is maintained by M-NCPPC. Recreational facilities within this site include a softball field, a football/soccer field, basketball courts, tennis courts, playground equipment and a picnic shelter. Stratton Park is considered essential to the recreational needs of the surrounding community, and there are no plans for future changes to the park.

**2. Economic Environment**

**a. Countywide Employment Characteristics**

In 1990, there were 512,700 jobs in Montgomery County. By the year 2020, employment in Montgomery County is expected to reach 697,100, an increase of 36% over 1990 figures. Of the total number of jobs in the County in 1990, approximately 39% were service oriented, while approximately 17% were government jobs. Service and government type jobs were the two largest categories of jobs in Montgomery County in 1990. It is projected that approximately 48% of the jobs in the County in 2020 will be service type jobs and approximately 14% will be government jobs. Countywide, the median household income in 1990 was \$54,089, increasing in 1993 to \$58,700, an increase of 8.5% over the three year period.

**b. Study Area Employment Characteristics**

Within the study area census tracts in 1990, there was a total of 17,329 persons of age 16 and over who were employed. An analysis of 1990 census data reveals that the majority of this working population in the study area census tracts were employed in public administration, professional services, retail trade, health services, education, business and repair services, finance, insurance and real estate.

Much of the study area contains residential development; however, the area also includes commercial/retail, office park, and business park development. Located within the study area are offices of major corporations, shopping centers, and a regional retail facility, Montgomery Mall. Most of the employment in the study area can be attributed to these establishments. Rock

Spring Office Park, a corporate office center centrally located in the study area, contains over 492,000 square meters (5.3 million square feet) of office space. The Montgomery Mall, located in the western extremity of the study area, contains approximately 102,000 square meters (1.1 million square feet) of retail space. Within the study area, there is the potential for further growth in commercial and office development. Rock Spring Office Park could potentially experience an increase in gross floor area of 288,000 square meters (3.1 million square feet), approximately 60% more than exists today. This translates into a substantial increase in employment opportunities in the future.

**3. Land Use**

**a. Existing Land Use in the Study Area**

The Maryland-National Capital Park and Planning Commission (M-NCPPC) is a bi-County (Montgomery and Prince George's) agency whose responsibilities include all local plans, recommendations on zoning amendments, administration of subdivision regulations and general administration of parks. To carry out these responsibilities, M-NCPPC has divided the counties into planning areas, two of which contain the study area for this project.

Most of the study area is located in the North Bethesda-Garrett Park Planning Area (Planning Area 30), with a small portion west of the I-270 Spur being located in the Potomac - Cabin John Planning Area. For the purpose of describing and analyzing demographics, socioeconomics, land use and transportation issues related to this project planning study, study area limits are defined as indicated on Figures I-2 to I-5.

As shown in Figure I-5, the existing land use in the study area consists of the following categories:

- Residential, One-family, 20,000 S.F. lots (R-200)
- Residential, One-family, 9,000 S.F. lots (R-90)
- Residential, One-family, 6,000 S.F. lots (R-60)
- Residential, Townhouse
- Local Commercial/Retail
- Commercial, Office Park
- Technology and Business Park
- Vacant Land
- Institutional (Church, School, etc.)
- Parkland

As seen on Figure I-5, a substantial portion of the study area is being used for residential purposes, mostly single-family homes, in communities such as Windermere, Luxmanor, and Timberlawn to the north; Stratton Woods to the south; Wildwood Manor to the east; and Wildwood Hills to the west.

The sector centrally located in the study area that is bounded by I-270 (East Segment), I-270 Spur, MD 187, and Democracy Boulevard encompasses 100 hectares (247 acres), and is made up almost entirely of the Rock Spring Office Park, which is a corporate office center containing over 492,000 square meters (5.3 million square feet) of office space in 21 buildings. About 40 percent of the Park's total office square footage is occupied by Lockheed Martin, Marriott, and IBM, while high technology professional and service firms occupy the remaining office space. Also included in this sector is Walter Johnson High School and Georgetown Square Shopping Center.

Located in the northwest quadrant of the I-270 Spur interchange at Democracy Boulevard, the western extremity of the study area, is the Montgomery Mall, which contains approximately 102,000 square meters (1.1 million square feet) of retail space and serves as a regional retail facility for the area. Retail land uses are also found in the form of smaller shopping centers and individual stores along MD 187 (Old Georgetown Road).

**b. Hazardous Materials/Waste Sites**

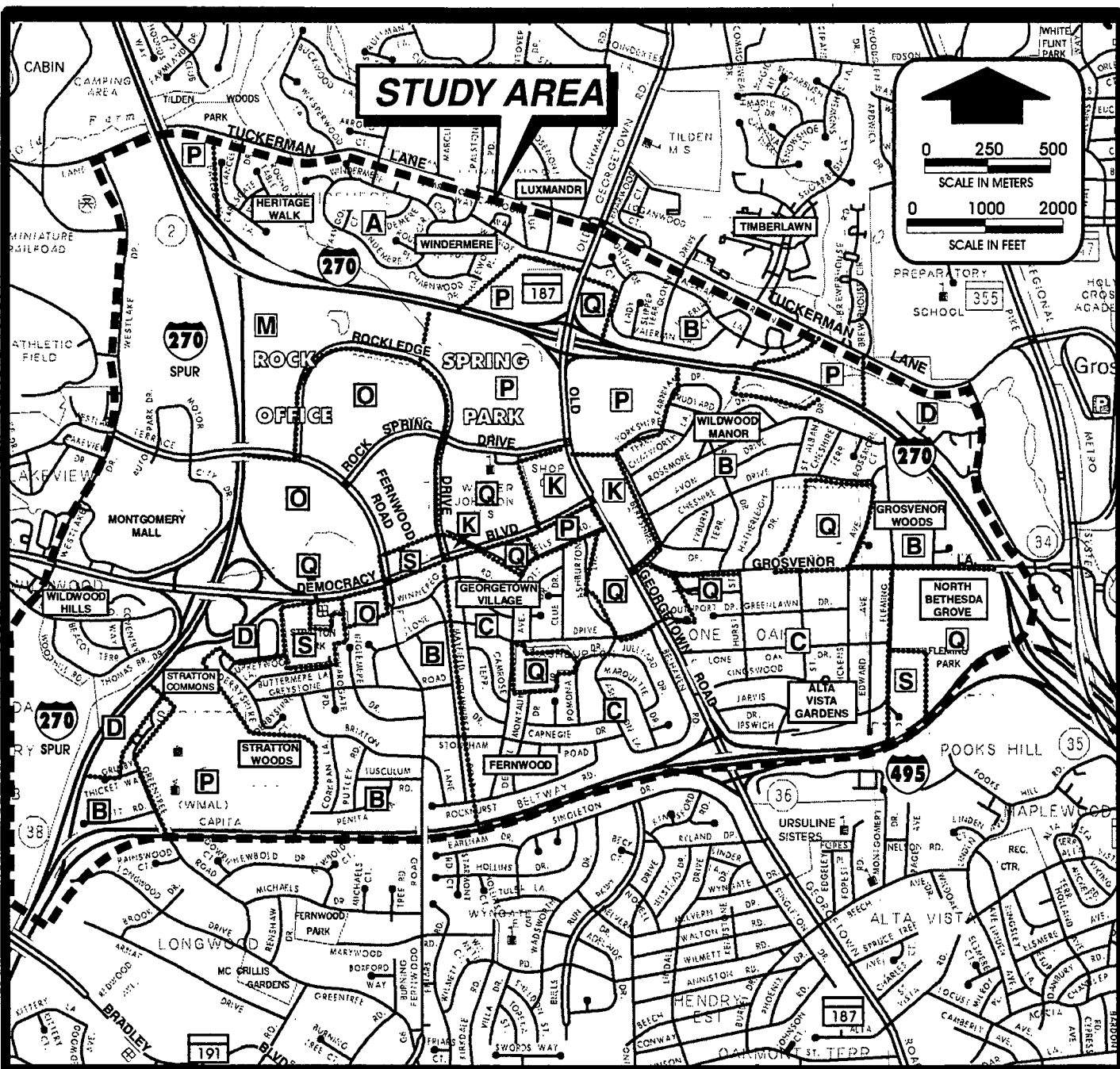
A field survey and land use examination of the project area did not identify any land use likely to have potential for hazardous waste contamination. In addition, the U.S. Environmental Protection Agency (EPA) listing of Superfund sites (CERCLIS) did not identify any sites within the project area.

**c. Future Land Use in the Study Area**

The North Bethesda-Garrett Park Master Plan, Interim Reference Edition was approved and adopted in December, 1992. This Master Plan sets forth recommendations as to where the existing zoning should be maintained and the locations where zoning should be changed.

The existing zoning in the study area, shown in Figure I-6, consists of the following categories:





**EXISTING LAND USE**

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li>A. Residential, One-Family<br/>20,000 sq. ft.</li> <li>B. Residential, One-Family<br/>9,000 sq. ft.</li> <li>C. Residential, One-Family<br/>6,000 sq. ft.</li> <li>D. Residential, Townhouse</li> <li>E. Multiple-Family, Low Density<br/>Residential</li> <li>F. Multiple-Family, Medium Density,<br/>Residential</li> </ul> | <ul style="list-style-type: none"> <li>G. Multiple-Family, High Density<br/>Residential</li> <li>H. Planned Residential Development</li> <li>I. Transit Station, Residential</li> <li>J. Transit Station, Mixed</li> <li>K. Local Commercial / Retail</li> <li>L. General Commercial Office / Retail</li> <li>M. Commercial, Office Park</li> <li>N. Light Industrial / Mixed Use</li> <li>O. Technology &amp; Business Park.</li> <li>P. Vacant Land</li> </ul> | <ul style="list-style-type: none"> <li>Q. Institutional<br/>(Church, School, Etc.)</li> <li>R. Parking Lot</li> <li>S. Parkland</li> </ul> |
|--|--|--|

**Note:**  
This is a complete listing of existing land uses as stated in the Master Plan. Not all existing land uses are contained in the study area.

**Reference:**  
North Bethesda-Garrett Park Master Plan, Dec., 1992  
Interim Reference Edition

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**EXISTING LAND USE**

**FIGURE I-5**

R-200	Residential, One-Family
R-90	Residential, One-Family
R-60	Residential, One-Family
R-30	Multiple-Family Low Density Residential
R-H	Multiple-Family High Rise Planned Residential
O-M	Office Building Moderate Intensity
C-P	Commercial Park
C-1	Local Commercial
I-3	Technology and Business Park

There are several parcels in the study area which have the potential to undergo further development in accordance with their current zoning or through modifications to current zoning recommended by the Master Plan. These properties are identified on Figure I-7 as key vacant or redevelopable parcels and are discussed below:

**1) Davis-Lux Lane**

This property is currently undeveloped with an existing zoning of R-200. It is approximately 7.69 ha (19 acres) in size and is located in the northwest quadrant of the I-270/MD 187 interchange adjacent to the Luxmanor community. The Master Plan recommends that the existing R-200 zoning be kept.

**2) Aubinoe**

This undeveloped property is located in the southeast quadrant of the I-270/MD 187 interchange next to the Wildwood Manor subdivision. The approximately 10.1 hectare (25 acre) site has an existing zoning of R-90, and preliminary plan approval has been obtained for 44 single family detached units under the existing zoning. In order to preserve much of the existing woodland, which covers nearly all of the site, the Master Plan recommended R-90/TDR-7 zoning with a maximum of 160 dwelling units, none of which would be single family detached, including 52 TDR's (Transferable Development Rights). TDR's permit development of an area to a specified density greater than the base zoning density. With this change and the clustering of more intensive development in the western portion of the site, 50 percent of the existing woods could be preserved.

186

**3) Davis-Democracy**

This undeveloped 1.38 hectare (3.42 acre) site is located in the southwest quadrant of the MD 187/Democracy Boulevard intersection. The existing zoning is R-60. Although the property is generally considered unsuitable for single family detached homes for reasons inherent to the site, including access concerns, the Master Plan recommended development under the R-60 (Cluster) option. Site plan approval has been obtained for 17 townhomes.

**4) American Foresters/Natural Resources Foundation**

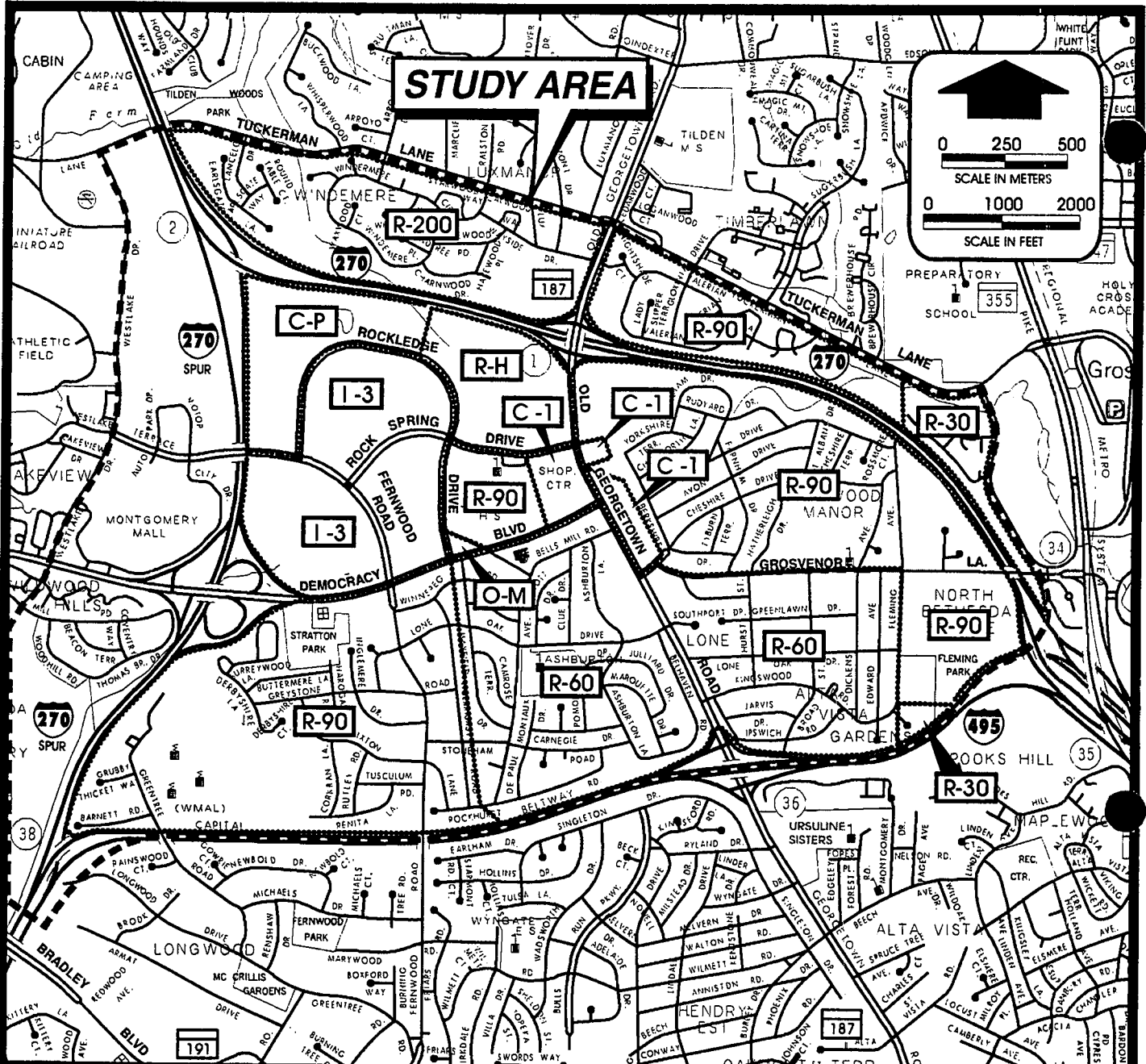
This 14.3 hectare (35.4 acre) property has an existing zoning of R-90. The site is located south of Grosvenor Lane, between I-495 and I-270, and is currently used to operate a scientific society headquarters as a special exception land use in the R-90 zone. The Foundation plans to increase the size of its facility. The approved comprehensive site plan ultimately provides for the overall development of 27,900 square meters (300,000 square feet) of office space in seven buildings, whereas the present site provides 4,100 square meters (44,000 square feet) of space in three buildings. The Master Plan supports this planned expansion as a special exception in the existing R-90 zone.

**5) WMAL, Inc.**

This site is located northeast of the I-495/I-270 Spur interchange. The existing zoning of this 30.37 hectare (75.04 acre) property, the largest in North Bethesda, is R-90. There are no buildings presently located on the site, only four radio transmission towers, and this is the intended use of the property for the foreseeable future. Should the present land use be discontinued, the Master Plan recommends that the property be used for single family residential development with R-90 zoning.

**6) Davis-Camalier**

This 21.9 hectare (54 acre) tract is located in the Rock Spring Office Park, in the southwest quadrant of the I-270/MD 187 interchange. Commonly referred to as the "Davis Parcel", it is currently vacant, and the existing zoning is R-H, for multiple family, high rise residential use. The Master Plan recommends retaining R-H as the base zone and assigns a floating zone of MXPDP (Mixed Use Planned Development). Under the



**EXISTING ZONING**

R-200 Residential, One Family	R - H Multiple - Family High Rise	C - 1 Local Commercial
R-90 Residential, One Family	PD - 9 Planned Residential	C - 2 General Commercial
R-60 Residential, One Family	PD-11 Planned Development	I - 1 Light Industrial
RT-10 Residential, Townhouse	TS - R Transit Station, Residential	I - 3 Technology & Business Park
RT-12.5 Residential, Townhouse	TS - M Transit Station, Mixed	
R-30 Multiple - Family	O - M Office Building	
Low Density Residential	C - O Commercial Office Building	
R-20 Multiple - Family	C - T Commercial Transition Zone	
Medium Density Residential	C - P Commercial Park	
R-10 Multiple - Family		
High Density Residential		

**Notes:**  
 1. This is a complete listing of the existing zoning as stated in the Master Plan. Not all existing zoning categories are contained in the study area.  
 2. The Master Plan Interim Reference Edition also contains recommended changes to existing zoning - See Fig 1-7.

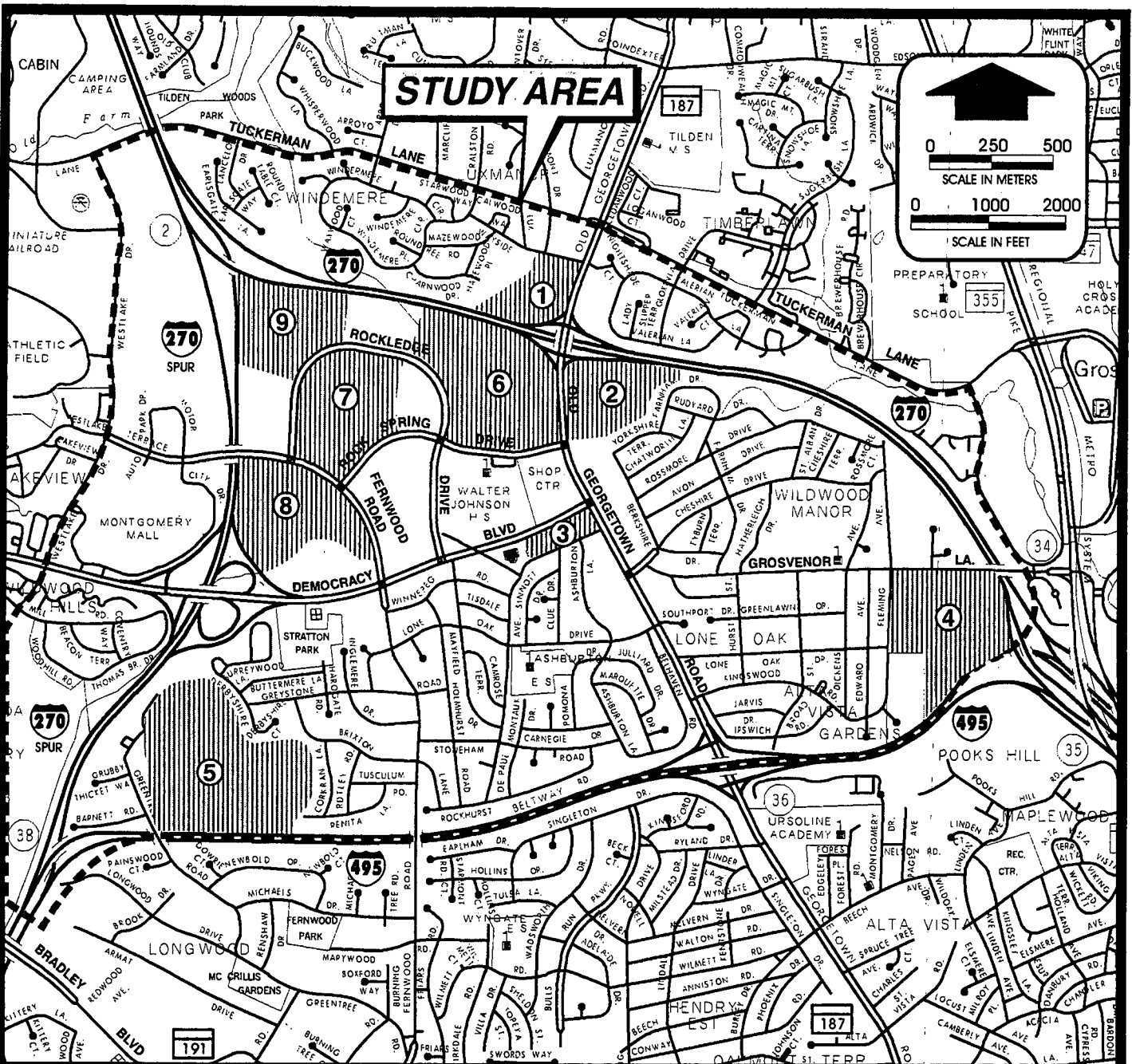
**Reference:**  
 North Bethesda-Garrett Park Master Plan, Dec., 1992 Interim Reference Edition

**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

**EXISTING ZONING**

**FIGURE 1-6**

284



**KEY VACANT OR REDEVELOPABLE PARCELS**

1. DAVIS - LUX LANE: Keep existing R-200
2. AUBINOE: Change to R-90 / TDR-7
3. DAVIS - DEMOCRACY: Keep existing R-60
4. AMERICAN FORESTERS / NRF: Keep existing R-90 (Special Exception)
5. WMAL, INC.: Keep existing R-90
6. DAVIS CAMALIER: Keep existing R-H (base zone) with MXPD (floating zone)
7. IBM: Keep existing I-3
8. MARRIOTT HEADQUARTERS: Keep existing I-3
9. LOCKHEED MARTIN: Keep existing C-P

*Note:*  
The Zoning listed is the Master Plan recommended Zoning.

*Reference:*  
North Bethesda - Garrett Park  
Master Plan, Dec. 1992  
Interim Reference Edition

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**KEY  
VACANT OR REDEVELOPABLE  
PARCELS**

**FIGURE I - 7**

MXPD zoning option, the Master Plan envisions the "Davis Parcel" becoming the urban village center for this area of North Bethesda and sets guidelines to achieve this. The guidelines include several specific items regarding types, sizes and locations of buildings to be placed on the site, as well as the following transportation recommendations:

- Direct access ramp(s) from I-270 near Old Georgetown Road and roadway connection from the ramp to Rockledge Drive
- The North Bethesda Transitway - a high quality transit connection from Montgomery Mall to Grosvenor Metro Station via Rock Spring Office Park

**7) IBM**

This property, located in Rock Spring Office Park, includes five office buildings, a central park and a retail structure with rooftop parking. The approved site plan provides for a total of 149,000 square meters (1.6 million square feet) of floor area. Much of this has been built, with 72,570 square meters (781,165 square feet) remaining. This parcel is a "loophole" property, which is a term used to refer to properties that received subdivision approval prior to 1982, in which case, approval was obtained with a less stringent, or without any, Adequate Public Facilities (APF) transportation test. For the most part, non-residential "loophole" properties must pass Local Area Transportation Review prior to building permit, but are exempt from Policy Area Transportation Review until July, 2001, provided they were registered with the Planning Board before July 1, 1990. In this sense, there is a time limit on the development of "loophole" properties to develop without having to meet the APF requirements, which could interfere with their completion.

**8) Marriott Headquarters**

This parcel, located in Rock Spring Office Park, is a "loophole" property and has an existing zoning of I-3. The site is approximately 13.8 hectares (34 acres) in size and currently provides 75,108 square meters (808,482 square feet) of floor area. There is the potential to increase the floor area on the site by 40,948 square meters (440,775 square feet). The Master Plan recommends that the existing I-3 zoning be retained.

286

9) **Lockheed Martin**

This Rock Spring Office Park property is currently zoned C-P. The site is a "loophole" property and currently provides 22,395 square meters (241,071 square feet) of floor area. There is the potential to expand by adding up to 84,883 square meters (913,704 square feet) of floor area. The Master Plan recommends retaining the existing C-P zone.

In summary, there are many opportunities within the study area for planned growth in office, residential and commercial development in accordance with current zoning or through modifications to zoning recommended in the Master Plan. Most significantly, the Rock Spring Office Park could potentially experience an increase in gross floor area of 288,000 square meters (3.1 million square feet), approximately 60% more than exists today. Since severe traffic congestion already occurs under existing conditions at the I-270 interchanges at MD 187 and Democracy Boulevard, the growth potential in the study area could lead to an intensification of the current operational problems resulting from capacity and safety deficiencies within the existing interchanges.

**4. Historic and Archeological Resources**

**a. Standing Historic Structures**

No sites on or eligible for listing on the National Register of Historic Places were identified within the study area.

**b. Archaeological Sites**

A Phase I archeological survey was performed by the State Highway Administration. One prehistoric site (18 MO63) is in the project vicinity. However, the survey indicates that the site was disturbed by construction of the Rockledge Center.

**5. Natural Environment**

**a. Physiography/Topography, and Geology**

The terrain in the study area varies from flat to moderately sloping with elevations varying between 76.2 meters and 121.9 meters (250 and 400 feet) above mean sea level. The study area lies within the Piedmont Physiographic Province. Bedrock in the eastern portion of the Piedmont Province is composed of hard, crystalline igneous and metamorphic rocks, including schist, gneiss, and gabbro.

**b. Soils**

According to the Soil Survey of Montgomery County, published by the U.S. Department of Agriculture, Soil Conservation Service, soils in the study area belong to the Glenelg-Manor-Chester Association and are well-drained micaceous soils.

The Manor Channery series consists of silt loams with slopes of 15-25 percent. The moderately eroded soils of this group provide the best (most problem-free) sites for urban development. Slopes are favorable, thus requiring only minimal cutting, filling and grading.

The Wehadkee series consists of silt loams with slopes of 0-3 percent. These soils generally occur in areas that are occasionally flooded, and have several limitations for use as sites for commercial and residential development.

The study area does not contain any Prime or Unique Farmland or Farmland of Statewide Importance as classified by the U.S. Department of Agriculture.

**c. Water Resources**

**Surface Water**

The study area lies within the Washington Metropolitan Area Watershed. Rock Creek, Old Farm Creek, and Thomas Branch are streams located in the study area (Figure I-4).

The Maryland Department of the Environment has classified all surface waters of the State into four categories according to their desired uses. These categories are:

- Use I - Water contact recreation, aquatic life, and water supply.
- Use II - Shellfish harvesting.
- Use III - Natural trout waters.
- Use IV - Recreational trout waters.

All waters of the State are Use I with additional protection provided by higher classifications. All streams in the study area are classified as Use I.



Lengthening or reconstructing the existing ramps in the project area and constructing new collector-distributor roads and ramps would necessitate the extension of existing culverts carrying the streams under I-270 and I-270 Spur and relocation of portions of streams.

**Groundwater**

The crystalline rocks of the eastern Piedmont Province have very low primary porosity, restricting the movement of groundwater. The Wissahickon Formation, composed of schists and quartzites of Hydrologic Units II and III, provides small to moderate supplies of groundwater available throughout this region. The yields of wells in the study area range from less than 4 to 1,200 liters per minute (1 to 320 gallons per minute).

**d. Floodplains**

The 100 year floodplains associated with Rock Creek, Old Farm Creek, and Thomas Branch are shown on Figure I-4. The average width of the 100 year floodplains is 4.6 meters (15 feet), 3.0 meters (10 feet) and 6.1 meters (20 feet), approximately, for Rock Creek, Old Farm Creek and Thomas Branch, respectively.

**6. Ecological Conditions**

**a. Wetlands**

**Methodology**

Wetland delineations were made in accordance with the U.S. Army Corps of Engineer's (COE) Wetlands Delineation Manual (Department of the Army, 1987). Soils, vegetative communities, and hydrologic indicators were analyzed to delineate and classify wetlands. Hydric soils maps and National Wetlands Inventory maps were used to support and confirm the conclusions reached in the field.

Wetlands were classified according to the Cowardin System, as described in Classification of Wetlands and Deepwater Habitats of the United States (1979). This system classifies wetlands based on hydrological, geomorphological, chemical and biological factors.

Hydric soils are soils that are saturated or inundated during the growing season for sufficient time to develop anaerobic conditions that favor the growth of hydrophytic vegetation. Many soil cores were taken to determine whether or not wetland soils are present. Soil

289

characteristics such as composition, texture, color, chroma, value, odor, and moisture regime were analyzed. Soil color, chroma, and value were verified using Munsell Soil Color Charts. The National Hydric Soils List, USDA Soil Conservation Service, was used as a reference in the soils studies.

Each site was analyzed according to plant community composition. Plant species observed in the field were identified and the indicator status for each species was determined following the National List of Plant Species That Occur in Wetlands: Northeast (Region 1) (May, 1988). The indicator status designates the probability of occurrence (expressed as a percentage) of a given plant species in wetlands of the northeast region of the United States. The following is an explanation of the indicator status designations:

- OBL = Obligate Wetland (greater than 99% probability of occurrence)
- FACW = Facultative Wetland (greater than 66% - less than 99% probability of occurrence)
- FAC = Facultative (33% - 66% probability of occurrence)
- FACU = Facultative Upland (1% - less than 33% probability of occurrence)
- UPL = Obligate Upland (less than 1% probability of occurrence)

According to the COE manual, 50% or more of the vegetative community that exists or is expected to exist on a site must be hydrophytic - i.e., OBL, FACW, and/or FAC - in order to satisfy the vegetative community criterion for wetlands. Open water and riverine systems do not require 50% or more hydrophytic vegetation.

Hydrologic indicators of wetlands include soil erosion, sediment deposits, visual inundation, black leaves, drift lines, buttressing and hummocking. Evidence of these indicators is present even during dry periods and, therefore, are useful indentifiers of a wetland. Hydrologic indicators observed on the site were used to determine wetland status and classification.

**Wetland Descriptions**

A total of 12 sites were identified as wetlands and delineated in the field. Classifications include: palustrine forested broad leafed deciduous (PF01A) - 5 sites; palustrine emergent (PEM1A) - 2 sites - and (PEM1J) - 1 site; palustrine open water (POWZh) - 1 site; riverine

emergent (R2EM2C) - 1 site; and riverine intermittent (R4SB1C) - 1 site; and 1 site was a combination of PF01A, PEMIA and POWZh.

The wetlands range from low quality to high quality based on functional assessment.

Descriptions of each wetland site, including location, classifications, value, dominant vegetation and indicator status follow and are summarized in Table I-2. In addition, relative wetland quality based on functional assessment is included. See Figures I-8A and I-8B for locations of wetlands and Waters of the United States.

Wetland W-1, of medium value, is located on the north and south sides of I-270 approximately 670.6 meter (2200 feet) west of MD 187. The area consists of a stream channel and associated forested floodplain. The two segments are connected by a 88.4 meter (290 linear feet) 1,524 millimeter (60-inch) diameter pipe. This wetland is classified as palustrine forested broad leafed deciduous, with a temporarily flooded water regime (PF01A). It is dominated by red maples, black willows, sycamores, spicebush, virburnum, green ash, elderberries, sedges, Joe-Pye-weed, and sensitive fern. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil saturation, drift lines, erosion, blackened leaves, scouring around roots, absence of leaf litter, and association with a stream. The functions of wetland W-1 are passive recreation, uniqueness and natural heritage value, sediment trapping/stabilization (short-term), food chain support (nutrient export), and nutrient retention/removal (long-term).

Wetland W-2, of medium value, is located adjacent to previously identified area W-1, south of and adjacent to I-270 west of Old Georgetown Road. This wetland is an intermittent stream/ditch and associated topographic depression. It is classified as palustrine forested broad leafed deciduous, with a temporarily flooded water regime (PF01A). This wetland is dominated by red maples, black willows, sycamores, spicebush, sedges, sweet gum, and sensitive fern. Soils were mainly alluvial silty sands with a hue of 10 YR, a value of 5, and a chroma of 6. This is a recently disturbed site. Hydrologic indicators include visual soil saturation, sediment deposits, blackened leaves, and association with a stream. The functions of wetland W-2 are sediment trapping/stabilization (short-term and long-term), flood desynchronization, food chain support (nutrient export) and nutrient retention/removal (long-term).

Wetland W-3, of medium value, is located on the north side of I-270, approximately 213.4 meter (700 feet) west of MD 187. This wetland is a drainage channel classified as palustrine

emergent persistent, with a temporarily flooded water regime (PEM1A). It is dominated by black willows, elderberries, cattails, and soft rush. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, predominance of obligate plants, and association with a drainage channel. The functions of wetland W-3 are passive recreation, uniqueness and natural heritage value, sediment trapping/stabilization (short-term), and nutrient retention/removal (long-term).

Wetland W-4, of high value, is located northwest of the I-270/MD 187 interchange. This wetland consists of a diked lowland fresh meadow, classified as palustrine emergent persistent, with a temporary water regime (PEM1A). This part of the wetland is dominated by sedges and rushes. In addition, the site contains a fresh water pond classified as palustrine open water impoundment (POWZh). The pond and fresh meadow drain into a palustrine forested broad leafed deciduous wetland, with a temporarily flooded water regime (PF01A). This part of the wetland is dominated by red maples, black willows, sycamores, spicebush, sedges, sweet gum, and sensitive fern. Soils had a hue of 7.5 YR, value of 5, and chroma of 2. Bright orange mottles were present. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, drift lines, erosion, scouring around roots, absence of leaf litter, and association with a stream. The functions of wetland W-4 are passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, sediment trapping/stabilization (short-term), flood desynchronization, food chain support (nutrient export), dissipation of erosion forces, active recreation, and nutrient retention/removal (long-term).

Wetland W-5, of high value, is located southeast of the intersection of I-270 and Old Georgetown Road. This wetland is a lowland adjacent to and encompassing two intermittent stream channels. It is classified as palustrine forested broad leafed deciduous, with a temporarily flooded water regime (PF01A). The site is dominated by tulip poplars, red maples, and spicebush. Soils were dark gray-brown with dark brown mottles. These soils had a hue of 10 YR, a value of 6, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil saturation, sediment deposits, and association with a stream. The functions of wetland W-5 are passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, sediment trapping/stabilization (short-term and long-term), flood desynchronization, food chain support (nutrient export), and nutrient retention/removal (long-term).

Wetland W-6, of high value, is located on the south side of I-270, approximately 1,341.1 meter (4,400 feet) south of MD 187, at Fleming Avenue. This wetland is a stream channel with associated depression. It is classified as palustrine emergent persistent, with a temporarily

flooded water regime (PEM1A). It is dominated by box elders, red maples, tulip poplars, sycamores, speckled alders, black willows, spicebush, and elderberries. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, drift lines, erosion, scouring around roots, absence of leaf litter, predominance of obligate plants, and association with a stream and is at the outfall of the closed system draining the I-270/MD 187 interchange area. The functions of wetland W-6 are passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, food chain support (nutrient export), and groundwater discharge/groundwater recharge.

Wetland W-7, of high value, is located within the forested area in the I-270 Spur median, near the Y-split. It consists of a series of drainage channels classified as riverine intermittent streambed, cobble/gravel, with a seasonally flooded water regime (R4SB1C). It is dominated by skunk cabbage, and spotted touch-me-nots. Soils were gray-brown with dark yellow-brown mottles. These soils had a hue of 10 YR, value of 5, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, sediment deposits, and association with a stream. The functions of wetland W-7 are passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, sediment trapping/stabilization (short-term), food chain support (nutrient export), dissipation of erosion forces, and nutrient retention/removal (long-term).

Wetland W-8, of low value, is located within the I-270 Spur median, approximately 762 meters (2500 feet) north of Democracy Boulevard. It consists of a drainage channel and narrow swale. It is classified as riverine, lower perennial, emergent non-persistent, with a seasonally flooded water regime (R2EM2C). It is dominated by soft rushes, cattails, and green bulrushes. Soils had a hue of 10 YR, value of 5, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, sediment deposits, and association with a stream. The functions of wetland W-8 are sediment trapping/stabilization (short-term), flood desynchronization and dissipation of erosion forces.

Wetland W-9, of medium value, is located east of I-270 Spur at Democracy Boulevard. This is a stream and associated storm water management pond. It is classified as palustrine open water impoundment (POWZh). The site is dominated by black willows, cattails, common reeds, and sedges. Soils were dark gray-brown with dark yellow-brown mottles. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil inundation and saturation, sediment deposits, and

TABLE I-2

WETLANDS SUMMARY

WETLAND SYSTEM	LOCATION	SITE DESCRIPTION	COWARDIN CLASSIFICATION	VALUE	DOMINANT VEGETATION
W-1	North and South Sides of I-270, 670.6 meters (2200 feet) ± West of MD 187	Stream Channel on South Side of I-270; Stream Channel and Adjacent Low Area on North Side of I-270	Palustrine, forested broadleaved deciduous with a temporary water regime (PF01A)	Medium	Black Willows, Elderberries, Red Maples, Sycamores, Spicebush, Viburnum, Green Ash, Sedges, Joe-Pye Weed, Sensitive Fern
W-2	South Side of I-270 West of Old Georgetown Road	Intermittent Stream/Drainage Ditch and Associated Topographical Depression	Palustrine forested broadleaved deciduous, (PF01A)	Medium	Red Maples, Black Willows, Sycamores, Spicebush, Sedges, Sweet Gum Sensitive Fern
W-3	North Side of I-270, 213.4 meters (700 feet) ± West of MD 187	Drainage Channel	Palustrine, emergent, persistent vegetation, temporary water regime (PEM1A)	Medium	Black Willows, Elderberries, Cattails, Soft Rush
W-4	Northwest of the I-270/ MD 187 Interchange	Diked lowland fresh meadow, fresh water pond	Palustrine emergent persistent (PEM1A), Palustrine open water impoundment (POWZh), Palustrine Forested Broad Leaved	High	Sedges, Rushes, Willows, Sycamores, Spicebush, Sweet Gum, Sensitive Fern
W-5	Southeast of I-270 at Old Georgetown Road	Intermittent streams and associated wooded floodplains	Palustrine forested broadleaved deciduous, (PF01A)	High	Tulip Poplars, Red Maples, Spicebush
W-6	South Side of I-270 at Fleming Avenue	Stream Channel	Palustrine emergent, persistent, temporarily flooded (PEM1A)	High	Box Elders, Red Maples, Tulip Poplars, Sycamores, Specked Alders, Black Willows, Spicebush, Elderberries

61-1

203

TABLE I-2 (Cont'd)

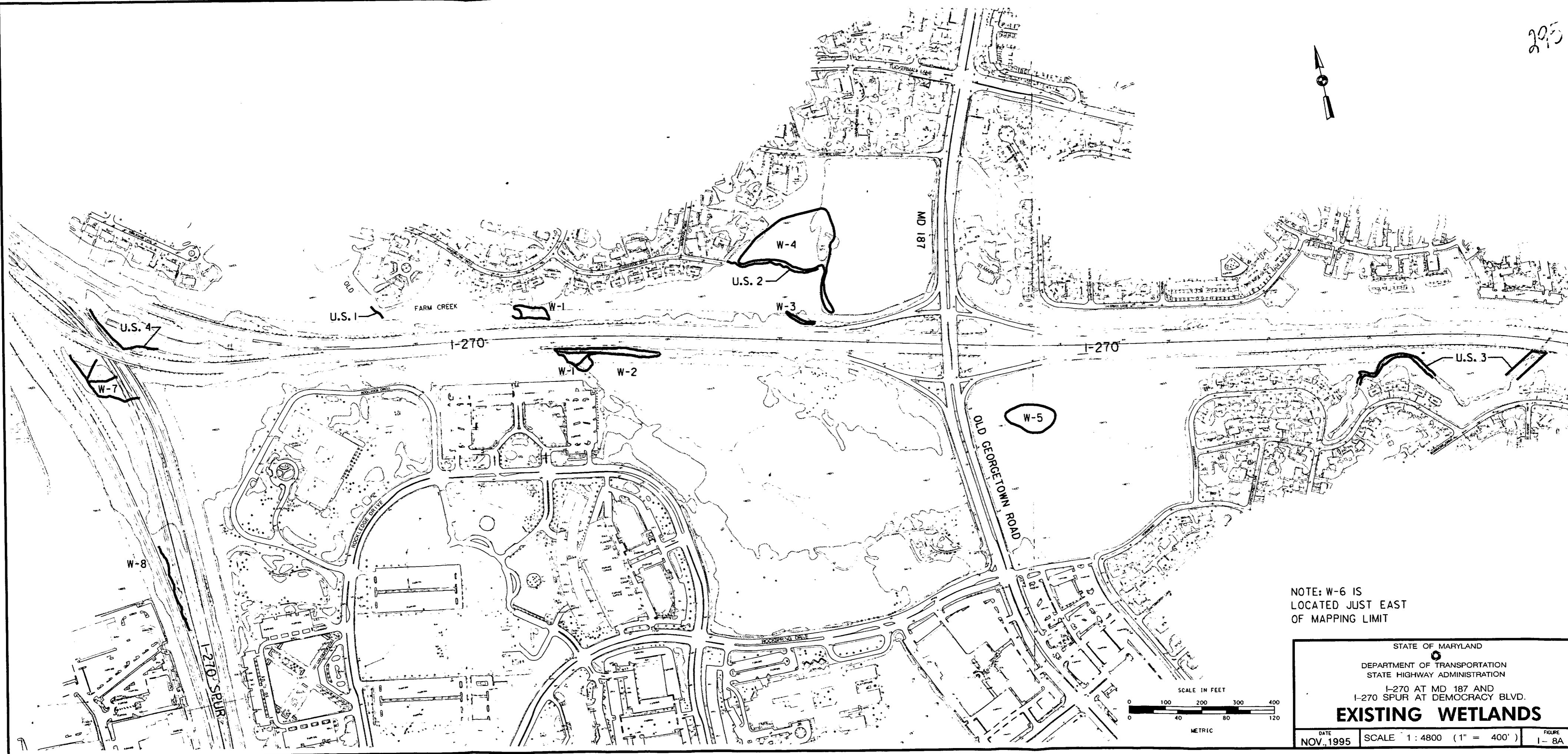
WETLANDS SUMMARY

WETLAND SYSTEM	LOCATION	SITE DESCRIPTION	COWARDIN CLASSIFICATION	VALUE	DOMINANT VEGETATION
W-7	Just West of the Y-Split Bridge Along the Southbound I-270 Spur Ramp	Unnamed Drainage Channels	Riverine, intermittent, strcambed, cobble/gravel with a seasonally flooded regime (R4SB1C)	High	Skunk Cabbage, Touch-Me-Nots
W-8	In the I-270 Spur Median, 304.8 meters (1000 feet) ± South of the Y-Split	Unnamed Drainage Channel	Riverine, lower perennial, emergent non-persistent with a seasonally flooded regime (R2EM2C)	Low	Soft Rushes, Cattails, Green Bulrushes
W-9	East of I-270 Spur at Democracy Boulevard	Stream and Storm water Management Pond	Palustrine Open Water Impoundment (POWZh)	Medium	Black Willows, Cattails, Common Reeds, Sedges
W-10	East of Fernwood Road	Stream and Associated Wooded Floodplain	Palustrine forested broadleaved deciduous, (PF01A)	Medium	Sycamores, Black Willows, Red Maples, Silver Maples
W-11	West of Fire Station on Democracy Boulevard	Intermittent Stream/Ditch and Associated Lowland	Palustrine forested broadleaved deciduous (PF01A)	Low	Black Willows, Red Maples, Tulip Poplars
W-12	In the Southeast Quadrant of the I-270 Spur/Democracy Boulevard Interchange	Drainage Channel Along Northbound I-270 Spur	Palustrine emergent, persistent vegetation, temporary water regime (PEM1A)	Medium	Black Willows, Cattails, Soft Rush, Sedges

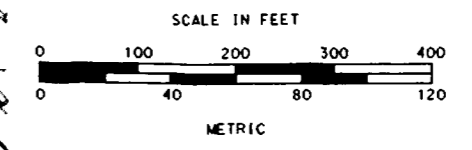
I-20

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205



NOTE: W-6 IS  
LOCATED JUST EAST  
OF MAPPING LIMIT



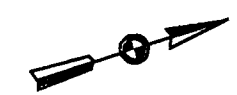
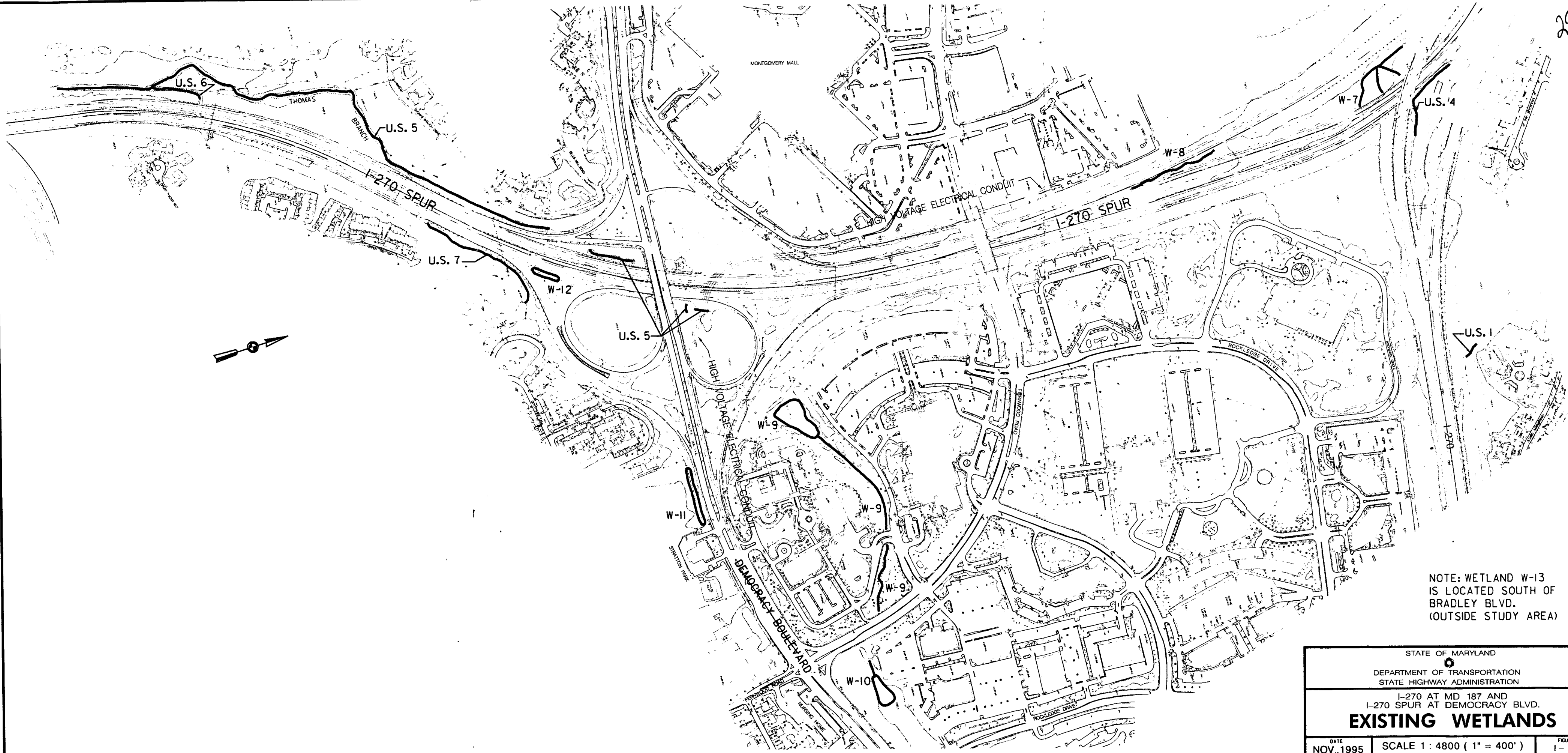
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**EXISTING WETLANDS**

DATE NOV., 1995	SCALE 1:4800 (1" = 400')	FIGURE 1-8A
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291a



NOTE: WETLAND W-13  
IS LOCATED SOUTH OF  
BRADLEY BLVD.  
(OUTSIDE STUDY AREA)

STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>EXISTING WETLANDS</b>		
DATE NOV. 1995	SCALE 1 : 4800 ( 1" = 400' )	FIGURE 1 - 8B

association with a stream. The functions of wetland W-9 are passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, sediment trapping/stabilization (short-term and long-term), flood desynchronization, and nutrient retention/removal (long-term).

Wetland W-10, of medium value, is located east of the intersection of Fernwood Road and Democracy Boulevard. This wetland is a stream and associated wooded floodplain. It is classified as palustrine forested broad leafed deciduous, with a temporarily flooded water regime (PF01A). The site is dominated by sycamores, black willows, red maples, and silver maples. Soils in the forested floodplain were dark gray-brown with dark yellow-brown mottles. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. The combination of low chroma with mottles indicates hydric soils. Hydrologic indicators include visual soil saturation, drift lines, sediment deposits on vegetation and other objects, blackened leaves, and association with a stream. The functions of wetland W-10 are passive recreation, uniqueness and natural heritage value, sediment trapping/stabilization (short-term and long-term), flood desynchronization, food chain support (nutrient export), and nutrient retention/removal (long-term).

Wetland W-11, of low value, is located west of the Fire Station on Democracy Boulevard. This is an intermittent stream/ditch and associated topographic depression. It is classified as palustrine forested broad leafed deciduous, with a temporarily flooded water regime (PF01A). The site is dominated by black willows, red maples, and tulip poplars. Soils were dark gray-brown with dark yellow-brown mottles. These soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual soil saturation, sediment deposits, blackened leaves, and association with a stream. The functions of wetland W-11 are sediment trapping/stabilization (short-term and long-term), flood desynchronization and nutrient retention/removal (long-term).

Wetland W-12, of medium value, is located in the southeast quadrant of the I-270 Spur/Democracy Boulevard interchange. This wetland is a drainage channel classified as palustrine emergent persistent, with a temporarily flooded water regime (PEM1A). It is dominated by black willows, cattails, soft rushes, and sedges. Soils were gray-dominated with dark brown mottles. The soils had a hue of 2.5 YR, value of 4, and chroma of 2. Low chroma and mottles indicate hydric soils. Hydrologic indicators include visual saturation, sediment deposits, and association with a drainage ditch. The functions of wetland W-12 are sediment trapping/stabilization (short-term and long-term), flood desynchronization and nutrient retention/removal (long-term).

298

## Waters of the United States

Seven sites were classified as Waters of the United States. Recent interpretations by the COE regarding hydric soils and hydrophytic vegetative community requirements of jurisdictions wetlands require that these sites, identified under previous criteria as wetlands, be listed as "Waters of the United States."

The sites labelled U.S. 1, U.S. 2 and U.S. 3 are unnamed, non-tidal upper perennial tributaries with unconsolidated sand and gravel bottoms. Hydric soils and a predominance of hydrophytic vegetation do not occur at these sites.

The site labelled U.S. 4 consists of two drainageways that flow through forest stand on deep, well drained soils. Hydric soils and a predominance of hydrophytic vegetation do not occur at this site.

The sites labelled U.S. 6 and U.S. 7 are unnamed, non-tidal intermittent tributaries with unconsolidated sand and gravel bottoms. The site labelled U.S. 5 is Thomas Branch, an upper perennial stream with an unconsolidated sand and gravel bottom. Hydric soils and a predominance of hydrophytic vegetation do not occur at these sites.

### **b. Forest Areas**

Some woodlands still remain in the study area, mostly on the periphery of I-270 East Segment and I-270 Spur, ranging in size from 0.2 hectares (0.5 acres) to 14.2 hectares (35 acres), approximately. These woodlands have been identified as the Tulip-Poplar Association. Characterized by the presence of tulip poplar, common associated species include: red maple, flowering dogwood, Virginia creeper, black gum, white oak, sassafras, black cherry, black locust, mockernut hickory, grape, southern arrowwood, Virginia pine, American sycamore, smooth sumac, black walnut, red cedar, pin oak, black willow, green ash, eastern white pine, Japanese honeysuckle, spicebush, skunk cabbage, bull thistle, spotted Joe-pye-weed, Queen Anne's lace, common mullein, poison ivy, and Christmas fern.

### **c. Wildlife, Terrestrial and Aquatic Habitat**

The terrestrial habitat found in the study area supports a varied fauna of urban wildlife species. Insects found in the area include: butterflies, grasshoppers, beetles, bees, and wasps.

Bird species inhabiting the area are: common crow, mourning dove, common grackle, mockingbird, field sparrow, and red-tailed hawk. Mammals found include: eastern cottontail, eastern mole, house mouse, opossum, woodchuck, and eastern gray squirrel.

The aquatic life known to inhabit Rock Creek and Old Farm Creek includes typical finfish species, such as: American eel, blacknose dace, creek chub, spotfin shiner, white sucker, channel catfish and green sunfish. Thomas Branch in the study area supports a limited finfish community of mostly Cyprinidae fish such as the blacknose dace.

**d. Threatened and Endangered Species**

Coordination with the U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources indicates that no federally listed threatened or endangered species are known to inhabit the study area.

**7. Existing Noise Conditions**

**a. Description of Noise Sensitive Areas**

The study of noise abatement measures considers the size of the impacted area, the number and distribution of structures within that area, the predominant activities being performed, their vulnerability to noise disturbances, the visual impact and the economic feasibility of the control methods.

Twenty-nine (29) receptor sites were located within nine (9) noise sensitive areas (NSA's) and were characterized by noise levels at specific locations within each NSA, as shown in Table I-3 and indicated on Figures I-9 and Figures III-4 through III-17. All nine NSA's are residential environments, although community facilities such as swimming pools, tennis courts, and churches are also present. The impacted residences generally abut I-270 or I-270 ramps and are of more recent construction than the roadway.

**b. Ambient Noise Level Measurements**

A detailed technical analysis has been performed to determine the impact of the project on noise. The results are summarized in Section IV.F. A copy of the technical analysis report is available at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

300

A field measurements program to establish ambient noise levels was conducted in March, 1995 thru May, 1995 utilizing the latest method of environmental noise analysis. The noise descriptor used in this study was the Equivalent Noise Level (Leq), which conforms to the noise abatement criteria established by the Federal Highway Administration (FHWA). In an acoustical analysis, measurement of ambient noise levels is intended to establish the basis for impact analysis and to calibrate the computer model. The ambient noise levels as recorded represent a generalized view of present noise levels. Ambient noise levels ranged from 58 dBA to 72 dBA.

Monitoring sessions were performed in accordance with the procedures outlined in Fundamentals and Abatement of Highway Traffic Noise by Bolt, Beranek and Newman, Inc., using an ANSI Type 2 integrating sound level meter model DB308 manufactured by Metrosonics, Inc.

Variations through time of total traffic volumes, truck traffic volume, speeds, etc., may cause fluctuations in ambient noise levels of several decibels; however, these fluctuations are not sufficient to substantially affect the impact assessment. For the analysis, 15-minute measurements were taken between 10 A.M. and 3:30 P.M. on weekdays.

**c. Results of Noise Monitoring**

A description of the NSA's, the results of the ambient monitoring program and the names of previous studies containing ambient measurements are included in Table I-3.

**8. Existing Air Quality**

The project area is located in the National Capital Intrastate Air Quality Control Region and is an air quality non-attainment area. The region does not meet the primary standards for carbon monoxide (CO) and ozone (O<sub>3</sub>) and is subject to transportation control measures such as the Vehicle Emissions Inspections Program.

A detailed microscale air quality analysis has been performed to determine the CO impact of the proposed project. The results are summarized in Section IV.6. A copy of the technical analysis report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

**TABLE I-3  
NSA'S AND AMBIENT NOISE LEVELS**

NSA	RECEPTOR	LOCATION	DESCRIPTION	DEVELOPMENT	Leq dBA	PREVIOUS STUDIES
A	R1	7107 Thomas Branch Dr.	Frame Residence	Wildwood Hills	67	1986 EA, 1989 FONSI, 1991 STUDY 1991 STUDY
	R1A	7207 Thomas Branch Dr.	Frame Residence	Wildwood Hills	64	
	R2	7131 Swansong Way	Brick Townhouse	Wildwood Hills	57	
B	R3	6724 Surreywood La.	Brick Townhouse	Stratton Commons	58	1986 EA, 1989 FONSI 1986 EA, 1989 FONSI 1986 EA, 1989 FONSI
	R4	6734 Surreywood La.	Brick Residence	Stratton Commons	61	
	R5	7225 Grubby Thicket Way	Brick Residence	Bradley Manor	72	
	R6	7314 Greentree Way	Brick Townhouse	Bradley Manor	66	
	R7	9928 Derbyshire Ct.	Frame Residence	Stratton Commons	63	
C	R8	Stratton Park	Park	---	59	
	R9	6518 Democracy Blvd.	Brick Residence	Georgetown Village	67	
D	R10	10500 Old Georgetown Rd.	Frame Residence	---	58	
E	R11	10525 Farnham Dr.	Brick Residence	Wildwood Manor	66	1986 EA 1986 EA
	R12	5913 Rudyard Dr.	Brick Residence	Wildwood Manor	67	
	R12A	5711 Rossinore Dr.	Brick Residence	Wildwood Manor	64	
	R13	10541 Farnham Dr.	Brick Townhouse	Wildwood Manor	64	
F	R14	10710 Pinehaven Terr.	Brick Townhouse	Timberlawn	70	1986 EA 1986 EA 1986 EA
	R15	10723 Valerian Ct.	Brick Residence	Timberlawn	65	
	R16	10701 Lady Slipper Terr.	Brick Residence	Timberlawn	63	
	R17	St. Mark's Church	Church	---	64	
	R18	6120 Nighshade Ct.	Brick Residence	Timberlawn	63	
G	R19	6001 Lux Lane	Frame Residence	---	68	1986 EA 1986 EA 1986 EA 1986 EA
	R20	6104 Wayside La.	Brick Residence	Windermere	56	
	R21	6120 Charnwood Dr.	Brick Residence	Windermere	56	
	R21A	6200 Charnwood Dr.	Brick Residence	Windermere	59	
	R22	6216 Charnwood Dr.	Brick Residence	Windermere	63	
	R23	6332 Windermere Cir.	Brick Residence	Windermere	65	
	R25	Windermere Comm. Pool/TC	Pool/Tennis Ct.	Windermere	62	
I	R24	10904 Earlsgate La.	Brick Residence	Windermere	64	1986 EA 1986 EA 1986 EA
	R24A	10908 Earlsgate La.	Brick Residence	Windermere	64	
	R24B	11012 Earlsgate La.	Brick Residence	Windermere	63	
	R24C	11028 Earlsgate La.	Brick Residence	Windermere	63	

I-25

301



**II. PURPOSE AND NEED**



## II. PURPOSE AND NEED

### A. Purpose

The purpose of this project is to provide adequate roadway capacity within the I-270 interchanges at MD 187 and Democracy Boulevard to accommodate, safely and efficiently, existing traffic and traffic expected to be generated by planned development. Under existing conditions, frequent and severe traffic congestion occurs at these interchanges, and continued planned growth is expected in the study area in accordance with current zoning and Master Plan recommendations. Traffic congestion will intensify in the future since traffic volumes in the study area are projected to increase for the no-build condition. Current unsafe conditions result in a high accident rate. The alternates under consideration will provide improvements intended to alleviate the adverse conditions caused by inadequate capacity and safety deficiencies at the I-270 interchanges at MD 187 and Democracy Boulevard.

### B. Background and Need

This project planning study was reactivated in January, 1994, after having been placed on hold in 1988 based on funding constraints and to allow time for the project need to become more clearly defined based on master plan updates and transportation studies being performed by The Maryland-National Capital Park and Planning Commission. Prior to being placed on hold, the study had progressed to an Alternates Public Meeting, held in March, 1988. After the study was reactivated, a Supplemental Alternates Public Meeting was held in June, 1994, to present the changes that were made to the various alternatives since the 1988 public meeting.

The need for improved connections between I-495 and I-270 was addressed in two previous project planning studies which obtained Location/Design Approval in 1989 from the Federal Highway Administration to provide an additional lane and accommodate High Occupancy Vehicles (HOV) in each direction on I-270 (East Segment) and I-270 Spur. These improvements will accommodate projected through traffic growth on this portion of mainline I-270; however, the capacity needs of the existing interchanges in these segments would still remain. It was determined, as a part of the two aforementioned studies, that more efficient access was needed between I-270 (East Segment)/I-270 Spur and the adjacent land uses.

This project planning study has been included in the Maryland Department of Transportation's Consolidated Transportation Program (CTP) since 1988, and is included in the

305

Development and Evaluation Program of the CTP for 1995-2000. Funding is programmed for project planning, but not for design, right-of-way acquisition, or construction.

The four routes which form the primary focus for this study are I-270 (East Segment), I-270 Spur, MD 187, and Democracy Boulevard. The existing transportation network is discussed in Section II.C.

Within the study area, there are several projects in various stages of design or construction which will improve accessibility to and within the region, placing even more importance on the function of the I-270 interchanges at MD 187 and Democracy Boulevard. The projects are referenced below and are discussed in greater detail in Section II.C.

- I-270 HOV Ramps at the Y-Split
- I-270 Spur Widening and Reconstruction of the Interchange with I-495
- Fernwood Road Bridge, Westlake Terrace to Rockledge Drive (Completed)
- I-270 (East Segment) Widening and HOV Lanes from the Y-Split to I-495 (Completed)
- North Bethesda Transitway

Although these projects will improve accessibility in the study area, the I-270 interchanges at MD 187 and Democracy Boulevard are still expected to experience increases in the severity and duration of traffic congestion as population, housing, and employment growth continues in the study area and surrounding region.

Since the study area is so strategically located at the southern gateway to the I-270 corridor and the junction of I-270 and I-495, a hindrance to the free movement of traffic has an effect on two interstate systems, extending into both suburban Maryland and Virginia. The demographics of several surrounding regions impact the subject interchanges. In the past ten years, there has been a rapid rate of growth in population, households and employment in the region surrounding the study area, Montgomery County and the other counties associated with the Washington, D.C. metropolitan area. This trend is expected to continue through the year 2020. Based on the Metropolitan Washington Council of Governments (MWCOG) Round 5.1 forecasts, the number

of households within the Montgomery County portion of the I-270 corridor<sup>1</sup> is expected to increase by 44% over 1993 levels, from 87,100 to 125,400 by the year 2020. Employment within this same region is expected to increase 62% between 1993 and 2020.

In Montgomery County, the population grew from 579,000 in 1980 to 757,000 in 1990, an increase of 31%. By the year 2020, the County's population is expected to reach 1,000,000 people, an increase of 32% over 1990. Employment in the County is expected to reach 697,000 by 2020, an increase of 36% over 1990 values. Based on 1990 data, of the 429,700 county workers, 16 years and over, 68% drove alone to work and 13% rode in carpools, with an overall mean travel time to work of 29.5 minutes.

The I-270 East Segment and I-270 Spur are also impacted by traffic outside of Montgomery County, in areas that are also experiencing sustained and significant growth. Frederick County, which feeds the northern end of the I-270 corridor, is projected to experience a population growth from 150,200 to 267,100, or 78%, between 1990 and 2020. Similarly, Frederick County employment is expected to grow from 71,800 to 114,900, or 60% between 1990 and 2020. The Fairfax/Arlington/Alexandria county region in Virginia is projected to experience a growth in households of 185,300 units, or 43%, between 1990 and 2020. Employment in the Fairfax/Arlington/Alexandria county region is expected to grow to 1,143,200 by the year 2020, a 59% increase over 1990 employment figures.

Along with this continued growth in population, housing, and employment, traffic volumes in the study area are projected to increase, thereby pointing to the need to improve capacity and safety at the I-270 interchanges at MD 187 and Democracy Boulevard. Traffic data are provided in Section II.D.

**C. Existing and Planned Transportation Network**

**1. Roadways**

The I-270 (East Segment) and the interchange at MD 187 were both opened to traffic in 1959 as part of the construction of the mainline of I-270 to the north. The I-270 Spur and the interchange at Democracy Boulevard were constructed in 1963.

<sup>1</sup> Includes the following Planning Areas: North Bethesda, Rockville, R&D Village, Derwood/Needwood/Wash. Grove, Gaithersburg, Montgomery Village/Airpark, Germantown East and Germantown West.

Both the I-270 (East Segment) and I-270 Spur provide a connection from I-270 to I-495, as is evident on the study area map (Figure I-2). The I-270 (East Segment) also provides for through traffic from Maryland suburbs to the east, and I-270 Spur serves traffic primarily to and from Virginia. The importance of these connections has grown over the years as I-270 and I-495 have been expanded and traffic volumes thereon have increased.

The I-270 interchanges at MD 187 and Democracy Boulevard are integral to the regional transportation network. In particular, these interchanges serve the rapidly developing North Bethesda region of which the Rock Spring Office Park is a major component. The Rock Spring Office Park, located as shown in Figure I-2 and discussed in detail in previous sections, is a campus-style high rise office complex, accommodating several major corporations' headquarters and comprising a significant portion of the study area.

Within the study area, there are several projects that have been recently completed, or are in various stages of design or construction. A brief description of each of the projects follows:

**I-270 HOV Ramps at the Y-Split**

Construction of this project began in Spring, 1995. It will provide High Occupancy Vehicles (HOV) median ramp connections for all four movements between I-270 north of the Y-Split and the East Segment and Spur.

**I-270 Spur Widening and Reconstruction of the Interchange with I-495**

Construction of this project began in Spring, 1995. It will provide an additional median lane for HOV's in each direction and reconstruct the Spur interchange with I-495 to improve the alignment and accommodate HOVs. This project will also include an additional lane at the gore associated with the westbound I-495/northbound I-270 interchange.

**Fernwood Road Bridge, Westlake Terrace to Rockledge Drive**

This project was completed in May, 1995 by Montgomery County and provides a bridge over the I-270 Spur at Fernwood Road. The bridge and roadway are four lanes wide with a median.

## **I-270 (East Segment) Widening and HOV Lanes from the Y-Split to I-495**

Construction of this project was completed in 1994. Inside widening of this portion of I-270 was provided with improvements of the auxiliary lanes at the MD 187 and I-495 interchanges.

### **2. Master Plan Recommendations**

The North Bethesda-Garrett Park Master Plan, December 1992, Interim Reference Edition sets forth a transportation plan that addresses the traffic problems in the study area. In addition, the Staging Amendment to the 1992 Master Plan was adopted July 26, 1994. The Staging Amendment prioritizes into three stages the sequence of development and the recommendations contained in the Master Plan for improving transportation in the area by linking the level of development in each stage to transportation projects and programs. The level of development that can be attained is based on the recommended staging ceiling contained in the Annual Growth Policy (AGP), the staging ceiling being the total amount of development that can be handled by the transportation network without exceeding standards for roadway congestion. Therefore, each stage of development is associated with a set of transportation improvements which represent a minimum level of service that is needed before development can be increased to the next stage. It is stated in the Montgomery County FY 95 Annual Growth Policy that North Bethesda is a high priority area for development and additional transportation facilities will be required to support that development.

In general terms, the Master Plan recommends that additional roadway capacity be provided, along with transit and transportation demand management policies that emphasize pedestrian and bicycle use. The Plan recognizes that the need for transportation system improvements will not be eliminated even if development would be restricted in the area. Furthermore, the Master Plan states that although increased use of non-auto-driver modes is desirable, additional roadway capacity will still be needed to accompany these other forms of transportation.

The Staging Amendment's recommended transportation facilities and policies for Stage I (Short-Term) that are related to the study area include the following:

- Establish a Transportation Management Organization (TMO) to support the use of non-auto-driver modes by enacting various programs with area employers.

- Decrease the Single Occupant Vehicle (SOV) mode share for employees by four percentage points to 74 percent.
- Institute a parking policy that eliminates free parking and places constraints on long-term parking.
- Provide improved pedestrian and bicycle crossings at the intersections of Old Georgetown Road with Democracy Boulevard, Rock Spring Drive, and Tuckerman Lane.
- Provide intersection improvements at Old Georgetown Road and Tuckerman Lane by adding a northbound left turn lane.
- Re-establish an express bus service along the future High Occupancy Vehicle (HOV) lane to and from Rock Spring Office Park.

The Stage II (Mid-Term) recommended improvements begin, for the most part, when the policies and programs contained in Stage I are implemented, when the transportation level of service is within the AGP standard, and new increased staging ceilings have been approved. The Stage II recommendations applicable to the study area include the following:

- Provide one or more direct access ramps from I-270/I-270 Spur to Rock Spring Office Park. (The Master Plan also recommends a direct access HOV ramp from I-270 Spur to Rock Spring Office Park.)
- Provide bikeways from Montgomery Mall to Old Georgetown Road and from Democracy Boulevard to Lux Lane.
- Expand HOV usage on I-270.
- Provide high capacity transit service between Grosvenor Metrorail Station, Rock Spring Office Park and Montgomery Mall (North Bethesda Transitway).

The Stage III (Long-Term) recommended transportation facilities will be defined in the future after a new comprehensive transportation analysis is prepared as part of the North Bethesda Master Plan Amendment, which will be prepared in 10 to 15 years.

The Staging Amendment does not address specifics on transportation system improvements that are to be provided by IBM as a result of their planned expansion. The proposed IBM improvements are located on Old Georgetown Road between Cheshire Drive and I-270 and include the intersections with Democracy Boulevard and Rock Spring Drive.

The Staging Amendment recommends establishing Transportation Management Districts (TMD's) to implement policies that promote the use of alternative forms of transportation to reduce the SOV mode share. The Transportation Action Partnership, Inc. (TAP) is a group of area employers whose work has already been successful in increasing the vehicle occupancy rate in Rock Spring Office Park.

The improvements proposed in this project planning study are compatible with the North Bethesda-Garrett Park Master Plan.

**3. Transit Services**

A full range of public transportation is available to residents and commuters in the study area and surrounding region. The Washington Metropolitan Area Transit Authority offers both the Metrorail and regional bus service. Commuter rail service is provided at the Garrett Park station of the Maryland Rail Commuter (MARC) Service. The Montgomery County Department of Transportation offers Ride-On service. Also, the North Bethesda Transitway project is being studied by Montgomery County. It involves provisions for a high capacity transit connection between the Grosvenor Metrorail Station and Montgomery Mall, with stops along Rock Spring Drive and Fernwood Road.

**4. Pedestrian/Bicycle Facilities**

In conjunction with the North Bethesda-Garrett Park Master Plan, pedestrian and bike facilities exist or are planned in the study area. The Master Plan sets forth the following recommendations:

- Designate a new right-of-way linking Democracy Boulevard and Rock Spring Office Park with the residential area north of I-270 as far as Tuckerman Lane. An overpass spanning I-270 will be required to link these areas. This connection, which might be integrated into the design of the proposed interchange at Rock Spring Office Park, will enhance non-auto access to employment, Walter Johnson

High School, and the future transitway envisaged between Grosvenor and Montgomery Mall.

- Include right-of-way for a bikeway in the easement for the North Bethesda Transitway, along Rock Spring Office Park Drive and Fernwood Road from Old Georgetown Road to Montgomery Mall. This bikeway will ultimately connect housing, shopping centers, offices, a high school, community center, and the proposed park on the Davis parcel at Rock Spring Office Park.

**D. Traffic Statistics**

The existing I-270 interchange at MD 187 is a diamond-type interchange. The high traffic volumes at this interchange result in substantial delays during peak hours, with queuing on the southbound I-270 ramp onto southbound MD 187 occasionally extending as far back as the I-270 (East Segment) mainline. Operational problems are also experienced on the MD 187 bridge over I-270 due to the limited amount of left-turning vehicle storage capacity. Lack of merge areas on MD 187 north and south of the interchange also contributes to traffic congestion by restricting the free flow of traffic exiting I-270.

The existing I-270 Spur interchange at Democracy Boulevard is a partial cloverleaf interchange. Extensive delays are also experienced at this interchange during the peak hours, with queues extending onto the northbound I-270 Spur. Operational problems occur at the interchange due to lack of merge areas on Democracy Boulevard, and as a result of the short distance available for vehicles entering I-270 Spur northbound to weave across the flow of traffic exiting I-270 Spur.

Traffic counts conducted in 1993 and 1994 were used to derive the Average Daily Traffic (ADT) volumes shown in Figure II-1. This figure shows a 1994 existing conditions volume of 185,500 vehicles per day on I-270 mainline north of the Y-Split at the northern extremity of the study area with volumes south of the Y-Split of 85,600 vehicles per day and 99,900 vehicles per day on I-270 (East Segment) and I-270 Spur, respectively.

Traffic projections made for the design year 2020 are shown for the no-build condition in Figure II-2. Table II-1 shows a comparison between the 1994 and 2020 ADT's, listing the compounded annual growth rate in traffic volume at various locations throughout the study area.



312

TABLE II-1

1994-2020 AVERAGE DAILY TRAFFIC VOLUME COMPARISON

Location	1994 Existing Conditions ADT	2020 No Build ADT	Compounded Annual Growth
I-270 N. of Y-Split	185,500	302,000	1.89%
I-270 (E. Segment) W. of MD 187	85,600	125,000	1.47%
I-270 (E. Segment) E. of MD 187	83,000	117,000	1.33%
I-270 Spur N. of Democracy Blvd.	99,900	177,000	2.22%
I-270 Spur S. of Democracy Blvd.	99,000	180,000	2.33%
MD 187 N. of I-270 (E. Segment)	66,800	73,000	0.34%
MD 187 S. of I-270 (E. Segment)	66,200	87,000	1.06%
Democracy Blvd. W. of I-270 Spur	51,950	62,000	0.68%
Democracy Blvd. E. of I-270 Spur	57,850	71,000	0.79%
Rock Spring Dr. W. of MD 187	23,200	55,000	3.38%

Level of Service - Signalized Intersections

Level-of-service (LOS) for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period.

LOS A describes operations with very low delay, i.e., less than 5.0 sec. per vehicle.

LOS B describes operations with delay in the range of 5.1 to 15.0 sec. per vehicle.

LOS C describes operations with delay in the range of 15.1 to 25.0 sec. per vehicle.

LOS D describes operations with delay in the range of 25.1 to 40.0 sec. per vehicle. At the level D, the influence of congestion becomes more noticeable.

LOS E describes operations with delay in the range of 40.1 to 60.0 sec. per vehicle. This is considered to be the limit of acceptable delay.

LOS F describes operations with delay in excess of 60.0 sec. per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

**Level-of-Service - Ramps and Merge Areas**

Level-of-service for ramps and merge areas is defined in terms of driving turbulence.

LOS A represents unrestricted operations. Merging and diverging maneuvers are carried out without disruption to through vehicles. There is no noticeable turbulence in the ramp influence area.

At LOS B, minimal levels of turbulence exist. Merging and diverging maneuvers become noticeable to through drivers as speeds must be adjusted by merging and diverging drivers to smoothly fill available gaps and make lane changes within the ramp influence area. Speeds of vehicles in the influence area begin to decline slightly.

At LOS C, the level of merging or diverging turbulence becomes noticeable and the average speed within the ramp influence area begins to decline. Driving conditions are still relatively comfortable at this level.

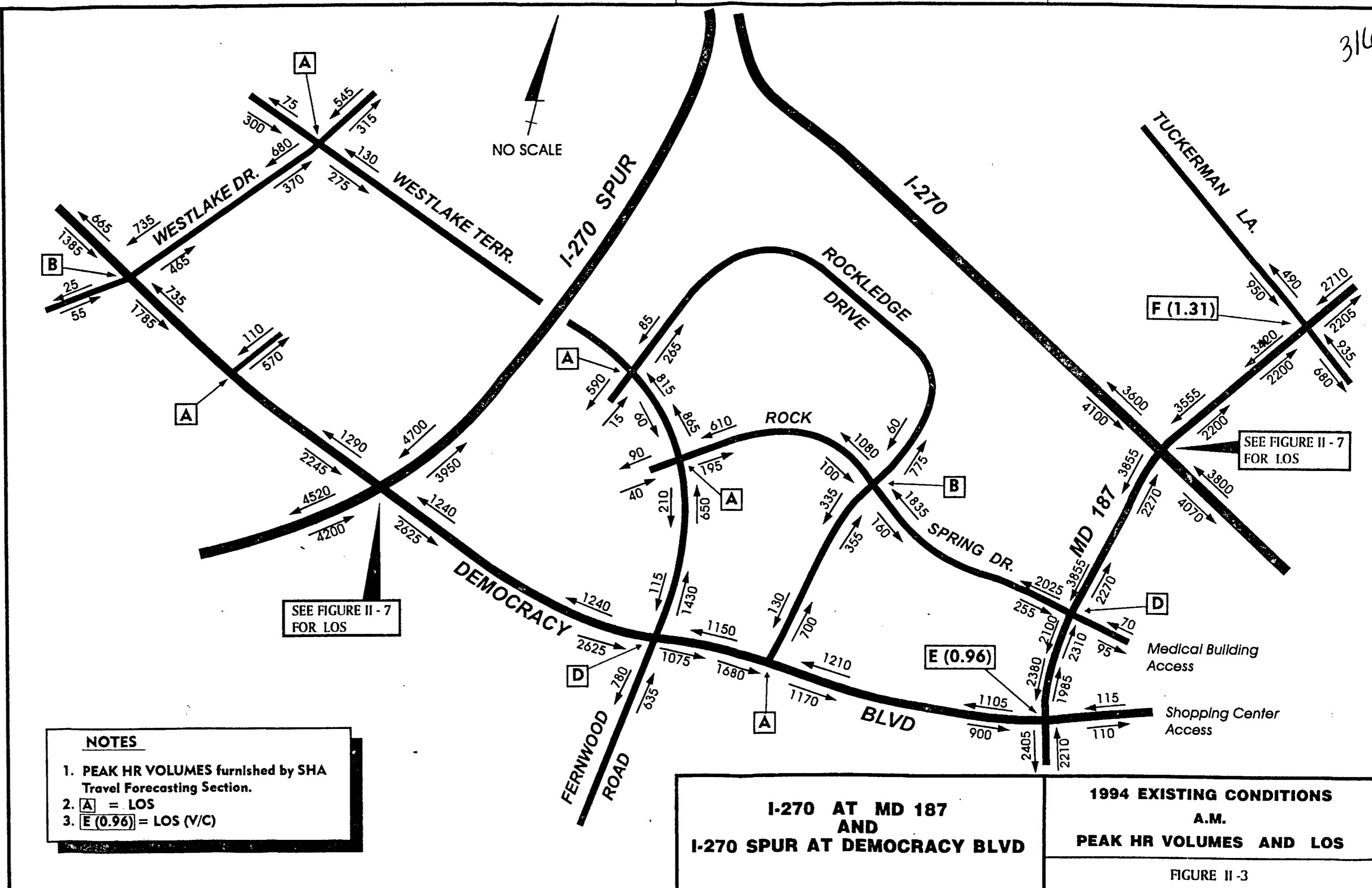
At LOS D, virtually all vehicles slow to accommodate merging or diverging maneuvers as turbulence levels become intrusive. Some ramp queues may form, but freeway operation remains stable.

At LOS E, speeds reduce to 65± kilometers per hour (low 40's miles per hour) as the turbulence of merging and diverging maneuvers becomes intrusive to all drivers in the influence area. Both ramp and freeway queues begin forming as flow levels approach capacity limits.

LOS F represents breakdown, or unstable, operation. Queues have visibly formed on the freeway and on-ramps as approaching demand flows exceed the discharge capacity of the downstream freeway.







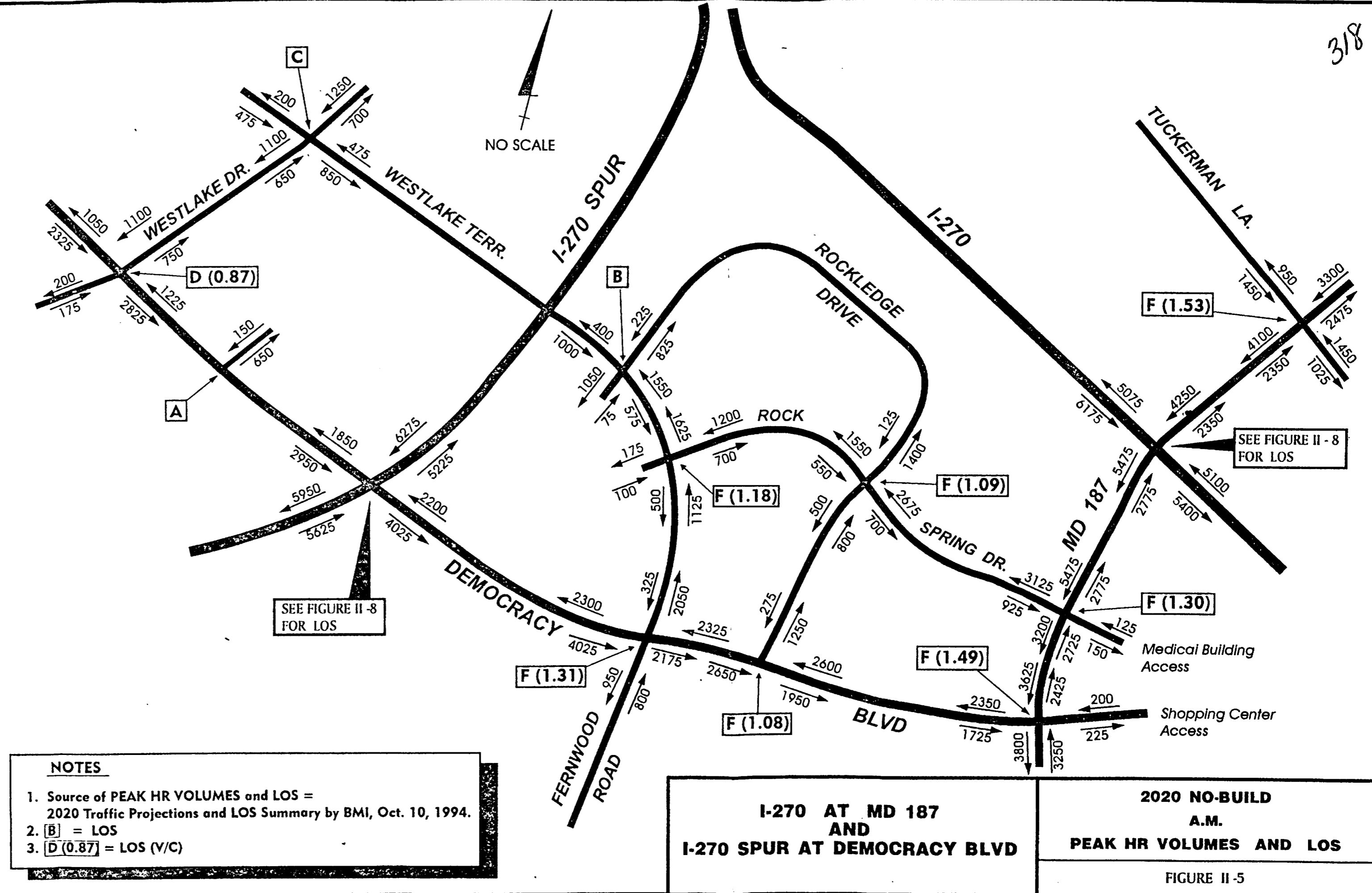
- NOTES**
1. PEAK HR VOLUMES furnished by SHA Travel Forecasting Section.
  2. **A** = LOS
  3. **E (0.96)** = LOS (V/C)

**I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD**

**1994 EXISTING CONDITIONS A.M. PEAK HR VOLUMES AND LOS**

FIGURE II - 3





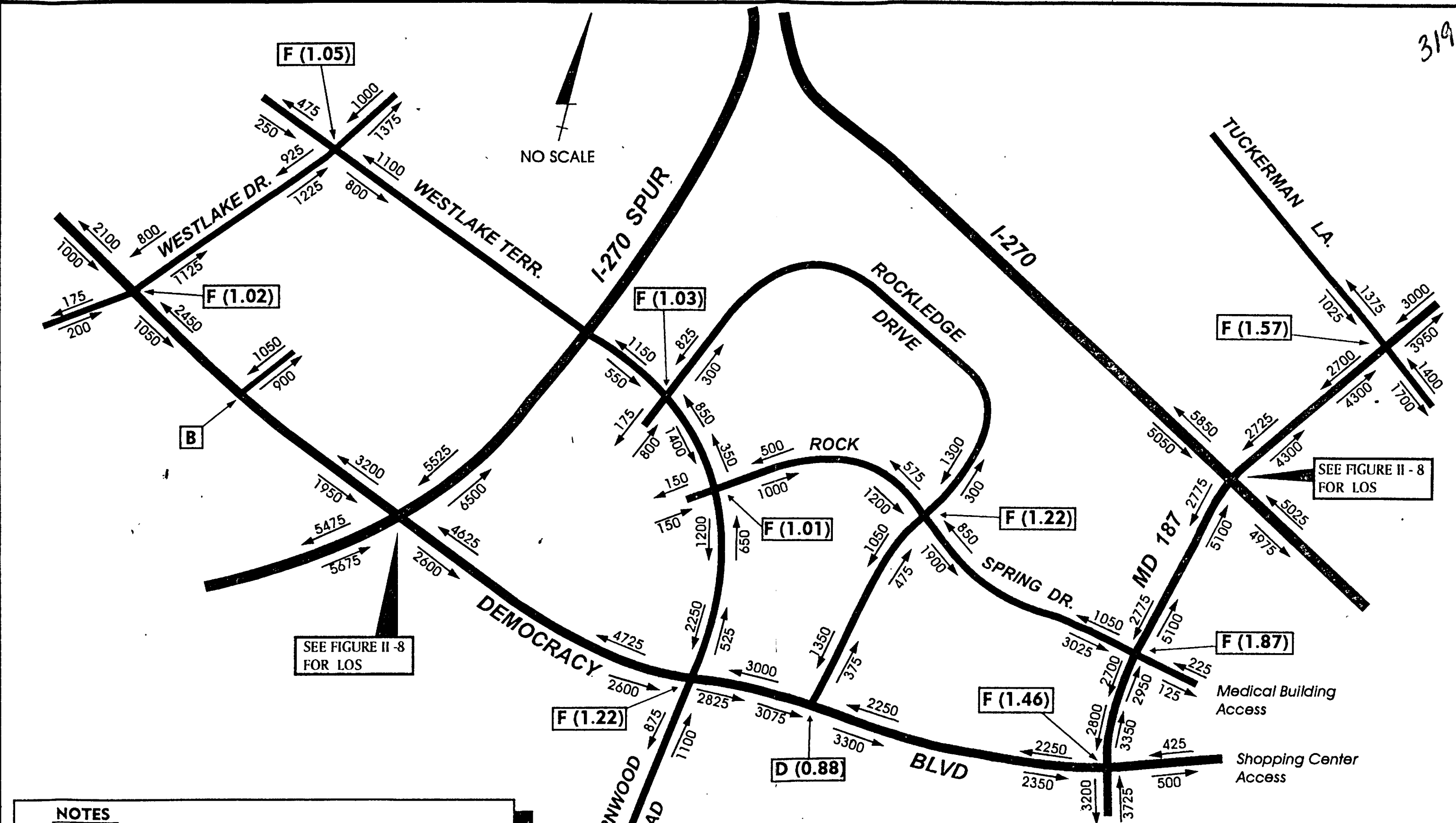
**NOTES**

1. Source of PEAK HR VOLUMES and LOS = 2020 Traffic Projections and LOS Summary by BMI, Oct. 10, 1994.
2. [B] = LOS
3. [D (0.87)] = LOS (V/C)

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

**2020 NO-BUILD  
A.M.  
PEAK HR VOLUMES AND LOS**

FIGURE II - 5



**NOTES**

1. Source of PEAK HR VOLUMES and LOS = 2020 Traffic Projections and LOS Summary by BMI, Oct. 10, 1994.
2. **B** = LOS
3. **D(0.87)** = LOS (V/C)

**I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD**

**2020 NO-BUILD P.M. PEAK HR VOLUMES AND LOS**

SEE FIGURE II - 8 FOR LOS

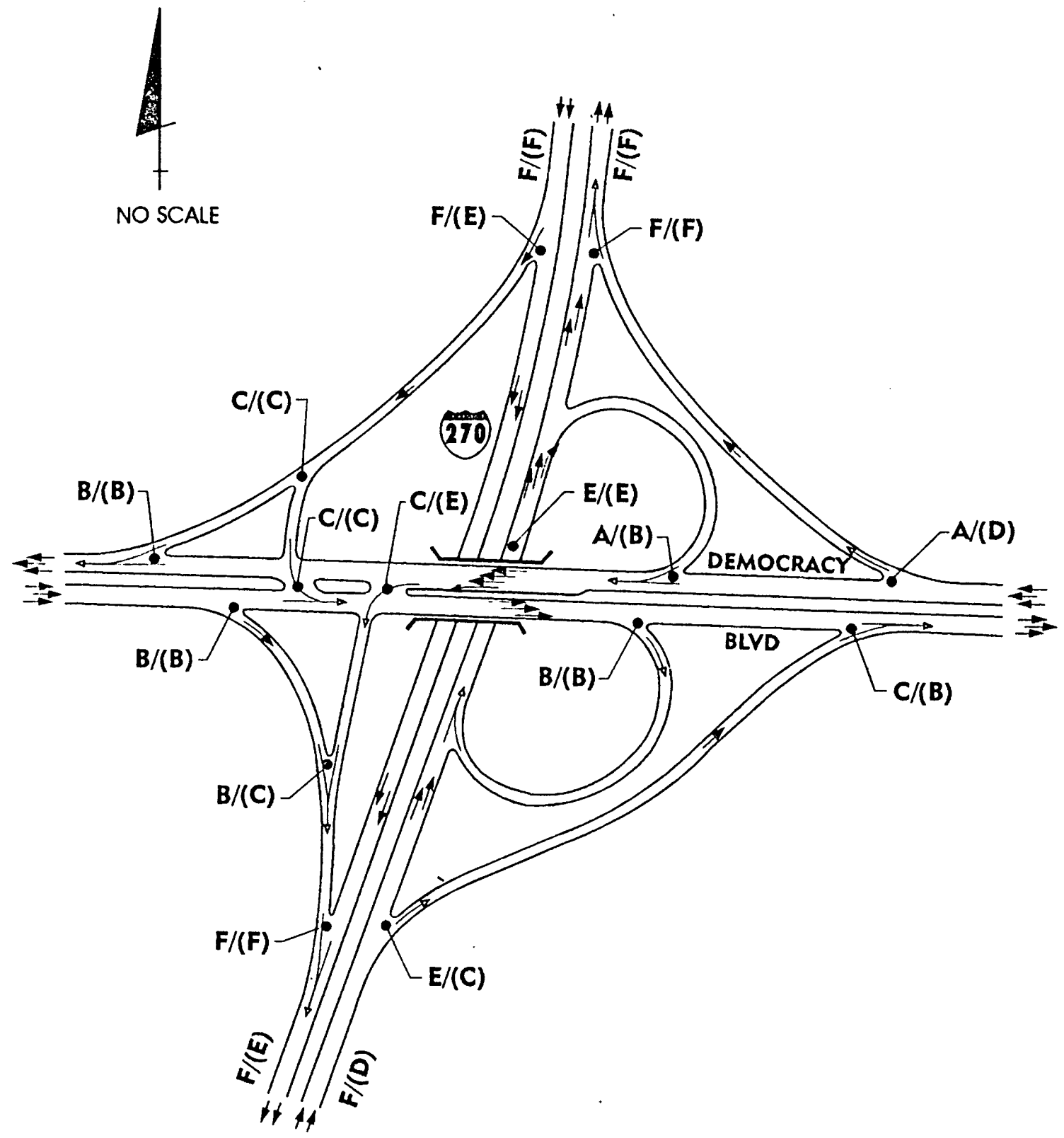
SEE FIGURE II - 8 FOR LOS

Medical Building Access

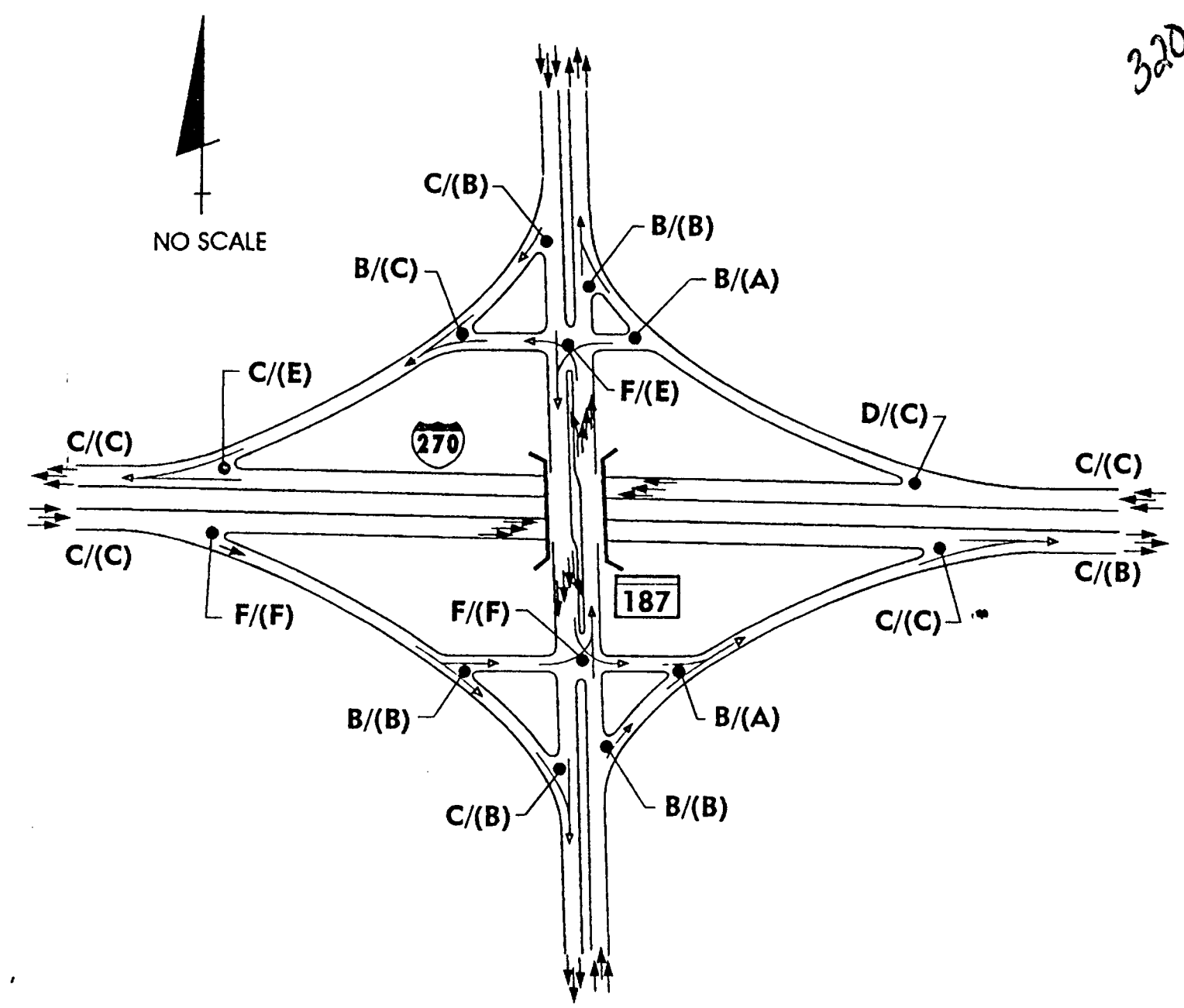
Shopping Center Access

NO SCALE



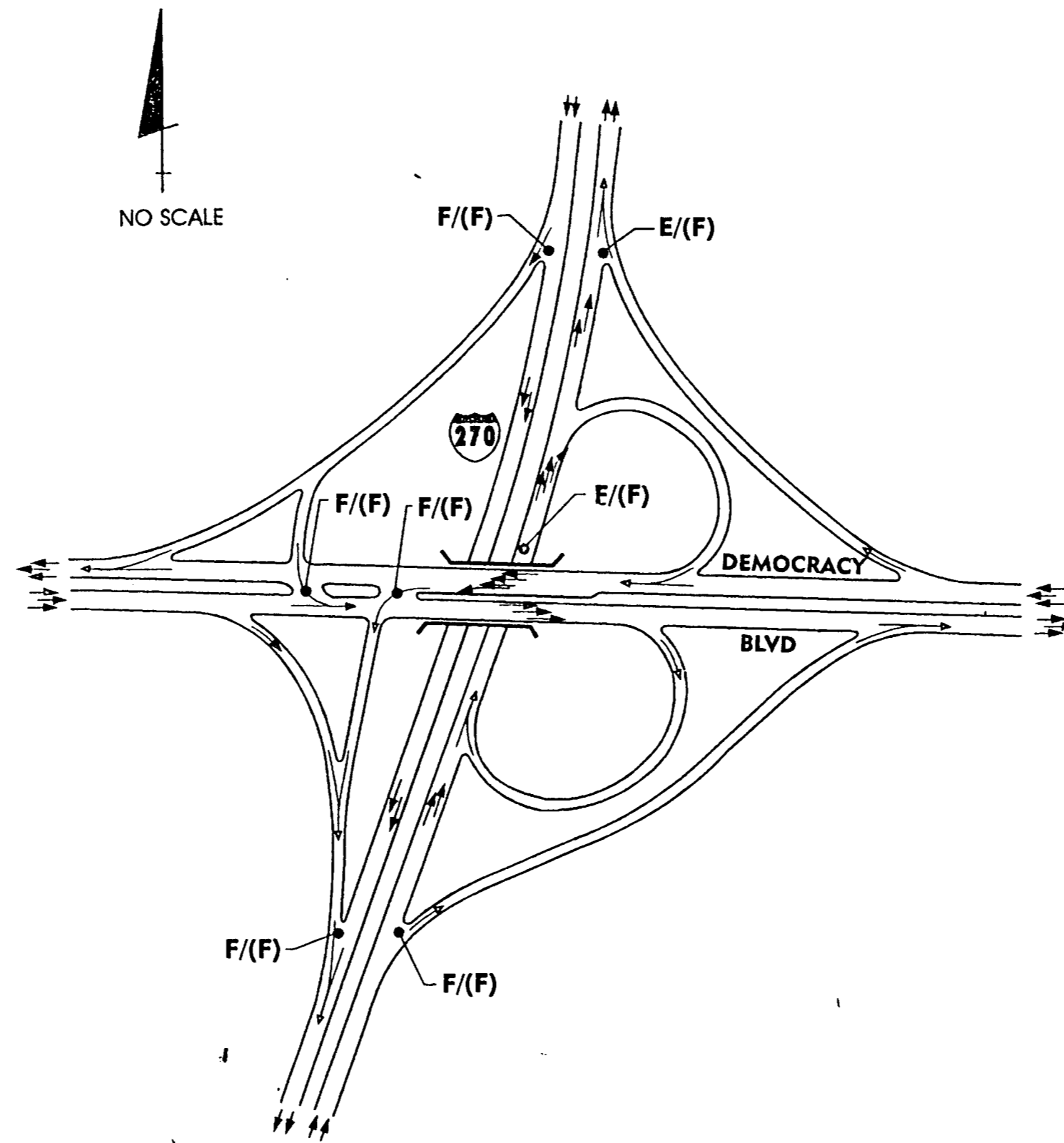


I-270 SPUR AT DEMOCRACY BLVD

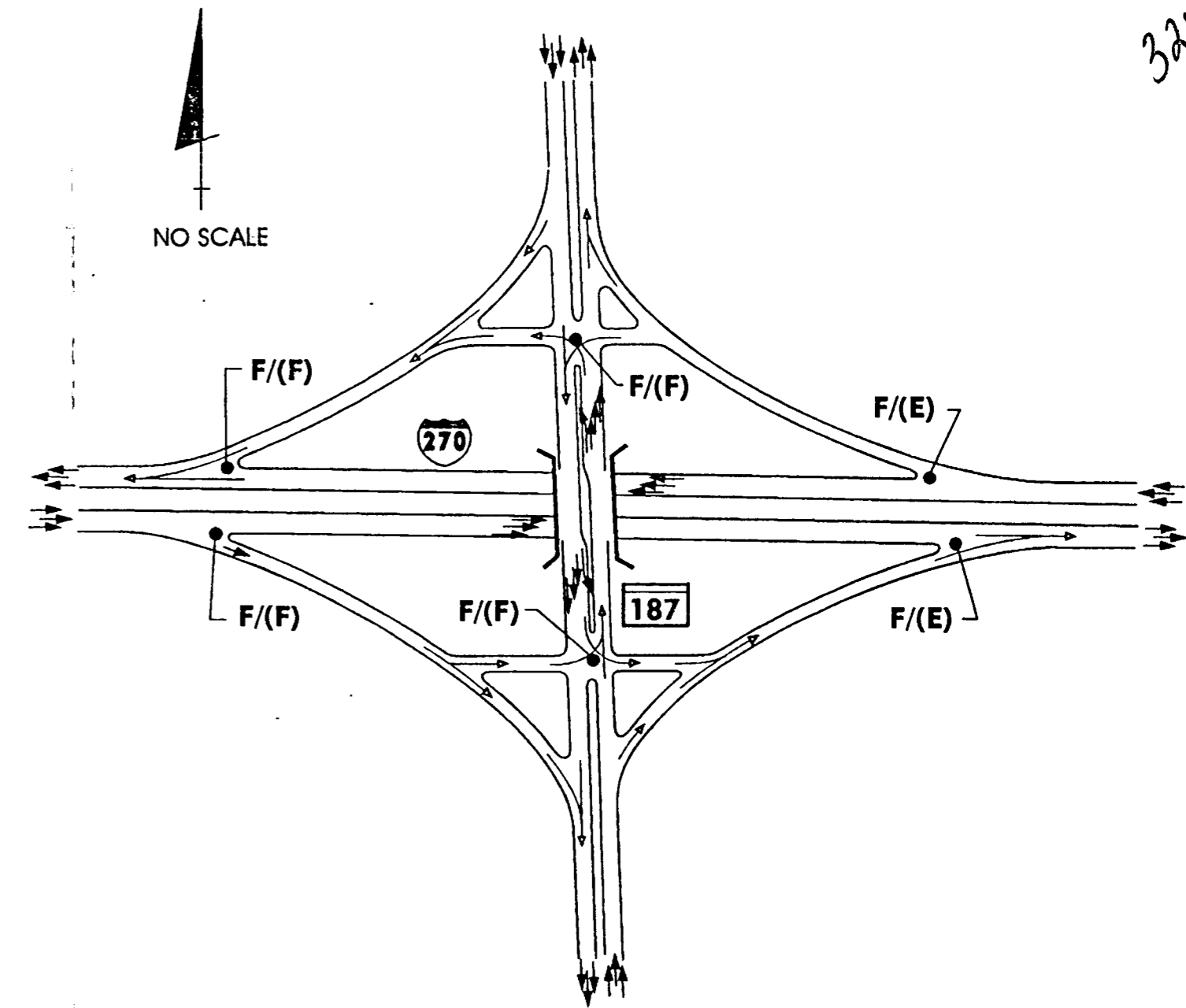


I-270 AT MD 187

<b>I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD</b>	<b>1994 EXISTING INTERCHANGE LOS</b> <b>AM / (PM)</b>
	FIGURE II - 7



I-270 SPUR AT DEMOCRACY BLVD



I-270 AT MD 187

<p><b>I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD</b></p>	<p><b>2020 NO-BUILD INTERCHANGE LOS AM / (PM)</b></p>
<p>FIGURE II - 8</p>	

321

A.M. and P.M. peak hour levels of service at the various intersections based on analyses using traffic volumes for 1994 existing conditions and the projected 2020 no-build conditions are shown in Figures II-3 through II-6. The A.M. and P.M. peak hours are from 8:00 to 9:00 A.M. and 4:00 to 5:00 P.M., respectively. Also shown are peak hour volumes, A.M. and P.M., for both 1994 existing conditions and 2020 no-build conditions. Shown along with the LOS, for ratings of D through F, is the volume to capacity ratio (V/C), which is the ratio of the actual volume to the theoretical capacity at a given point. It is noteworthy to observe that three of the eleven intersections have LOS F under P.M. 1994 existing conditions, and it is projected that nine of the eleven intersections will have LOS F under P.M. 2020 no-build conditions.

Levels of service at the I-270 interchanges at MD 187 and Democracy Boulevard, A.M. and P.M. peak hours, for 1994 existing and 2020 no-build conditions are shown in Figures II-7 and II-8, respectively. Under the 2020 no-build conditions, levels of service at all analyzed locations at the I-270/MD 187 interchange are projected to be at LOS E or F. Similarly, at the I-270 Spur/Democracy Boulevard interchange, all analyzed locations are projected to be at LOS F, except for the ramp from Democracy Boulevard westbound onto I-270 Spur northbound (LOS E - A.M.).

Under existing conditions, frequent and severe traffic congestion occurs at the I-270 interchanges at MD 187 and Democracy Boulevard. Continued planned growth is expected in the study area in accordance with current zoning and Master Plan recommendations. As is evident from the above traffic discussion, traffic volumes are projected to increase in the study area, and levels of service at the various locations within the subject interchanges are projected to deteriorate. The Master Plan recognizes the need for transportation improvements and recommends that additional roadway capacity be provided. In order to efficiently handle the projected traffic growth, improvements are needed in the form of additional lanes at the I-270 interchanges at MD 187 and Democracy Boulevard and additional direct interchange connections between I-270 and Rockledge Drive and between I-270 Spur and Fernwood Road.

Alternative 1 (no-build) would provide no major improvements to the interchanges. As traffic volumes continue to grow, traffic delays and the length of the peak congestion will increase. It can be expected that as the magnitude and duration of congestion increase over time, the rate of accidents will also increase.

Descriptions of build alternatives are contained in Section III.C.

The traffic volumes, traffic operations and levels of service that would result from the build alternatives have been determined assuming each of the following conditions:

- a. Each build alternative would be constructed individually (i.e., with a given alternative at one location, the no-build condition would exist at all other locations).
- b. A combination of build alternatives would be implemented (including the possibility of the no-build alternative at certain locations).

The levels of service that are projected for the Year 2020 for the individual build alternatives and reasonable combinations of build alternatives are presented in Tables II-2 through II-4 on the following sheets. The levels of service that would result in the year 2020 with the no-build alternative are also listed for reference.

As previously stated, analysis results for the year 2020 no-build alternative indicate congested flow and unsatisfactory LOS for most traffic movements at the I-270 interchange at MD 187 and Democracy Boulevard. The 2-series and 3-series build alternatives focus on improvements to the I-270/MD 187 interchange and the 4-series build alternatives incorporate improvements to the I-270 Spur/Democracy Boulevard interchange. Build Alternatives 5B and 6B focus on providing additional access to the Rockspring area via connecting ramps. Build Alternative 5B is a half-diamond interchange at Fernwood Road and Build Alternative 6B is a one-direction ramp from the northbound I-270 Spur into the Rockspring area. Build Alternative 6B is designed as a roadway enhancement to compliment one of the 3-series build alternatives. The Build Alternatives were evaluated for changes in LOS conditions at both interchanges and at selected at-grade intersections throughout the study area.

At the I-270/MD 187 interchange, LOS results for the 2-series build alternatives do not indicate substantial improvements to traffic operations. The 3-series build alternatives show some improvement over the no-build results, primarily during the A.M. peak hour. At the I-270 Spur/Democracy Boulevard interchange, analysis results for the 4-series build alternatives indicate mixed LOS improvements, with all designs except 4D indicating an LOS F in at least one peak hour (A.M. or P.M.). Build Alternatives 4C and 4D show slightly better LOS results than 4A and 4B. Analysis of the HOV improvements for the Fernwood Road and MD 187 interchanges did not show significant improvements in LOS results at these locations. Analysis

of build alternative 5B indicated a LOS F at one of the proposed ramps intersections during the A.M. peak hour.

The LOS analysis suggests that a combination of the build alternatives may be required to improve the LOS results. A series of combinations of these alternatives are currently being evaluated.

**E. Accident Statistics**

During the period from January 1, 1990 to December 31, 1992, 233 accidents occurred within the I-270/MD 187 Interchange. Of these accidents, 159 occurred on MD 187, 64 occurred on I-270, and 10 occurred on the ramps. For the 0.87 kilometer (0.54 mile) segment of MD 187 included in the accident study, the accident rate was 513.1 accidents per one hundred million vehicle miles (ACC/100 MVM), which is significantly higher than the statewide average of 269.9 ACC/100 MVM for similar State maintained highways. There was one fatal accident, which occurred in 1992, and 95 injury accidents along this stretch of MD 187 during the study period. The accident rates along this segment of MD 187 for accidents resulting from angle, rear end, and left-turn collisions which occurred during the study period are significantly higher than the statewide average rates for similar State maintained highways.

For the 0.56 kilometer (0.35 mile) segment of I-270 included in the accident study of the MD 187 interchange, the accident rate was 210.0 ACC/100 MVM, which is significantly higher than the statewide average rate of 54.7 ACC/100 MVM for similar State maintained highways. During the study period, there were no fatal accidents, but there were 36 injury accidents along this segment of I-270. Accident rates during the study period for rear end, fixed object, parked vehicle, and other collisions along this segment of I-270 are significantly higher than the statewide average rates for similar State maintained highways.

There were no High Accident Locations designated along the mainline sections of the I-270/MD 187 Interchange. High Accident Locations are those intersections and sections of road deemed to be most hazardous locations as stratified by number of accidents and ADT. Ramps 2 and 6, located in the northeast and southwest quadrants of the interchange, respectively, were designated as High Accident Ramps. A High Accident Ramp is a ramp where three or more accidents occur within a one year period or five or more accidents occur on the ramp within a three year period.

325

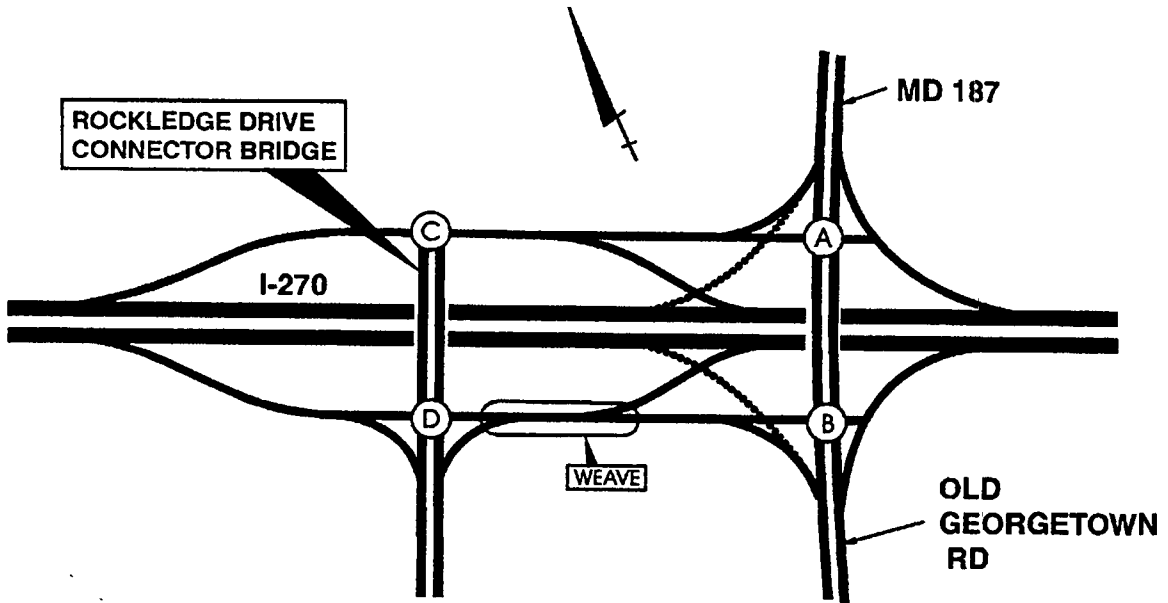


TABLE II-2

**2020 LEVEL OF SERVICE ANALYSIS  
I-270/MD 187/ROCKLEDGE DRIVE CONNECTOR**

ALTERNATIVE	INTERSECTION ANALYSIS LOCATION			
	A	B	C	D
NO BUILD	F(1.62)/F(1.54)	F(1.08)/F(1.70)	-	-
2C	F(1.45)/F(1.43)	F(1.03)/F(1.59)	-	-
2D	F(1.33)/F(1.14)	F(1.03)/F(1.48)	-	-
2E	F(1.08)/E(0.99)	C/F(1.49)	-	-
3E	E(0.97)/F(1.11)	D/F(1.35)	F(1.46)/E(0.92)	F(1.30)/E(0.98)
3F	E(0.97)/F(1.11)	D/F(1.35)	F(1.46)/E(0.92)	-
3G	E(0.97)/F(1.11)	D/F(1.35)	F(1.46)/E(0.92)	-
3H			-	-
4A, 4B, 4C, 4D	F(1.62)/F(1.54)	F(1.08)/F(1.70)	-	-
5B	F(1.50)/F(1.25)	F(1.08)/F(1.57)	-	-
5C	F(1.62)/F(1.51)	F(1.08)/F(1.68)	-	-
6B w/3A or 3B	D(0.87)/F(1.11)	C(0.78)/F(1.23)	E(0.94)/B(0.66)*	
SELECTED ALTERNATIVES COMBINATIONS				
3F w/ 2D	D(0.87)/F(1.11)	C(0.78)/F(1.23)	E(0.94)/E(0.92)	

Legend: E(0.97)/F(1.11) = AMLOS (V/C) / PMLOS (V/C)

\* Applicable to 3A only.

326

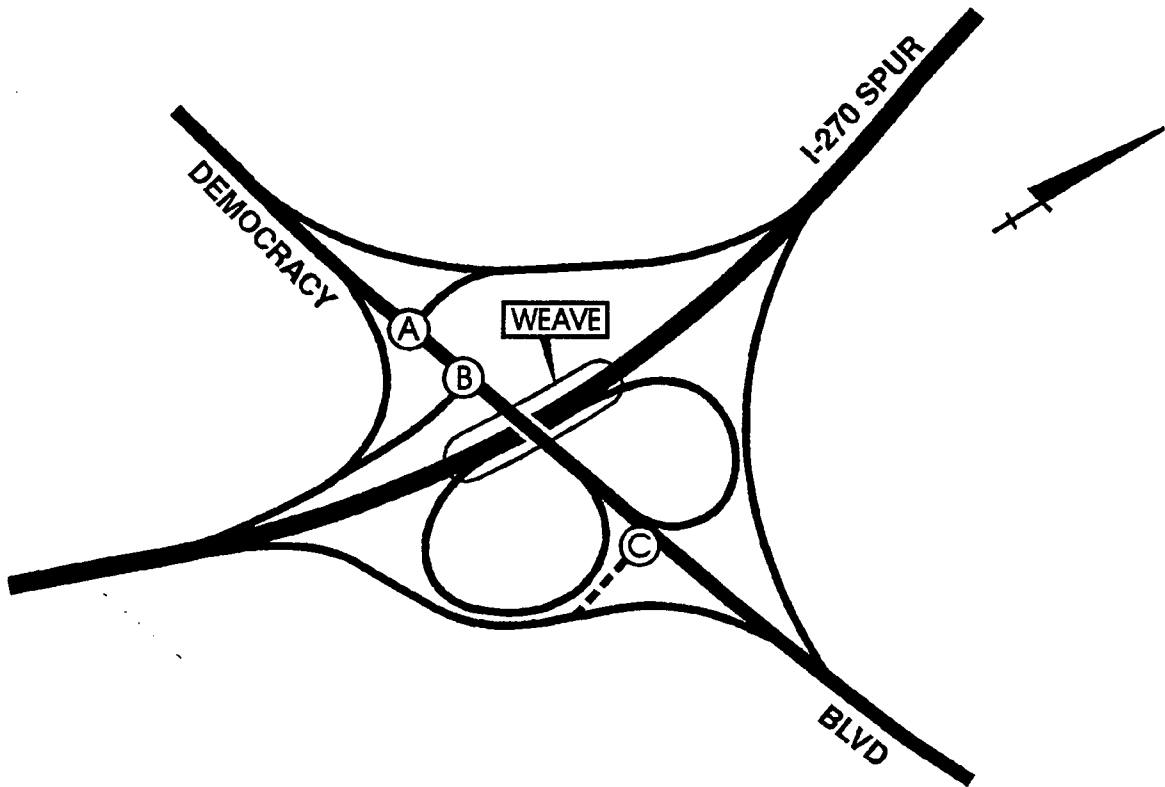


TABLE II-3

**2020 LEVEL OF SERVICE ANALYSIS  
I-270 SPUR/DEMOCRACY BOULEVARD**

ALTERNATIVE	INTERSECTION ANALYSIS LOCATION		
	A	B	C
NO BUILD	F(1.23)/F(1.08)	F(1.19)/F(1.20)	-
2C, 2D, 2E	F(1.23)/F(1.08)	F(1.19)/F(1.20)	-
3E, 3F, 3G	F(1.04)/E(0.92)	F(1.12)/F(1.14)	-
3H	F(1.23)/F(1.08)	F(1.19)/F(1.20)	-
4A	F(1.23)/F(1.08)	F(1.19)/F(1.20)	D/E(0.95)
4B	F(1.23)/F(1.08)	F(1.19)/F(1.20)	-
4C	E(0.96)/D	F(1.04)/E(0.95)	-
4D	E(0.96)/D	-	-
5B	D/E(0.95)	F(1.02)/F(1.10)	-
5C	F(1.08)/F(1.08)	F(1.13)/F(1.18)	-
6B	F(1.04)/E(0.92)	F(1.12)/F(1.14)	-

Legend: E(0.97)/F(1.11) = AMLOS (V/C) / PMLOS (V/C)

327

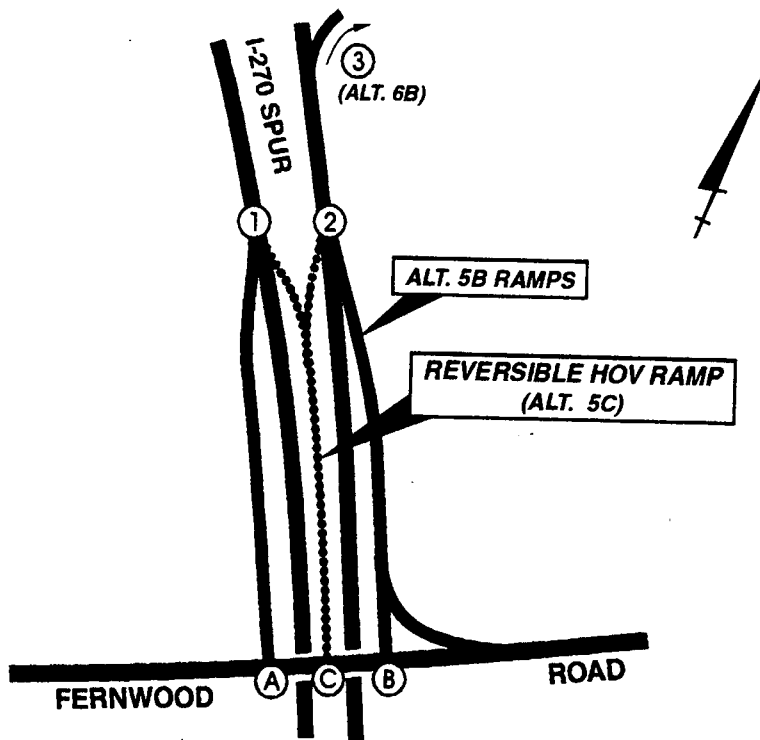


TABLE II-4

**2020 LEVEL OF SERVICE ANALYSIS  
I-270 SPUR/FERNWOOD ROAD AND I-270 SPUR/I-270**

ALTERNATIVE	INTERSECTION ANALYSIS LOCATION		
	A	B	C
NO BUILD	-	-	-
5B	F(1.04)/B	-	A/A
5C	-	A/A	-

Legend: E(0.97)/F(1.11) = AM LOS (V/C) / PM LOS (V/C)

ALTERNATIVE	MERGE/DIVERGE ANALYSIS LOCATION					
	1		2		3	
	DIVERGE	FREEWAY	DIVERGE	FREEWAY	DIVERGE	FREEWAY
NO BUILD	-	-	-	-	-	-
5B	F/D	F/E	F/F	F/F	-	-
5C	D/-	F/-	-/E	-/F	-	-
6B	-	-	-	-	E/C	E/F

- Note:
- Alternative 5C consists of a single, reversible ramp with traffic flowing from I-270 to Fernwood Road in the AM and from Fernwood Road to I-270 in the PM. Thus, there is no diverge analysis for the PM and no merge analysis for the AM.
  - Alternatives 5B and 6B cannot be built together.



Within the I-270 Spur/Democracy Boulevard Interchange, there were 199 accidents from January 1, 1990 to December 31, 1992. One hundred thirty-six accidents occurred on Democracy Boulevard, 29 accidents on I-270 Spur, and 34 accidents on the ramps.

For the 1.34 kilometer (0.83 mile) portion of Democracy Boulevard included in the accident study, the accident rate was 300.9 ACC/100 MVM. Since Democracy Boulevard is a County-maintained road, the statewide average rate for similar State maintained highways is considered not applicable for comparison and is not listed. There were no fatal accidents along this portion of Democracy Boulevard during the study period, but there were 88 injury accidents.

For the 0.63 kilometer (0.39 mile) segment of I-270 Spur included in the accident study of the Democracy Boulevard interchange, the accident rate was 69.0 ACC/100 MVM, as compared to the statewide average rate of 54.7 ACC/100 MVM for similar State maintained highways. There was one fatal accident, which occurred in 1991, and 16 injury accidents along this portion of the I-270 Spur during the study period. Accident rates along this segment of I-270 Spur for angle, rear end, and opposite direction collisions that occurred during the study period are significantly higher than the statewide average rates for similar State maintained highways.

There were no High Accident Locations designated along the mainline sections of the I-270 Spur/Democracy Boulevard Interchange. Ramps 1 and 4, located in the northeast and southeast quadrants of the interchange, respectively, were designated as High Accident Ramps.

Specifically, factors contributing to the high accident rates at these locations include:

- High traffic volumes
- Lack of merge areas
- Inadequate acceleration and deceleration lane lengths

Table II-5 summarizes pertinent information from the Maryland State Highway Administration accident study.

**TABLE II-5**  
**REPORTED ACCIDENTS AT I-270/MD 187**  
**AND I-270 SPUR/DEMOCRACY BOULEVARD – JAN. 1, 1990 - DEC. 31, 1992**

Severity	I-270/MD 187*			I-270 Spur/Democracy Blvd.		
	No.	Rate ACC/100 MVM	Statewide Rate ACC/ 100 MVM	No.	Rate ACC/100 MVM	Statewide Rate*** ACC/ 100 MVM
Fatal Accidents	1	1.6	1.3	1	1.1	----
Injury Accidents	131	213.1**	116.2	104	119.2	----
Property Damage Accidents	91	148.0**	106.4	60	68.8	----
Total Accidents	223	362.8**	223.9	165	189.1	----

- \* Interchange mainlines only, does not include accidents on ramps
- \*\* Significantly higher than statewide average rate
- \*\*\* Not applicable for County roads (Democracy Boulevard)

To summarize, the importance of the I-270 interchanges at MD 187 and Democracy Boulevard in the context of the regional transportation network has been established. Improvements to alleviate the safety deficiencies within the existing interchanges are needed to reduce the high incidence of accidents. The severe traffic congestion currently occurring at the interchanges, the growth in employment and office/retail space that is expected in the study area, the increase in traffic volumes that is projected in the area, as well as the unsafe conditions that cause a high accident rate, all point to the need for improvements of the I-270 interchanges at MD 187 and Democracy Boulevard.

The most significant safety improvement that could be made at either interchange location would be to provide acceleration and deceleration lanes at the ramp terminals. Capacity improvements, such as additional lanes on the ramps and existing interchange reconfiguration, are needed to keep traffic from queuing onto the interstate mainlines and causing a hazardous condition.

**III. ALTERNATIVES CONSIDERED**

### III. ALTERNATIVES CONSIDERED

Section III.A. describes the preliminary alternatives developed in Stage I of the Project Planning Study. Section III.B. describes the alternatives that were dropped from further consideration subsequent to the Supplemental Alternates Public Meeting held on June 8, 1994. Section III.C. describes the alternatives that have been carried forward for detailed comparative study in Stage II of this Project Planning Study. These Stage II alternatives are the subject of this Environmental Assessment.

#### Design Criteria Common to All Alternatives

The proposed typical sections have been developed using the SHA's Highway Development Manual. Geometric parameters developed in accordance with the design speeds and functional classifications were obtained from the American Association of State Highway and Transportation Officials' (AASHTO) 1990 Geometric Design of Highways and Streets.

Utility reconnaissance through SHA District 3 offices has been completed to determine specific engineering constraints and assess impacts of improvement alternatives. Washington Suburban Sanitary Commission (WSSC) underground water lines, Potomac Electric Power Company (PEPCO) high voltage underground conduit are included among the utilities present within the limits of possible improvements.

#### Related Projects

Planned and programmed transportation improvements, several of which are already under construction, are common to all alternatives under consideration. These improvements are described in Section II.C., Existing and Planned Transportation Network.

One roadway improvement project which has particular relevance to this study, and is under construction by the State Highway Administration, is the I-270 Spur Widening, HOV ramp construction and I-495 over I-270 Spur bridge reconstruction project. This project is split into two construction contracts and includes the following elements:

- The addition of one lane in each direction in the median of I-270 Spur between the Y-Split and I-495. These lanes will be for HOV use during the peak hour.

332

- The construction of HOV ramps for the northbound I-270 (East Segment) movement onto northbound I-270 and the southbound movement from I-270, north of the Y-Split, to I-270 Spur, south of the Y-Split.
- The reconstruction of the westbound I-495 bridge over northbound I-270 Spur to improve geometrics and to span the I-270 Spur northbound roadway.

Another project closely related to this Project Planning Study is the Fernwood Road overpass of I-270 Spur, completed by Montgomery County Department of Transportation in May, 1995.

All traffic projections and level of service analyses for the no-build and build alternatives in the design year 2020 assume these projects to be in place. The final contract documents for these projects were closely referenced in the development of this study's build alternatives.

**A. Preliminary Alternatives Developed**

Upon reactivation of this Project Planning Study in January, 1994, the preliminary alternatives that were selected for development were identical to those selected for detailed study when the project was placed on hold in 1990. Figures III-1A through III-1G provide a history of the alternatives. The preliminary alternatives that were developed and presented at the Supplemental Alternates Public Meeting, described in the form in which they were presented, are as follows:

**1. Alternative 1 (No-Build)**

The No-Build Alternative is under consideration at each of the proposed interchange locations. This alternative would include maintenance and minor construction projects at the existing interchanges. The analysis of traffic operations associated with the no-build alternative assumes that the following recently constructed or planned highway improvements are in place:

- I-270 (East Segment) Widening and HOV lanes from the Y-Split to I-495
- I-270 HOV Ramps at the Y-Split
- I-270 Spur Widening and reconstruction of the interchange with I-495
- Fernwood Road Bridge, Westlake Terrace to Rockledge Drive

333

- North Bethesda Transitway
- Southbound I-270 Interim Ramp Improvement at southbound MD 187

**2. Alternatives 2A and 2B (I-270 East Segment/MD 187)**

Alternatives 2A and 2B would consist of reconstruction of the I-270 interchange at MD 187. Either alternative would increase the capacity of the interchange, but would not substantially relieve congestion along MD 187. Either alternative would result in additional lanes along MD 187 through the interchange area between Tuckerman Lane and Rock Spring Drive.

With these alternatives, all traffic accessing the Rock Spring Office Park from I-270 would need to use MD 187. Substantial changes to the MD 187/Rock Spring Drive intersection would be necessary to obtain adequate levels of service.

Alternative 2A (Figure III-1A) proposes the construction of an interchange referred to as an urban diamond. The design of an urban diamond interchange allows six major intersection movements to occur at one central point, controlled by one traffic signal. This alternative provides greater traffic capacity than the diamond interchange which currently exists and does not require a large amount of additional right of way.

Alternative 2B (Figure III-1A) is a partial cloverleaf interchange with loop ramps proposed in the undeveloped land at the northwest and southeast quadrants of the interchange. These ramps would allow free flow of the movements from northbound I-270 to southbound MD 187 and from southbound I-270 to northbound MD 187. A cul-de-sac would be constructed on Lux Lane, just west of MD 187, due to Lux Lane's proximity to the ramp from southbound MD 187 onto northbound I-270.

**3. Alternatives 3A and 3B (I-270 East Segment/Rockledge Drive Connector/MD 187)**

Alternatives 3A and 3B are similar in that they each propose construction of a direct connection between I-270 and the Rock Spring Office Park via Rockledge Drive. The existing interchange at MD 187 would also be improved.

Each alternative includes construction of a bridge crossing I-270 approximately 1200 feet-1400 feet west of MD 187. Access ramps to this bridge would be braided with the ramps to and from MD 187.

The existing structure carrying MD 187 over I-270 would be reconstructed with each of these alternatives in order to accommodate double left turns at the ramps and additional left turn storage length, and to accommodate the proposed ramps on I-270 under MD 187. MD 187 would be widened north and south of the I-270 overpass to extend ramp acceleration and deceleration lanes. Construction of any of these alternatives would necessitate a cul-de-sac on Lux Lane, just west of MD 187 due to the close proximity of Lux Lane to the northbound I-270 ramp intersection with MD 187.

Alternatives 3A and 3B differ only in the manner in which traffic exits and enters northbound I-270 from MD 187 and the Rockledge Drive connector. These differences are summarized as follows:

Alternative 3A (Figure III-1B) would resemble a diamond interchange at the proposed location of the Rockledge Drive Connector bridge over I-270. Access to northbound I-270 from Rock Spring Office Park would be provided by means of a stop-controlled or signal-controlled intersection at the north end of the Rockledge Drive bridge.

Alternative 3B (Figure III-1B) would resemble a "trumpet" interchange at the proposed I-270/Rockledge Drive Connector. It would differ from Alternative 3A by providing a loop ramp rather than a stop or signal-controlled left turn for traffic from Rock Spring Office Park onto northbound I-270.

Note: An Alternative 3C was developed and dropped prior to the Supplemental Alternates Public Meeting. Alternative 3C (Figure III-1B) resembled a partial cloverleaf at MD 187 combined with a "trumpet" interchange, similar to Alternative 3B, at the proposed I-270/Rockledge Drive Connector.

**4. Alternatives 4A, 4B, 4C and 4D (I-270 Spur/Democracy Boulevard)**

Alternatives 4A, 4B, 4C and 4D propose the reconstruction of the I-270 Spur interchange at Democracy Boulevard. Various combinations of these alternatives could be combined to provide a composite interchange.

Alternative 4A (Figure III-1D) would replace the northbound I-270 Spur loop ramp connection to westbound Democracy Boulevard with double left turn lanes. The removal of this ramp would eliminate the weave on the northbound I-270 Spur and eliminate the merge on westbound Democracy Boulevard which is a high accident location. The existing ramp connecting northbound I-270 Spur with eastbound Democracy Boulevard would be widened away from the Stratton Woods Community to accommodate the additional westbound vehicles. Democracy Boulevard would be widened on both sides between the I-270 Spur and Fernwood Road to provide auxiliary lanes thereby addressing a high accident merge location on eastbound Democracy Boulevard.

The objectives of Alternative 4B (Figure III-1D) are similar to 4A in addressing the high accident locations where I-270 Spur ramps merge with Democracy Boulevard. To improve the northbound-to-westbound merge, Alternative 4B proposes widening the Democracy Boulevard bridge 3.7 meters (12 feet) to provide an acceleration lane. East of the I-270 Spur, eastbound Democracy Boulevard would be widened 3.7 meters (12 feet) to provide an acceleration lane for the northbound-to-eastbound movement. Alternative 4B addresses the limited weaving distance between the loop ramp entrance in the southeast quadrant and the loop ramp exit in the northeast quadrant by proposing the construction of a collector-distributor (C-D) road outside the northbound I-270 Spur roadway. This solution would place the weave on the C-D road, separated from the I-270 Spur mainline, but it requires the reconstruction and lengthening of the easternmost span of the Democracy Boulevard bridge.

Alternative 4C (Figure III-1D) proposes the reconstruction of the ramp off of southbound I-270 Spur at Democracy Boulevard. The exit ramp would be shifted to the east to increase the distance between the ramp terminal along westbound Democracy Boulevard and the entrance to Montgomery Mall. This relocated ramp would provide a double left turn lane for the southbound-to-eastbound movement. The westbound-to-southbound movement would be widened from a single left turn to a double left turn. This alternative would also address the high accident location where the northbound I-270 Spur loop ramp merges onto westbound Democracy Boulevard with the addition of an acceleration lane. Alternative 4C would require widening the Democracy Boulevard bridge approximately 3.7 meters (12 feet) on both sides.

The objectives of Alternative 4D (Figure III-1D) are similar to Alternative 4C in addressing the ramp movements in the western half of the interchange. Alternative 4D would provide a loop ramp for the westbound-to-southbound movement instead of left turn lanes. This would eliminate a signal-controlled intersection. Construction of this loop would require the



336

widening of the Democracy Boulevard bridge and the modifications of its end span. The bridge widening would provide an acceleration-deceleration lane along westbound Democracy Boulevard and the end span modification would allow the loop ramp to pass between the western bridge pier and abutment. The southbound I-270 Spur ramp at Democracy Boulevard would be reconstructed to increase the distance between the merge point and the Montgomery Mall entrance and to provide a double left turn onto eastbound Democracy Boulevard.

#### 5. Alternatives 5A, 5B and 5C (I-270 Spur/Fernwood Road)

Alternatives 5A, 5B and 5C would consist of ramps connecting Fernwood Road to the I-270 Spur north of Fernwood Road. As discussed in the Related Projects section, Montgomery County has completed construction of the I-270 Spur overpass which will connect Westlake Terrace and Fernwood Road. This bridge has been constructed to a width that accommodates a four lane divided roadway. It has been designed to be adaptable to widening for left turn lanes if recommended from this study. The span length is compatible with any of the Democracy Boulevard Alternatives (Alts. 4A-4D) being considered in this study.

Alternative 5A (Figure III-1E) would consist of a full diamond interchange at Fernwood Road braided with ramps to and from Democracy Boulevard.

Alternative 5B (Figure III-1E) would consist of a half-diamond interchange between the I-270 Spur and Fernwood Road, with ramps oriented to and from the north. Ramps would intersect Westlake Terrace and Fernwood Road to the outside of the I-270 Spur roadways. The Fernwood Road Bridge would be widened to provide a double left turn bay to access the northbound ramp. This alternative would be compatible with all Democracy Boulevard alternatives with the exception of Alternative 4B.

Alternative 5C (Figure III-1E) would consist of a ramp connection between Fernwood Road and the northbound and southbound I-270 Spur median HOV lanes (See Related Transportation Projects). This ramp would intersect the north side Fernwood Road overpass near the center of its span over the I-270 Spur. This connection would operate as HOV-only at least during the peak hours.

**6. Alternatives 6A and 6B (I-270 Spur/I-270 East Segment - the Y-Split)**

Alternatives 6A and 6B would provide a route in addition to Democracy Boulevard for northbound I-270 Spur traffic accessing the Rock Spring Office Park via a ramp off of the northbound I-270 Spur roadway at the Y-Split.

Alternative 6A (Figure III-1F) pertains to the condition in which neither of the Rockledge Drive Connector alternatives (Alts. 3A and 3B) would be in place. A ramp would exit from the northbound I-270 Spur roadway, north of Fernwood Road, and merge with the right hand auxiliary lane on the I-270 East Segment bound for the exit onto MD 187. To simplify traffic operations, it is anticipated that only traffic destined for Rock Spring Drive would be permitted to use this ramp.

Alternative 6B (Figure III-1F) is similar to Alternative 6A, except that it is compatible with the Rockledge Drive Connector Alternatives (Alts. 3A and 3B). The ramp exiting from the northbound I-270 Spur would run parallel to, but not immediately merge with, the I-270 East Segment ramp onto the Rockledge Connector. The Alternative 6B ramp and the Rockledge Drive connector ramp would merge together immediately after reaching westbound Rockledge Drive.

**B. Alternatives Dropped From Further Study**

**1. Alternatives Presented at the Original and Supplemental Alternates Public Meeting That Were Subsequently Dropped**

Alternative 2A (Urban Diamond) was dropped based on findings that it would have a significantly higher cost than alternatives providing comparable levels of service. Urban Diamonds operate most effectively when left-turning volumes from all approaches are nearly balanced, which is not the case at the I-270/MD 187 Interchange.

Alternative 2B was dropped primarily because the loop ramp in the southeast quadrant, carrying traffic from southbound I-270 to northbound MD 187, would significantly impact the Aubinoe parcel, in which an approved residential subdivision is nearing construction. This loop ramp is not projected to carry heavy volumes of traffic and was therefore eliminated to form Alternative 2E (See Section III.C.).

Alternatives 3A, 3B and 3C were dropped based on findings that they would have significantly higher costs than other Rockledge Drive Connector alternatives providing comparable levels of service.

Alternative 5A was dropped based on the determination that the two interchanges were too closely spaced to accommodate an adequate alignment for the braided ramps.

Alternative 6A was dropped because it was projected that unsatisfactory traffic operations would result as traffic from the northbound I-270 Spur ramp combines with southbound I-270 traffic exiting onto MD 187. This alternative would channel additional traffic into the already overloaded southbound I-270 to southbound MD 187 movement.

**2. Alternatives Developed Subsequent to the Supplemental Alternates Public Meeting and Dropped**

Alternative 3D (Figure III-1B) was a direct connection , to and from the north only, between I-270 and Rockledge Drive. This alternative was dropped because it would not provide needed capacity for Rock Spring Office Park traffic to and from I-270 south of MD 187 or MD 187 traffic itself.

Several alternatives for High Occupancy Vehicle (HOV) ramps off of I-270 were developed to various levels of detail subsequent to the Supplemental Alternates Public Meeting. Four alternatives -- HOV-1, HOV-2, HOV-3 and HOV-4 were considered to provide an HOV median connection with the proposed Rockledge Drive Connector bridge over I-270. HOV-1 (Figure III-1G) was a one-lane reversible ramp to/from northbound and southbound I-270, both north and south of the Rockledge Drive Connector. HOV-1 was modified, eliminating the connection south of the Rockledge Drive Connector, renamed 3H (Figure III-1C), because of low projected demand to and from the south, to arrive at its current configuration (See Section III.C.). HOV-2 (Figure III-1G) was identical to HOV-1, except that a 2-lane ramp would be provided, 1-lane in each direction. HOV-2 was dropped based on the determination that the lower cost 1-lane reversible configuration could adequately handle projected volumes.

HOV-3 and HOV-4 (Figure III-1G) were 1-lane reversible and 2-lane median ramps, respectively, combined with general-use ramps onto the Rockledge Drive Connector, as with Alternatives 3A and 3B. These alternatives were dropped based on cost and the determination that it would be difficult to provide adequate traffic operations with the closely spaced intersections that would result from a combined general-use/HOV interchange.

HOV-5 (Figure III-1G) was considered briefly and dropped because of cost. It would have provided a median ramp connection between I-270 and the north side of the Grosvenor Lane bridge over I-270. Mainline widening and bridge reconstruction would have been required. This was considered as a possible route for a busway that may have been able to be implemented in lieu of the North Bethesda Transitway.

Alternative 5C Option 2 (Figure III-1E) consisted of a 2-lane, 2-way median ramp connecting the north side of the Fernwood Road Bridge with northbound and southbound I-270 Spur. This alternative was dropped because of cost (mainline widening would have been required), as the 1-lane reversible version of this alternative would provide comparable levels of service at a much lower cost (See Section III.C. - Alternative 5C).

A second option to Alternative 4C (Figure III-1D) at the I-270 Spur/Democracy Boulevard Interchange was developed that would have created a four-way intersection where ramps to and from southbound I-270 Spur intersect Democracy Boulevard. It would have required reconstruction of the southbound I-270 ramp and eliminated the offset intersection condition that currently exists. This alternative was dropped because of its impacts on a stormwater management pond within the interchange, without substantial operational improvements.

**C. Alternatives Retained for Detailed Study**

Following a careful review of the comments received from the public and concerned agencies, as well as the preliminary engineering and environmental data developed in Stage I of the project, it was determined that the following alternatives should be carried forward for detailed study in Stage II of the project:

- |                          |                |
|--------------------------|----------------|
| Alternative 1 (No-Build) | Alternative 4A |
| Alternative 2C           | Alternative 4B |
| Alternative 2D           | Alternative 4C |
| Alternative 2E           | Alternative 4D |
| Alternative 3E           | Alternative 5B |
| Alternative 3F           | Alternative 5C |
| Alternative 3G           | Alternative 6B |
| Alternative 3H           |                |

A detailed description of these alternatives, options that are being considered, and possible combinations of alternatives follows. A set of representative typical sections is provided in Figures III-2A through III-2C, and plans of the alternatives are provided in Figures III-4 through III-17B.

**1. Alternative 1 (no-build)**

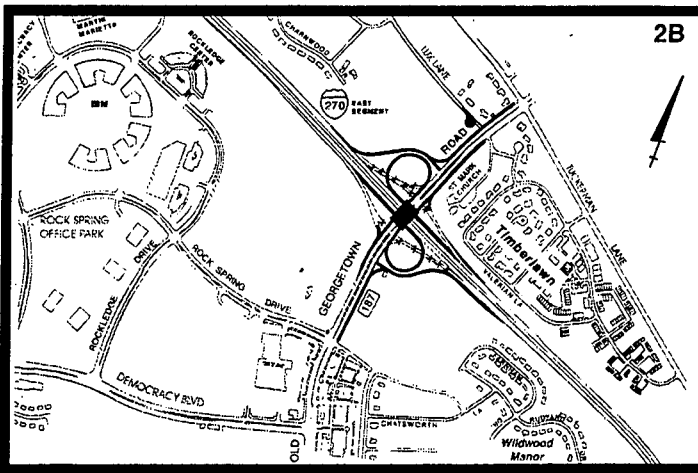
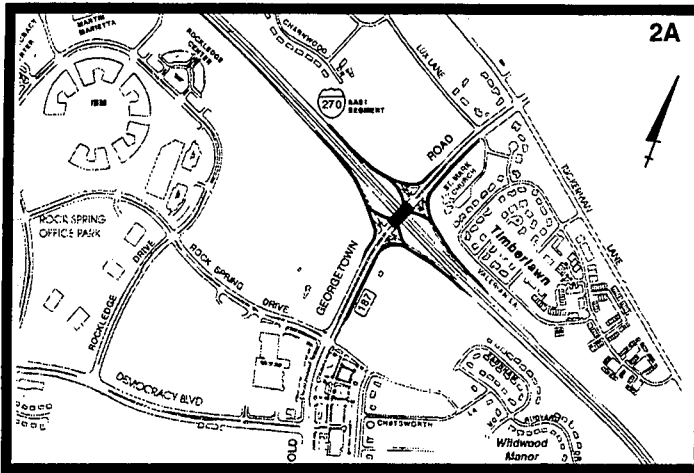
The **No-Build Alternative** is the same as described in III.A.1.

**2. Alternatives 2C, 2D and 2E - Improvements to the Existing I-270/MD 187 Interchange**

**Alternative 2C** proposes widening the ramp approach for the northbound I-270 left-turn movement onto southbound MD 187 (See Figure III-4) and the ramp approach to the southbound I-270 left-turn movement onto northbound MD 187 from one to two lanes. The length of the widening would be approximately 91.4 meters (300 feet) for each ramp.

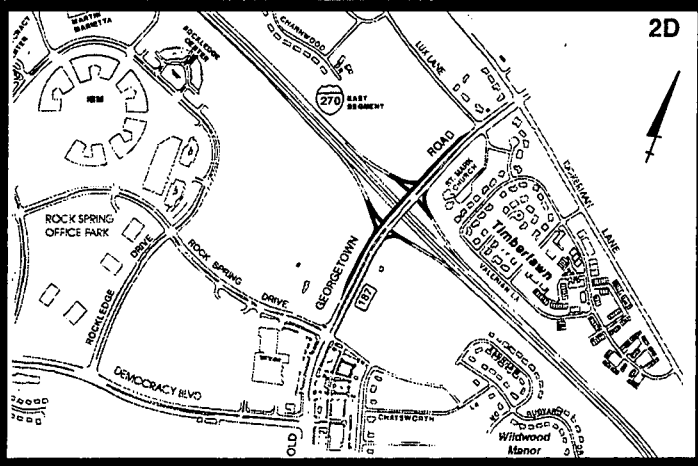
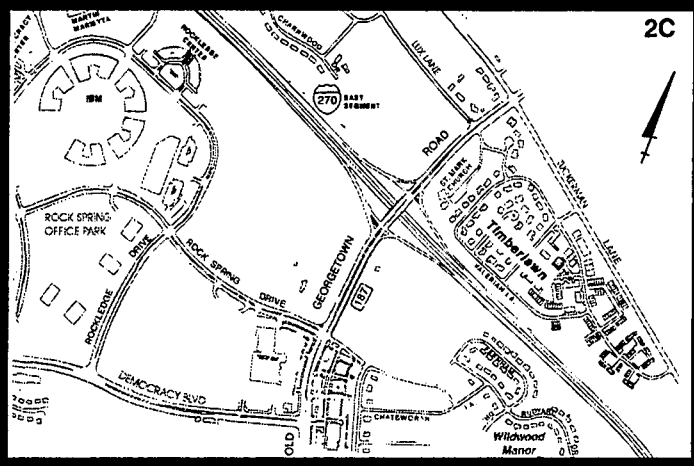
**Alternative 2D** proposes improvement of the existing interchange to provide a double left-turn for all four left-turning interchange movements (See Figures III-5A and III-5B). The ramp approaches to MD 187 from I-270 would be widened as with Alt. 2C. In addition, MD 187 would be shifted west, up to 6.1 meters (20 feet) ± for a distance of 457.2 meters (1500 feet) ± to allow widening of MD 187 without impacting the St. Mark Church, except for a small amount of right-of-way (0.04 hectares) [0.1 acres], which would be required from the church property to provide the acceleration lane. The MD 187 bridge over I-270 would be widened 11.6 meters (38 feet) to provide the double left-turns for the full length available between the diamond ramps. An additional through lane would be provided upstream of the diamond intersections to provide additional storage for traffic queuing to enter the left-turn bays. A deceleration lane is also proposed on northbound MD 187 for right turning traffic onto southbound I-270.

**Alternative 2E** differs from Alternative 2D in that it replaces the signalized northbound I-270 to southbound MD 187 left-turn movement with a loop ramp in the northwest interchange quadrant (See Figures III-6A through III-6C). Also, the location of the left-turn from northbound MD 187 onto northbound I-270 would be shifted north, allowing more length for left-turning vehicle storage as compared to existing conditions or Alternative 2D.



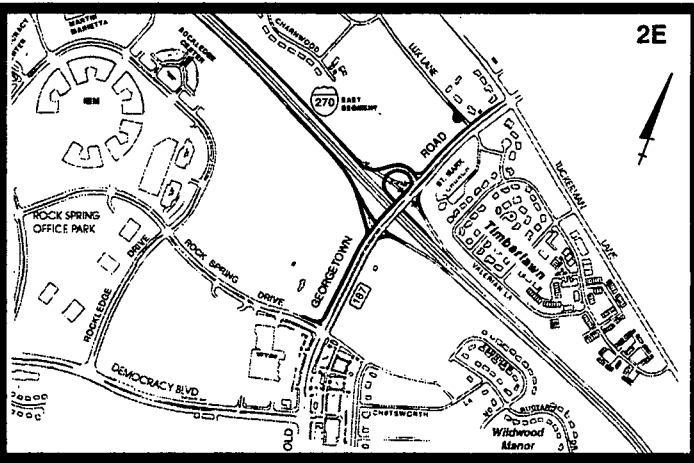
**ALTERNATIVE 2A**  
 Developed prior to the 3/88 Meeting.  
 Dropped subsequent to the 6/94 Meeting.

**ALTERNATIVE 2B**  
 Developed prior to the 3/88 Meeting.  
 Dropped subsequent to the 6/94 Meeting.



**ALTERNATIVE 2C**  
 Developed subsequent to the 6/94 Meeting and Retained

**ALTERNATIVE 2D**  
 Developed subsequent to the 6/94 Meeting and Retained



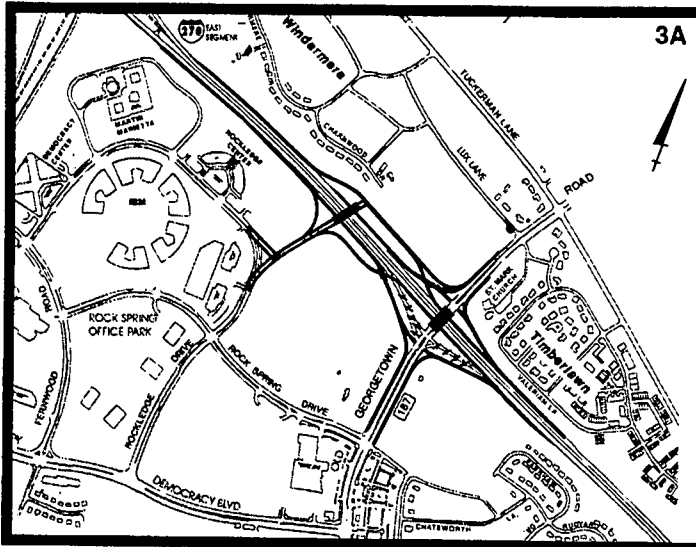
**ALTERNATIVE 2E**  
 Developed subsequent to the 6/94 Meeting and Retained

An Alternates Public Meeting was held on March 3, 1988.  
 A Supplemental Alternates Public Meeting was held on June 8, 1994.

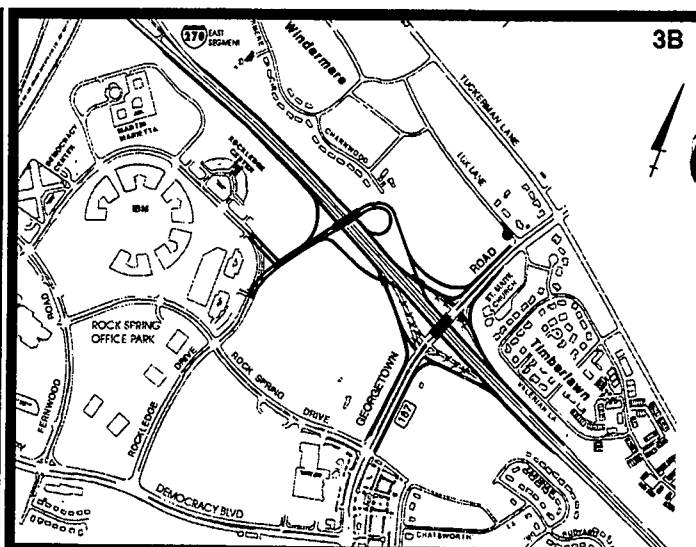
**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

**HISTORY OF ALTERNATIVES  
 (2A, 2B, 2C, 2D, 2E)**

**FIGURE III -1A**



3A



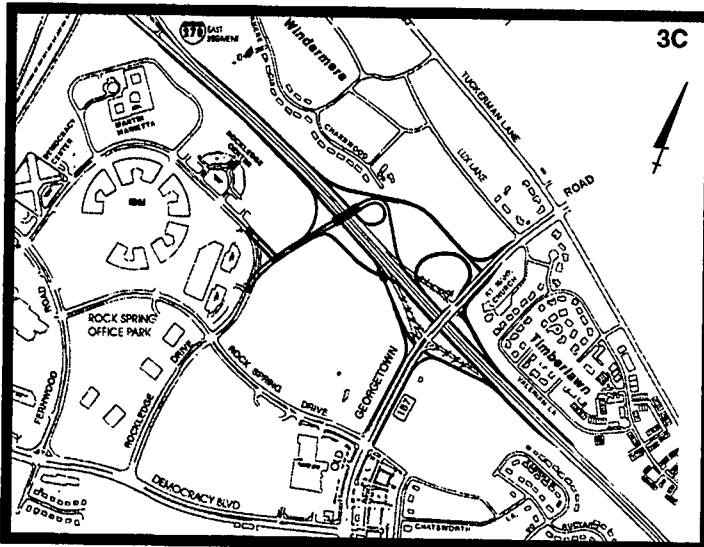
3B

**ALTERNATIVE 3A**

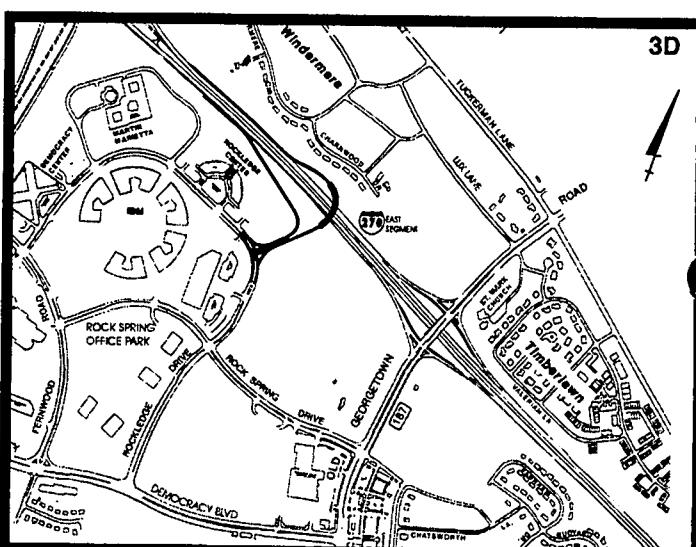
Developed prior to the 3/88 Meeting.  
Dropped subsequent to the 6/94 Meeting.

**ALTERNATIVE 3B**

Developed prior to the 3/88 Meeting.  
Dropped subsequent to the 6/94 Meeting.



3C



3D

**ALTERNATIVE 3C**

Developed and Dropped prior to the 6/94 Meeting  
(was not presented to the public)

**ALTERNATIVE 3D**

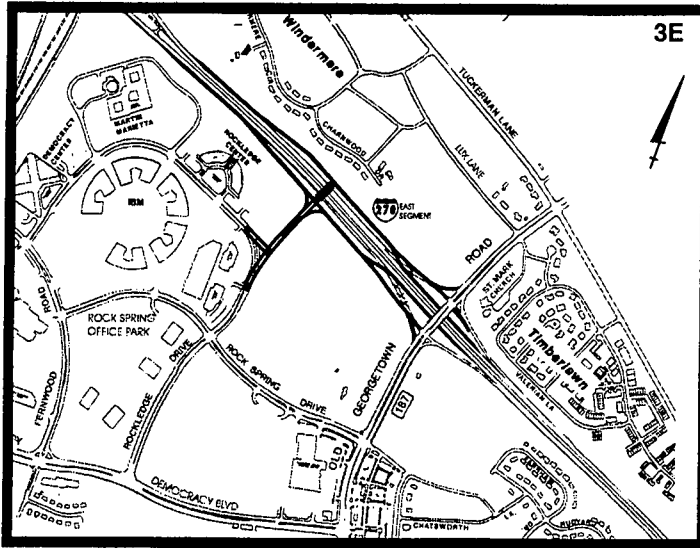
Developed and Dropped subsequent to the 6/94 Meeting

An Alternates Public Meeting was held on March 3, 1988.  
A Supplemental Alternates Public Meeting was held on June 8, 1994.

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BLVD**

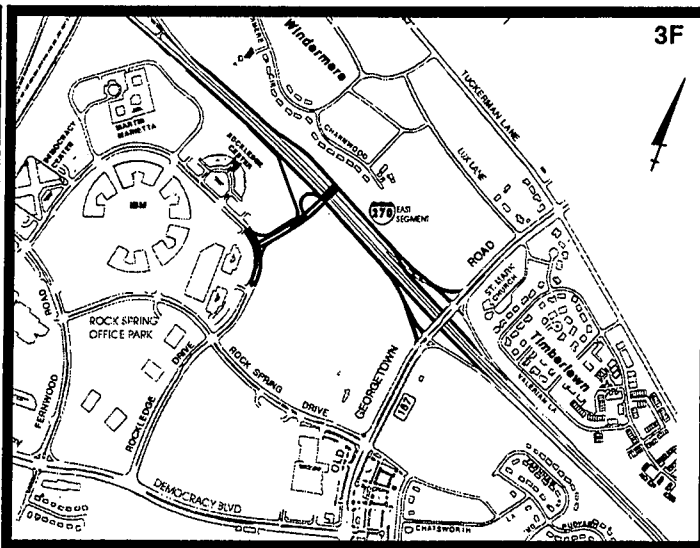
**HISTORY OF ALTERNATIVES  
(3A, 3B, 3C, 3D)**

**FIGURE III -1B**



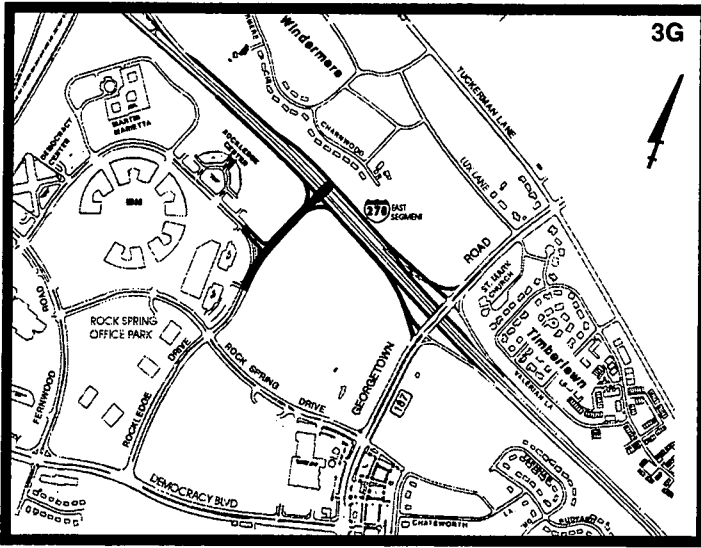
**ALTERNATIVE 3E**

Developed subsequent to the 6/94 Meeting and Retained



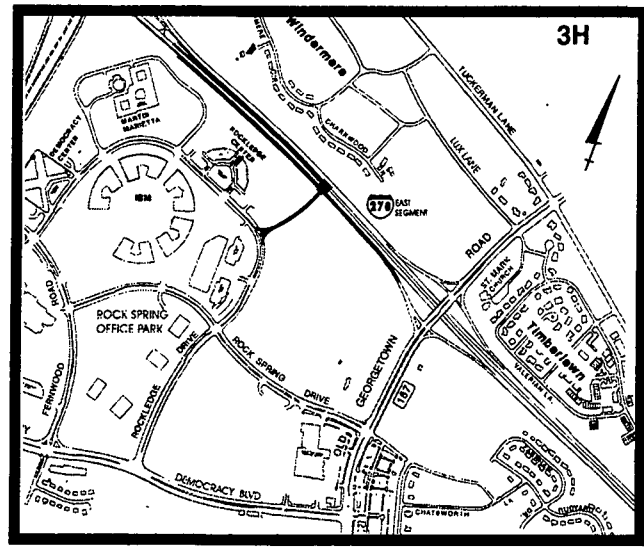
**ALTERNATIVE 3F**

Developed subsequent to the 6/94 Meeting and Retained



**ALTERNATIVE 3G**

Developed subsequent to the 6/94 Meeting and Retained



**ALTERNATIVE 3H**

Retained - See Alternative HOV-1

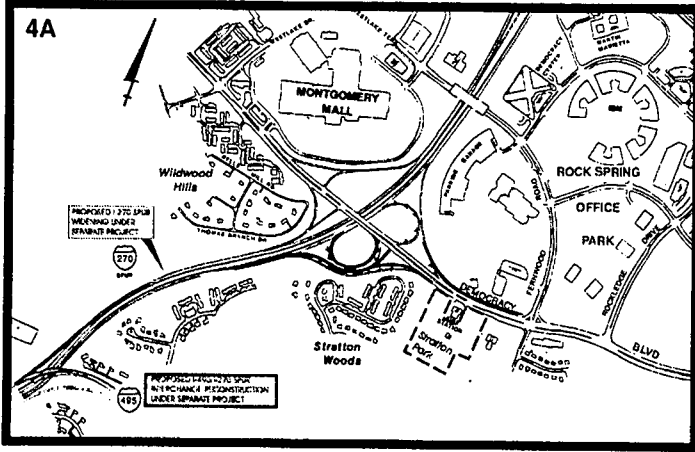
An Alternates Public Meeting was held on March 3, 1988.  
 A Supplemental Alternates Public Meeting was held on June 8, 1994.

**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

**HISTORY OF ALTERNATIVES  
 (3E, 3F, 3G, 3H)**

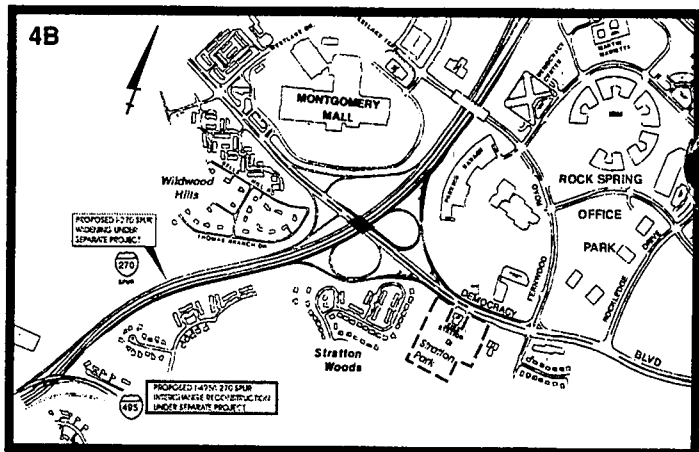
FIGURE III -1C





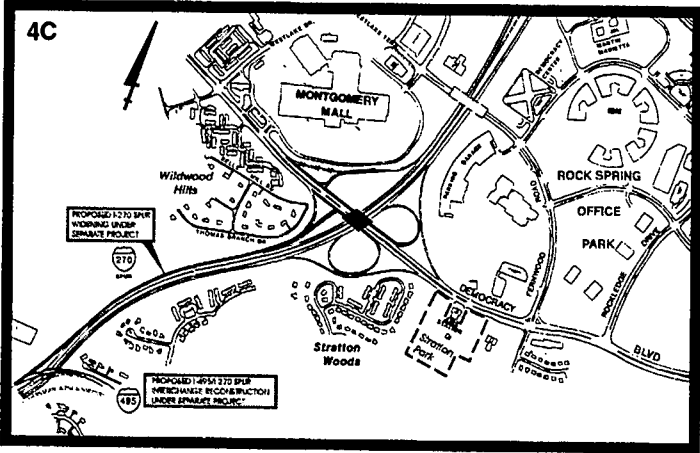
**ALTERNATIVE 4A**

Developed prior to the 3/88 Meeting and Retained



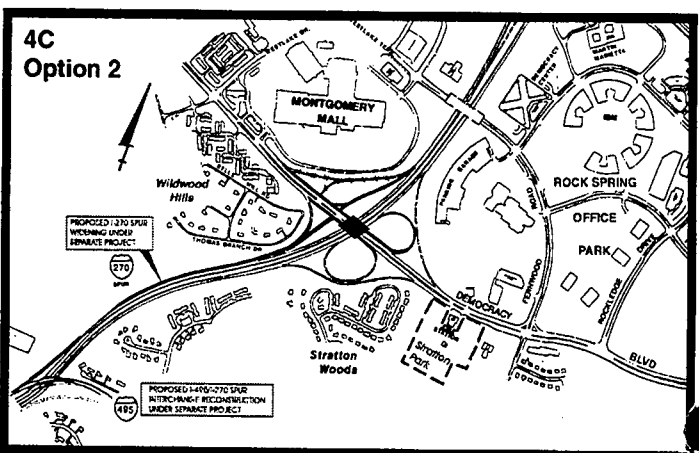
**ALTERNATIVE 4B**

Developed prior to the 3/88 Meeting and Retained



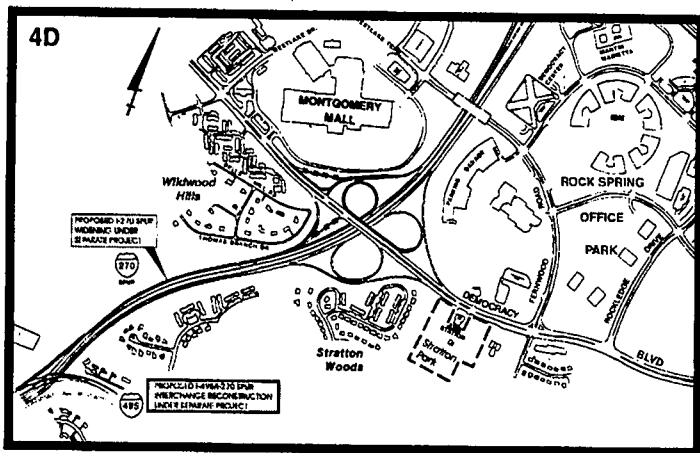
**ALTERNATIVE 4C**

Developed prior to the 3/88 Meeting and Retained



**ALTERNATIVE 4C Option 2**

Developed subsequent to the 6/94 Meeting and Dropped



**ALTERNATIVE 4D**

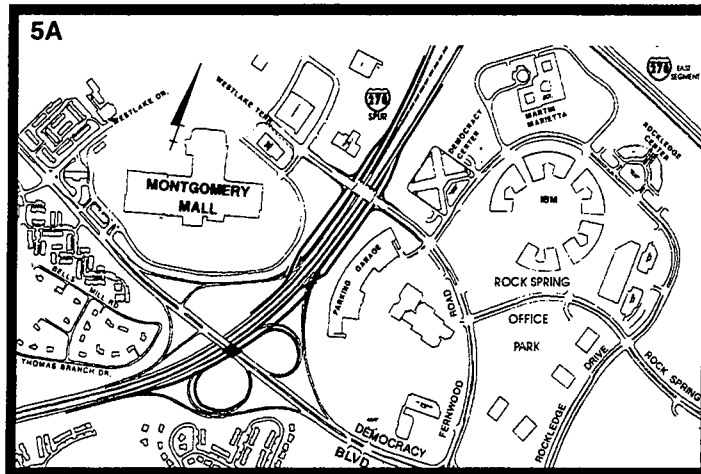
Developed prior to the 3/88 Meeting and Retained

An Alternates Public Meeting was held on March 3, 1988.  
 A Supplemental Alternates Public Meeting was held on June 8, 1994.

**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

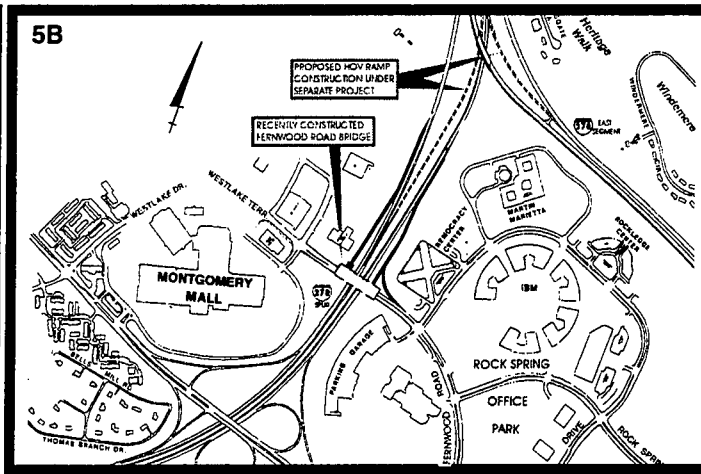
**HISTORY OF ALTERNATIVES  
 (4A, 4B, 4C, 4C Option 2, 4D)**

**FIGURE III-1D**



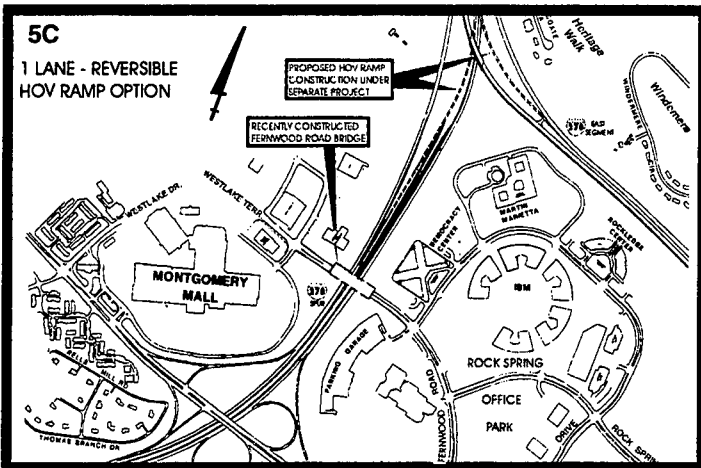
**ALTERNATIVE 5A**

Developed prior to the 3/88 Meeting and Dropped subsequent to the Meeting.



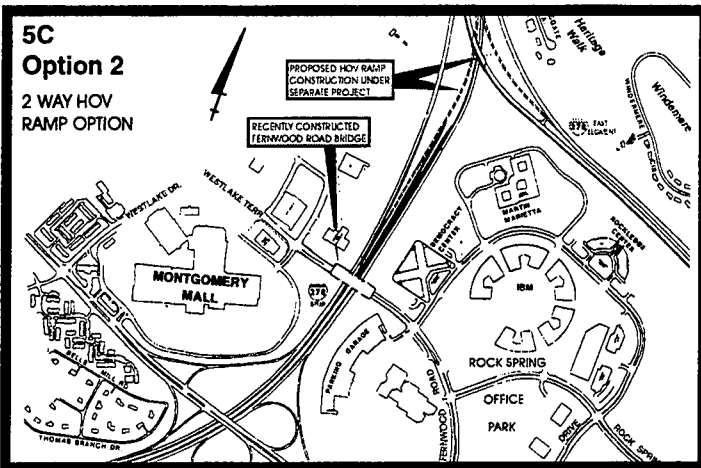
**ALTERNATIVE 5B**

Developed prior to the 3/88 Meeting and Retained



**ALTERNATIVE 5C**

Developed subsequent to the 3/88 Meeting and Retained



**ALTERNATIVE 5C Option 2**

Developed subsequent to the 3/88 Meeting and Dropped

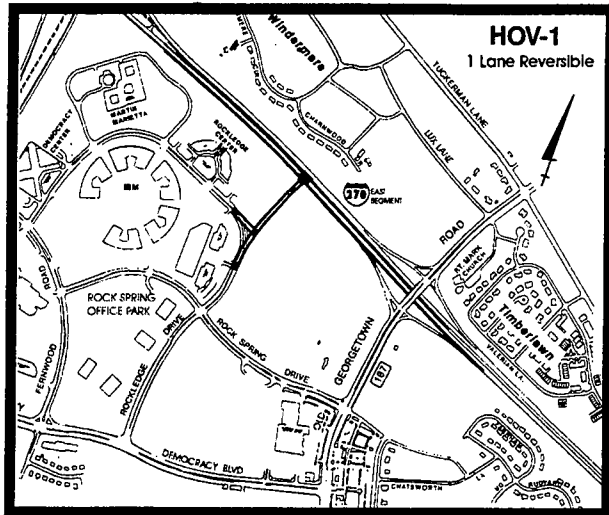
An Alternates Public Meeting was held on March 3, 1988.  
 A Supplemental Alternates Public Meeting was held on June 8, 1994.

**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

**HISTORY OF ALTERNATIVES  
 (5A, 5B, 5C, 5C Option 2)**

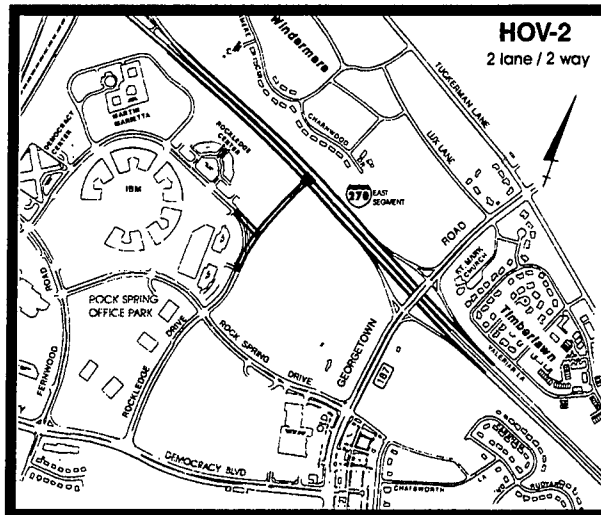
**FIGURE III -1E**





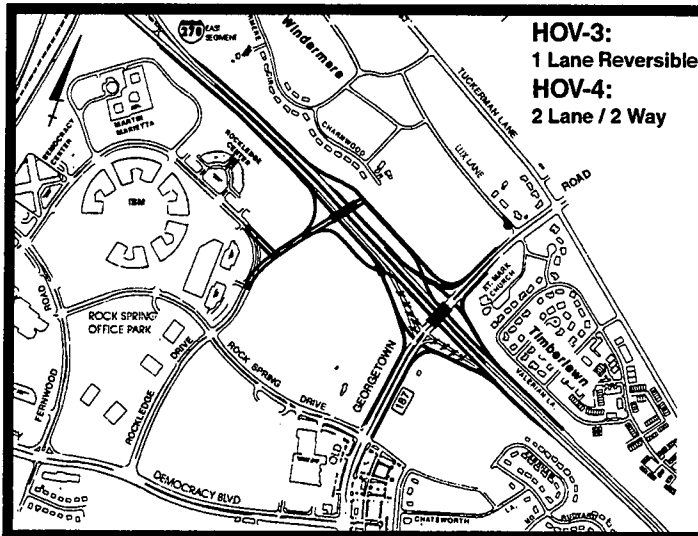
**ALTERNATIVE HOV-1 (Original)**

Developed subsequent to the 6/94 Meeting and Retained (with modifications) and Renamed Alt. 3H



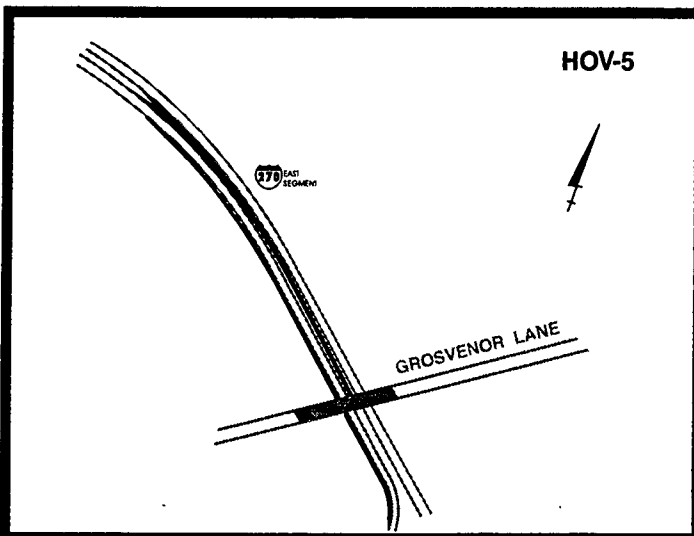
**ALTERNATIVE HOV-2**

Developed subsequent to the 6/94 Meeting and Dropped



**ALTERNATIVES HOV-3 & HOV-4**

Developed subsequent to the 6/94 Meeting and Dropped



**ALTERNATIVE HOV-5**

Developed subsequent to the 6/94 Meeting and Dropped

An Alternates Public Meeting was held on March 3, 1988.  
 A Supplemental Alternates Public Meeting was held on June 8, 1994.

**I-270 AT MD 187  
 AND  
 I-270 SPUR AT DEMOCRACY BLVD**

**HISTORY OF ALTERNATIVES  
 (HOV-1, HOV-2, HOV-3, HOV-4, HOV-5)**

FIGURE III -1G

**3. Alternatives 3E, 3F, 3G and 3H - I-270 Interchanges with the Proposed Rockledge Drive Connector, Maintaining the Existing Connection with MD 187**

Alternatives 3E, 3F, and 3G propose a direct connection between I-270 and Rock Spring Office Park using a reconstructed and extended Rockledge Drive. Each alternative would include a new bridge over I-270, approximately 762 meters (1500 feet) north of the existing MD 187 bridge.

**Alternative 3E** (See Figures III-7A and III-7B) resembles a split-diamond interchange configuration. Interchange ramps from I-270 would intersect the north and south ends of the Rockledge Drive Connector bridge forming a diamond interchange at this location. In addition, 2-lane roadways, one in each direction, would run parallel to I-270 between the Rockledge Drive Connector and MD 187. Traffic on southbound I-270 exiting onto MD 187 would first need to travel through a signalized intersection at the south end of the Rockledge Drive Connector bridge before continuing on to MD 187. Similarly, vehicles traveling from MD 187 onto northbound I-270 would be required to go through a T-intersection at the north end of the Rockledge Drive Connector bridge. The interchange ramps for the I-270 connections south of MD 187 would remain unchanged.

**Alternative 3F** (See Figures III-8A through III-8C) is similar to Alternative 3E, particularly on the northbound side of I-270, where it is nearly identical. Alternate 3F differs from 3E in its accommodation of Rockledge Drive Connector traffic leaving Rock Spring Office Park onto southbound I-270. This traffic would make a left-turn from the Rockledge Drive Connector onto a grade-separated C-D roadway under the Rockledge Drive Connector bridge. This grade-separated C-D roadway eliminates the need for a signal at the south end of the bridge; however, traffic from Rock Spring Office Park going onto southbound I-270 would need to weave across traffic exiting southbound I-270 onto MD 187. The above described left-turn onto the C-D roadway maximizes the available distance for the weave.

**Alternative 3G** (See Figures III-9A through III-9C) is similar to Alternative 3F (again, nearly identical to Alt. 3E on the northbound side), except that the Rockledge Drive Connector bridge is shifted further north to allow the Rockledge Drive Connector traffic destined for southbound I-270 to turn right onto the C-D road where, as with Alt. 3F, this traffic would weave across traffic exiting southbound I-270 for MD 187. The Alternative 3G location of the Rockledge Connector bridge would necessitate shifting the beginning of the tapers for the southbound I-270 exit ramps to just south of the Y-Split bridge.

**Alternative 3H** (See Figures III-10A and III-10B) proposes a one-lane reversible median ramp connecting the north side of a partial Rockledge Drive Connector bridge (over southbound I-270 only) with I-270. This ramp would connect with both northbound and southbound I-270 and be gate controlled to allow southbound I-270 HOV traffic to reach Rockledge Drive during the morning peak and allow traffic leaving Rock Spring Office Park during the evening peak to access northbound I-270. The southbound I-270 mainline roadway would need to be shifted as much as 7.6 meters (25 feet) ±, between the Y-Split and MD 187, to accommodate the median ramp which would be supported by retaining walls.

**4. Alternatives 4A, 4B, 4C and 4D - Improvements to the Existing I-270 Spur/Democracy Boulevard Interchange**

**Alternative 4A** (See Figures III-11A and III-11B) is the same as described in III.A.4. An option is being considered to provide a two-lane ramp and signal control to accommodate the heavy volume of traffic from northbound I-270 Spur onto eastbound Democracy Boulevard, which subsequently weaves into the left-turn lanes at Fernwood Road (Figure III-11C).

**Alternative 4B** (See Figures III-12A through III-12C) is the same as described in III.A.4. As with Alternative 4A, a signalized northbound I-270 spur to eastbound Democracy Boulevard ramp option is being considered (Figure III-12D).

**Alternative 4C** (See Figures III-13A and III-13B) is the same as described in III.A.4.

**Alternative 4D** (See Figures III-14A and III-14B) is the same as described in III.A.4.

**5. Alternatives 5B and 5C - New Interchange Connecting I-270 Spur and Fernwood Road**

**Alternative 5B** (See Figure III-15) is the same as described in III.A.5.

**Alternative 5C** (See Figure III-16) is the same as described in III.A.5.

**6. Alternative 6B - New Ramp Connecting Northbound I-270 Spur with Rockledge Drive**

**Alternative 6B** (See Figures III-17A and III-17B) is the same as described in III.A.6.

350

**D. Combinations of Build Alternatives**

The improvement alternatives being considered with this study are not mutually exclusive; in fact, a wide range of alternatives could be constructed together. As described in Section II.D., a combination of at least two alternatives would be required to obtain adequate levels of service.

Generally, within a category of Alternatives (e.g., 2's, 3's, etc.), alternatives cannot be combined. The exceptions are 2C, which could be a first stage to 2D or 2E, and the 4's, where an alternative to improve one side of the interchange (e.g., 4A or 4B) could be combined with either of the alternatives on the other side of the interchange.

Other combinations of alternatives that cannot be made include: 2E with 3E, 3F or 3G; 4B with 5B or 6B; and 5B with 6B. Alternative 6B can only be built with one of the 3's.

The levels of service and aggregate environmental impacts associated with the possible combinations of build alternatives are contained in Section II.D. and Section IV., respectively.

351



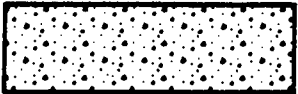
PROPOSED ROADWAY IMPROVEMENT



PROPOSED BRIDGE REDECKING



PROPOSED BRIDGE WIDENING



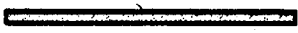
PROPOSED NEW STRUCTURE



PAVEMENT TO BE REMOVED



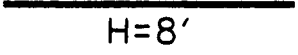
PROPOSED CULVERT EXTENSION



PROPOSED SIDEWALK



PROPOSED CURB & GUTTER



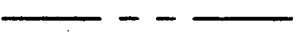
PROPOSED RETAINING WALL



PROPOSED CONCRETE BARRIER



PROPOSED LANE CONFIGURATION



PROPOSED RIGHT OF WAY



EXISTING RIGHT OF WAY



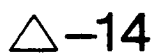
SLOPE LIMITS



PROPERTY LINE



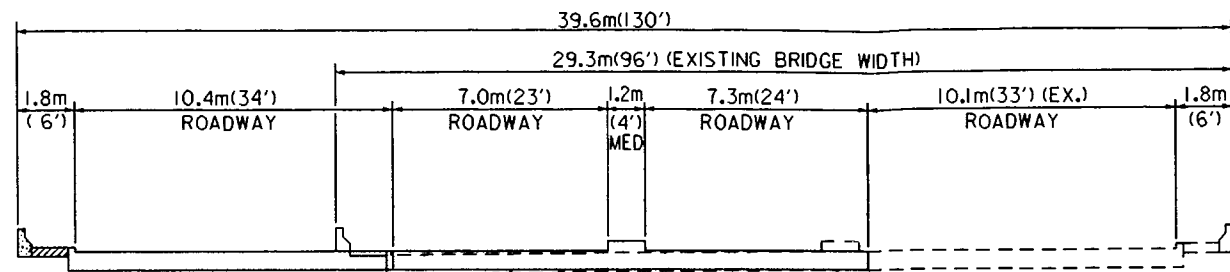
WETLAND BOUNDARY



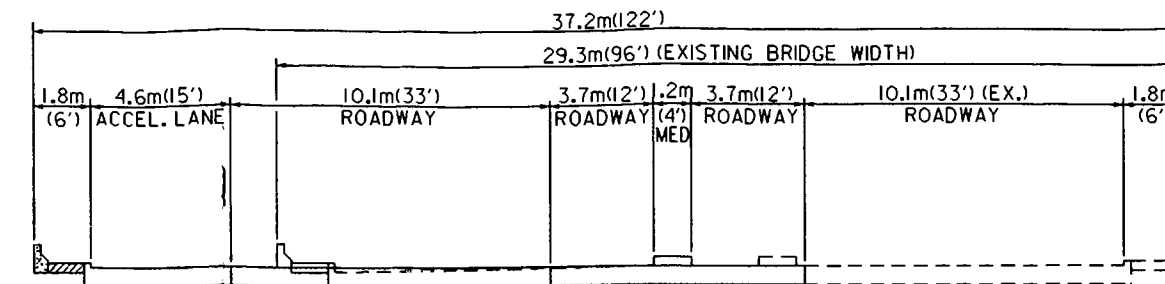
AIR & NOISE RECEPTOR LOCATION

STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>LEGEND - PLAN SHEETS</b>		
DATE	NOT TO SCALE	FIGURE III-3

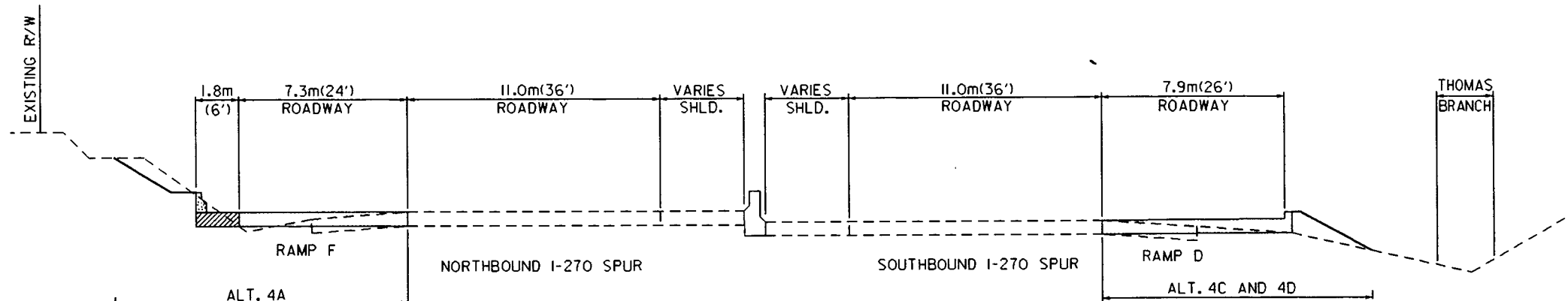




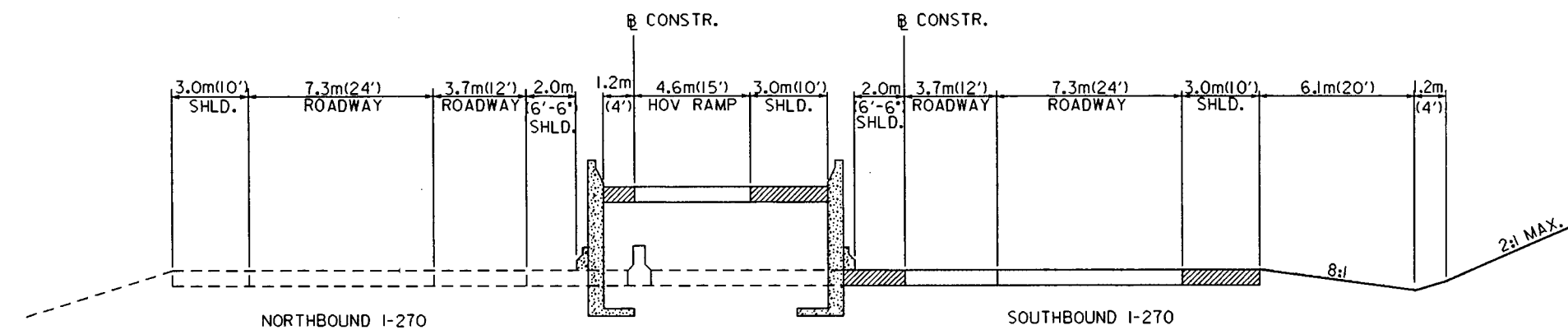
ALTERNATIVE 2D  
MD 187 BRIDGE OVER I-270 EAST SEGMENT  
(LOOKING NORTH)



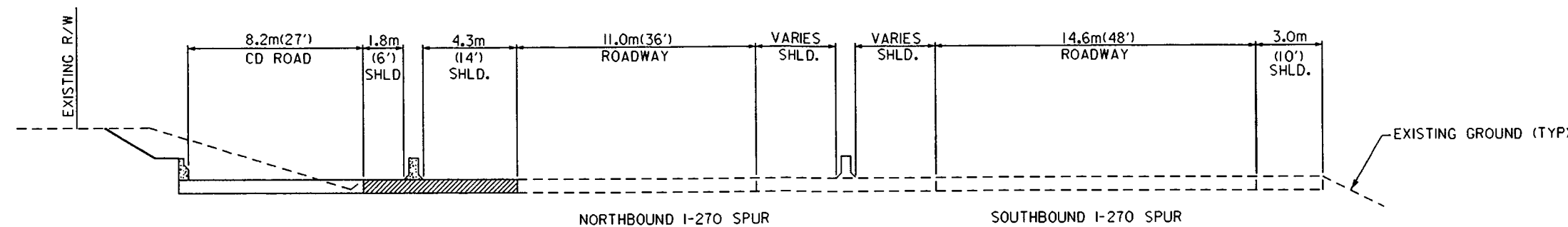
ALTERNATIVE 2E  
MD 187 BRIDGE OVER I-270 EAST SEGMENT  
(LOOKING NORTH)



ALTERNATIVES 4A, 4C AND 4D  
(LOOKING SOUTH)



ALTERNATIVE 3H  
1 LANE REVERSIBLE RAMP  
(LOOKING SOUTH)



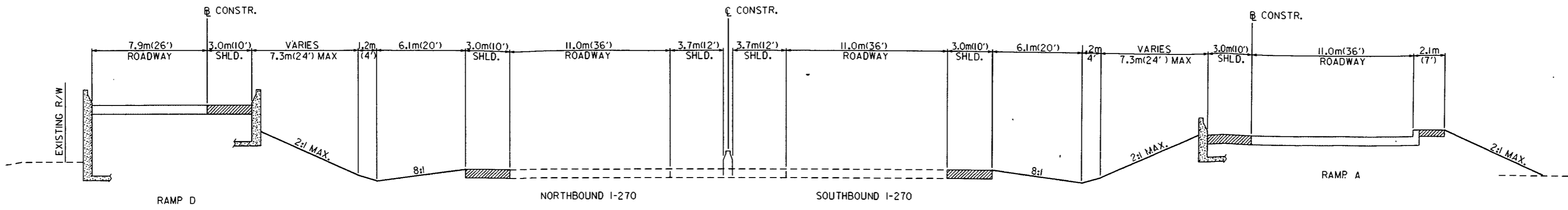
ALTERNATIVE 4B  
(LOOKING SOUTH)

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

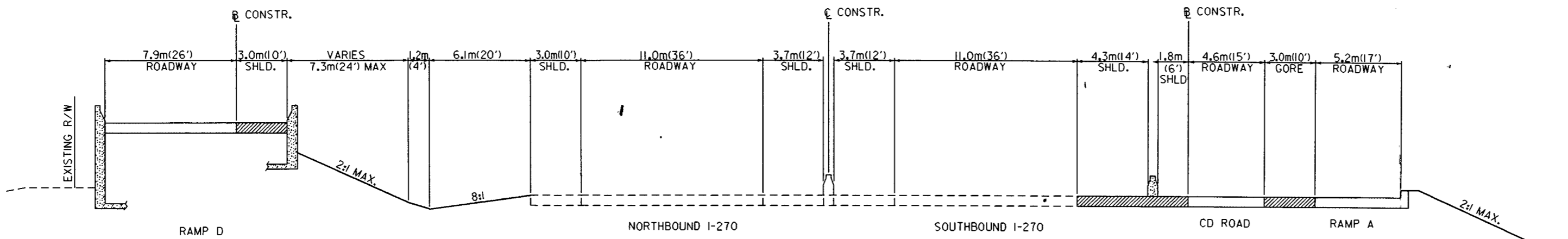
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	- PROPOSED ROADWAY
	- PROPOSED BARRIER/RETAINING WALL
	- EXISTING ROADWAY/SOULDER

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD. TYPICAL SECTIONS - BUILD ALTERNATIVES		
DATE NOV., 1995	NOT TO SCALE	FIGURE III-2A

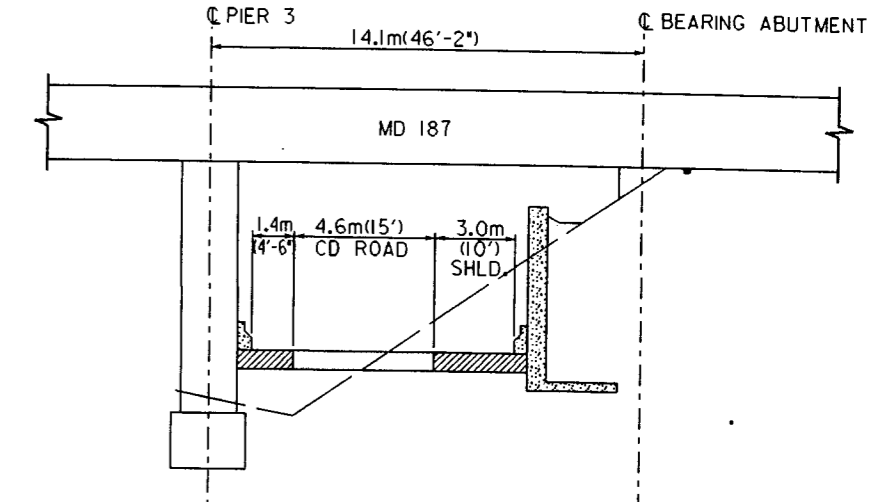
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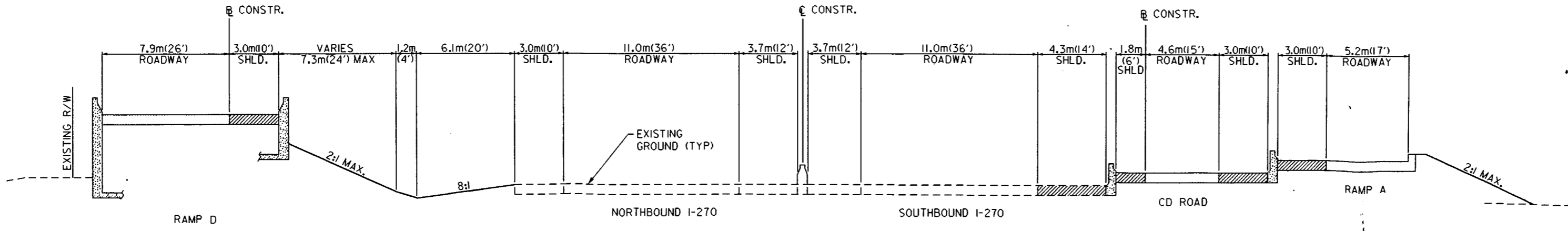
ALTERNATIVE 3E  
(LOOKING SOUTH)



ALTERNATIVE 3F  
(LOOKING SOUTH)



ALTERNATIVE 3F & 3G  
(LOOKING SOUTH)

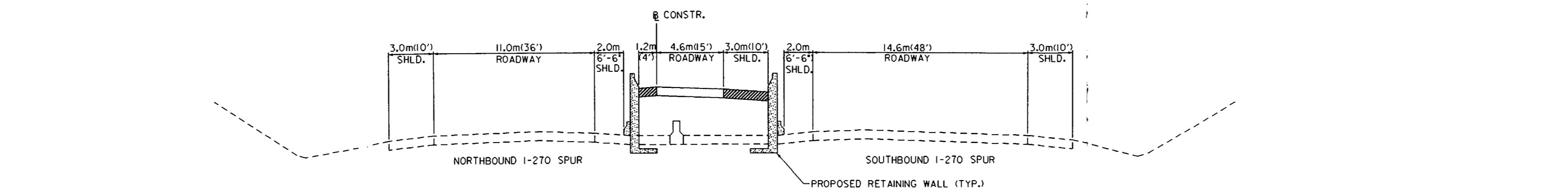


ALTERNATIVE 3G  
(LOOKING SOUTH)

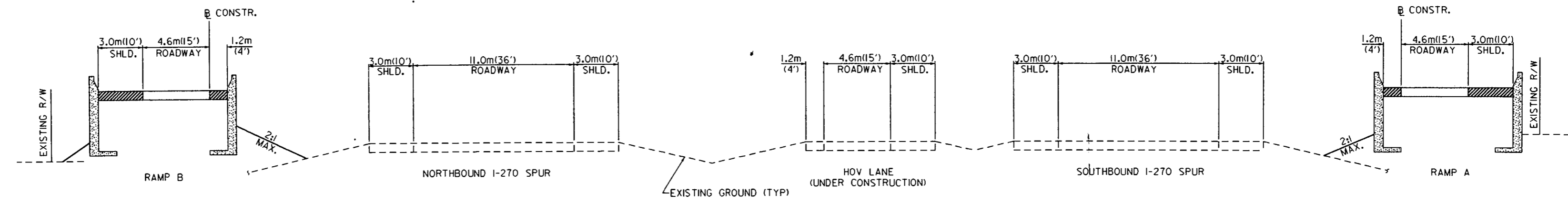
LEGEND		
	- PROPOSED SHOULDER	
	- PROPOSED ROADWAY	
	- PROPOSED BARRIER/RETAINING WALL	
	- EXISTING ROADWAY/SOULDER	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD. TYPICAL SECTIONS - BUILD ALTERNATIVES		
DATE NOV., 1995	NOT TO SCALE	FIGURE III-2B

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

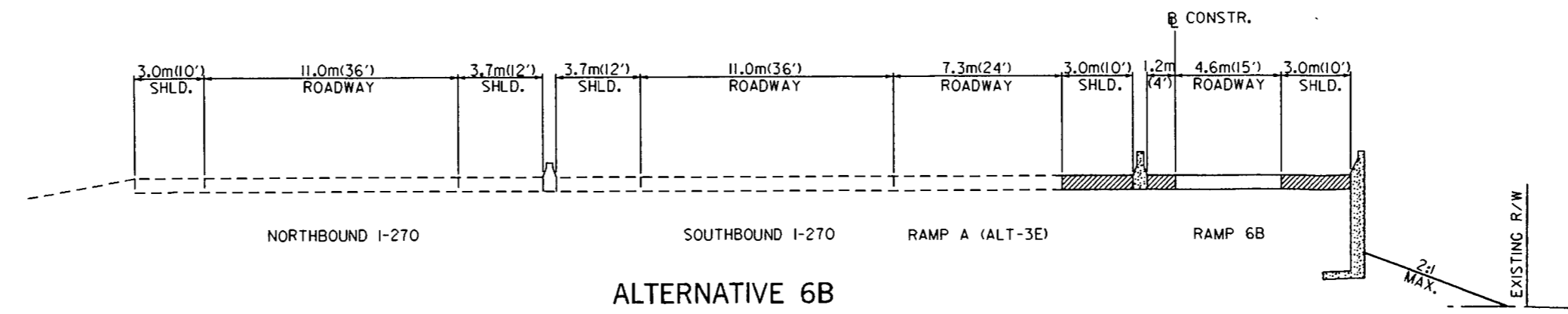
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10-11-95  
F08



ALTERNATIVE 5C  
(LOOKING SOUTH)



ALTERNATIVE 5B  
(LOOKING SOUTH)



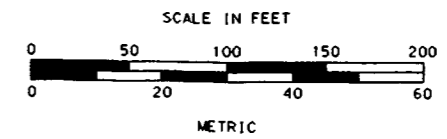
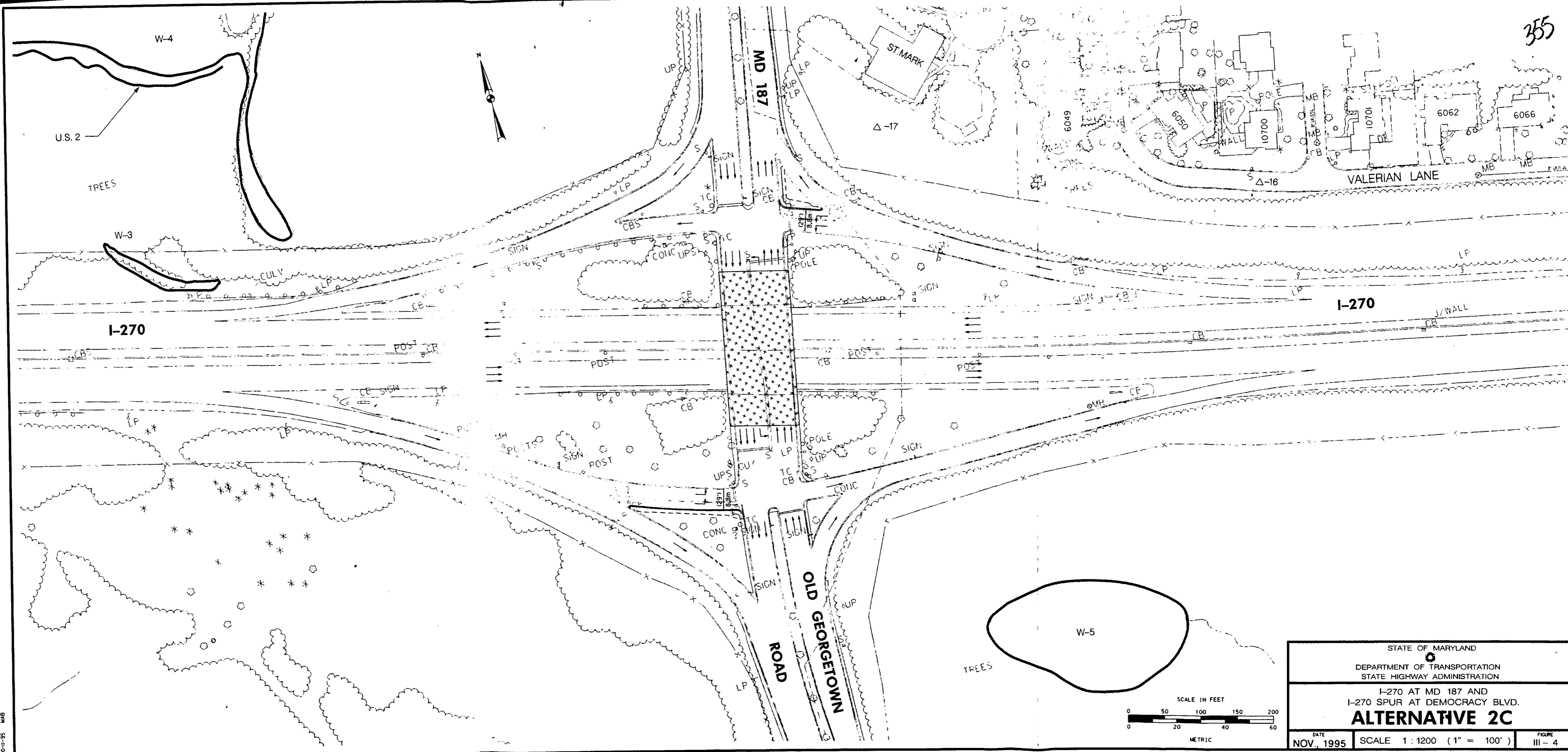
ALTERNATIVE 6B  
(LOOKING SOUTH)

LEGEND	
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	- PROPOSED ROADWAY
	- PROPOSED BARRIER/RETAINING WALL
	- EXISTING ROADWAY/SHOULDER

STATE OF MARYLAND  
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 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**TYPICAL SECTIONS - BUILD ALTERNATIVES**

DATE NOV., 1995	NOT TO SCALE	FIGURE III-2C
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THE DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS, AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.



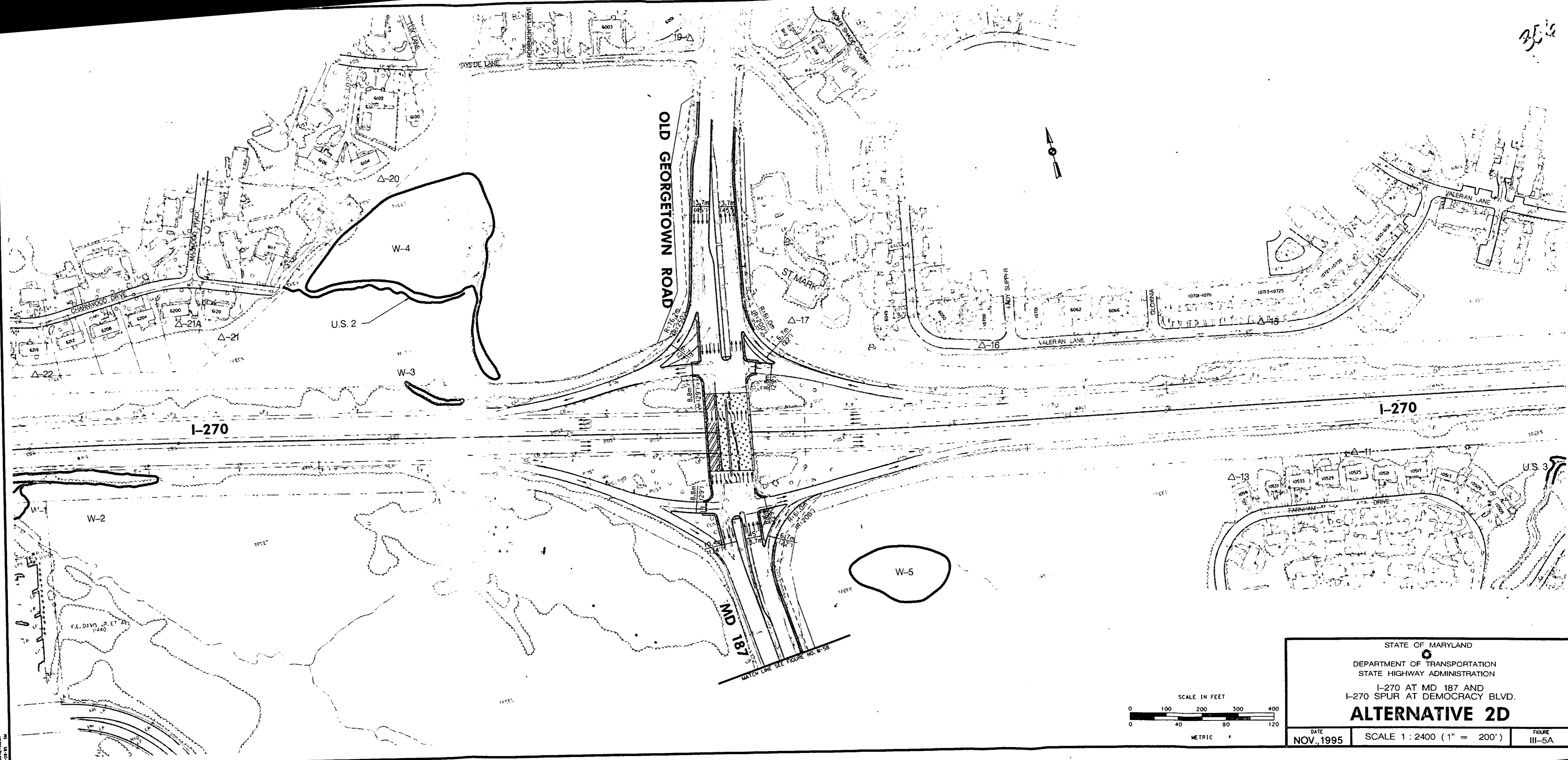
STATE OF MARYLAND  
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I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 2C**

DATE: NOV., 1995      SCALE: 1 : 1200 (1" = 100')      FIGURE: III - 4

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35

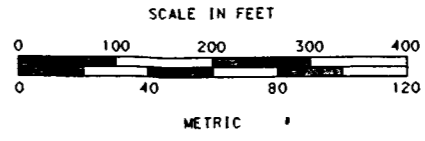


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I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

**ALTERNATIVE 2D**

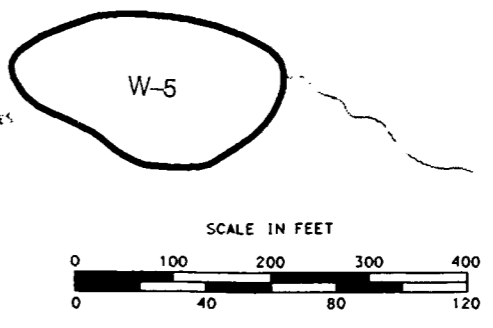
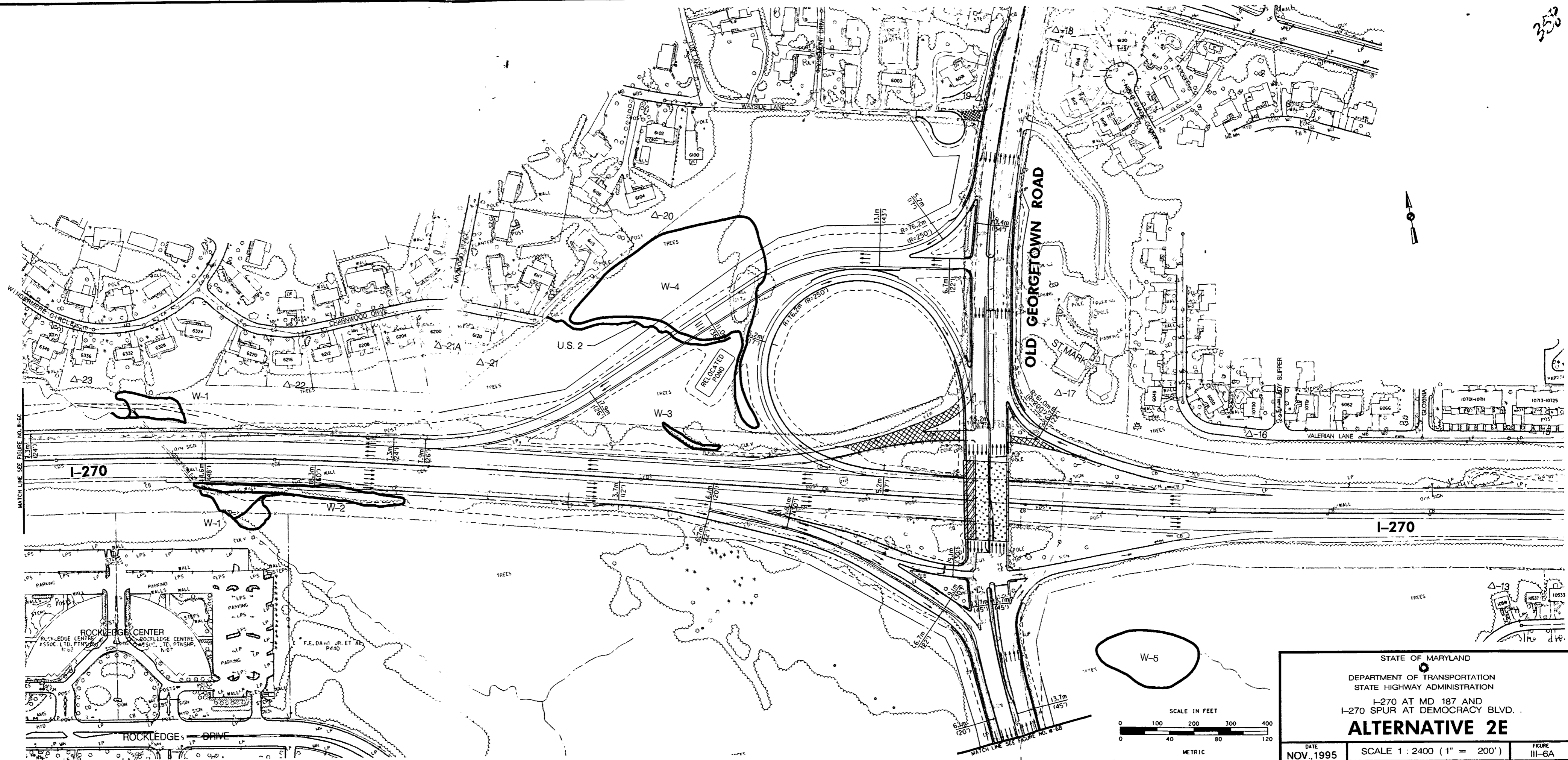
DATE NOV., 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-5A
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PROJECT NO. 54  
10-01-95



352

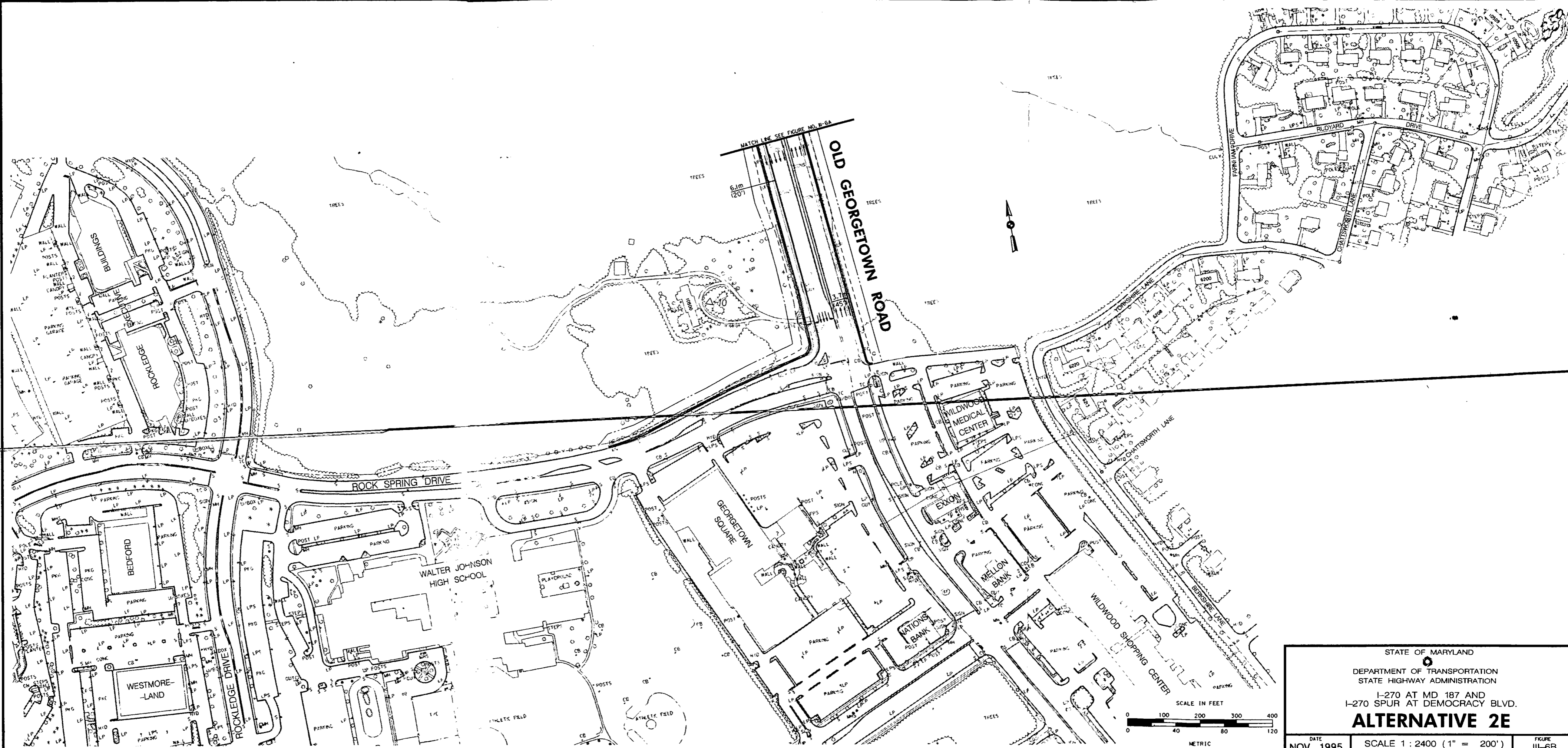


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STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 2E**

DATE NOV. 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-6A
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08-08-95 3M

FILE NO. P506270.DGN  
08-08-95 SM



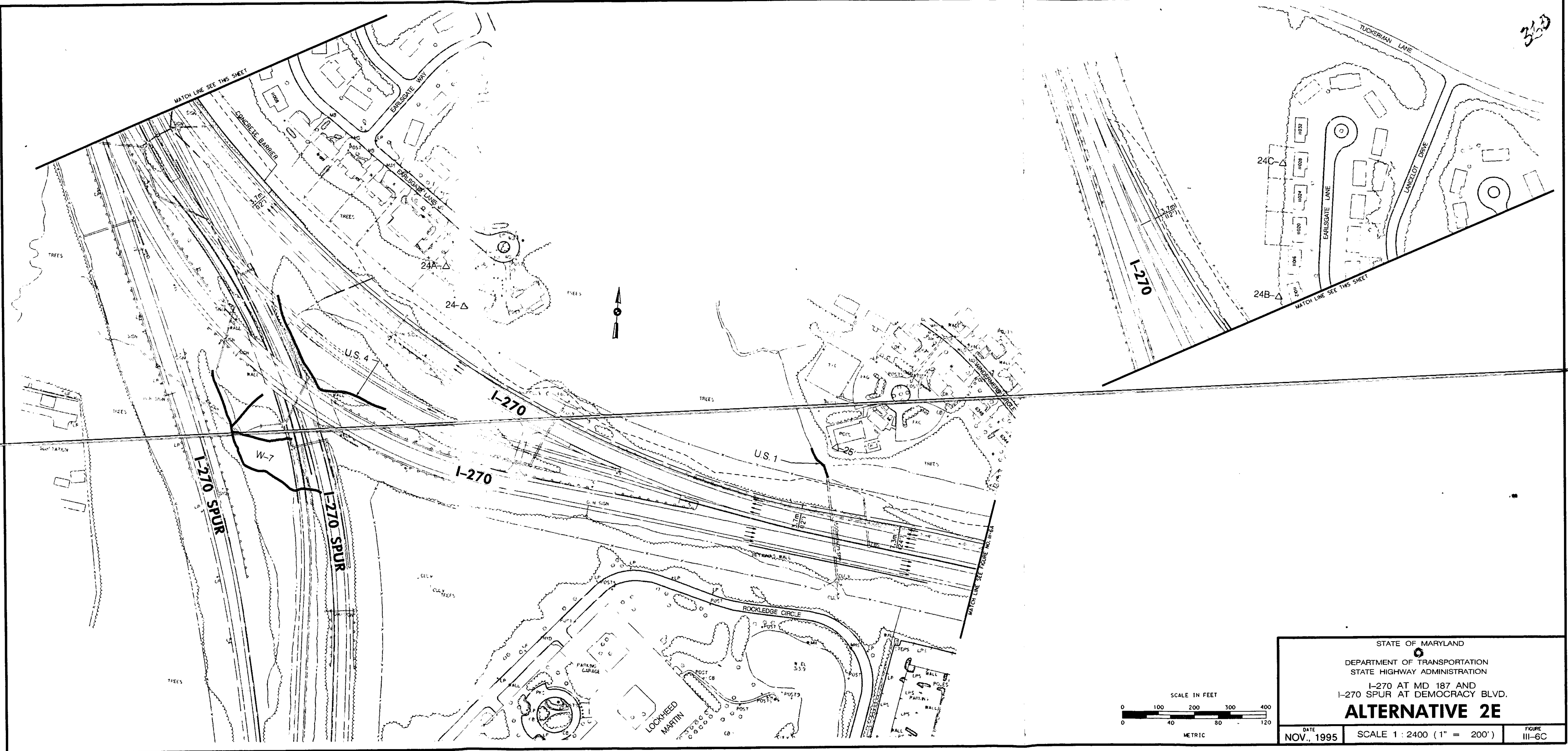
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 2E**

SCALE IN FEET  
0 100 200 300 400  
METRIC  
0 40 80 120

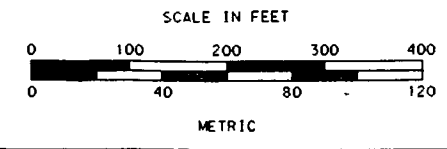
DATE NOV., 1995	SCALE 1" = 200'	FIGURE III-6B
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350

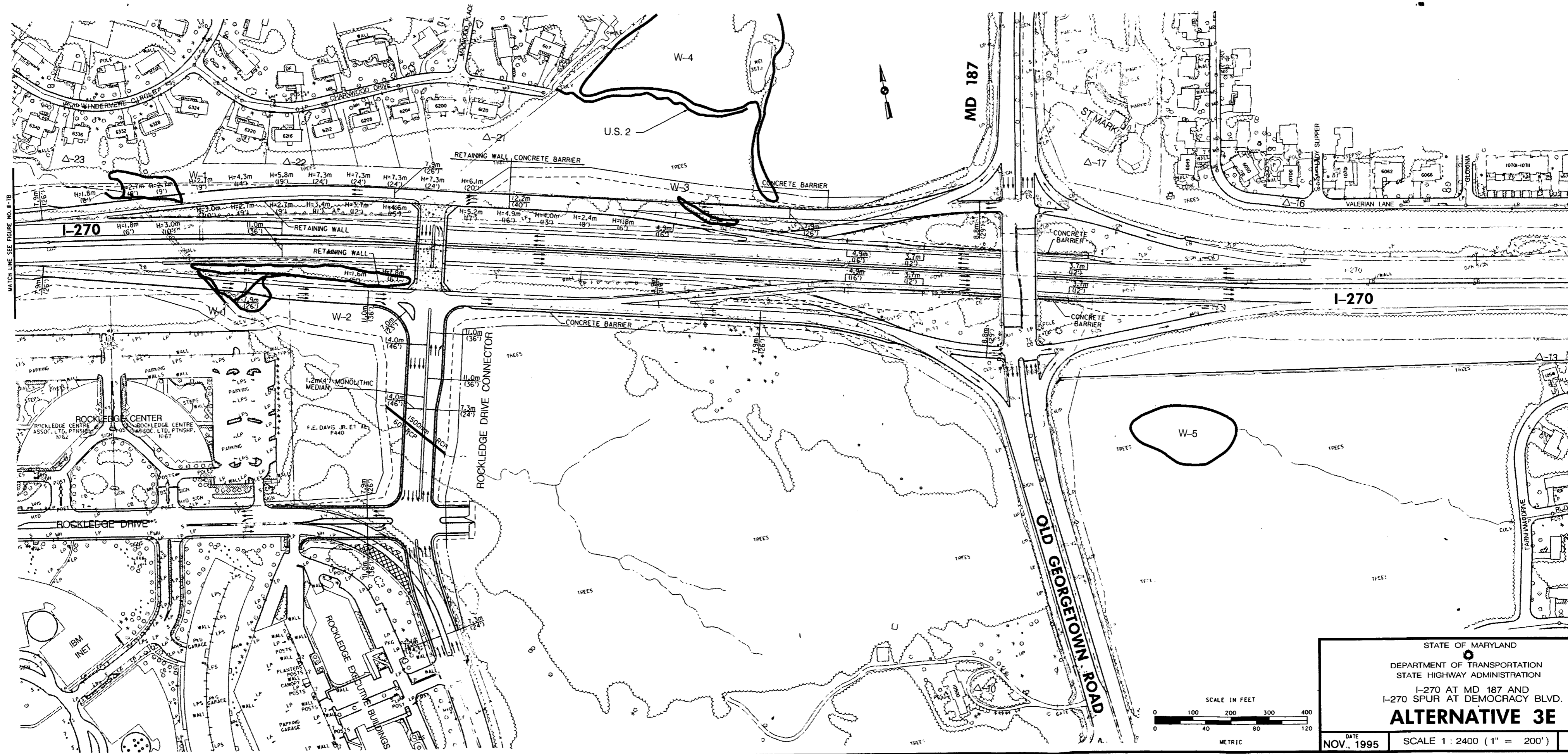


FILE NO. PS00270.DGN  
10/11/95



STATE OF MARYLAND  
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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 2E**

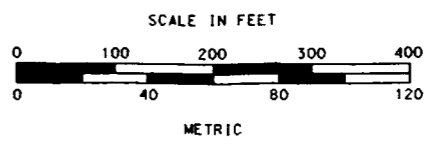
DATE NOV., 1995	SCALE 1" = 2400'	FIGURE III-6C
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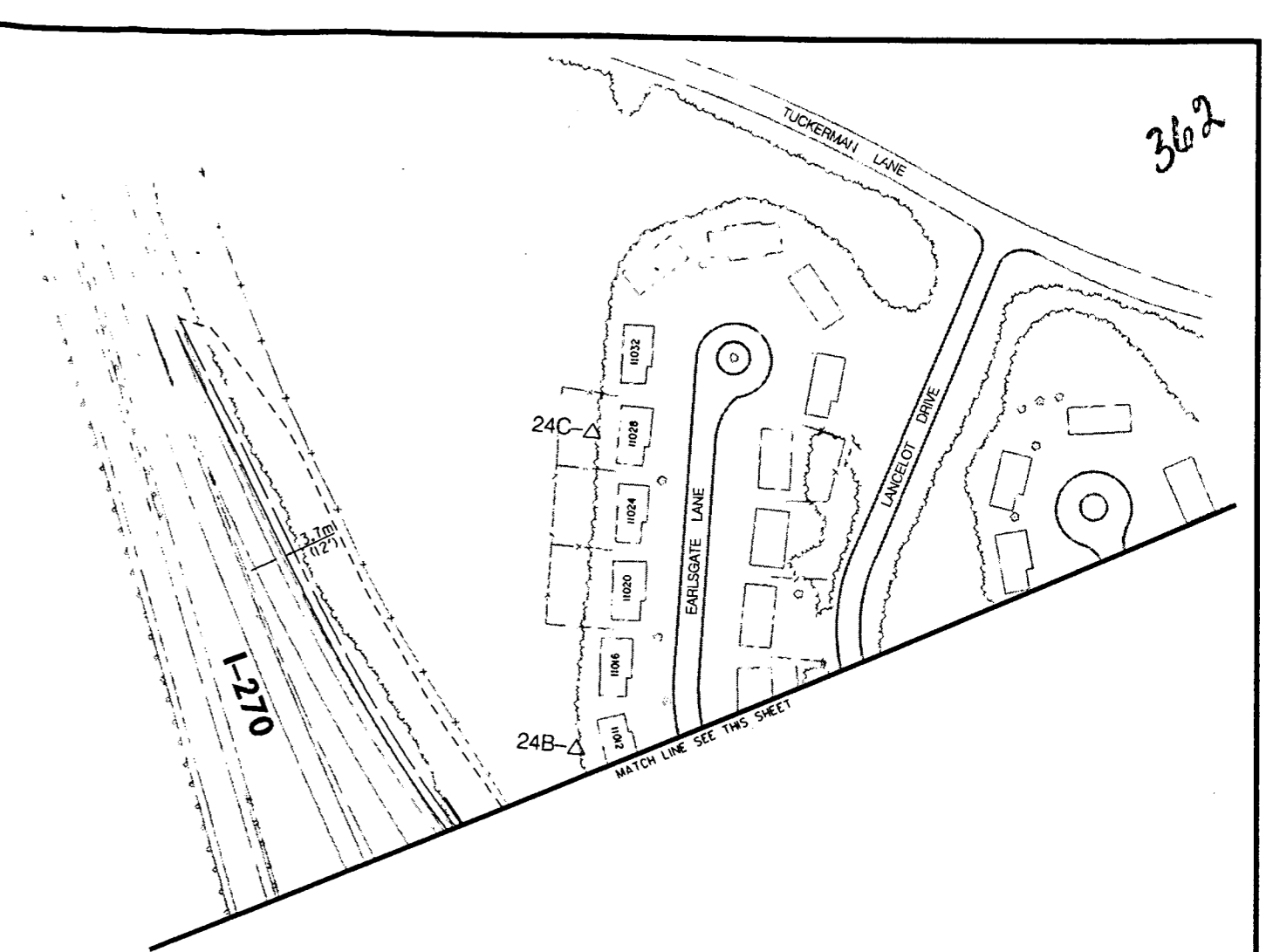
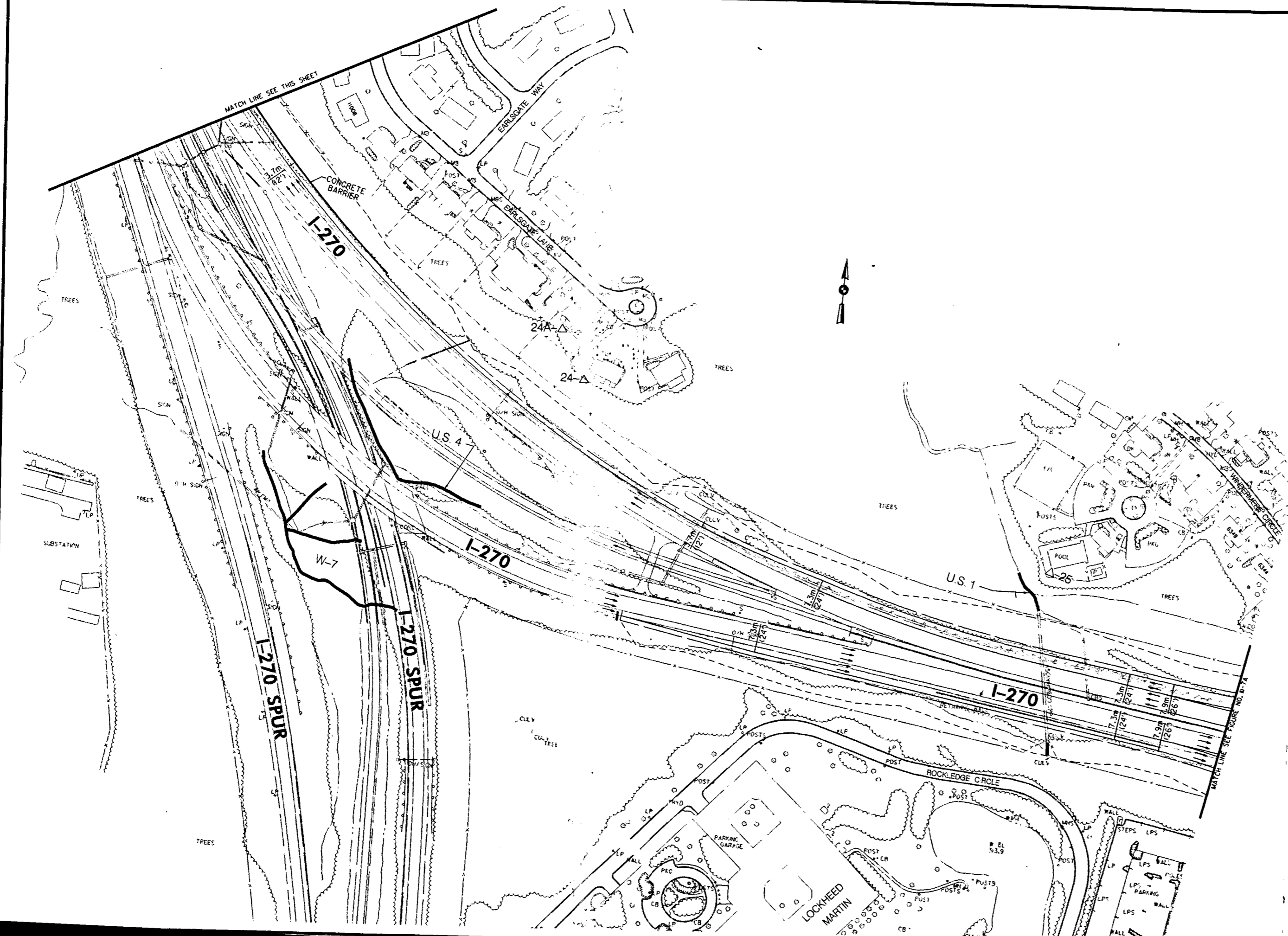


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08-08-95 SM

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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3E**

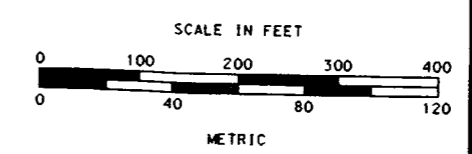
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 SCALE: 1" = 200'  
 FIGURE: III-7A





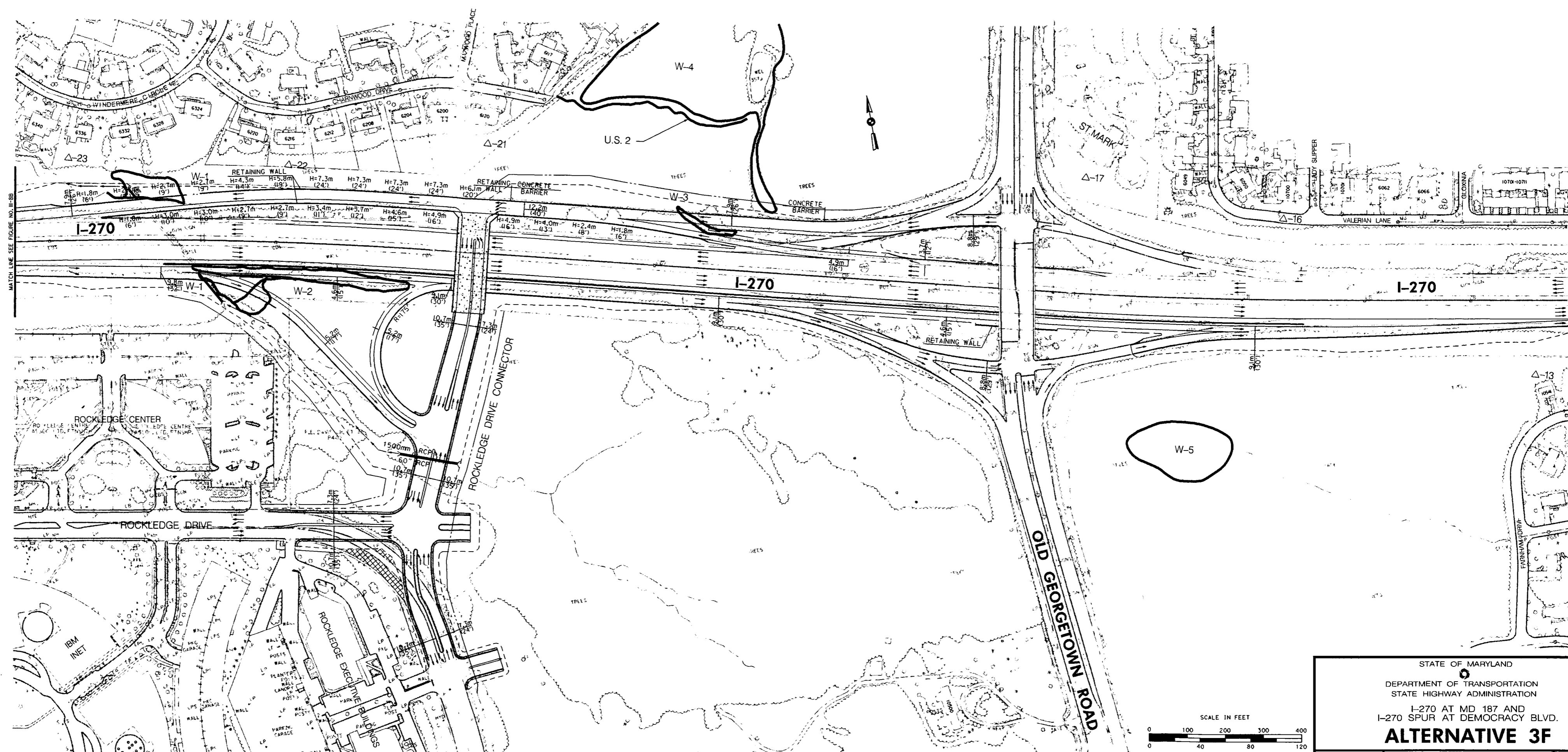
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STATE OF MARYLAND  
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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3E**

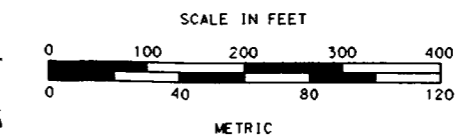
DATE NOV., 1995 SCALE 1 : 2400 ( 1" = 200' ) FIGURE III-7B



MATCH LINE SEE FIGURE NO. III-8B

MATCH LINE SEE FIGURE NO. III-8C

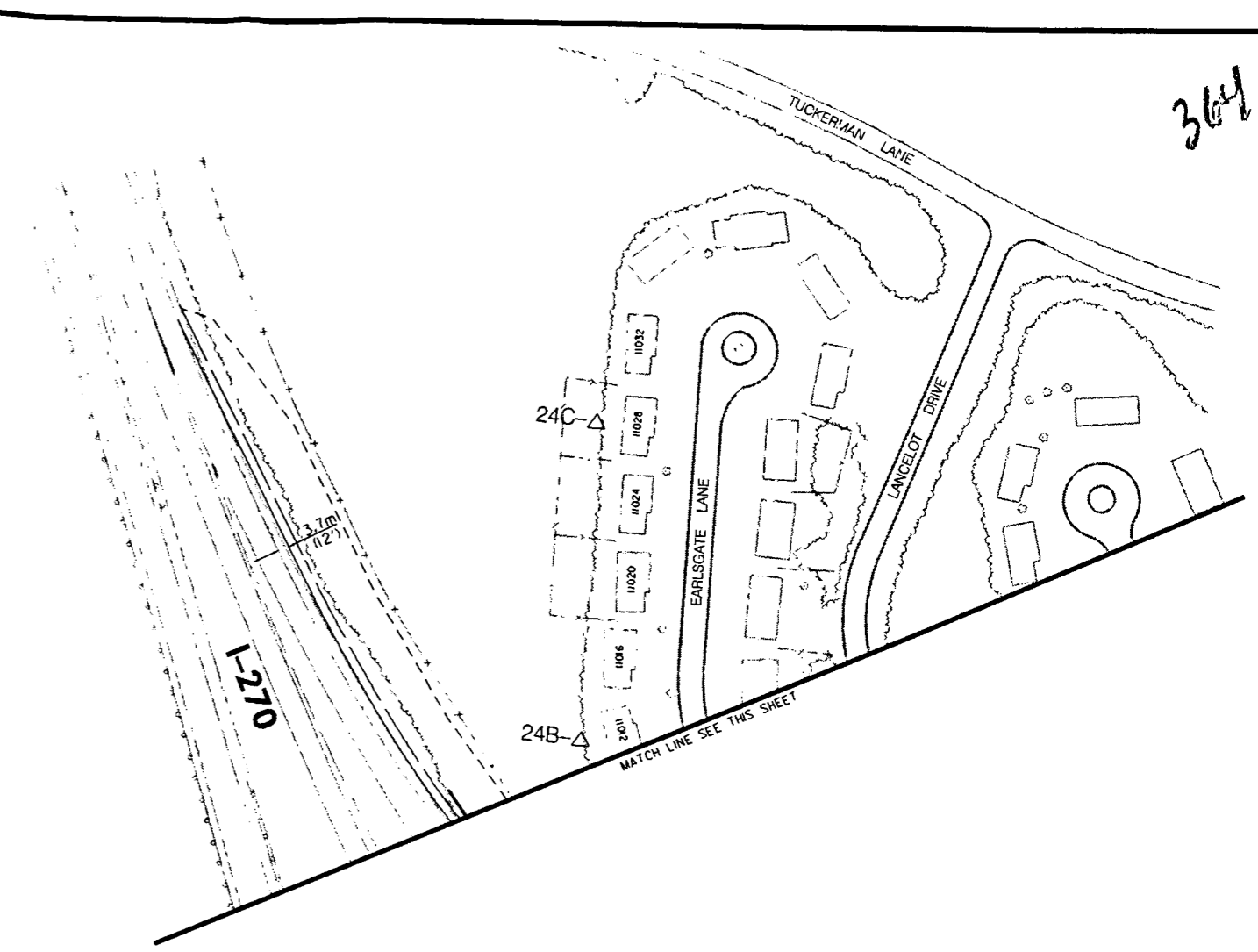
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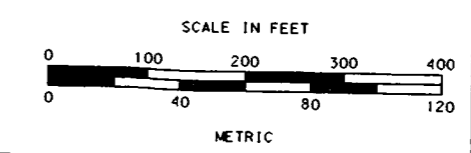
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3F**

DATE NOV., 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-8A
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364



FILE NO. PS12270.DGN  
11-95 SM



STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3F**

DATE NOV. 1995 SCALE 1 : 2400 (1" = 200')

FIGURE III-8B

2/15

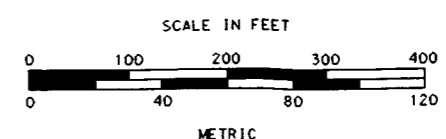
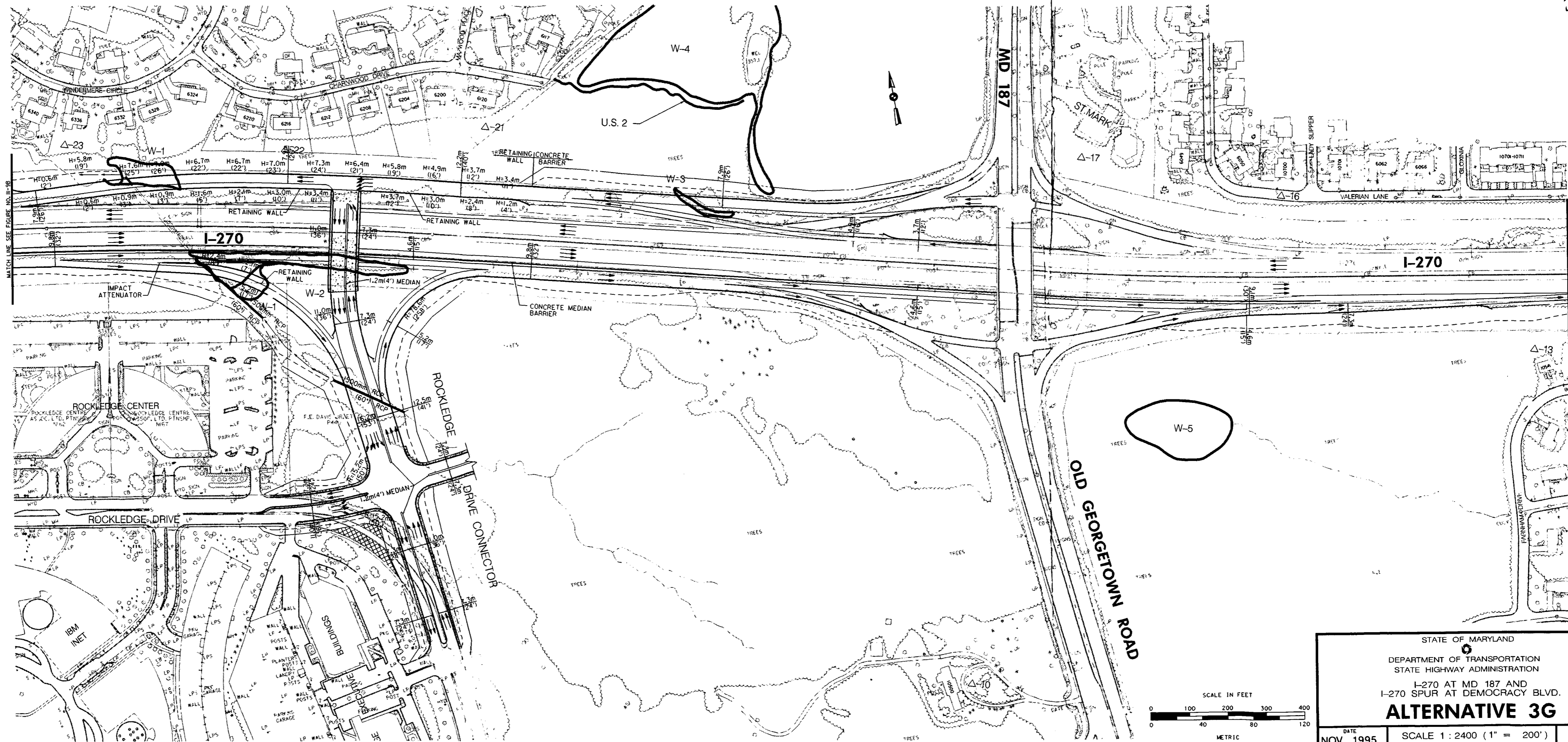


STATE OF MARYLAND  
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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3F**

DATE: NOV., 1995  
 SCALE: 1 : 2400 (1" = 200')  
 FIGURE: III-8C

NO. PS4270.DGN  
3/95 SM

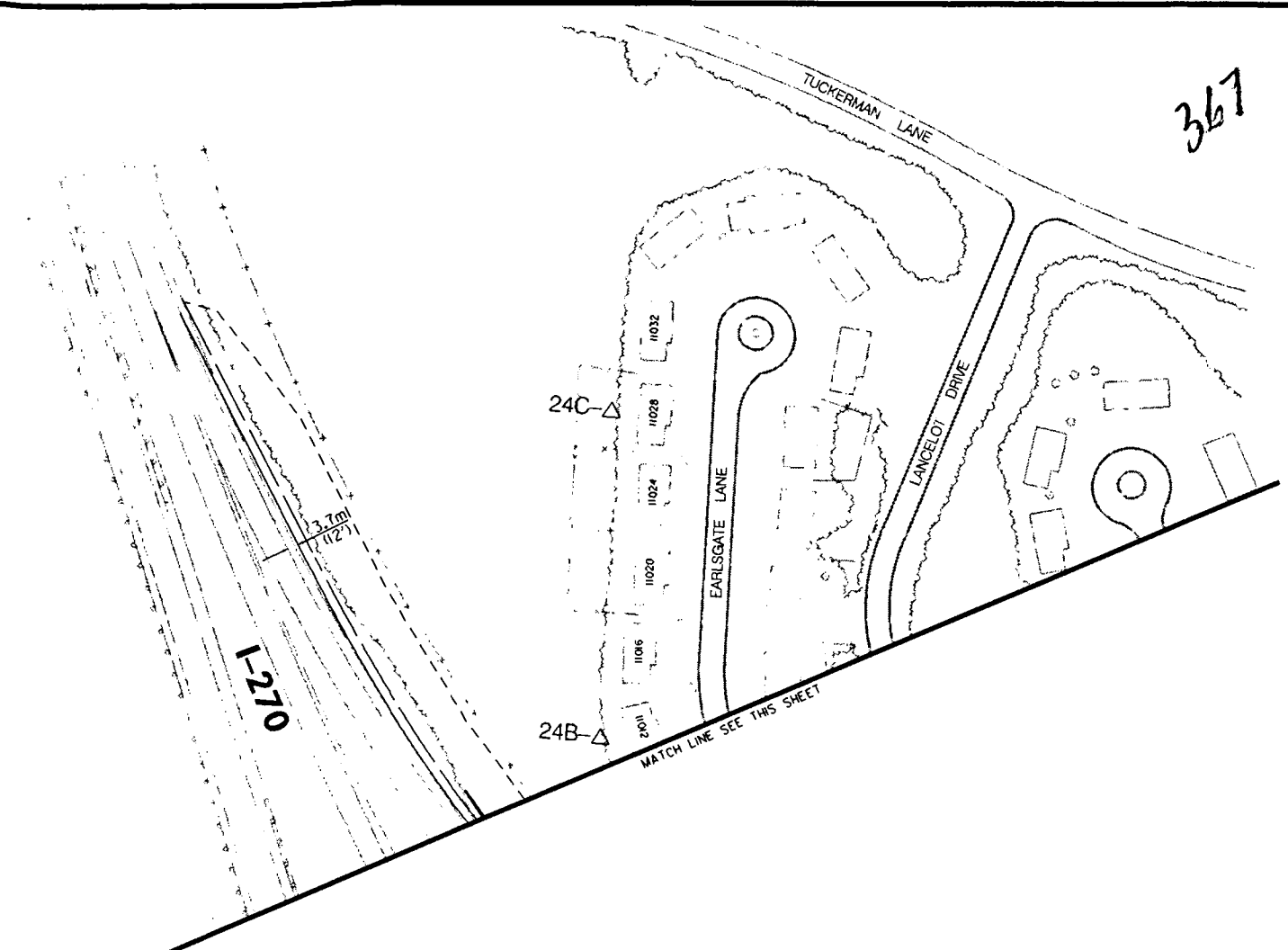
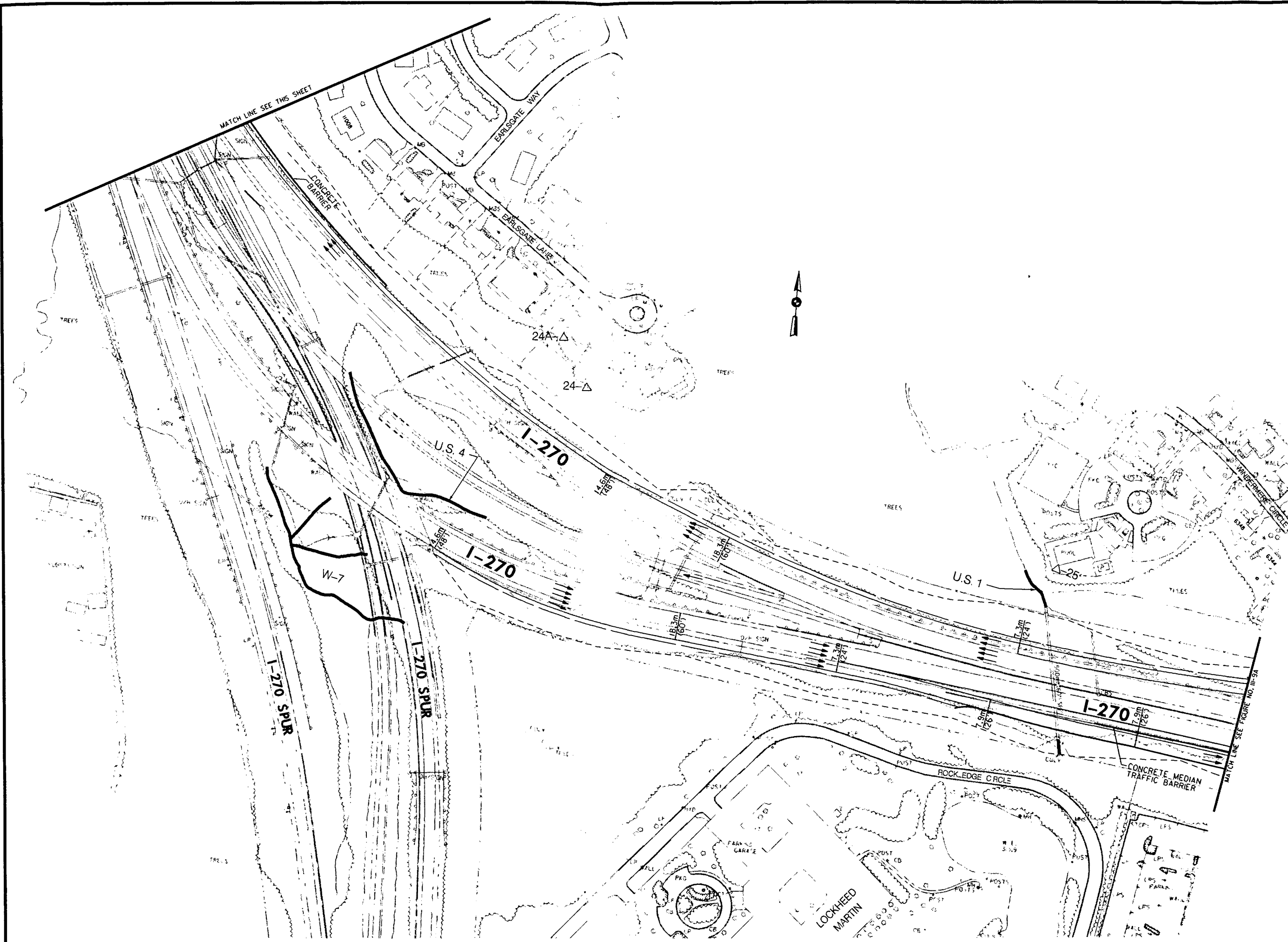
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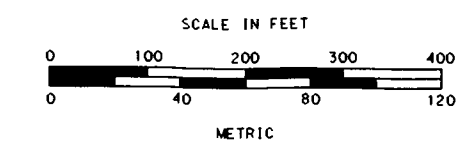
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3G**  
 DATE NOV. 1995 SCALE 1 : 2400 (1" = 200') FIGURE III-9A

FILE NO. PS1870.DGN  
 08-09-95 SA

367



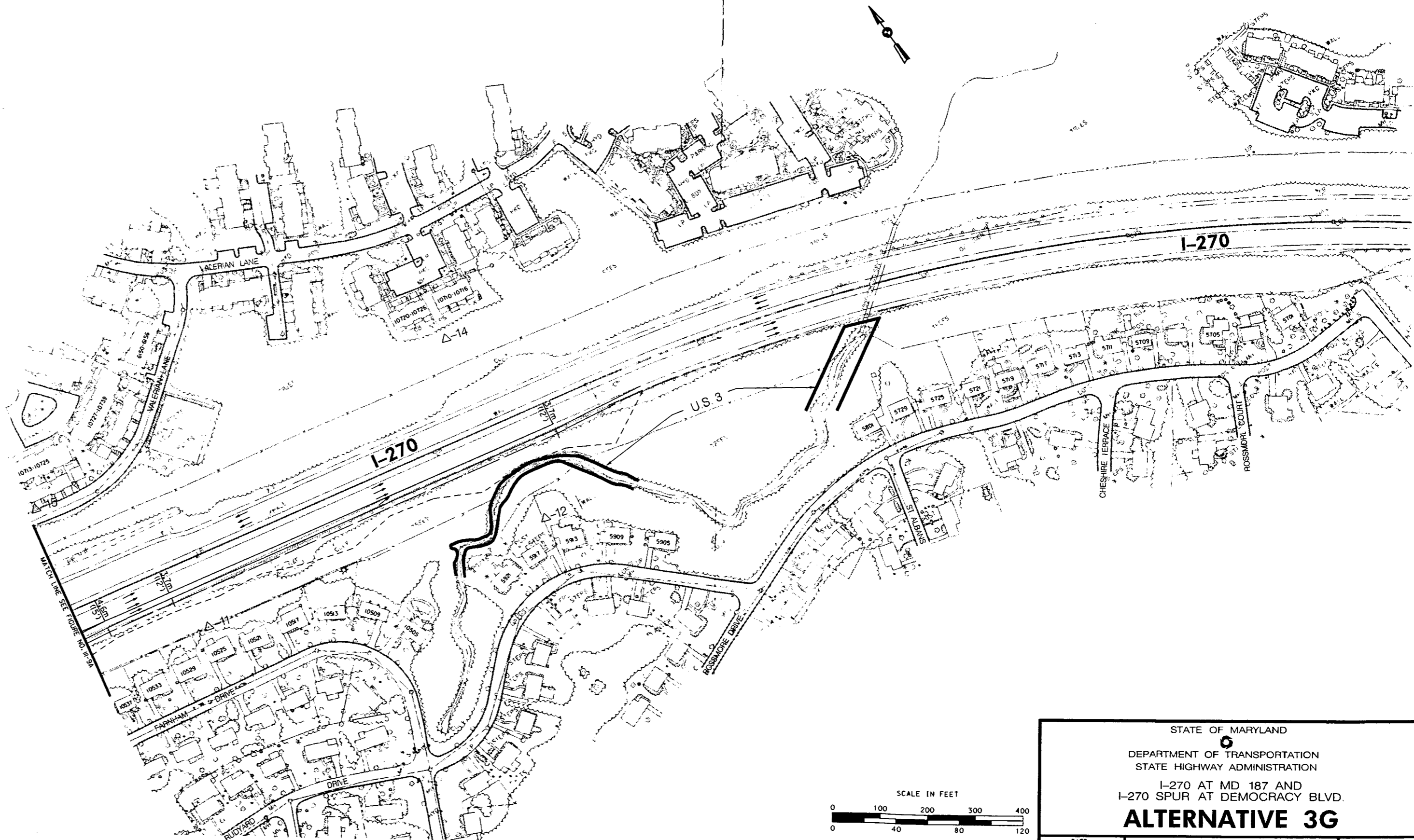
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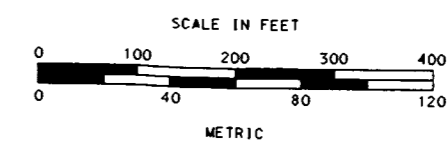
STATE OF MARYLAND  
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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3G**

DATE NOV. 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-9B
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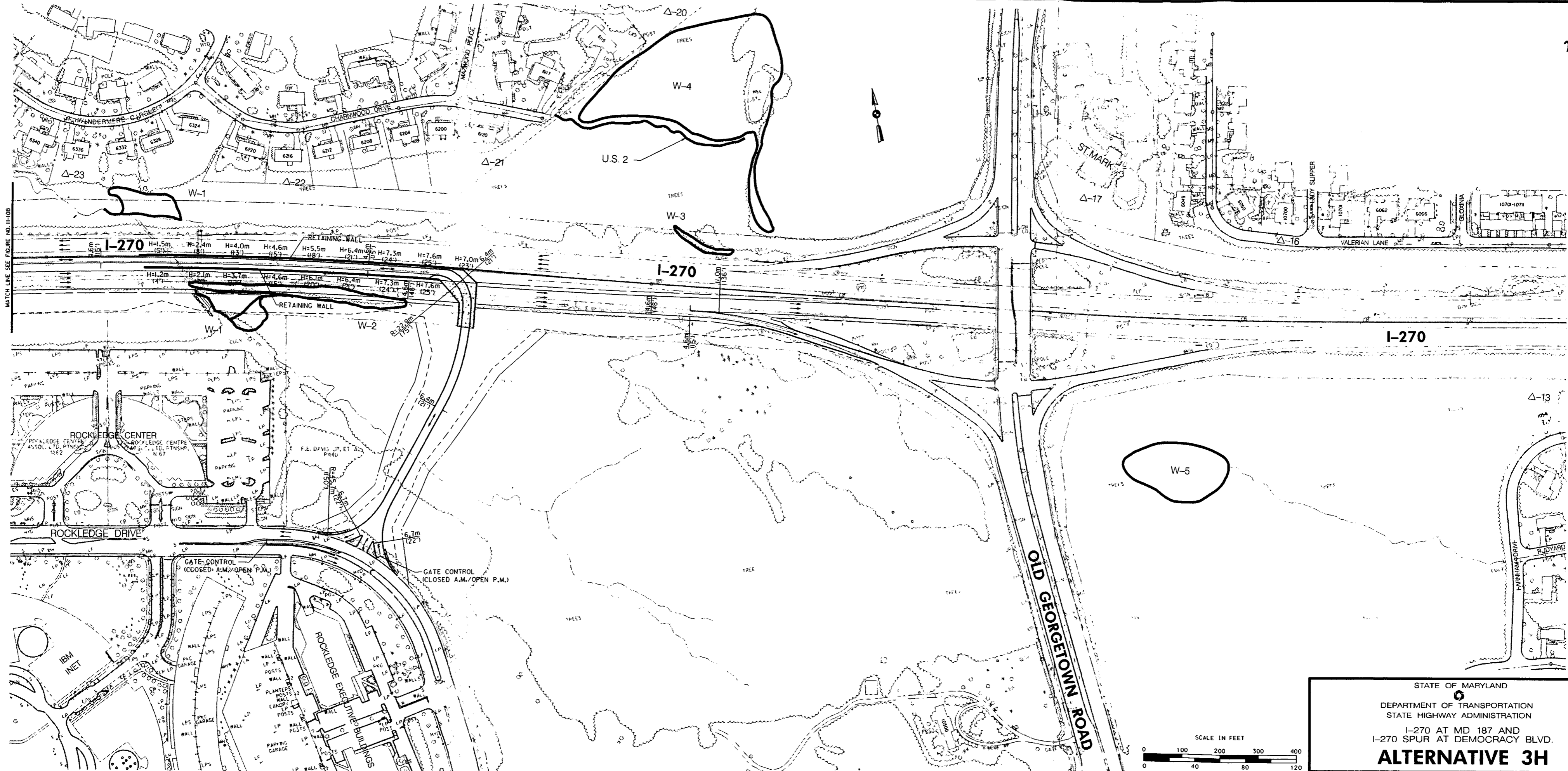
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08-07-95 3M



STATE OF MARYLAND  
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 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3G**

DATE NOV., 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-9C
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369



MATCH LINE SEE FIGURE NO. III-10B

**I-270**

**I-270**

**I-270**

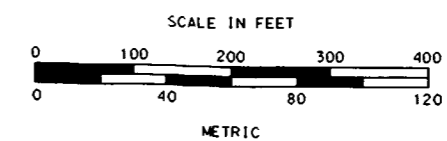
**OLD GEORGETOWN ROAD**

**ROCKLEDGE CENTER**

**ROCKLEDGE DRIVE**

**ROCKLEDGE EXECUTIVE BUILDINGS**

W-5



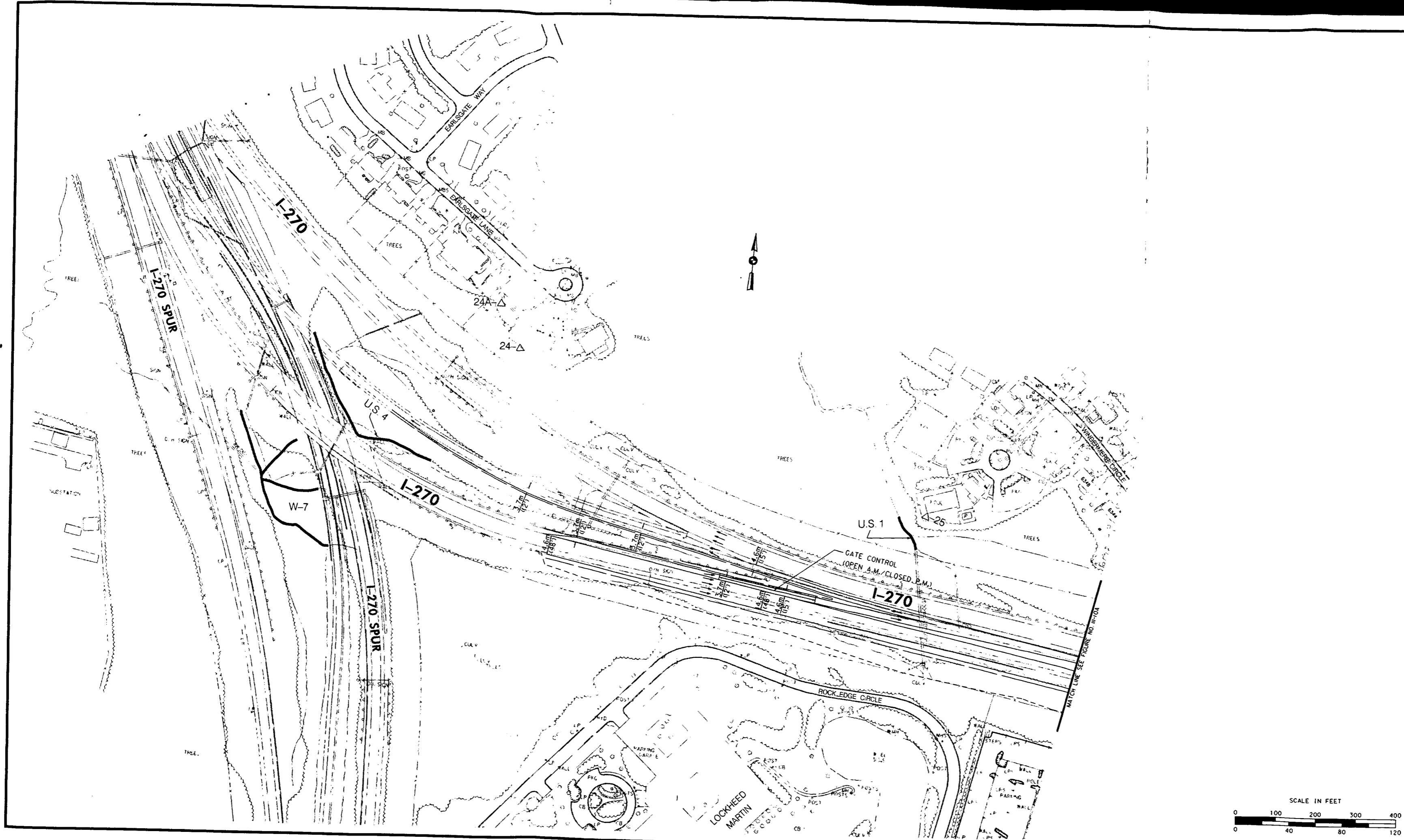
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

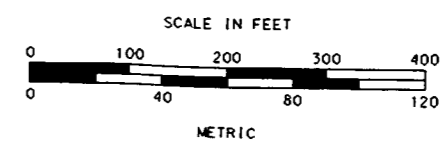
**ALTERNATIVE 3H**

DATE: **NOV. 1995**      SCALE 1:2400 (1" = 200')      FIGURE III-10A

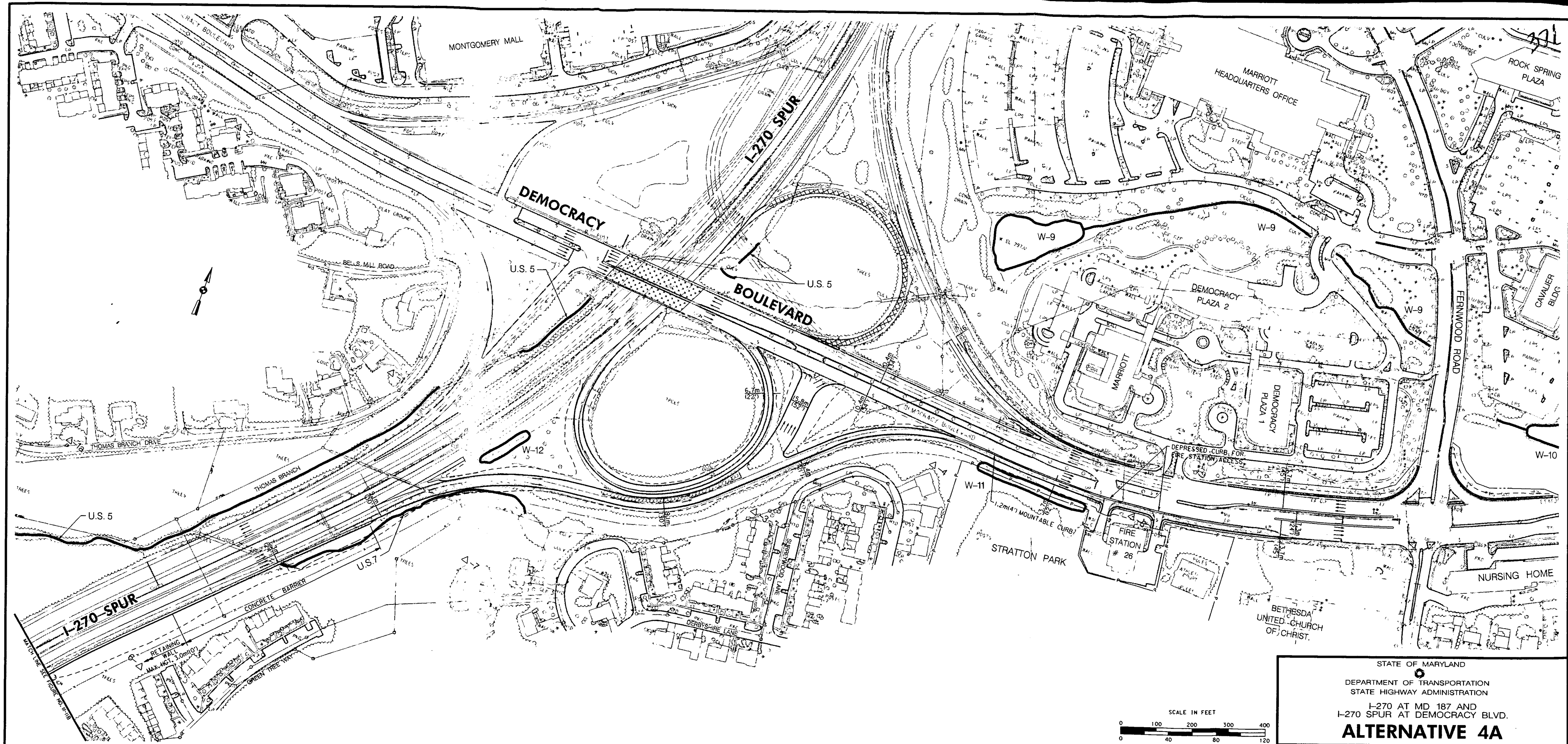
FILE NO. PS18720.DGN  
10-11-95 3M



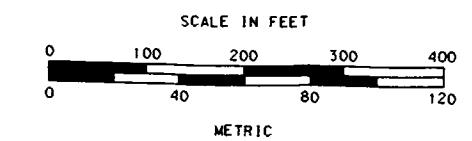
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10-11-95 SM



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 3H**  
DATE NOV. 1995 SCALE 1 : 2400 (1" = 200') FIGURE III-10B

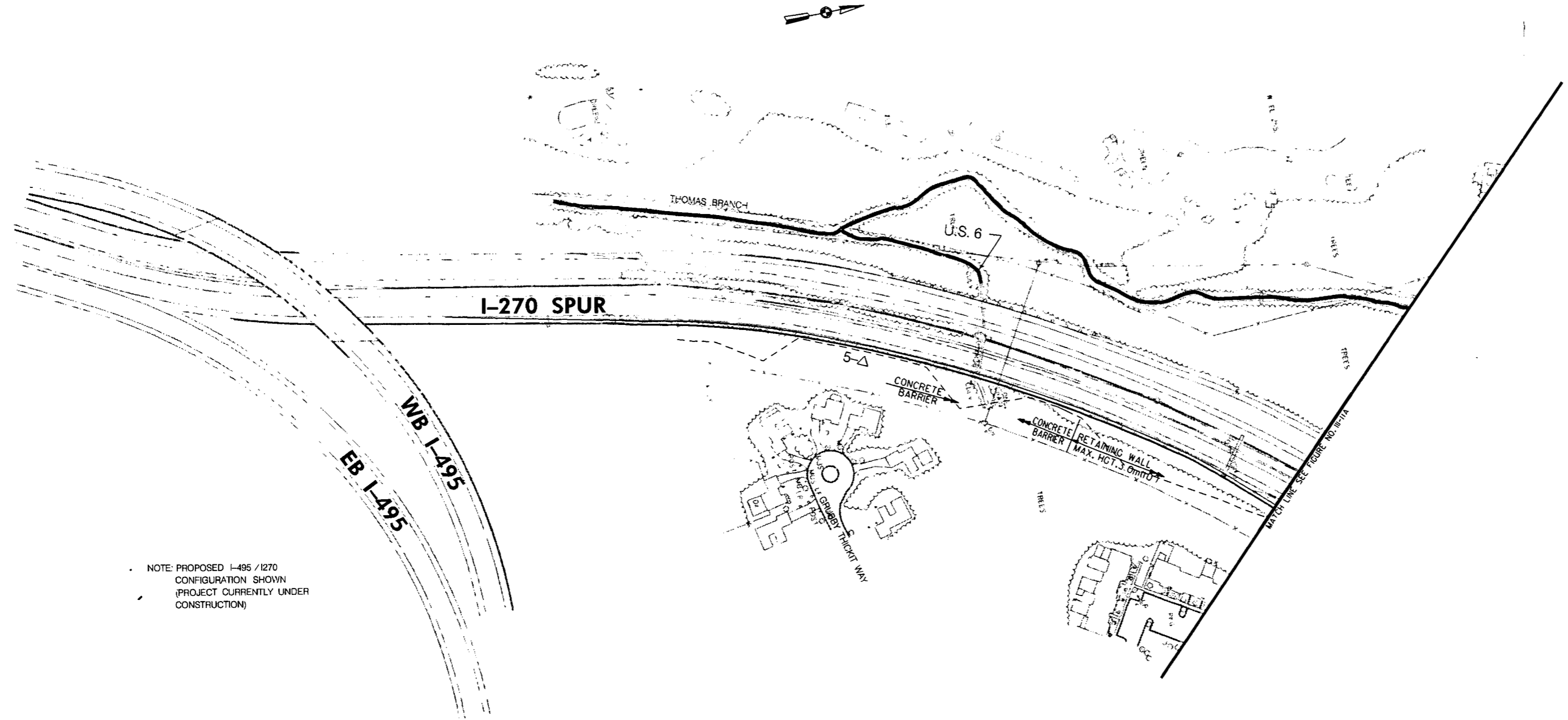


FILE NO. PC-281270.DGN  
08-09-95 SM

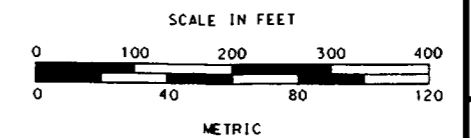


STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4A**

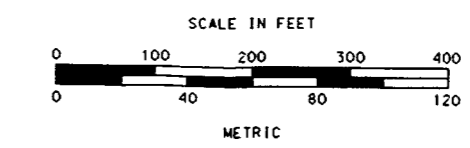
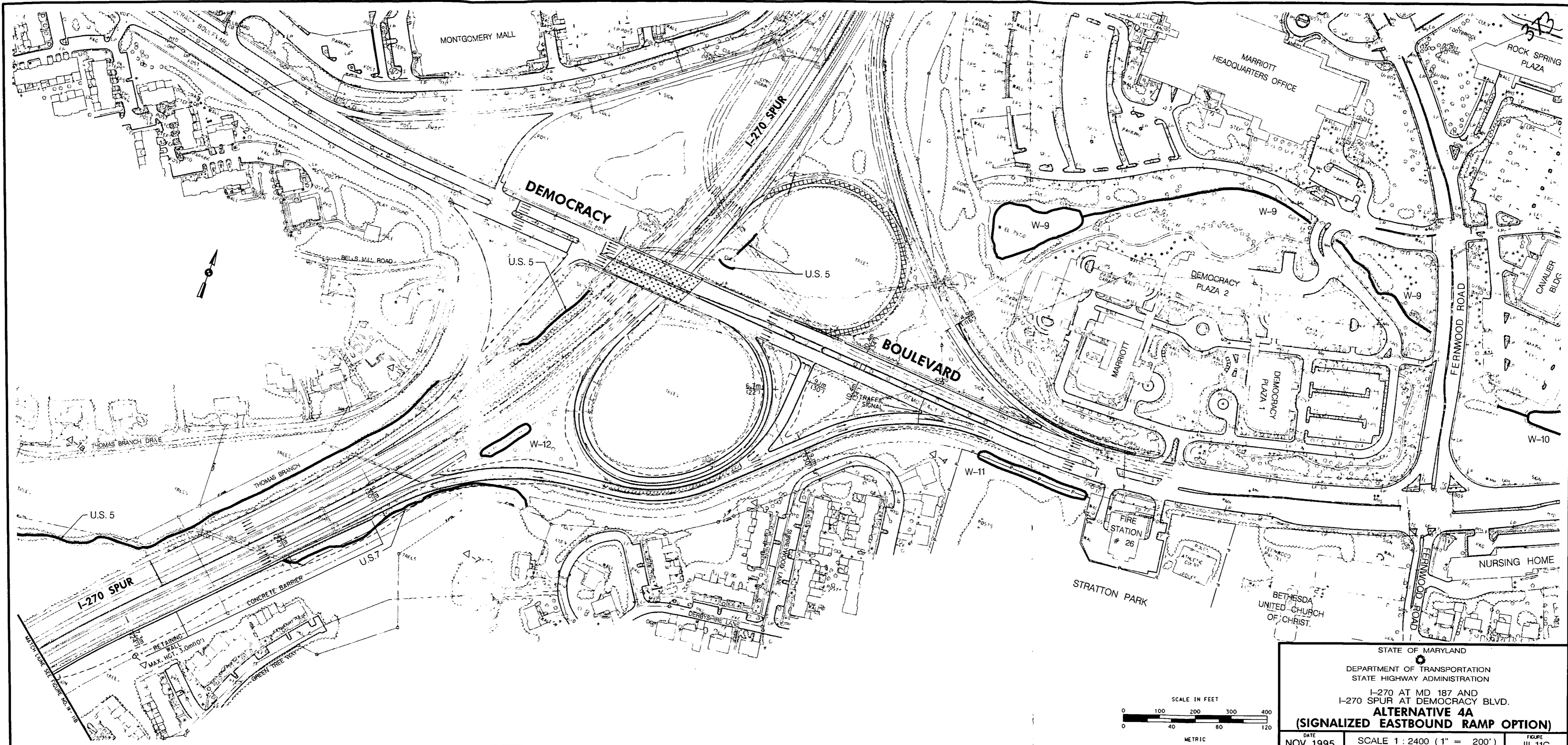
DATE NOV. 1995	SCALE 1 : 2400 ( 1" = 200' )	FIGURE III-11A
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NOTE: PROPOSED I-495 / I270  
 CONFIGURATION SHOWN  
 (PROJECT CURRENTLY UNDER  
 CONSTRUCTION)

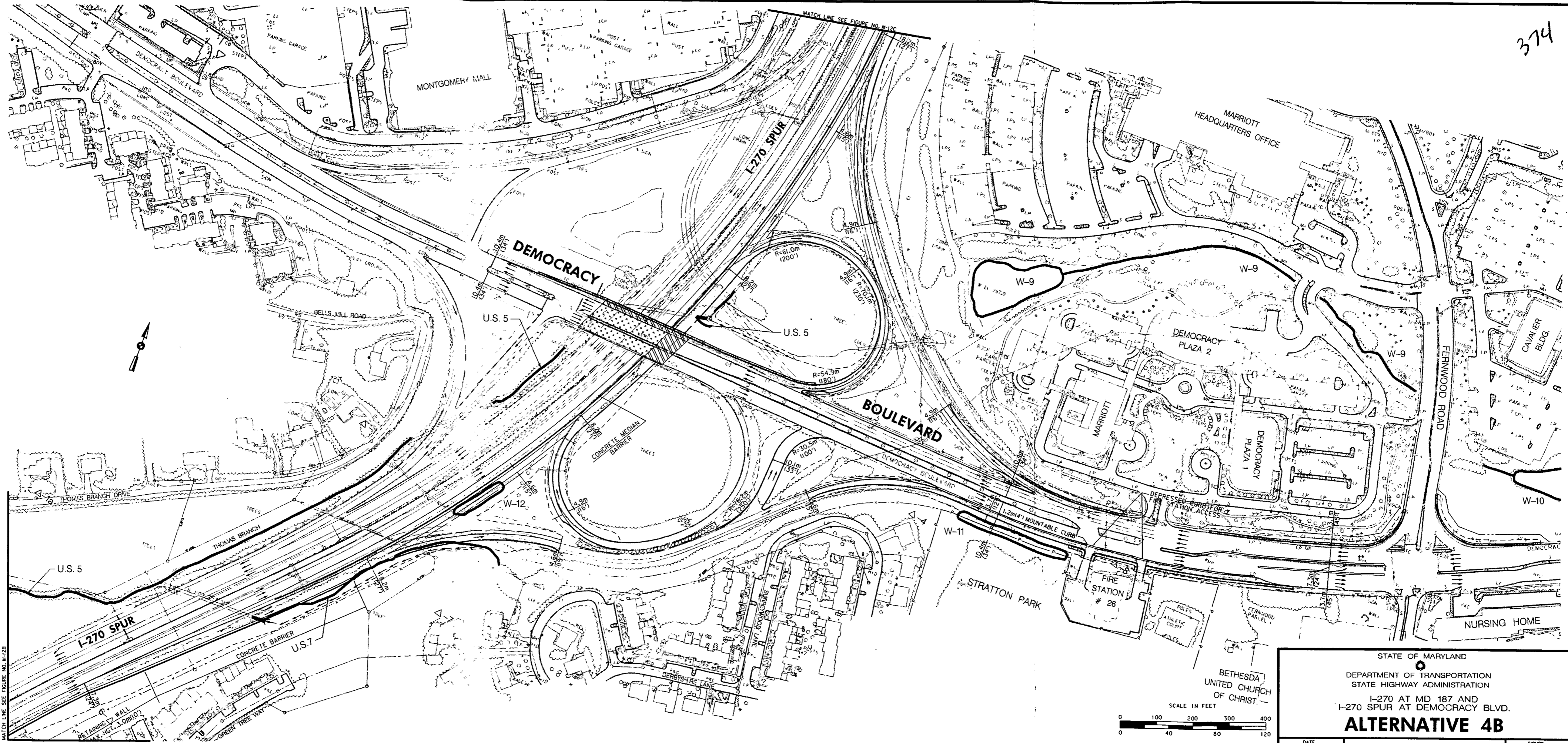


STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>ALTERNATIVE 4A</b>		
DATE NOV., 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-11B



STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4A**  
**(SIGNALIZED EASTBOUND RAMP OPTION)**  
 DATE: NOV. 1995      SCALE: 1" = 200'      FIGURE: III-11C

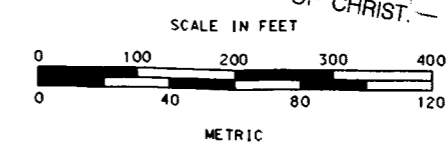
FILE NO. PS42210.DGN  
 08-07-95 SM



FILE NO. PS9270.DGN  
08-07-95 3M

MATCH LINE SEE FIGURE NO. III-12B

MATCH LINE SEE FIGURE NO. III-12C

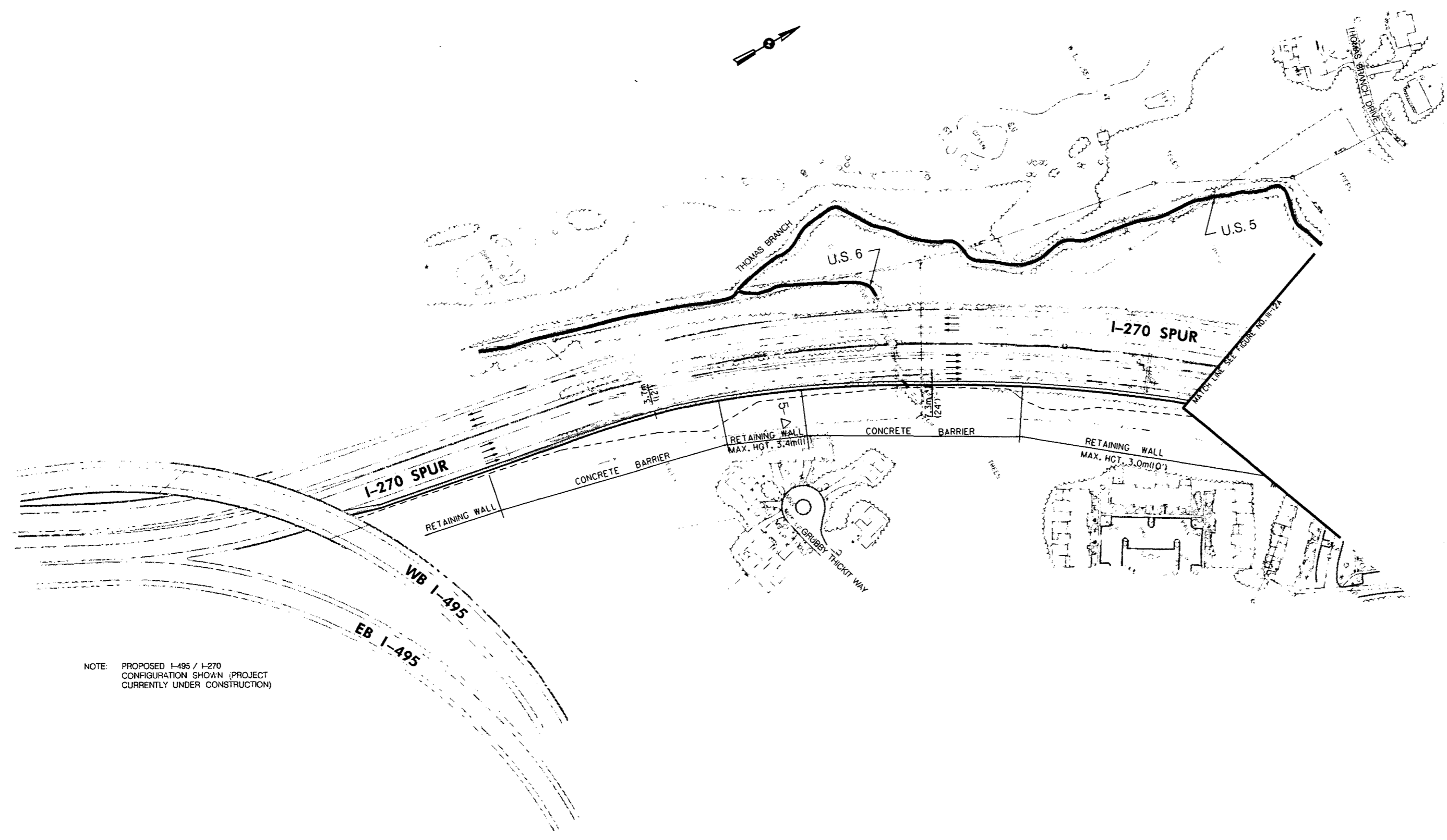


STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4B**

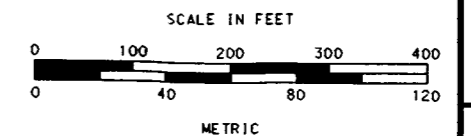
DATE  
NOV., 1995

SCALE 1 : 2400 (1" = 200')

FIGURE  
III-12A



NOTE: PROPOSED I-495 / I-270  
CONFIGURATION SHOWN (PROJECT  
CURRENTLY UNDER CONSTRUCTION)

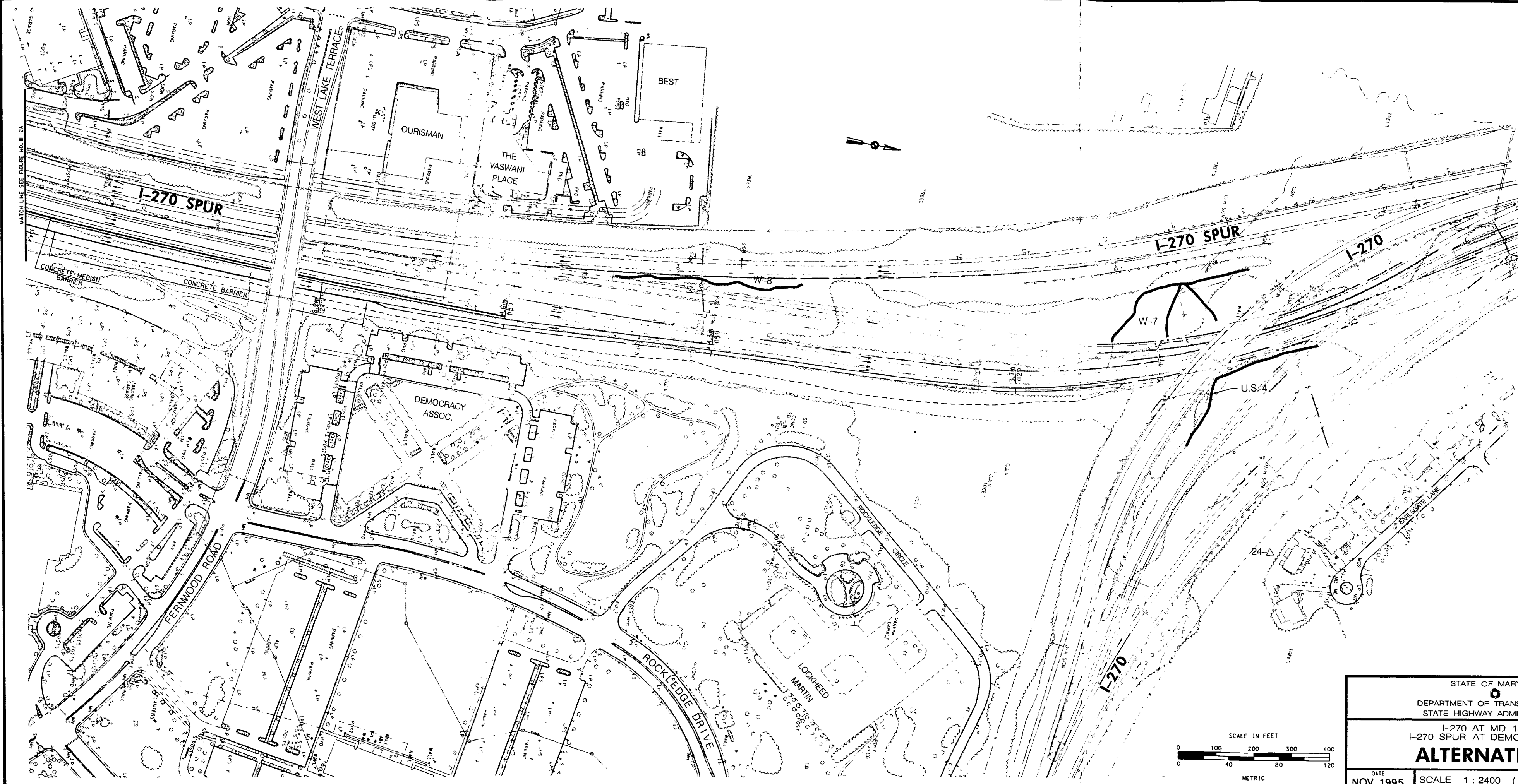


STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4B**

DATE: NOV, 1995      SCALE 1 : 2400 (1" = 200')

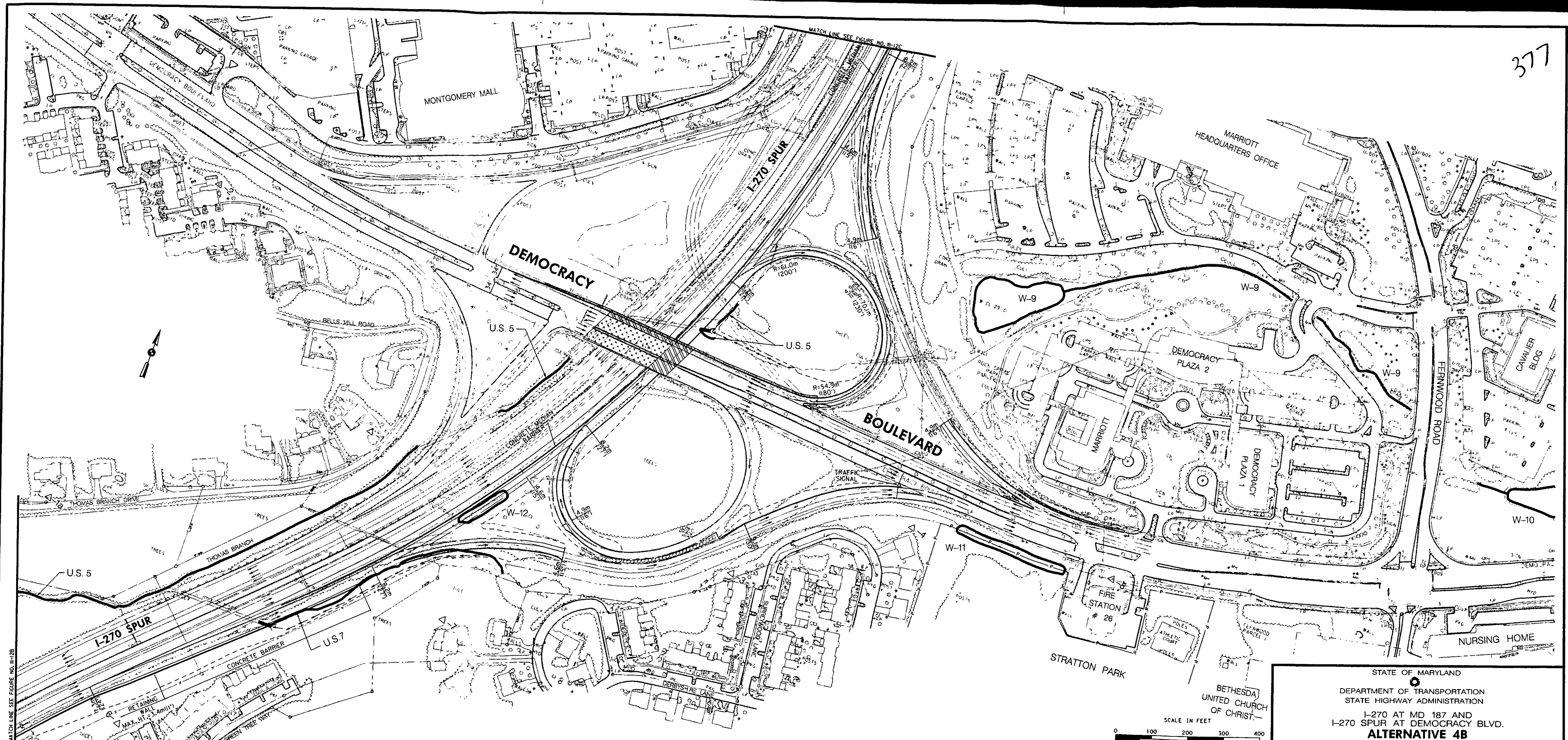
FIGURE III-12B





FILE NO. PS1021000N  
09/01/95 3M

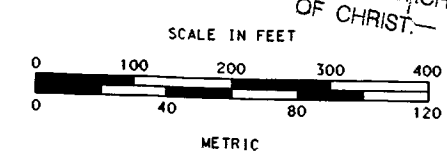
STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>ALTERNATIVE 4B</b>		
DATE NOV., 1995	SCALE 1:2400 (1" = 200')	FIGURE III-12C



FILE NO. PS41270.DGN  
7-31-95 SM

MATCH LINE SEE FIGURE NO. III-12B

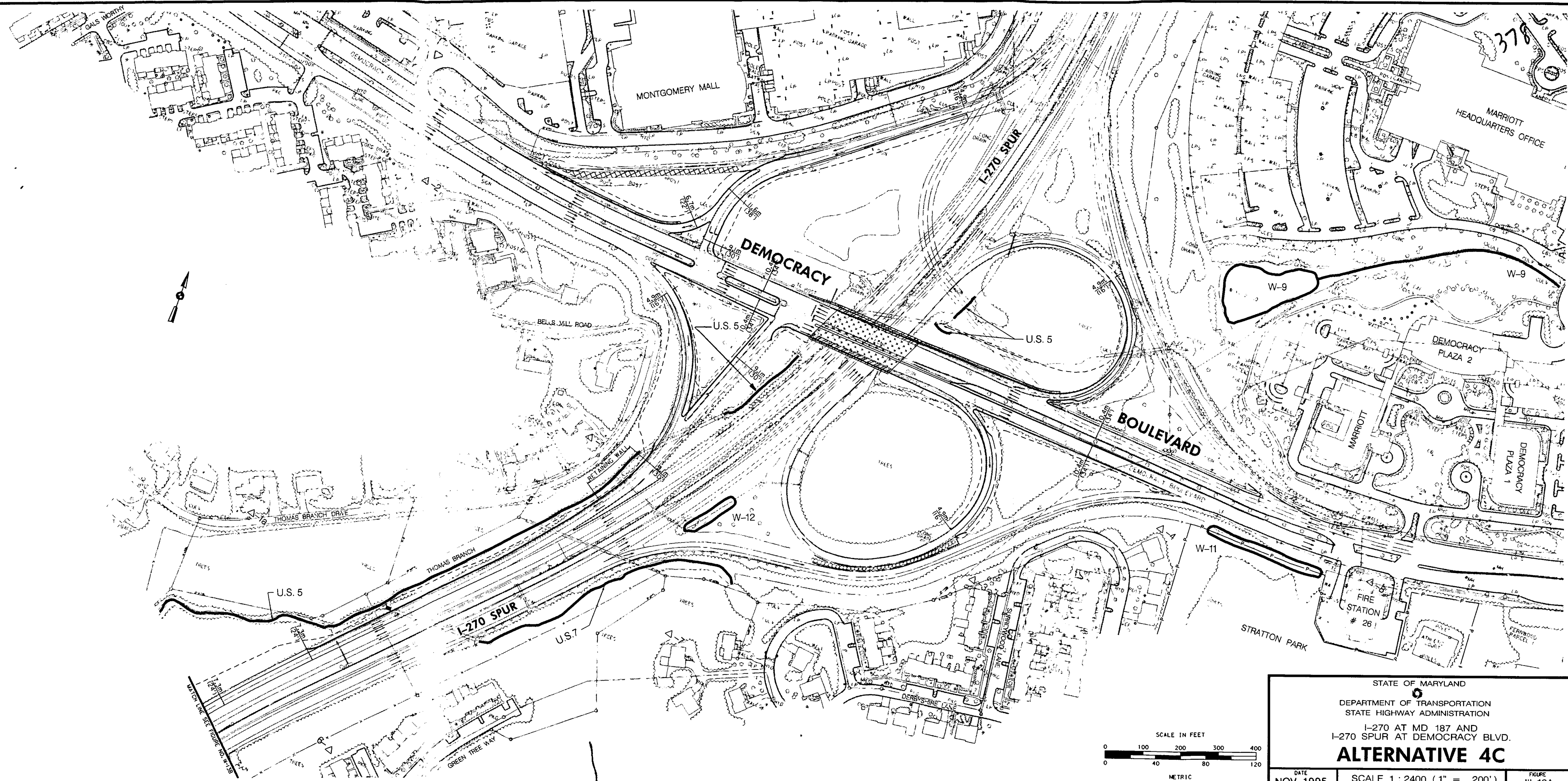
MATCH LINE SEE FIGURE NO. III-12C



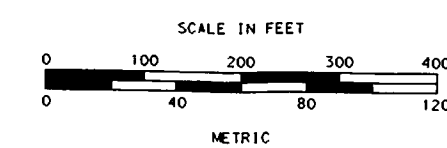
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4B**  
**(SIGNALIZED EASTBOUND RAMP OPTION)**

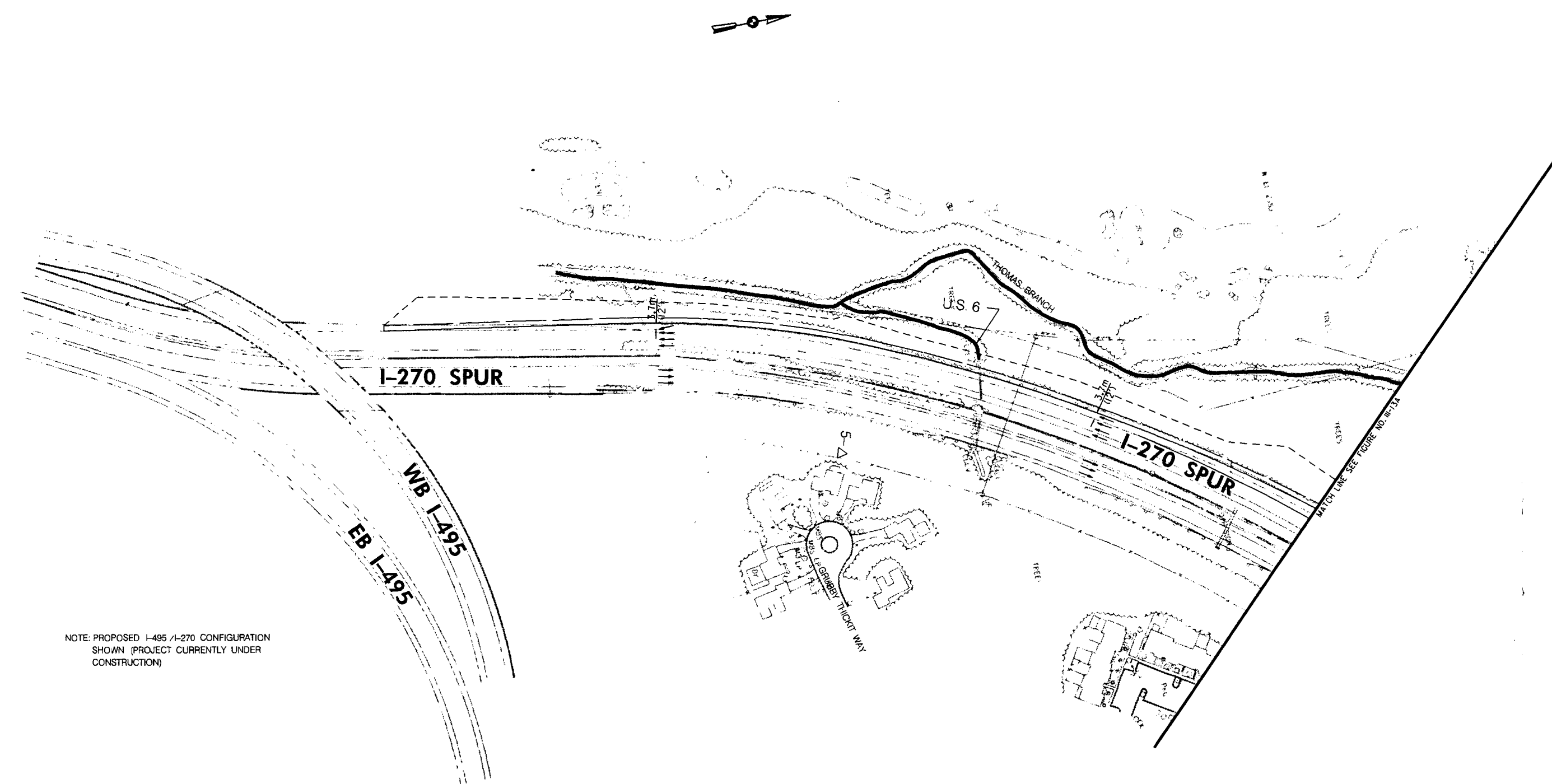
DATE: NOV., 1995  
 SCALE: 1:2400 (1" = 200')  
 FIGURE: III-12D



FILE NO. PS320270.DGN  
08-08-95 SM

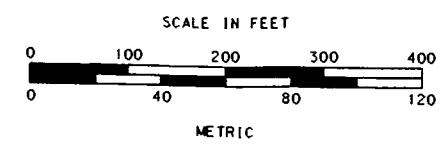


STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 4C**  
 DATE NOV., 1995 SCALE 1 : 2400 (1" = 200') FIGURE III-13A



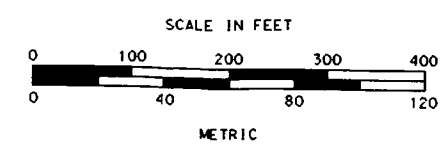
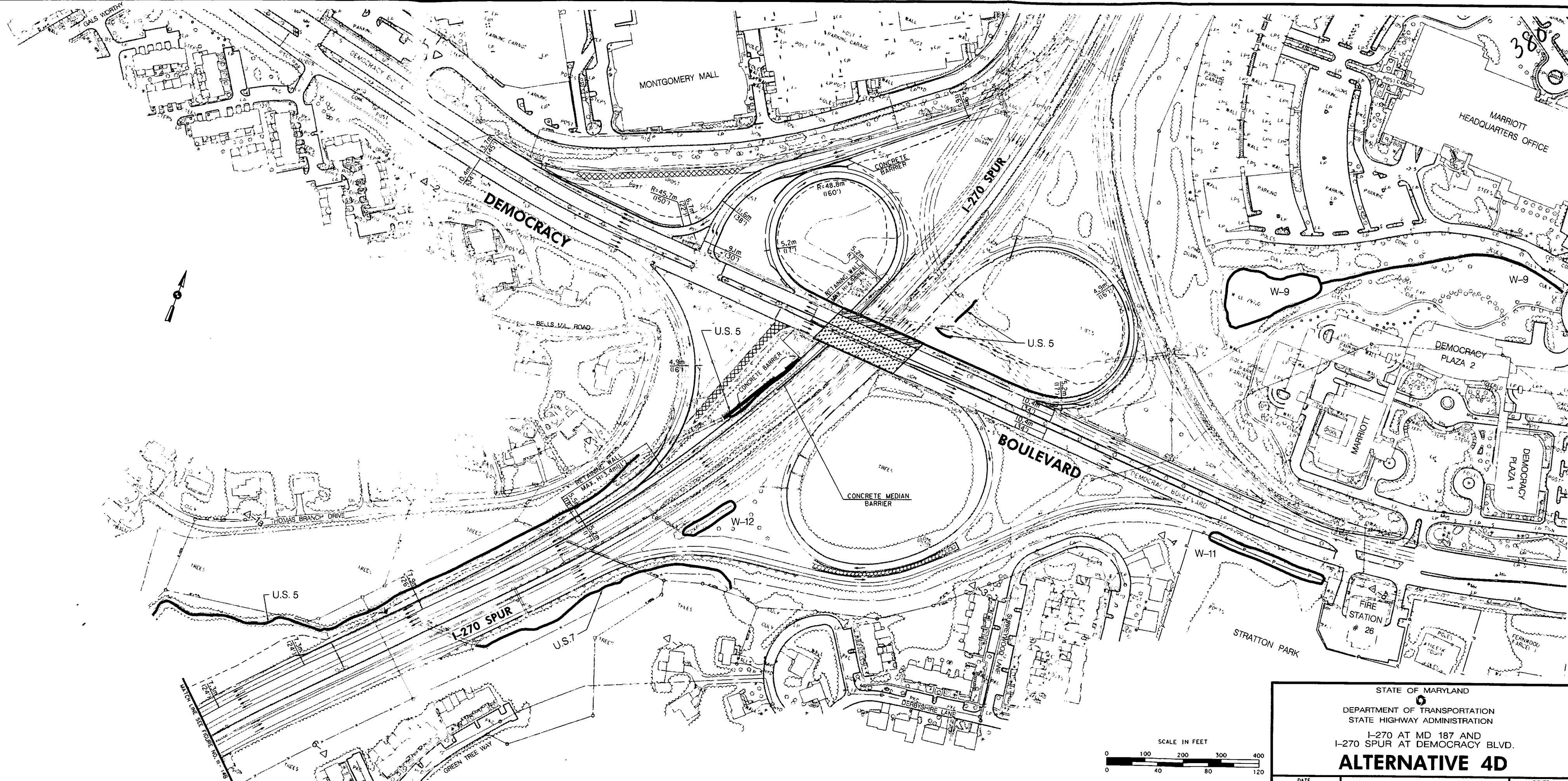
NOTE: PROPOSED I-495 / I-270 CONFIGURATION SHOWN (PROJECT CURRENTLY UNDER CONSTRUCTION)

FILE NO. PS33270.DGN  
08-01-95 SM



STATE OF MARYLAND		
DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD.		
<b>ALTERNATIVE 4C</b>		
DATE NOV. 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-13B

FILE NO. PS15270.DGN  
08-08-99 5M

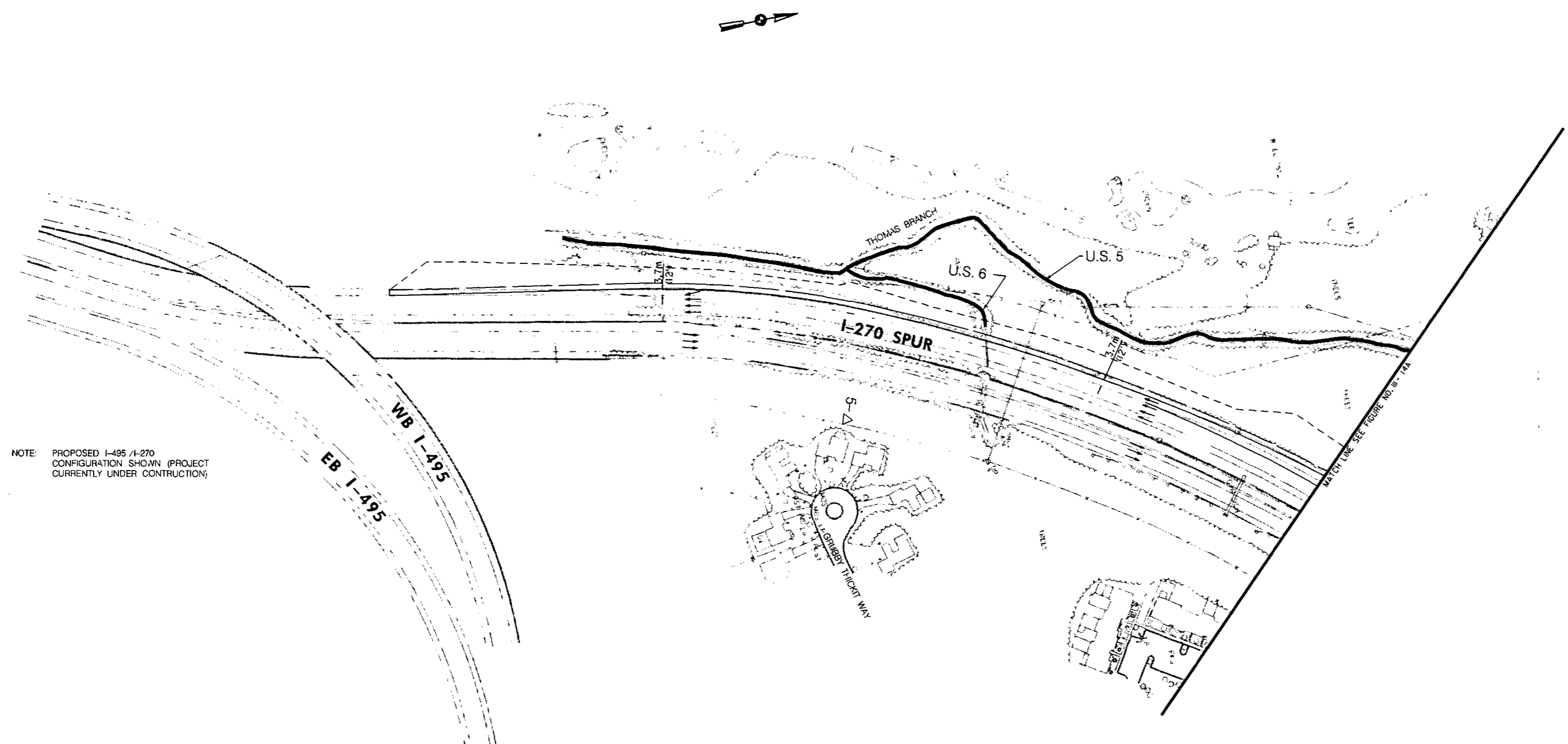


STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.

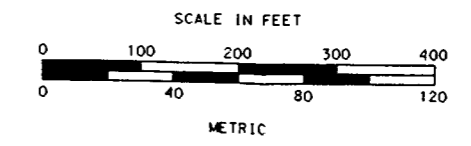
**ALTERNATIVE 4D**

DATE NOV. 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-14A
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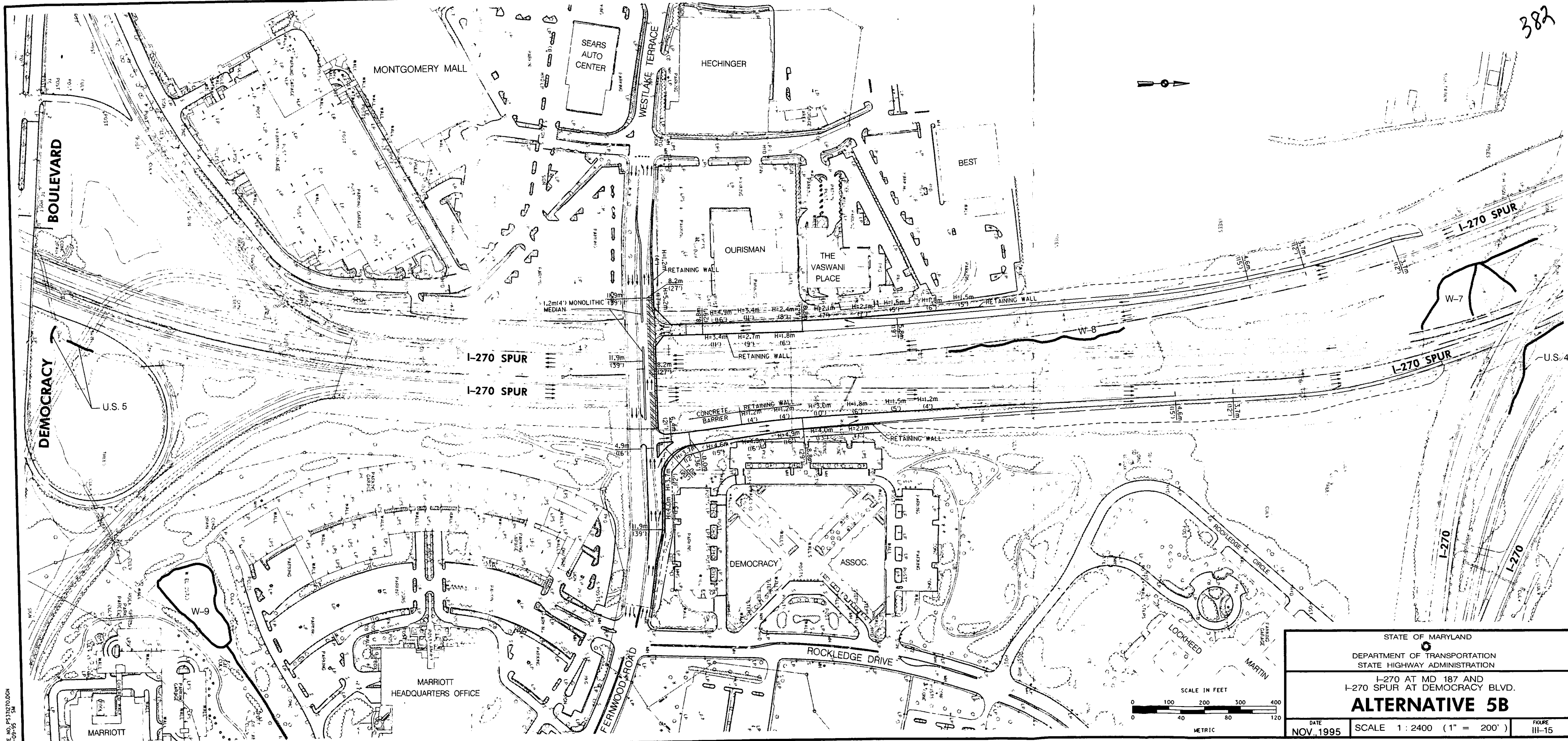


NOTE: PROPOSED I-495 /I-270 CONFIGURATION SHOWN (PROJECT CURRENTLY UNDER CONSTRUCTION)

FILE NO. P5161270.DGN  
08-08-95 SM



STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		
I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD. <b>ALTERNATIVE 4D</b>		
DATE NOV., 1995	SCALE 1 : 2400 (1" = 200')	FIGURE III-14B



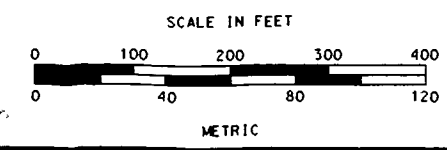
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08-09-95 SM

STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

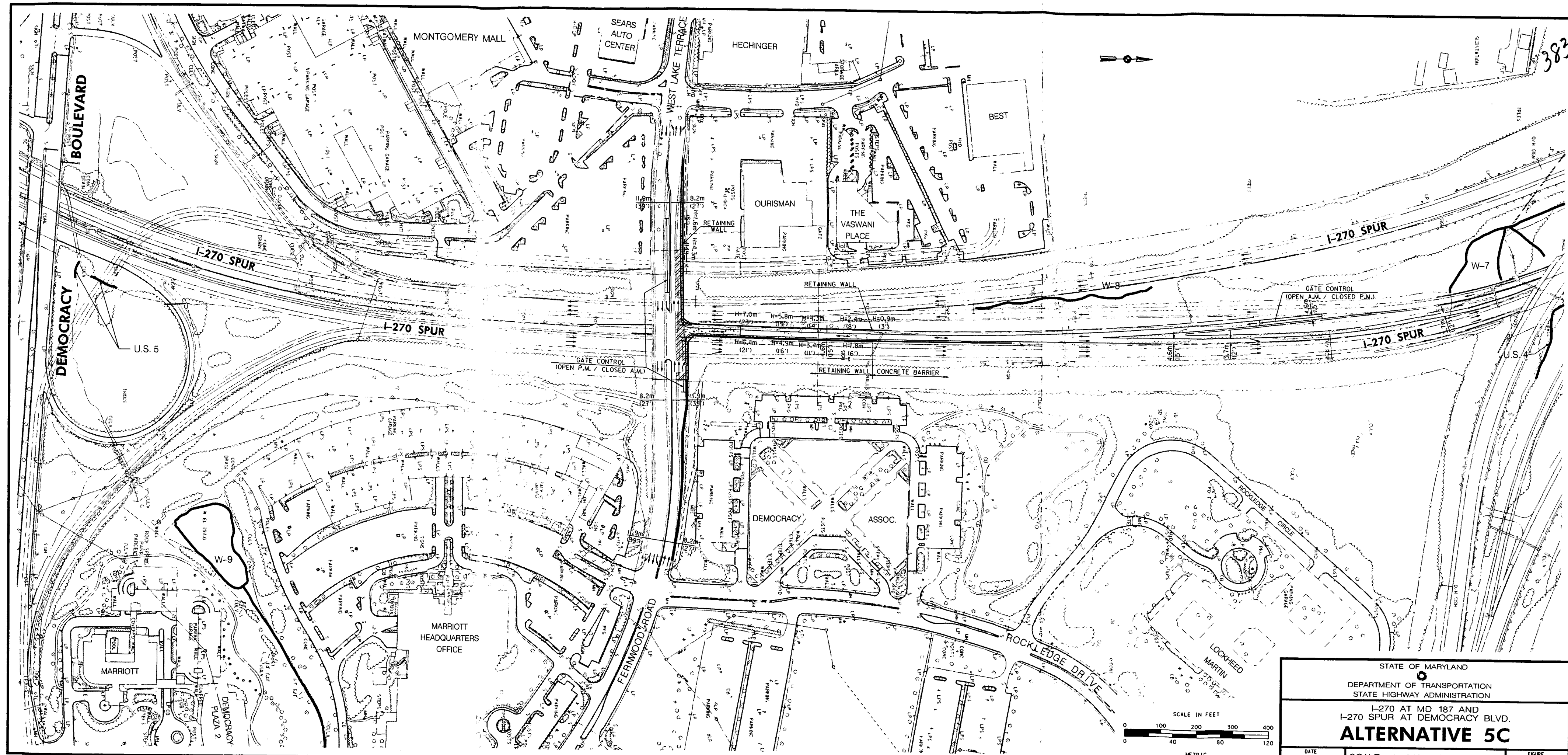
I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.

**ALTERNATIVE 5B**

DATE: NOV. 1995    SCALE: 1" = 200'    FIGURE: III-15



FILE NO. PS18270.DGN  
08-07-95 SM



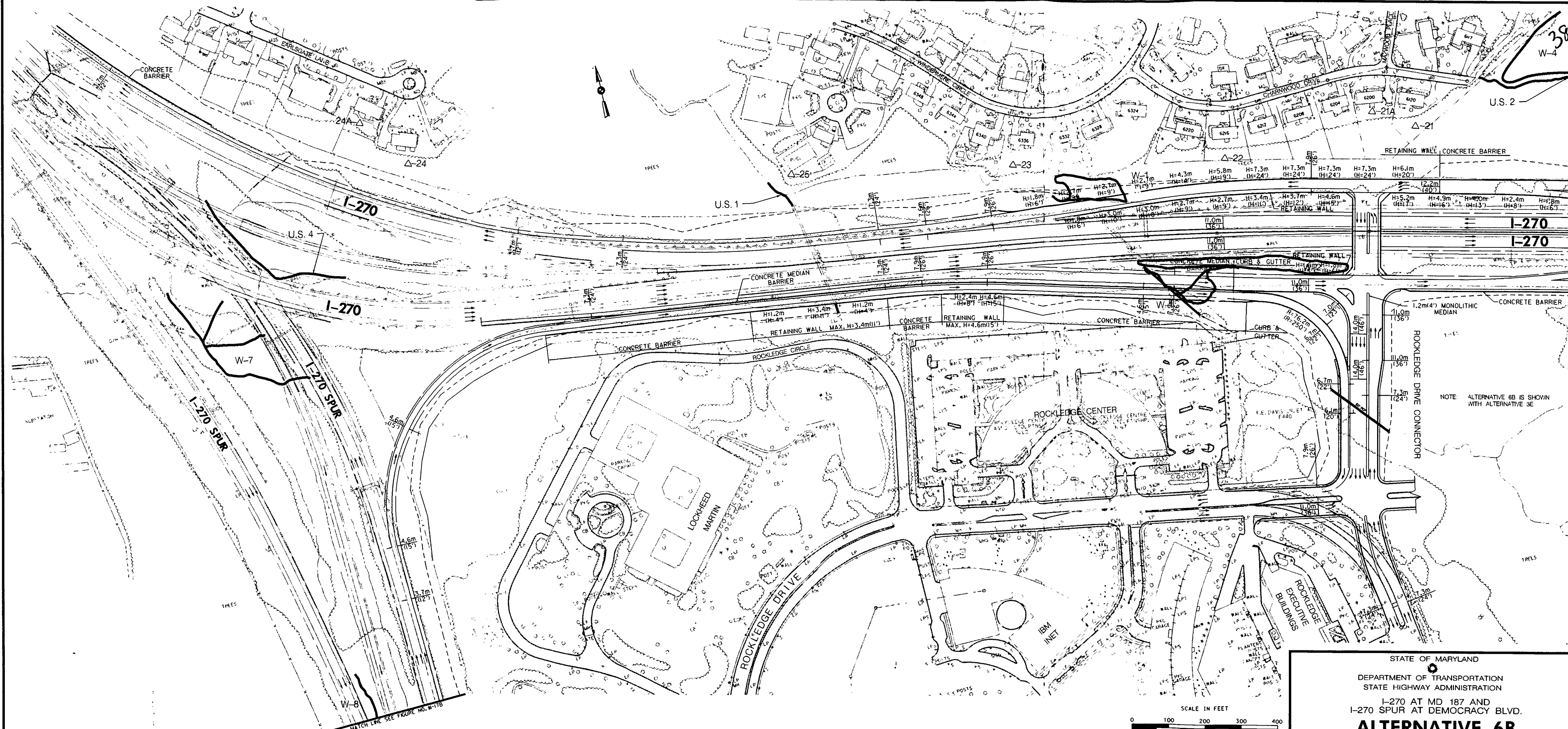
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 5C**

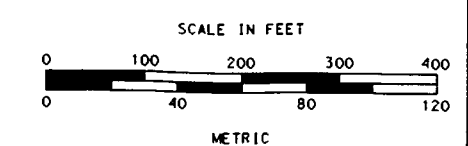
DATE: NOV. 1995 SCALE: 1" = 200' FIGURE: III-16



W-4 384



NOTE: ALTERNATIVE 6B IS SHOWN WITH ALTERNATIVE 3E



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

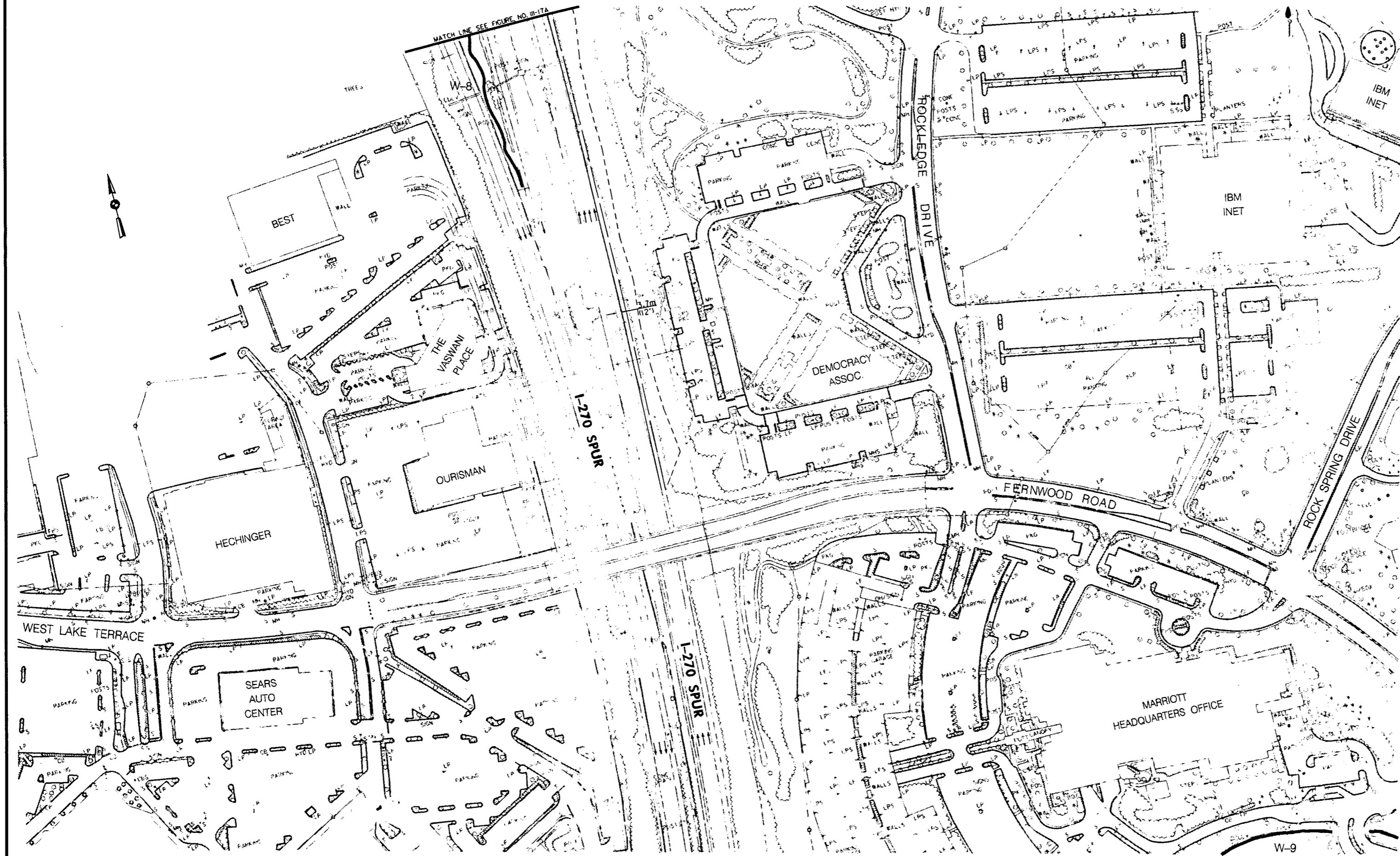
I-270 AT MD 187 AND  
I-270 SPUR AT DEMOCRACY BLVD.

**ALTERNATIVE 6B**

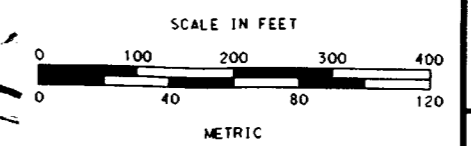
DATE NOV., 1995 SCALE 1 : 2400 (1" = 200') FIGURE III-17A

FILE NO. PS440270.DGN  
08-09-95 3M

MATCH LINE SEE FIGURE NO. W-718



FILE NO. PS-4870.DWG  
08-08-95 3/4



STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 I-270 AT MD 187 AND  
 I-270 SPUR AT DEMOCRACY BLVD.  
**ALTERNATIVE 6B**  
 DATE NOV., 1995  
 SCALE 1 : 2400 (1" = 200')  
 FIGURE III-17B

**IV. ENVIRONMENTAL CONSEQUENCES**

**IV. ENVIRONMENTAL CONSEQUENCES**

**A. Social**

**1. Disruption of Neighborhoods and Communities**

This project would not result in any residential or business displacements with any of the alternatives currently considered.

There is no evidence that minority, elderly, or handicapped populations will be adversely affected by any of the build alternatives proposed.

Since I-270, I-270 Spur, MD 187 and Democracy Boulevard and the associated interchanges are existing facilities, the selection of any build alternative, which are basically modifications of these facilities, would not cause the separation of residents from other residents or community facilities, nor produce any adverse changes in social interaction, or disrupt community cohesion.

Construction of any of the build alternatives would have effects on adjacent communities in the following ways. During construction, there would be a temporary increase in noise from heavy equipment and fugitive dust. Alternative 2E proposes a cul-de-sac on Lux Lane, eliminating its intersection with MD 187 (full access would remain off of Tuckerman Lane). The Alternative 3's would require 6.1 meters (20 feet) - 7.6 meters (25 feet) high retaining walls along the existing right-of-way line behind some of the homes in the Windermere community, thereby affecting visibility to the southwest from these properties.

Traffic patterns for the area residents would not be significantly changed by any of the build alternatives. Depending on the build alternative, there could actually be less traffic on study area arterials such as MD 187 and Democracy Boulevard, as compared to the no-build alternative, as a result of more direct access to and from the interstate system. For example, Alternatives 5B and 5C provide more direct access to and from Montgomery Mall and Rock Spring Office Park, and the Alternative 3's provide more direct access to and from Rock Spring Office Park. Other alternatives simply modify the location, configuration or number of lanes associated with some of the ramp movements.

388

None of the build alternatives would require the acquisition of any land from a residential property. (Note: Zoned residential, but not occupied.)

Alternative 1 (no-build) would not address the need for additional capacity which would result in additional traffic congestion on both the interstate and the arterials, lengthen the peak hours, and worsen travel time and safety for local and through traffic. Additionally, commuters may seek alternative routes through residential neighborhoods in an effort to avoid delays.

## **2. Title VI Statement**

### **TITLE VI STATEMENT**

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap in all State Highway Administration program projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way, or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Office of Equal Opportunity of the Maryland State Highway Administration for investigation.

## **3. Effects on Parks and Recreation Facilities**

None of the build alternatives would require the acquisition of land from any park or recreation area, nor affect the use of any park forest, wildlife management area, scenic river or wildland. Stratton Park is the only such area in close proximity to any proposed improvements. Alternative 4A or 4B would require the widening of Democracy Boulevard as much as 3.7 meters (12 feet) - 4.6 meters (15 feet) towards Stratton Park. However, all grading associated with this widening would remain within existing right-of-way. Access to Stratton Park would not be affected.

#### 4. Effects on Access to Community Services

The impacts on the means of access to existing services and facilities resulting from any of the build alternatives would be minor. Each build alternative would, to varying degrees, improve the capacity of connections between the various communities and I-270. Alternatives 2D and 2E propose the extension of the acceleration lane on northbound MD 187, north of I-270, to connect with the auxiliary right-turn lane for the entrance to St. Mark Church and Tuckerman Lane. The extension of this acceleration lane would improve the merge on northbound MD 187 and allow better visibility of the St. Mark Church entrance. Alternative 2E would require a cul-de-sac on Lux Lane, eliminating its intersection with MD 187.

Alternatives 4A and 4B propose improvements to Democracy Boulevard, east of the I-270 Spur, in the area in front of the Bethesda Fire Department Station No. 26. Widening, median modifications and possibly a narrow raised concrete island to channelize traffic off the I-270 ramp would be constructed with these alternatives. However, access into and out of the Fire Station would remain as it is currently.

The selection of any build alternative, with associated retaining walls, would not impede pedestrian mobility. All build alternatives, including the new bridges and bridge widenings associated with the build alternatives, propose new sidewalks to maintain continuity with the existing sidewalk system through the project area.

The no-build alternative does not address the existing or projected traffic congestion, safety problems or existing access in the project area. As a result, peak congestion periods would lengthen and access to community services would worsen over time. The selection of this alternative is anticipated to worsen emergency response time as capacity at the interchanges is exceeded on a more frequent basis.

The build alternatives will, to varying degrees, improve emergency vehicle response times through the interchange areas, both on the interstate and the secondary roads. The traffic flow patterns associated with Bethesda Fire Station No. 26 on Democracy Boulevard would remain unchanged.

#### **B. Economic Impacts**

##### **1. Effects on Local Business**

Alternative 1 (no-build) would not require the relocation or displacement of any business in the study area. This alternative would result in increased congestion, traffic conflicts, and increased travel time for commuter access to and from local businesses. This may create a shift in travel demand to other roadways that could lure customers and tenants away from area facilities.

None of the build alternatives currently proposed would require the displacement of any business in the study area. Other benefits associated with the build alternatives would be the improved levels of service for the individual interchange movements and corresponding decreases in delays. More direct access to and from I-270 to Rock Spring Office Park, as proposed with the Alternative 3's and 5's, would make this strategic location even more attractive as a corporate headquarters location.

Retaining walls would be included with many of the build alternatives to minimize the amount of right-of-way required from any parcel. Any right-of-way required would be in vacant areas and would not impact any buildings, parking areas or access roadways.

Any improvements in capacity and levels of service at the I-270 Spur/Democracy Boulevard Interchange would be beneficial to Montgomery Mall, as many of its patrons are likely to use this interchange.

## **2. Effects on Regional Business**

The I-270 corridor is a vital, growing extension of the Washington Metropolitan regional economy. Named the I-270 Technology Corridor, this interstate continues to be a focal point of major commercial development.

Alternative 1 (no-build) would not help address the growing needs of the County, and, in particular, the study area. This alternative is anticipated to have a negative impact on the County's business, as additional traffic congestion and reduced safety will deter additional residential and business development in the study area, and/or may encourage additional suburban sprawl. The no-build alternative would have only a minor impact on overall regional business activity, for businesses attracted to the region will select a location where access is or will be available.

The build alternatives, and in particular, the Alternative 3's, would provide the greatest increase in traffic capacity, provide the most relief to traffic congestion and the most improvement to mainline levels of service. The Build Alternatives would also address the growth needs of the County and have a positive effect on regional business activities. These alternatives would alleviate congestion at the existing interchanges, thereby reducing travel time to and from the study area employment centers, and provide increased traffic capacity to accommodate planned commercial growth, and the attraction of that planned growth which would translate to increased employment opportunities in the area.

**3. Effects on The Tax Base**

The selection of the no-build alternative (Alternative 1) will only worsen existing traffic conditions and may have a detrimental effect on continued development in the study area and its vicinity.

Improvements to the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges, as presented under the build alternates, will support continued, planned development in the study area. Increased traffic capacity and safety will accommodate growth and relieve congestion problems. The expansion of residential and commercial areas will have a positive effect on the County's tax base and revenues since, typically, developed land is more valuable than vacant land, and developable parcels in an area served by adequate transportation facilities are more highly valued and tend to attract potential developers, which would lead to new sources of tax revenues.

Since there are no residential or business displacements associated with any of the build alternatives, any reduction in the County's tax base or revenues would only be in the form of vacant land acquisition.

**C. Land Use Impacts**

The 1992 North Bethesda-Garrett Park Master Plan, which covers most of the study area, has recognized the need to increase the capacity of the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges to accommodate the planned future growth and to relieve existing traffic. Future land use and development densities planned in the County and study area are based on increased traffic capacity. The build alternatives, therefore, would not alter the ultimate intensity pattern of land use development and redevelopment. The long-term secondary impacts of the



392

build alternatives, which would provide increased traffic capacity and safety, will play a vital role in the future development plans for the study area.

The Build Alternatives, therefore, are consistent with the County's Master Plan for the area which, as stated in Section I.C.9, recommends one or more direct access ramps from I-270 and/or I-270 Spur to Rock Spring Office Park and a direct access HOV ramp from I-270 Spur to Rock Spring Office Park. The Master Plan includes sketches of a future I-270/Rockledge Drive interchange near MD 187 that closely resemble Alternatives 3E, 3F and 3G.

Although the build alternatives would enhance operational characteristics of the interchanges, it is not expected that they would place additional development pressure on low growth areas in the general vicinity, nor cause or encourage land uses that are not compatible with area Master Plans.

Alternative 1 (no-build) ultimately, is not consistent with the County's Master Plans, for it will not serve the planned residential and commercial land uses, and may serve to inhibit the implementation of the approved Master Plan and associated Staging Amendments. The increasing traffic congestion and service problems would contribute to restricting additional development and add delays to commuter and resident mobility.

**D. Effects on Historic and Archeological Resources**

No sites on or eligible for listing on the National Register of Historic Places were identified within the study area. Therefore, this project would not have any impact on any historic resources.

A Phase I archeological survey was performed by the State Highway Administration for the anticipated right-of-way associated with each of the build alternatives. One prehistoric site (18MO63) is in the project vicinity. However, the survey indicates that the site was disturbed by construction of the Rockledge Center. A no effect determination has been received from the State Historic Preservation Officer concerning archeological resources in the project area.

**E. Natural Environment**

**1. Effects on Geology, Topography, Soils**

**a. Geology and Topography**

The Build Alternatives would not substantially change the existing topographic conditions along I-270, I-270 Spur, MD 187 or Democracy Boulevard. The grades of the build alternatives closely follow the existing grades in all cases except Alternatives 3E, 3F, 3G, and 3H, at the Rockledge Connector Bridge and Alternatives 5B and 5C at the Fernwood Road Bridge where new ramps, supported by retaining walls, would intersect an elevated bridge. This would create a new physical and visual overview of the existing landscape. However, the new landscape would not block the view of any scenic or important physical features, or create undesirable drainage patterns. No impacts to the underlying geological structures will occur as a result of the build alternates. Some cut and fill would be required to adjust for the auxiliary lane and ramp widenings for all build alternatives, but will not cut below the "B" soil horizon.

The no-build alternate (Alternative 1) would have no effect on the geology, topography or soils in the study corridor.

**b. Soils**

Implementation of any build alternative would result in some disturbance of soils, notably erosion and sedimentation during construction. Many of the soil series found in the project area are listed as susceptible to erosion. The removal of vegetation from the construction area would expose soils and increase the probability of runoff. Removal of vegetation also would reduce the beneficial effects of the vegetation's ability to intercept sediment loaded runoff.

The potential for soil erosion and sedimentation would become greater as soils are disturbed. The highest potential for sedimentation to receiving waters would occur where these soils are in close proximity to surface waters. Therefore, it is important that soil erosion and sedimentation be minimized as much as possible. Measures to mitigate these effects include structural, vegetative and operational methods. These methods will be developed as part of a Soil Erosion and Sediment Control Plan for the project, which will be prepared in accordance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control. Long-term impacts to the soils in the project area would be negligible. Introduction and establishment of

grasses and herbaceous vegetation would stabilize the soils as soon as possible after construction is completed. None of the build alternatives would have an effect on Prime Farmland Soils or Soils of Statewide Importance as the study area does not contain any such soils.

## 2. Water Resources

Impacts to water resources under the build alternatives are not significant and can be minimized using standard mitigation measures during construction and operation:

- Watershed effects would be minimized through a limited construction schedule and adherence to storm management and sediment and erosion control measures.
- Effects to the water quality in the study area would be minimized by the use of Best Management Practices (BMP's).
- Alternatives 3E, 3F, 3G, 4A, 4B, 4C, and 4D would require filling of and/or retaining wall construction within some of the floodplain associated with Old Farm Creek, Thomas Branch and their tributaries.

Water resources in the project area are limited to Old Farm Creek, Thomas Branch and their tributaries, which are the only streams being crossed. Culverts and/or pipes within the project would be extended no farther than the limits of the proposed slopes.

Alternatives 2E, 3E, 3F, 3G, 3H and 6B cross Old Farm Creek on the I-270 East Segment at two existing locations.

The existing 1,524 millimeter (60-inch) diameter culvert (670.6 meters [2,200 feet] north of MD 187) would require the following extensions:

- |   |                                     |
|---|-------------------------------------|
| 1) Alt. 2E - 7.6 meters (25 Linear Feet (LF)) ± | 4) Alt. 3G - 83.8 meters (275 LF) ± |
| 2) Alt. 3E - 36.6 meters (120 LF) ±             | 5) Alt. 3H - 19.8 meters (65 LF) ±  |
| 3) Alt. 3F - 41.1 meters (135 LF) ±             | 6) Alt. 6B - 29.0 meters (95 LF) ±  |

The existing 1,524 millimeter (60-inch) diameter culvert (914.4 meters [3,000 feet] north of MD 187) would require the following extensions:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1) Alt. 3E - 10.7 meters (35 LF) ± | 3) Alt. 3G - 9.1 meters (30 LF) ±  |
| 2) Alt. 3F - 7.6 meters (25 LF) ±  | 4) Alt. 3H - 10.7 meters (35 LF) ± |

Alternatives 3E, 3F, 3G, 3H and 6B would require a new crossing on the proposed Rockledge Connector. The proposed culvert lengths which would be required are as follows:

- 1) Alt. 3E - 61.0 meters (200 LF) ±
- 2) Alt. 3F - 48.8 meters (160 LF) ±
- 3) Alt. 3G - 57.9 meters (190 LF) ±
- 4) Alt. 3H - 24.4 meters (80 LF) ±
- 5) Alt. 6B - 18.3 meters (60 LF) ±

Alternatives 4A, 4B, 4C and 4D cross Thomas Branch on I-270 Spur at two locations. There would be no new stream crossings on the I-270 Spur.

The existing 2,438.4 millimeter (96-inch) diameter culvert would require the following extensions:

- 1) Alt. 4B - 12.2 meters (40 LF) ±
- 2) Alt. 4D - 76.2 meters (250 LF) ±

The existing 3.6 meters (11 feet - 10 inches) x 2.3 meters (7 feet - 7 inches) arch culvert would require the following extensions:

- 1) Alt. 4A - 6.1 meters (20 LF) ±
- 2) Alt. 4B - 10.7 meters (35 LF) ±
- 3) Alt. 4C - 3.0 meters (10 LF) ±
- 4) Alt. 4D - 3.0 meters (10 LF) ±

Culvert modifications would be in accordance with practices (e.g., check dams, culvert invert depression) that would maintain the aquatic habitat.

**a. Surface Water**

For all alternatives under study, highway runoff is a potential source of pollutants to surface water resources. The No-Build Alternative would not degrade water quality in the surface waters in the study area over and above existing conditions.

The long-term effects on the water quality from the proposed build alternatives would be minimal. Generally, the build alternatives would require the extension of existing drainage culverts under I-270 or I-270 Spur. Several build alternatives would also include retaining walls on stream banks to limit stream impacts as much as possible. Several of the alternatives would require minor stream relocations, as indicated in Table S-1 and the following discussion.

3916

Old Farm Creek, on the I-270 East Segment, would be impacted by alternatives 2E, 3E, 3F, 3G and 6B and would require the following stream relocations:

- 1) Alt. 2E - 106.7 meters (350 LF) ±
- 2) Alt. 3E - 88.4 meters (290 LF) ±
- 3) Alt. 3F - 243.8 meters (800 LF) ±
- 4) Alt. 3G - 121.9 meters (400 LF) ±
- 5) Alt. 6B - 22.9 meters (75 LF) ±

Thomas Branch, on the I-270 Spur, would be impacted by alternatives 4A, 4B, 4C and 4D and would require the following stream relocations:

- 1) Alt. 4A - 182.9 meters (600 LF) ±
- 2) Alt. 4B - 289.6 meters (950 LF) ±
- 3) Alt. 4C - 83.8 meters (275 LF) ±
- 4) Alt. 4D - 83.8 meters (275 LF) ±

All stream waters in the study area are designated Use 1 by the Department of the Environment. Therefore, in-stream construction will be prohibited from March 1st to June 15th. A Waterway Construction Permit will be required from the Maryland Department of the Environment, Water Management Administration.

Best Management Practices (BMP's), to control stormwater runoff, and sediment and erosion control measures would be applied to protect stream quality. BMP's which would be considered for use include extended detention, infiltration, ponds and grassed swales. If necessary, any increased runoff to the streams caused by the increase in impervious area due to additional pavement would be addressed with quantity control stormwater management.

The increase in runoff of pollutants such as soils, nutrients, organics, heavy metals, lead, petroleum, and other highway salts resulting from the increase in traffic would be addressed with quality control stormwater management. The increase in impervious surface area resulting from the proposed improvements will produce a proportionate increase in the amount of roadway runoff carrying vehicle generated pollutants (i.e., oil, coolants, brake lining, rubber, etc.). Infiltration of stormwater runoff would be investigated as a means to provide quality control by filtering the runoff through the soil.

Water quality indices (e.g., parameters that quantify sediment, nutrients, bacteria, oxygen demand, etc.) for all streams affected should remain in the permissible range. The use of Best Management Practices (BMP's) to provide sound stormwater management would be implemented where any disturbance could affect water quality in the corridor.

Stormwater runoff for the project will be managed in accordance with the State of Maryland Department of the Environment's "Stormwater Management Guidelines for State and Federal Projects". These regulations will require stormwater management practices in the following order of preference:

- On-site infiltration;
- Flow attenuation by open vegetated swales and natural depressions;
- Stormwater retention structures; and
- Stormwater detention structures.

It has been demonstrated that these measures can substantially reduce pollutant loads and control runoff. Stormwater management areas will be identified during the final design phase.

To minimize water quality impacts, final design for the proposed improvements will include plans for grading, sediment and erosion control, and stormwater management, in accordance with State and Federal laws and regulations. Final plans require review and approval by the Maryland Department of the Environment, Water Management Administration. Sediment and erosion control measures will be designed and implemented in accordance with the "1991 Maryland Standards and Specifications for Soil Erosion and Sediment Control". Typical temporary sediment control measures which are installed in a project of this type include straw bale structures, slope silt fence, sediment traps, rip-rap linings, fiberglass erosion stops, dikes and swales, soil stabilization matting and stabilized construction entrances. The area disturbed by the construction will be held to a minimum and revegetated promptly after grading to minimize the potential for erosion and sedimentation.

**b. Groundwater Effects**

The no-build alternative would not affect groundwater in the study area.

It is not anticipated that the proposed interchange improvements associated with the build alternatives would have any adverse affect on groundwater in the study area. Efforts to provide protection for groundwater in the vicinity of proposed highway improvements would include the following:

- o Stormwater Best Management Practices
- o Final design and construction effects would comply with DNR's WRA standards and specifications

**3. Floodplains**

The no-build alternative would not adversely affect floodplains in the study corridor.

Effects to floodplains in the study area under the build alternates, as indicated on Table IV-1, would occur at Old Farm Creek and Thomas Branch. Pursuant to the Flood Hazard Management Act of 1976 and in accordance with Executive Order 11988, the State Highway Administration has determined that all highway projects should not restrict the flow of the 100-year storm event

It is intended that the project would not cause an increase in the 100-year floodplain. The State Highway Administration will prepare a detailed hydrologic and hydraulic study for the selected alternative during final design to identify the existing 100-year storm discharge and floodplain. Stormwater management will be provided and all hydraulic structures will be designed to accommodate the 100-year flood without causing substantial impact.

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

Use of state-of-the-art sediment and erosion control techniques and stormwater management controls will ensure that none of the encroachments would result in risks or impacts

TABLE IV-1

EFFECTS ON 100-YEAR FLOODPLAINS

ALTERNATIVE	ACREAGE AND DESCRIPTION OF FLOODPLAIN IMPACT
Alternative 3E	<p>FLOODPLAIN IMPACT: 0.04 hectares (0.1 Ac.)                      LOCATION: 609.6 meters (2000 feet) ± north of MD 187; on the east side of I-270                      DESCRIPTION: 6.1 meters (20 linear feet) ± 1,524 millimeter (60-inch) diameter culvert extension and 45.7 meters (150 linear feet) ± channel relocation on Old Farm Creek</p>
Alternative 3F	<p>FLOODPLAIN IMPACT: 0.04 hectares (0.1 Ac.)                      LOCATION: 609.6 meters (2000 feet) ± north of MD 187; on the east side of I-270                      DESCRIPTION: 6.1 meters (20 linear feet) ± 1,524 millimeter (60-inch) diameter culvert extension and 45.7 meters (150 linear feet) ± channel relocation on Old Farm Creek</p>
Alternative 3G	<p>FLOODPLAIN IMPACT: 0.04 hectares (0.1 Ac.)                      LOCATION: 609.6 meters (2000 feet) ± north of MD 187; on the east side of I-270                      DESCRIPTION: 9.1 meters (30 linear feet) ± 1,524 millimeter (60-inch) diameter culvert extension and 45.7 meters (150 linear feet) ± channel relocation on Old Farm Creek</p>
Alternative 4B	<p>FLOODPLAIN IMPACT: 0.08 hectares (0.2 Ac.)                      LOCATION: Inside the loop ramp in the northeast I-270 Spur/Democracy Blvd. interchange quadrant                      DESCRIPTION: 10.7 meters (35 linear feet) ± 2,438.4 millimeters (96-inch) diameter culvert extension and 76.2 meters (250 linear feet) ± channel relocation on Thomas Branch</p>
Alternative 4C	<p>FLOODPLAIN IMPACT: 0.16 hectares (0.4 Ac.)                      LOCATION: Inside the northeast quadrant and along southbound I-270 Spur, south of Democracy Boulevard                      DESCRIPTION: 91.4 meters (300 linear feet) ± channel relocation at interchange; 3.0 meters (10 linear feet) ± 3.6 meters (11 feet - 10 inches) x 2.3 meters (7 feet - 7 inches) arch culvert extension and retaining wall along southbound I-270 Spur on Thomas Branch</p>
Alternative 4D	<p>FLOODPLAIN IMPACT: 0.20 hectares (0.5 Ac.)                      LOCATION: Inside the northeast quadrant and along southbound I-270 Spur, south of Democracy Boulevard                      DESCRIPTION: 91.4 meters (300 linear feet) ± channel relocation and 76.2 meters (250 linear feet) ± 2,438.4 millimeters (96-inch) diameter culvert extension at interchange; 3.0 meters (10 linear feet) ± (11 feet - 10 inches) x 2.3 meters (7 feet - 7 inches) arch culvert extension along southbound I-270 Spur on Thomas Branch</p>



400

to the beneficial floodplain values or provide direct or indirect support to further development within the floodplain.

In accordance with the requirements of FHPM 6-7-3-2, which is a FHWA guideline for ensuring compliance with Executive Order No. 11988, the impacts of each encroachment have been evaluated to determine if it is a significant encroachment. A significant encroachment would involve one of the following:

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

Preliminary analyses indicate that no significant floodplain impacts are expected to occur as a result of any proposed build alternates. A floodplain finding, if required, will be presented in the final environmental document.

#### **4. Effects on Hazardous Materials/Waste Sites**

A field survey and land use examination of the project area did not identify any land use likely to have potential for hazardous waste contamination. In addition, the U.S. Environmental Protection Agency (EPA) listing of Superfund sites (CERCLIS) did not identify any sites within the project area.

#### **5. Ecological Conditions**

##### **a. Wetlands**

In accordance with Executive Order 11990, efforts were made to avoid or minimize harm to wetlands in the project corridor. Following is a discussion of each wetland and the impacts resulting from the alternatives. Only the no-build alternative would completely avoid the wetlands. However, the no-build is not a practical alternative because it is inconsistent with local

master plans; does not support the planned development, does not improve existing levels-of-service, and does not address the existing traffic safety problems.

Federal, state and local regulations require the mitigation and/or compensation for unavoidable loss of wetland habitats. The affected wetland areas for each alternative are compared in Tables IV-2 through IV-4. A joint federal and state Section 404 Corps of Engineers permit would be required for any disturbance to wetlands associated with the alternatives. Replacement wetlands will be created as close to the disturbed wetland as possible at the specified replacement ratio.

As indicated on Tables IV-2 through IV-4, wetlands labelled W-1, W-2, W-3, W-4, W-11 and W-12 would be impacted by the build alternatives for this project. As such, these are the areas addressed in the following discussion.

**WETLAND W-1**

Wetland 1 (W-1) is located on the north and south sides of I-270, approximately 670.6 meters (2,200 feet) west of MD 187. It consists of a stream channel (Old Farm Creek) and associated forested floodplain and is classified as palustrine forested broadleafed deciduous (PF01A), and is of medium value. The soil is saturated and has low chroma.

**ALTERNATIVE 2E**

Alternative 2E would impact W-1 as a result of grading associated with the proposed ramp acceleration lanes connecting MD 187 with northbound I-270 and the proposed ramp deceleration lane connecting southbound I-270 and MD 187. Alternative 2E would impact 0.06 hectares (0.15 Ac.) of W-1 on the north side of I-270 and 0.02 hectares (0.05 Ac.) on the south side of I-270. Lengthening the existing 1,524 millimeter (60-inch) diameter culvert under I-270 and rechannelization would also be required into the wetland area.

**Avoidance** (Wetland W-1/Alt. 2E)

Avoidance of the northern segment could take place with one of the following two modifications:

- 1) Reduction of the width of the ramp carrying traffic from MD 187 onto northbound I-270 from 2-lanes to 1-lane and reducing the acceleration lane length from 1,097.3 meters (3,600 feet) ± to 182.9 meters (600 feet) ±. Because this

modification would result in failing ramp and merge levels of service and substandard acceleration lane lengths, it is not considered feasible.

- 2) Construction of a 91.4 meters (300 feet) ± long by 4.3 meters (14 feet) (average height) retaining wall at a cost of \$500,000 adjacent to the MD 187 ramp onto northbound I-270. This option is not considered feasible due to excessive cost.

Avoidance of the southern segment would be possible with one of the following two modifications:

- 1) Reduction of the width of the exit ramp from southbound I-270 to MD 187 from 2-lanes to 1-lane and maintaining the existing retaining wall along southbound I-270. Because this modification would result in failing levels of service at the ramp diverge, it is not considered feasible.
- 2) Construction of a 91.4 meters (300 feet) ± long by 2.7 meter (9 feet) average height retaining wall at a cost of \$400,000 adjacent to the southbound I-270 exit ramp to MD 187. This option is not considered feasible due to excessive cost.

**Minimization** (Wetland W-1/Alt. 2E)

For Alternative 2E (north and south of I-270), the use of a 80 kilometer per hour (kmh) (50 mph) versus a 100 kmh (60 mph) design speed for roadside grading in open sections would minimally reduce overall impacts throughout the wetland area with a slight reduction in cost and some sacrifice in safety. Additionally, the use of a closed section (curb and gutter, concrete barrier) with reduced grading and steepened slopes would minimize impacts with a slight increase in cost and some sacrifice in safety.

**ALTERNATIVE 3E**

Alternative 3E would impact W-1 as a result of the embankment for the proposed ramp connecting MD 187/Rockledge Connector to northbound I-270 and the proposed ramp connecting southbound I-270 to Rockledge Connector/MD 187. Alternative 3E would impact 0.06 hectares (0.15 Ac.) of W-1 on the north side of I-270 and 0.06 hectares (0.15 Ac.) on the south side of I-270. Lengthening the existing 1,524 millimeters (60-inch) RCP under I-270 and rechannelization would also be required into the wetland area.

**Avoidance** (Wetland W-1/Alt. 3E)

Avoidance of the northern segment of W-1 could be accomplished by a southerly shift of the proposed 2-lane ramp carrying traffic from MD 187/Rockledge Connector onto northbound I-270. A horizontal realignment adjacent to existing northbound I-270 would require construction of a 91.4 meters (300 feet) ± long by 7.3 meters (24 feet) average height retaining wall at a cost of \$700,000 north of the proposed ramp and construction of a 76.2 meter (250 feet) ± long by 2.1 meter (7 feet) (average height) retaining wall at a cost of \$300,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

Avoidance of the southern segment could be accomplished by a northerly shift of the proposed ramp carrying traffic from southbound I-270 onto Rockledge Connector/MD 187. A horizontal realignment adjacent to existing southbound I-270 would require construction of a 61.0 meter (200 feet) ± long by 3.7 meter (12 feet) average height retaining wall at a cost of \$300,000 north of the proposed ramp and construction of a 61.0 meter (200 feet) ± long by 7.3 meter (24 feet) (average height) retaining wall at a cost of \$500,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

**Minimization** (Wetland W-1/Alt. 3E)

For Alternative 3E, the northern segment W-1 impact could be minimally reduced by heightening the proposed retaining wall and eliminating grading slopes behind the proposed wall. Construction of the 91.4 meter (300 feet) ± long by additional 3.7 meter (12 feet) (average height) retaining wall would cost \$300,000. This option is not considered feasible due to excessive cost.

The southern segment impact could be reduced by replacing the proposed curb and gutter with construction of a 61.0 meter (200 feet) ± long by 7.9 meter (26 feet) (average height) retaining wall at a cost of \$500,000. This option is not considered feasible due to excessive cost.

**ALTERNATIVE 3F**

Alternative 3F would impact W-1 as a result of the embankment for the proposed ramp connecting MD 187/Rockledge Connector to northbound I-270 and the proposed ramp connecting southbound I-270 to Rockledge Connector/MD 187. Alternative 3F would impact 0.06 hectares (0.15 Ac.) of W-1 on the north side of I-270 and 0.06 hectares (0.15 Ac.) on the south side of I-270. Lengthening the existing 1,524 millimeters (60-inch) RCP under I-270 and rechannelization would also be required into the wetland area.

**Avoidance** (Wetland W-1/Alt. 3F)

Avoidance of the northern segment could only be accomplished by a southerly shift of the proposed 2-lane ramp carrying traffic from MD 187/Rockledge Connector onto northbound I-270. A horizontal realignment adjacent to existing northbound I-270 would require construction of a 91.4 meter (300 feet) ± long by 7.3 meter (24 feet) (average height) retaining wall at a cost of \$700,000 north of the proposed ramp and construction of a 7.6 meter (25 feet) ± long by 2.1 meter (7 feet) (average height) retaining wall at a cost of \$300,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

Avoidance of the southern segment of W-1 can be accomplished by constructing a 91.4 meter (300 feet) ± long by 4.0 meter (13 feet) (average height) retaining wall at a cost of \$500,000 south of ramp carrying southbound I-270 traffic to MD 187 and horizontally realigning southward the ramp carrying southbound I-270 traffic onto Rockledge Connector. The horizontal shift would require moving closer to the Rockledge Centre Property and constructing a 61.0 meter (200 feet) ± long by 5.2 meter (17 feet) (average height) retaining wall at a cost of \$400,000, north of the realigned ramp, and a 61.0 meter (200 feet) ± long by 4.3 meter (14 feet) (average height) retaining wall at a cost of \$300,000, south of realigned ramp. This option is not considered feasible due to excessive cost.

**Minimization** (Wetland W-1/Alt. 3F)

For Alternative 3F, the northern segment W-1 impact could be reduced by heightening the proposed retaining wall and eliminating grading slopes behind the proposed wall. Construction of the 91.4 meter (300 feet) ± long by additional 3.7 meter (12 feet) (average height) retaining wall would cost \$300,000. This option is not considered feasible due to excessive cost.

The southern segment impact could be reduced by replacing proposed curb and gutter with construction of a 61.0 meter (200 feet) ± long by 5.2 meter (17 feet) (average height) retaining wall at a cost of \$400,000. This option is not considered feasible due to excessive cost.

**ALTERNATIVE 3G**

Alternate 3G would impact W-1 resulting from the embankment for the proposed ramp connecting MD 187/Rockledge Connector to northbound I-270 and the proposed ramp connecting southbound I-270 to Rockledge Connector/MD 187. Alternative 3G would impact 0.06 hectares (0.15 Ac.) of W-1 on the north side of I-270 and 0.06 hectares (0.15 Ac.) on the south side of I-270. Lengthening the existing 1,524 millimeter (60-inch) RCP under I-270 and rechannelization would also be required into the wetland area.

**Avoidance** (Wetland W-1/Alt. 3G)

Avoidance of the northern segment of W-1 could be accomplished by a southerly shift of the proposed 2-lane ramp carrying traffic from MD 187/Rockledge Connector onto northbound I-270. A horizontal realignment adjacent to existing northbound I-270 would require construction of a 91.4 meter (300 feet) ± long by 8.8 meter (29 feet) (average height) retaining wall at a cost of \$900,000, north of the proposed ramp, and construction of a 91.4 meter (300 feet) ± long by 4.0 meter (13 feet) average height retaining wall at a cost of \$500,000 south of the proposed ramp. This option is not considered feasible due to excessive cost.

Avoidance of the southern segment of W-1 could be accomplished by construction of a 61.0 meter (200 feet) ± long by 5.5 meter (18 feet) (average height) retaining wall at a cost of \$400,000, south of the ramp carrying southbound I-270 traffic to MD 187, and horizontally realigning southward the ramp carrying southbound I-270 traffic onto Rockledge Connector. The horizontal shift would require moving closer to the Rockledge Centre Property and constructing a 61.0 meter (200 feet) ± long by 9.1 meter (30 feet) (average height) retaining wall at a cost of \$600,000, north of the realigned ramp, and a 61.0 meter (200 feet) ± long by 7.0 meter (23 feet) average height retaining wall at a cost of \$500,000, south of the realigned ramp. This option is not considered feasible due to excessive cost.

**Minimization** (Wetland W-1/Alt. 3G)

For Alternative 3G, the northern segment W-1 impact could be reduced by heightening the proposed retaining wall and eliminating grading slopes behind the proposed wall. Construction of the 91.4 meter (300 feet) ± long by additional 0.9 meter (3 feet) average height retaining wall would cost \$100,000. This option is not considered feasible due to excessive cost.

The southern segment impact could be reduced by replacing proposed curb and gutter with a 61.0 meter (200 feet) ± long by 8.8 meter (29 feet) (average height) retaining wall at a cost of \$600,000. This option is not considered feasible due to excessive cost.

**ALTERNATIVE 3H**

Alternative 3H would impact W-1 resulting from embankment for the widening of southbound I-270 to accommodate a 1-lane reversible HOV in the median. Alternative 3H would impact 0.04 hectares (0.1 Ac.) of W-1 on the south side of I-270, as lengthening the existing 1,524 millimeter (60-inch) diameter culvert under I-270 into the wetland area would be required.

**Avoidance** (Wetland W-1/Alt. 3H)

Avoidance of the southern segment could take place with construction of a 91.4 meter (300 feet) ± long by 5.2 meter (17 feet) (average height) retaining wall at a cost of \$500,000 adjacent to southbound I-270.

**Minimization** (Wetland W-1/Alt. 3H)

For Alternative 3H, the southern W-1 segment impact could be reduced by approximately 0.01 hectares (0.02 Ac.) using one of the following modifications:

- 1) Use of a 80 kmh (50 mph) versus 100 kmh (60 mph) design speed for roadside grading in open sections and steepened slopes with some reduction in cost and sacrifice in safety.
- 2) Use of a closed section (curb and gutter, concrete barrier) and steepened slopes with a slightly higher cost and sacrifice in safety.

**WETLAND W-2**

Wetland 2 (W-2) is located adjacent to the southern half of W-1, 548.6 meters (1800 feet) ± west of MD 187 along the southbound I-270 roadway. The wetland is an intermittent stream/ditch and associated topographic depression adjacent to a recently constructed retaining wall and is of medium value. It is classified as palustrine forested broadleafed deciduous (PF01A) and contains evidence of soil saturation.

**ALTERNATIVE 2E**

Alternative 2E impacts would result from grading associated with the extension and widening of the deceleration lane for the ramp connecting southbound I-270 to MD 187. Alternative 2E would impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.

**Avoidance** (Wetland W-2/Alt. 2E)

Avoidance of wetland W-2 could only be accomplished by reduction of the width of the exit ramp from southbound I-270 to MD 187 from 2-lanes to 1-lane and maintaining the existing retaining wall along southbound I-270 with construction of an additional 121.9 meter (400 feet) ± long by 1.2 meter (4 feet) (average height) retaining wall at a cost of \$300,000. Because this modification would result in failing levels of service at the ramp diverge, it is not considered a feasible option.

**Minimization** (Wetland W-2/Alt. 2E)

For Alternative 2E, wetland impacts could be reduced by:

- 1) Construction of a 182.9 meter (600 feet) ± long by 21 meter (7 feet) (average height) retaining wall at a cost of \$600,000 adjacent to southbound I-270. Due to excessive cost, this option is not considered feasible.
- 2) Use of a 80 kmh (50 mph) versus 100 kmh (60 mph) design speed for roadside grading in open sections with a slight reduction in cost and some sacrifice in safety.
- 3) Use of a closed section with reduced grading would minimally (less than 0.004 hectares (0.01 Ac.)) reduce the impacts to wetland W-2 with a slight increase in cost and some sacrifice in safety.

**ALTERNATIVE 3E**

Alternative 3E impacts to wetland W-2 would result from the embankment required for the ramp from southbound I-270 to the Rockledge Connector Bridge. Alternative 3E would impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.

**Avoidance** (Wetland W-2/Alt. 3E)

Avoidance of W-2 could be accomplished by maintaining the existing retaining wall and construction of an additional 121.9 meter (400 feet) ± long by 1.2 meter (4 feet) (average height) retaining wall at a cost of \$300,000 adjacent to I-270. Avoidance would also require construction of a 182.9 meter (600 feet) ± long by 7.6 meter (25 feet) (average height) retaining wall at a cost of \$1,500,000 adjacent to the ramp carrying traffic from southbound I-270 to the Rockledge Connector. Due to excessive cost, this option is not considered feasible.

**Minimization** (Wetland W-2/Alt. 3E)

A slight (less than 0.004 hectares (0.01 Ac.)) reduction in impacts to W-2 could be accomplished by replacing the proposed open section with curb and gutter and/or reducing backing, safety grading or slope ratios.

**ALTERNATIVE 3F**

Alternative 3F impacts to wetland W-2 would result from the embankment required for the ramp from southbound I-270 to MD 187. Alternative 3F would impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.



**Avoidance** (Wetland W-2/Alt. 3F)

Avoidance of W-2 could only be accomplished by a southerly shift to the ramp carrying traffic from southbound I-270 to MD 187, while maintaining the existing retaining wall along southbound I-270, resulting in the lengthening of the proposed Rockledge Connector Bridge over I-270 at a cost of \$1,000,000. A reduction of the radius on the loop ramp carrying Rockledge Connector traffic to MD 187/southbound I-270 from a 40 kmh (25 mph) design speed to a 40 kmh (20 mph) design speed would also be required. The resulting horizontal realignment would result in no change to this alternative's impacts to wetland W-1 (0.12 hectares [0.3 Ac.]). Due to excessive cost, this option is not considered feasible.

**Minimization** (Wetland W-2/Alt. 3F)

Minimization of impacts to wetland W-2 with Alternative 3F could be accomplished by construction of a 182.9 meter (600 feet) ± long by 2.7 meter (9 feet) (average height) retaining wall at a cost of \$700,000 adjacent to the proposed ramp. Due to excessive cost, this option is not considered feasible.

**ALTERNATIVE 3G**

Alternative 3G would impact W-2 as a result of the embankment for the ramp from southbound I-270 to MD 187. Alternative 3G would impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.

**Avoidance** (Wetland W-2/Alt. 3G)

Avoidance of W-2 could be accomplished by a southerly shift to the ramp carrying traffic from southbound I-270 to MD 187, resulting in lengthening the proposed Rockledge Connector Bridge over I-270 at a cost of \$1,000,000. The existing retaining wall along southbound I-270 would also need to be retained at its current location, thereby eliminating the buffer and barrier between mainline southbound I-270 and the C-D road. This option is not considered feasible due to excessive costs.

**Minimization** (Wetland W-2/Alt. 3G)

Minimization of the impacted wetland W-2 for Alternative 3G could be accomplished by construction of a 182.9 meter (600 feet) ± long by 3.4 meter (11 feet) (average height) retaining wall at a cost of \$800,000 adjacent to the proposed ramp. This option is not considered feasible due to excessive costs.

**ALTERNATIVE 3H**

Alternative 3H would impact W-2 resulting from embankment associated with an outward shift to the southbound I-270 roadway. Alternative 3H would impact 0.16 hectares (0.4 Ac.) of W-2 on the south side of I-270.

**Minimization** (Wetland W-2/Alt. 3H)

For Alternative 3H, the impacted wetland area could be reduced by construction of a 182.9 meter (600 feet) ± long by 4.0 meter (13 feet) (average height) retaining wall adjacent to southbound I-270 at a cost of \$900,000. This option is not considered feasible due to excessive costs.

**WETLAND W-3**

Wetland 3 (W-3) is located on the north side of I-270, 213.4 meters (700 feet) ± west of MD 187. This wetland is a drainage channel, classified as palustrine emergent persistent (PEM1A) and is of medium value. Soils are saturated with low chroma and mottles.

**ALTERNATIVE 2E**

Alternative 2E grading associated with northbound I-270 shoulder improvements near the proposed northbound I-270 to southbound MD 187 loop ramp would fall just at the edge of W-3. However, since W-3 is mostly within existing right-of-way, it is assumed that the entire area would be impacted. Therefore, Alternative 2E impacts 0.04 hectares (0.1 Ac.) of W-3 on the north side of I-270.

**Avoidance** (Wetland W-3/Alt. 2E)

Construction of a 61.0 meter (200 feet) ± long by 0.9 meter (3 feet) (average height) retaining wall, adjacent to northbound I-270 shoulder improvements, at a cost of \$150,000, would avoid impact to W-3. This option is not considered feasible due to excessive costs.

**Minimization** (Wetland W-3/Alt. 2E)

Minimization of W-3 impacts could be accomplished by one of the two following modifications:

- 1) Use of a 80 kmh (50 mph) versus 100 kmh (60 mph) design speed for roadside grading in open sections with a slight reduction in cost and some sacrifice in safety.

- 410
- 2) Use of a closed section (curb and gutter, concrete barrier) with reduced grading would minimally reduce impacts throughout the wetland area with a slight increase in cost.

### **ALTERNATIVES 3E AND 3F**

Alternatives 3E and 3F are identical in the area of W-3 and would require ramp construction covering the entire area. Alternatives 3E and 3F impact 0.04 hectares (0.1 Ac.) of W-3 on the north side of I-270.

#### **Avoidance** (Wetland W-3/Alts. 3E and 3F)

Avoidance of wetland W-3 could be accomplished by a northerly shift of the proposed 2-lane ramp carrying traffic from MD 187 to Rockledge Connector/Northbound I-270. The horizontal realignment requires construction of a 61.0 meter (200 feet)  $\pm$  long by 4.0 meter (13 feet) (average height) retaining wall at a cost of \$300,000 and would result in 0.06 hectares (0.14 acre) of wetland W-4 being impacted. Avoidance also requires a horizontal realignment of the proposed 1-lane ramp carrying northbound I-270 traffic to the Rockledge Connector, resulting in construction of a 61.0 meter (200 feet)  $\pm$  long by 2.7 meter (9 feet) (average height) retaining wall at a cost of \$250,000. This option is not considered feasible due to the 0.06 hectares (0.14 Ac.) of additional impact to W-4 and to excessive cost.

#### **Minimization** (Wetland W-3/Alts. 3E and 3F)

Construction of a 61.0 meter (200 feet) long by 3.0 meter (10 feet) average height retaining wall at a cost of \$300,000 adjacent to the ramp carrying traffic from MD 187 to Rockledge Connector/northbound I-270 and a 61.0 meter (200 feet) long by 2.7 meter (9 feet) (average height) retaining wall at a cost of \$250,000 adjacent to the ramp carrying northbound I-270 traffic to the Rockledge Connector. This option is not considered feasible due to excessive cost.

### **ALTERNATIVE 3G**

Alternative 3G, similar to Alternatives 3E and 3F, would require ramp construction covering the entire area. Alternative 3G impacts 0.04 hectares (0.1 acre) of W-3 on the north side of I-270.

Avoidance of wetland W-3 could be accomplished by a northerly shift to the proposed 2-lane ramp carrying traffic from MD 187 to Rockledge Connector/Northbound I-270. The horizontal realignment requires construction of a 61.0 meter (200 feet)  $\pm$  long by 3.0 meter (10 feet) average height retaining wall at a cost of \$300,000, resulting in wetland W-4 being impacted. Avoidance also requires a horizontal realignment of the proposed 1-lane ramp carrying

northbound I-270 traffic to the Rockledge Connector, resulting in construction of a 61.0 meter (200 feet) ± long by 1.8 meter (6 feet) (average height) retaining wall at a cost of \$200,000.

**Minimization**

Construction of a 61.0 meter (200 feet) ± long by 1.8 meter (6 feet) average height retaining wall at a cost of \$200,000 adjacent to the ramp carrying traffic from MD 187 to Rockledge Connector/northbound I-270 and a 61.0 meter (200 feet) ± long by 2.4 meter (8 feet) average height retaining wall at a cost of \$200,000 adjacent to the ramp carrying northbound I-270 traffic to the Rockledge Connector.

**WETLAND W-4**

Wetland 4 (W-4) is located northwest of the I-270/MD 187 interchange, and consists of a diked lowland fresh meadow, classified as palustrine emergent persistent (PEM1A) with segments of palustrine open water impoundment (POWZh) and palustrine forested broad leaved deciduous (PF01A) and is of high value. Soils are characterized by low chroma, mottles and saturation.

**ALTERNATIVE 2E**

Alternative 2E would impact W-4 as a result of the embankment for the proposed ramp connecting MD 187 with northbound I-270, as well as the proposed loop ramp for the northwest quadrant. Alternative 2E would impact 0.32 hectares (0.8 Ac.) of W-4 on the north side of I-270.

**Avoidance** (Wetland W-4/Alt. 2E)

Avoidance of W-4 could only be accomplished by construction of a 106.7 meter (350 feet) long bridge at a cost of \$2,800,000. This option is not considered feasible due to excessive cost.

**Minimization** (Wetland W-4/Alt. 2E)

For Alternative 2E, the W-2 impact could be reduced by horizontally realigning the ramps in the northwest quadrant of the MD 187 interchange. The loop ramp carrying northbound I-270 traffic to southbound MD 187 would revise the proposed 76.2 meter (250 feet) radius at a 50 kmh (30 mph) design speed to a 61.0 meter (200 feet) radius at a 40 kmh (25 mph) design speed, thus allowing a southerly shift to the ramp carrying traffic from MD 187 to northbound I-270. The horizontal revision would decrease the wetland W-4 impacts from 0.32 hectares (0.8 acres) to 0.08 hectares (0.2 acres), and the fresh water pond would also be avoided. This modification would

412

also reduce the distance between successive gores on northbound I-270 to 280.4 meters (920 feet); 304.8 meters (1,000 feet) is desirable. Costs with this modification would be approximately 10% less than the base Alternative 2E estimated cost of \$13.6 million.

### WETLAND W-11

Wetland 11 (W-11) is located along the south side of Democracy Boulevard, between I-270 Spur and the Fire Station. This is an intermittent stream/ditch and associated topographic depression, classified as palustrine forested broad leafed deciduous (PF01A). Soils are characterized by low chroma, mottles and saturation. This wetland is of low value.

### ALTERNATIVES 4A AND 4B

Alternatives 4A and 4B would result in some grading impact to W-11, as they propose the widening of Democracy Boulevard to the south in order to provide an acceleration/merge area for the northbound I-270 Spur movement onto eastbound Democracy Boulevard. Alternatives 4A and 4B would impact 0.04 hectares (0.1 Ac.) of W-11 on the south side of Democracy Boulevard.

### Avoidance (Wetland W-11/Alts. 4A and 4B)

Avoidance of wetland W-11 could be accomplished by construction of a 91.4 meters (300 feet) ± long by 2.4 meter (8 feet) (average height) retaining wall at a cost of \$300,000 adjacent to the proposed acceleration lane. This option is not considered feasible due to excessive cost.

### Minimization (Wetland W-11/Alts. 4A and 4B)

For Alternatives 4A and 4B, the impacted wetland area could be reduced by approximately 0.02 hectares (0.05 Ac.) by replacing proposed curb and gutter with a concrete barrier in fill with a steepened grading slope at an additional cost of approximately \$25,000.

### WETLAND W-12

Wetland 12 (W-12) is located in the southeast quadrant of the I-270 Spur/Democracy Boulevard Interchange. This wetland is a shallow topographic depression classified as palustrine emergent persistent, with an intermittently flooded water regime (PEM1A). Soils are characterized by low chroma, mottles and saturation. This wetland is of medium value.

### ALTERNATIVE 4B

Alternative 4B would require ramp construction covering the entire W-12 area. Alternative 4B would impact 0.04 hectares (0.1 Ac.) of W-12 east of the northbound I-270 Spur.

TABLE IV-2

AFFECTED WETLANDS - BY ALTERNATIVE

ALTERNATIVE	AFFECTED WETLANDS (WETLAND NUMBER: AREA)
2E	W-1: 0.08 hectares (0.2 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: 0.04 hectares (0.1 Ac.) W-4: <u>0.32 hectares (0.8 Ac.)</u> Total: 0.60 hectares (1.5 Ac.)
3E	W-1: 0.12 hectares (0.3 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.32 hectares (0.8 Ac.)
3F	W-1: 0.12 hectares (0.3 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.32 hectares (0.8 Ac.)
3G	W-1: 0.12 hectares (0.3 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.32 hectares (0.8 Ac.)
3H	W-1: 0.04 hectares (0.1 Ac.) W-2: <u>0.16 hectares (0.4 Ac.)</u> Total: 0.20 hectares (0.5 Ac.)
4A	W-11: 0.04 hectares (0.1 Ac.)
4B	W-11: 0.04 hectares (0.1 Ac.) W-12: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.08 hectares (0.2 Ac.)

TABLE IV-3

AFFECTED WETLANDS - COMBINATIONS OF ALTERNATIVES

COMBINATIONS OF ALTERNATIVES	AFFECTED WETLANDS (WETLAND NUMBER: AREA)
2E with 3H	W-1: 0.16 hectares (0.4 Ac.) W-2: 0.20 hectares (0.5 Ac.) W-3: 0.04 hectares (0.1 Ac.) W-4: <u>0.32 hectares (0.8 Ac.)</u> Total: 0.72 hectares (1.8 Ac.)
2E with 4A or 4B	W-1: 0.08 hectares (0.2 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: 0.04 hectares (0.1 Ac.) W-4: 0.32 hectares (0.8 Ac.) W-11: 0.04 hectares (0.1 Ac.) W-12: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.68 hectares (1.7 Ac.)
2E with 3H and 4A or 4B	W-1: 0.16 hectares (0.4 Ac.) W-2: 0.20 hectares (0.5 Ac.) W-3: 0.04 hectares (0.1 Ac.) W-4: 0.32 hectares (0.8 Ac.) W-11: 0.04 hectares (0.1 Ac.) W-12: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.80 hectares (2.0 Ac.)
3E, 3F or 3G with 4A or 4B	W-1: 0.12 hectares (0.3 Ac.) W-2: 0.16 hectares (0.4 Ac.) W-3: 0.04 hectares (0.1 Ac.) W-11: 0.04 hectares (0.1 Ac.) W-12: <u>0.04 hectares (0.1 Ac.)</u> Total: 0.40 hectares (1.0 Ac.)

TABLE IV-4

AFFECTED WETLANDS - BY AREA

AFFECTED WETLAND	LOCATION	ALTERNATIVE AND IMPACTED AREA IN HECTARES
W-1	North and South of I-270, 2200 feet± West of MD 187	2E: 0.08 (0.2 Ac.) 3E: 0.12 (0.3 Ac.) 3F: 0.12 (0.3 Ac.) 3G: 0.12 (0.3 Ac.) 3H: 0.04 (0.1 Ac.)
W-2	South Side of I-270, West of MD 187	2E: 0.16 (0.4 Ac.) 3E: 0.16 (0.4 Ac.) 3F: 0.16 (0.4 Ac.) 3G: 0.16 (0.4 Ac.) 3H: 0.16 (0.4 Ac.)
W-3	North Side of I-270, 700 feet± West of MD 187	2E: 0.04 (0.1 Ac.) 3E: 0.04 (0.1 Ac.) 3F: 0.04 (0.1 Ac.) 3G: 0.04 (0.1 Ac.)
W-4	Northwest of the I-270/MD 187 Interchange	2E: 0.32 (0.8 Ac.)
W-11	West of the Fire Station on Democracy Boulevard	4A: 0.04 (0.1 Ac.) 4B: 0.04 (0.1 Ac.)
W-12	Southeast Quadrant of the I-270 Spur/Democracy Boulevard Interchange	4B: 0.04 (0.1 Ac.)



**Avoidance** (Wetland W-12/Alt. 4B)

Avoidance of W-12 could only take place with an easterly shift of the proposed CD road. The resulting horizontal CD road shift would lengthen the Democracy Boulevard Bridge over I-270 Spur by 22.9 meters (75 feet) at a cost of \$1,300,000, create the need for right-of-way acquisition in the southeast quadrant of I-270 Spur/Democracy Interchange and necessitate drainage channel relocation along the northbound to eastbound ramp. Based on cost and additional impacts, this option is not considered feasible.

**Minimization** (Wetland W-12/Alt. 4B)

For Alternative 4B, the impacted wetland area could be reduced by construction of a 61.0 meter (200 feet) ± long by 3.0 meter (10 feet) (average height) retaining wall at a cost of \$250,000. This option is not considered feasible due to excessive cost.

As described in Section III.D., various combinations of the build alternatives, including those that impact wetlands, are possible. The resulting total wetland areas impacted by all possible wetland impacting alternatives combinations are provided in Table IV-4.

**b. Wildlife, Terrestrial and Aquatic Habitats**

The no-build alternative would have no further effect on wildlife in the study area beyond what has already occurred with the extensive development in the corridor.

The most substantial effect of the build alternatives on wildlife along the corridor would be in the removal and alteration of vegetation. The destruction of naturally existing vegetation -- hedgerows, forest and fields -- along the road affects erosion and sediment control and alters the habitat for birds, mammals and insects. The loss of habitat is typically accompanied by a proportional loss in wildlife populations inhabiting these areas based upon its holding capacity.

Reduction in populations and diversity of species due to the build alternatives would be, in large part, proportional to the area affected by each alternative, factoring in the condition that so much of the study area is already developed. The disturbed habitat would not be densely populated due to its proximity to the existing highway.

The number and total size of woodland areas affected by each alternative is indicated in Table IV-5 below.

**TABLE IV-5**  
**AFFECTED WOODLAND/FORESTED AREAS**

<b><u>BUILD ALTERNATIVE</u></b>	<b><u>AREA AFFECTED</u></b>
2E	3.2 hectares (7.8 Ac.){4}*
3E	4.8 hectares (11.9 Ac.){4}
3F	5.8 hectares (14.3 Ac.){6}
3G	4.7 hectares (11.7 Ac.){6}
3H	1.7 hectares (4.3 Ac.){4}
4A	1.1 hectares (2.6 Ac.){3}
4B	2.4 hectares (6.0 Ac.){4}
4C	0.8 hectares (2.1 Ac.){3}
4D	1.0 hectares (2.4 Ac.){2}
5B	1.7 hectares (4.2 Ac.){2}
6B	1.5 hectares (3.6 Ac.){5}

\* Number in braces indicates the number of contiguous woodland sites associated with the affected acreages.

Note: 2C, 2D and 5C each affect less than 10,000 S.F. of Forested Area

The State Forest Conservation Act of 1991 includes Section 2 (the "Reforestation Act") which requires the minimization of cutting or clearing trees, replacement of wooded areas affected and/or contributions to a Reforestation Fund for highway construction projects. The build alternatives for this project would comply with the Forest Conservation Act.

The study area does not contain any Prime or Unique Farmland or Farmland of Statewide Importance as classified by the U.S. Department of Agriculture.

**c. Threatened and Endangered Species**

Coordination with the U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources indicates that no federally listed threatened or endangered species are known to inhabit the study area and therefore, would not be affected by the build alternatives.

**F. Noise Impacts**

**1. Noise Prediction Methodology**

**a. Federal Highway Administration Standards**

The effects of noise from the proposed roadways are judged in accordance with the Federal Highway Administration as established by 23 Code of Federal Regulations (CFR) part 772. The FHWA criteria shown in Table IV-6 are based on specific land uses and are used in determining the need for studying noise attenuation. All locations within the study area are of land use category B, which has a design noise level of 67 dBA.

TABLE IV-6

**NOISE ABATEMENT CRITERIA**  
**(SPECIFIED IN 23CFR 772)**

<b><u>LAND USE CATEGORY</u></b>	<b><u>DESIGN NOISE LEVEL - Leq</u></b>	<b><u>DESCRIPTION OF LAND USE CATEGORY</u></b>
A	57 dBA (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and preservation of those qualities is essential if the area is to continue its intended purpose. Such areas could include amphitheaters, particular parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 dBA (exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, playgrounds, active sports areas, and parks.
C	72 dBA (exterior)	Developed lands, properties or activities not included in categories A or B above.
D	None Prescribed	Land which is undeveloped on the date of public knowledge of the project, and on which no known future development is planned.
E	52 dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

In this assessment, noise levels are presented in terms of the A-weighted equivalent sound level, abbreviated here as Leq. Leq is a single number representation of the actual fluctuating sound level that accounts for all sound energy during a given period of time. The units of Leq are A-weighted decibels or dBA. The A-weighting means that the sound level is measured in a method that approximates the response of the human ear with de-emphasis of the low and very high frequencies and emphasis on the mid-frequency range. In order to give a sense of

perspective to the noise levels discussed, a quiet rural night would register about 25 dBA, a quiet suburban nighttime about 60 dBA, a noisy daytime about 80 dBA, a gas mower at 30.5 m (100 feet) about 70 dBA and a diesel truck at 15.2 m (50 feet) about 85 dBA. Under typical field conditions, noise level changes of 2-3 dBA are barely perceptible, whereas a change of 5 dBA is readily noticeable. A 10 dBA increase in noise level is judged by most people as a doubling of sound loudness (This information is presented in the Fundamentals and Abatement of Highway Traffic Noise by Bolt, Beranek and Newman, Inc. for the FHWA, 1980).

The FHWA criteria states that noise impacts occur when predicted noise levels for the design year approach or exceed 67 dBA, or when predicted noise levels are substantially higher than existing ambient levels. The Maryland State Highway Administration's Noise Policy Guidelines characterize a substantial increase as 10 dBA or greater. Under the SHA policy, once an impact has been identified, feasibility and reasonability of noise mitigation measures must be determined. Mitigation measures are considered reasonable and feasible if:

- A) the mitigation measure is effective; that is, it provides a 7-10 dBA attenuation as a primary design goal,
- B) the mitigation measure is cost effective - approximately \$40,000 per impacted and benefitted residence,
- C) the difference between design year build and no-build noise levels is 5 dBA or greater, and
- D) the mitigation measure is acceptable to affected property owners.

An impacted residence is considered benefitted if it will receive a 5 dBA reduction in noise level (insertion loss). Additional consideration is given to schools, religious sites such as churches, and recreational facilities such as parks. For this study, an impacted and benefitted church counts as 5 residences, and impacted and benefitted swimming pools and tennis courts count as 1 residence per 38.1 m (125 feet) of linear distance of noise sensitive use area parallel to highway. A total cost of \$177.97 per square meter (\$16.54 per square foot) is assumed to estimate the total barrier cost, which conforms to the SHA Noise Policy Guidelines.

## b. Noise Prediction Methodology Using FHWA Model

The method used to model noise levels was developed by the Federal Highway Administration of the U.S. Department of Transportation. This method utilizes an experimentally and statistically determined reference sound level for each of the 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 the number of vehicles and the average vehicle speed; 2) distance adjustments comparing a reference and actual distance between receiver and roadway; and 3) adjustments for ground softness and for various types of physical barriers that would reduce noise transmission from source (roadway) to receiver.

Noise level modeling for this analysis was performed with the computer adaptation of the FHWA model, STAMINA 2.0/OPTIMA. Traffic counts were taken during the 15-minute ambient measurements and were used for calibration.

Traffic information for this analysis was obtained through the Maryland State Highway Administration, Project Planning Division. The Design Hour Volume (DHV), which produced the highest noise levels, was used in this study to represent the worst case condition.

## 2. Noise Prediction Results

Noise levels projected for the design year 2020 build and no-build alternatives are shown in Table IV-7. All projected noise levels are exterior maximum Leq noise levels. At impacted NSA's, mitigation was investigated by analyzing noise barriers. Results of noise mitigation barrier analysis, including feasibility and cost-effectiveness, are shown in Table IV-8.

Each noise sensitive area will be reevaluated following development of final engineering to verify that effective and reasonable solutions can be implemented. During final engineering, the specific horizontal and vertical location of the proposed highway will be established, and detailed mitigation alternatives will be examined at each location. The cost of mitigation for each noise sensitive area will be determined based on these detailed studies. Those barriers that meet the SHA criteria as accepted by FHWA will be constructed. The noise policy and criteria are currently under review. Once new criteria have been established, an evaluation of barriers will be completed.

**TABLE IV-7  
PROJECTED NOISE LEVELS (Leq dBA)**

**NSA-A**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-1	72	72	72	72	72	72	72	72	72	72	72	72	72	72
R-1A	66	66	66	66	66	66	66	66	66	66	66	66	66	66
R-2	66	66	66	66	66	66	66	66	66	66	66	66	66	66

**NSA-B**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-3	67	67	67	67	67	67	67	67	66	66	66	66	67	65
R-4	70	70	70	70	70	70	70	71	69	68	68	69	70	68
R-5	75	75	75	75	75	75	75	75	74	75	75	75	75	75
R-6	72	72	72	72	72	72	72	72	72	72	72	72	72	72
R-7	69	69	69	69	69	69	69	70	70	70	70	69	69	69

**NSA-C**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-8	68	68	68	68	68	68	68	71	68	68	68	68	70	67
R-9	71	71	71	71	71	71	71	74	71	71	71	71	71	70

**NSA-D**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-10	64	64	64	62	62	62	64	64	64	64	64	64	64	62

**NSA-E**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-11	76	76	76	76	76	76	76	76	76	76	76	76	76	76
R-12	73	73	73	73	73	73	73	73	73	73	73	73	73	73
R-12A	71	71	71	71	71	71	71	71	71	71	71	71	71	71
R-13	74	74	74	74	74	74	74	74	74	74	74	74	74	74

IV-35

421

**TABLE IV-7 (CONT.)  
PROJECTED NOISE LEVELS (Leq dBA)  
NSA-F**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-14	72	72	72	72	72	72	72	72	72	72	72	72	72	72
R-15	70	70	70	70	70	70	70	70	70	70	70	70	70	70
R-16	71	71	71	71	70	71	71	71	71	71	71	71	71	71
R-17	71	73	71	71	71	71	71	71	71	71	71	71	71	71

**NSA-G**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-18	72	71	71	72	72	72	72	72	72	72	72	72	72	72
R-19	74	74	74	74	74	74	73	74	74	74	74	74	74	74

**NSA-H**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-20	65	65	65	62	63	63	64	65	65	65	65	64	65	62
R-21*	60	60	60	52	55	56	58	60	60	60	60	59	60	53
R-21A*	63	63	63	55	57	57	61	63	63	63	63	63	63	55
R-22	73	73	73	64	62	62	71	73	73	73	73	72	73	64
R-23	73	73	73	70	68	68	72	73	73	73	73	72	73	70
R-25	71	71	71	71	70	70	70	71	71	71	71	71	71	71

**NSA-I**

RECEPTOR	2020 NO BUILD	ALT. 2D BUILD	ALT. 2E BUILD	ALT.3E BUILD	ALT.3F BUILD	ALT.3G BUILD	ALT. 3H BUILD	ALT. 4A BUILD	ALT. 4B BUILD	ALT. 4C BUILD	ALT. 4D BUILD	ALT. 5B BUILD	ALT. 5C BUILD	ALT.6B BUILD
R-24	75	75	75	75	75	75	75	75	75	75	75	74	74	75
R-24A	73	73	73	73	73	73	73	73	73	73	73	73	73	73
R-24B	74	74	74	74	74	74	74	74	74	74	74	73	73	74
R-24C	71	71	71	69	71	71	71	71	71	71	71	70	70	71

\* INCLUDES SHIELDING FACTORS DUE TO OWNER CONSTRUCTED BERM

IV-36

422

**TABLE IV-8**  
**DESIGN YEAR 2020 NOISE ABATEMENT ANALYSIS SUMMARY**

NOISE SENSITIVE AREAS	BENEFITTED RESIDENCES	NOISE LEVELS RANGE (Leq)				BARRIER			
		AMBIENT	NO BUILD (DESIGN)	BUILD (DESIGN)	WITH BARRIER	LENGTH m(ft.)	HEIGHT m(ft.)	COST (\$)#	COST PER RES. (\$)
A	5	57-67	66-72	66-72	61-66	429.4(1409)	5.5-7.3(18-24)	463,900	92,800
B	38	58-72	67-75	69-75	62-66	1306.6(4287)	3.7-7.3(12-24)	1,344,600	35,400
C*	-	59-67	68-71	67-74	-	-	-	-	-
D*	-	58	64	62-64	-	-	-	-	-
E	44	64-67	71-76	71-75	60-64	1092(3583)	6.1-6.7(20-22)	1,218,200	27,700
F**	55	63-70	70-72	71-72	60-64	1151.1(3777)	3.7-7.3(12-24)	1,462,600	26,600
G*	-	63-68	72-74	72-73	-	-	-	-	-
H-ALT.3E***	10	56-65	60-73	52-69	52-62	532.2(1746)	1.2-5.5(4-18)	399,700	40,000
H-ALT.3G***	10	56-65	60-73	55-68	55-63	434.3(1425)	3.7-5.5(12-18)	394,200	39,500
H-ALT. 3H***	22	56-65	60-73	58-72	55-63	684.2(2245)	6.7-7.3(22-24)	877,700	39,900
I	29	63-64	71-75	71-75	59-64	1052.4(3453)	6.1(20)	1,142,115	39,390

# BASED ON A SQUARE METER COST OF \$177.97(SQUARE FOOT COST OF \$16.54)

\*BARRIER NOT FEASIBLE DUE TO DRIVEWAYS AND INTERSECTIONS

\*\* INCLUDES ST. MARK'S CHURCH AND TENNIS COURTS ON VALERIAN LA.

\*\*\* INCLUDES THE WINDERMERE COMM. POOL AND TENNIS COURTS

11-31

423



**Noise Sensitive Area A**

NSA A includes receptors R-1, R-1A, and R-2, which are located in the Wildwood Hills Community. Alternatives 4A, 4B, 4C, 4D, 5B, and 5C directly affect this area. There is no substantial increase in the no-build to build noise levels, but because these noise levels exceed 67 dBA, a noise mitigation barrier was analyzed for this area. A 429.4 meter (1,409 foot) long noise barrier ranging from 5.5 meters to 7.3 meters (18 feet to 24 feet) in height was studied. The total cost is estimated to be \$463,900, and the total number of benefitted residences is 5. Since the cost per benefitted residence is \$92,800, this barrier does not prove to be cost effective. This area does not meet the current criteria for consideration of a noise barrier.

**Noise Sensitive Area B**

NSA B includes receptors R-3, R-4, R-5, R-6, and R-7, of the Stratton Woods and Bradley Manor communities. This area is affected by Alternatives 4A, 4B, 4C, 4D, 5B, and 5C. Because the design year 2020 build and no-build noise levels exceed 67 dBA, barrier analysis was performed. Thirty-eight residences would benefit from a 1,306.6 meter (4,287 foot) long barrier, with heights ranging from 3.7 meters to 7.3 meters (12 feet to 24 feet). The total estimated cost is \$1,344,600, with a cost per residence of \$35,400. This area does not meet the current criteria for consideration of a noise barrier.

**Noise Sensitive Area C**

NSA C includes R-8 and R-9, which are Stratton Park and a private residence along Democracy Boulevard at Fernwood Road. This site is directly affected by Alternatives 4A, 4B, 4C, 4D, 5B, and 5C. Although 2020 no-build and build noise levels exceed 67 dBA, noise barriers are not feasible at this area due to roadway intersections and private driveways along Democracy Boulevard. Therefore, no barrier analysis was performed at NSA C.

**Noise Sensitive Area D**

NSA D consists of R-10, which is a private residence along Old Georgetown Road at Rockspring Drive. Similar to NSA C, barrier placement at this noise sensitive area is not feasible due to roadway intersections and private driveways. Although this receptor site is directly affected by Alternatives 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C and 6B, 2020 no-build and build noise levels do not differ by more than 2 dBA, and do not exceed 67 dBA.

**Noise Sensitive Area E**

NSA E includes R-11, R-12, R-12A, and R-13. This noise sensitive area, which encompasses the Wildwood Manor community, is affected by Alternatives 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C and 6B. Barrier analysis was performed because 2020 noise levels exceed 67 dBA. A 1,092 meter (3,583 foot) long noise barrier with heights ranging from 6.1 meters to 6.7 meters (20 feet to 22 feet) would benefit 44 residences. The total estimated cost is \$1,218,200, and the estimated cost per residence is \$27,700. This area does not meet the current criteria for consideration of a noise barrier.

**Noise Sensitive Area F**

NSA F includes R-14, R-15, R-16, and R-17 of the Timberlawn community. The alternatives which affect this site are 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C and 6B. Barrier analysis was performed for this area because no-build and build noise levels for the design year 2020 exceed 67 dBA. A 1,151.1 meter (3,777 foot) long noise barrier with heights ranging from 3.7 meters to 7.3 meters (12 feet to 24 feet) was studied. The total estimated cost is \$1,462,600, and the cost per residence is \$26,600. The total number of benefitted residences is 55, which includes St. Mark's Church and tennis courts adjacent to Valerian Lane. This area does not meet the current criteria for consideration of a noise barrier.

**Noise Sensitive Area G**

This NSA consists of R-18 and R-19, adjacent to Old Georgetown Road at Tuckerman Lane. This area is directly affected by Alternatives 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C and 6B. Although noise levels at this area exceed 67 dBA for the design year 2020, noise mitigation barriers are not feasible at this site due to roadway intersections and private driveways. Therefore, no barrier analysis was performed for this area.

**Noise Sensitive Area H**

This NSA consists of the Windermere community, which includes R-20, R-21, R-21A, R-22, R-23, and R-25. Alternatives 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C and 6B affect this site, and 2020 no-build and build noise levels exceed 67 dBA. Three barriers were analyzed for this NSA, to accommodate the differing projected noise levels of Alternatives 3E, 3G, and 3H. This area does

not meet the current criteria for consideration of a noise barrier.

For Alternative 3E, a 532.2 meter (1,746 foot) long barrier with heights ranging from 1.2 meters to 5.5 meters (4 feet to 18 feet) would benefit 10 residences. A portion of this wall is atop a retaining wall adjacent to Ramp D. The total estimated cost would be \$399,700, and the cost per benefitted residence would be \$40,000.

A 434.3 meter (1,425 foot) long barrier was studied for Alternative 3G, and it would benefit 10 residences as well. This barrier would range from 3.7 meters to 5.5 meters (12 to 18 feet) and would cost \$39,500 per benefitted residence. A portion of this wall is atop a retaining wall adjacent to Ramp D. The total estimated cost would be \$394,200.

For Alternative 3H, a 684.2 meter (2,245 foot) long barrier with heights ranging from 6.7 meters to 7.3 meters (22 to 24 feet) would cost \$877,700. With 22 benefitted residences, the cost per residence would be \$39,900.

**Noise Sensitive Area I**

This NSA consists of 4 receptors sites on Earls Gate Lane, R-24, R-24A, R-24B, and R-24C in the Windermere community. Alternatives 2D, 2E, 3E, 3F, 3G, 3H, 5B, 5C, and 6B directly affect this site. Noise levels for the 2020 design year exceed 67 dBA. Barrier analysis calls for a 1,052.4 meter (3,453 foot) long barrier, 6.1 meters (20') high. The total cost is estimated at \$1,142,115.00. This wall would benefit 29 residences with a cost per residence of \$39,390.00. This area does not meet the current criteria for consideration of a noise barrier.

**3. Construction Noise**

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

- Bulldozers and Earth Movers
- Graders
- Front End Loaders

Dump and other Diesel Trucks  
Compressors

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

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

Temporary fencing will be considered in residential areas, where feasible, to screen construction activities.

**G. Air Quality**

**1. Objectives and Type of Analysis**

The air quality analysis has been prepared in accordance with the U.S. Environmental Protection Agency (US EPA), the Federal Highway Administration (FHWA), and the Maryland State Highway Administration (MD SHA) guidelines. Carbon monoxide (CO) impacts were analyzed as the accepted indicator of vehicle-generated air pollution. The years of analysis were 2000 and 2020. The EPA CAL3QHC dispersion model was used to predict carbon monoxide (CO) concentrations at air quality sensitive receptors. These detailed analyses predict air quality impacts from carbon monoxide vehicular emissions for the no-build and build alternatives for each analysis year. Modeled 1-hour and 8-hour average CO concentrations were added to background CO concentrations for comparison to the State and National Ambient Air Quality Standards (S/NAAQS).

**2. Construction Impacts**

The construction phase of the proposed project has the potential to impact the local ambient air quality by generating fugitive dust through activities such as demolition and materials handling. The State Highway Administration has addressed this possibility by establishing "Standard Specifications for Construction and Materials" which specifies procedures to be followed by contractors involved in site work.

The Maryland Air Management Administration was consulted to determine the adequacy of the "Specifications" in terms of satisfying the requirements of the "Regulations of Governing the Control of Air Pollution in the State of Maryland". The Maryland Air Management Administration found the specifications to be consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03 D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area.

**3. Receptor Sites**

Receptors for the microscale CO pollutant diffusion analysis are identical to those used in the noise analysis. These sites are described in Section I.C.7 and indicated on Figures I-9 and III-4 thru III-17.

**4. Results of Microscale Analysis**

The results of the calculations of CO concentrations at each of the sensitive receptor sites for the no-build and build alternatives are shown on Tables IV-9 through IV-17. The values shown consist of predicted CO concentration attributable to traffic on various roadway links plus projected background levels.

The air quality analysis indicates that carbon monoxide impact resulting from the implementation of the no-build or build alternatives would not result in a violation of the 1-hour or 8-hour S/NAAQS of 35ppm and 9ppm, respectively, at any receptor location. Relative comparison of impacts for the no-build versus the build alternatives indicate that implementation of the proposed alternatives would result in a slight increase or decrease in CO concentration depending on alternative alignment, traffic volume and speed, and the location of the specific receptor. Changes in concentrations are less than 1 ppm.

**5. Conformity with Regional Air Quality Standards**

This project is located in Montgomery County which is an air quality non-attainment area for CO and Ozone and has transportation control measures in the state in the State Implementation Plan (SIP). The project conforms with the SIP, as it originates from the conforming Transportation Improvement Program (TIP).

**6. Analysis Inputs**

**a. Traffic Data**

The traffic data used for this *Air Quality Analysis* include average daily traffic volumes (ADT), hourly a.m. and p.m. peak hour volumes, percent daily distributions (diurnal traffic curves), and peak and off-peak vehicle speeds. Traffic data were obtained through the Project Planning Division of the Maryland State Highway Administration for the years 2000 and 2020. Free flow speeds were assumed to be the posted speed limits for Interstate 270, Democracy Boulevard, Tuckerman Lane, and Old Georgetown Road. On other side roads the free flow speeds were assumed to be 30 mph. Signal timing was assumed based on current and future traffic conditions. Signalized intersections were analyzed at the intersections of Old Georgetown Road and Tuckerman Lane, Old Georgetown Road at Rockspring Drive, Democracy Boulevard at Rockledge Drive, Democracy Boulevard at Fernwood Road, Democracy Boulevard at Montgomery Mall Entrance Road, and Democracy Boulevard at Westlake Drive. Because of low ramp traffic volumes, the signalized intersections on Old Georgetown Road and Democracy Boulevard were analyzed assuming free flow links, with a traffic speed of 30 mph.

**b. Vehicular Emissions**

Mobile source emission factors were obtained for us in the CO prediction models using the latest version of the (EPA) Mobile Source Emission Factors Model, MOBILE5a. The emission rates of individual vehicles are influenced by factors such as ambient air temperature, engine temperature, operating mode, average speed, and maintenance. The average emission rate for a fleet of vehicles operating on a highway is further influenced by the composition of the fleet, vehicle type, and vehicle age.

Vehicle CO emission rates increase with decreasing ambient temperatures. An ambient temperature of 20° F was used to determine peak hour impacts, while an average temperature of 35° F was selected to represent the composite hours which together make up the 8-hour average impact. Engine operating temperature is included in the emission rate calculation as that fraction of vehicles operating in the cold or hot start modes. For this analysis FTP starts was assumed. The vehicle fleet mix and age also influence the average fleet emission rates. The fleet mix was assumed based on the average daily truck traffic on I-270, Old Georgetown Road, Democracy Boulevard, and Tuckerman Lane.

Because MOBILE5a cannot currently directly calculate idle emissions factor, the methodology contained in EPA Information Sheet #2 was used. This method uses MOBILE5a to calculate emissions (g/mi) for a speed of 2.5 mph and then multiplies the resulting emissions by 2.5 mph to get idle emission factors in g/hr.

All traffic data used for this analysis can be found in the Air Quality Technical Report for this project.

To estimate the maximum eight-hour average CO concentration, the daily traffic distributions (diurnal traffic curve) were analyzed to determine which consecutive eight-hour period resulted in the highest average traffic volume combined with worst case meteorological conditions. Each hour within the eight-hour period was then analyzed. Free flow travel speed for each link was determined based on the traffic volume in the link with 2 m/sec wind speed and atmospheric stability class D, if before 5 p.m., or 1 m/sec wind speed and atmospheric stability class F, if after 5 p.m. The CO impacts were arranged into a spreadsheet matrix as a function of time, and maximum average hourly CO concentration identified for each receptor/year/scenario combination. Maximum 8-hour averages were calculated in the spreadsheet.

#### **H. Caline3 Analysis**

The mathematical model used to estimate future air quality concentrations was the current version of the EPA CAL3QHC dispersion model. The CAL3QHC dispersion model is a microcomputer-based modeling methodology developed to predict the level of CO or other inert pollutant concentrations from motor vehicles traveling near roadway intersections, under worst case meteorological conditions. CAL3QHC is a consolidation of CALINE3 line source dispersion model and an algorithm that internally estimates the length of queues formed by idling vehicles at signalized intersections. Based on the assumption that vehicles at an intersection are either in motion or in an idling state, the program is designed to predict air pollution concentrations by combining the emissions from both moving and idling vehicles. By including emissions from idling vehicles, CAL3QHC represents a more reliable model than CALINE3 alone for predicting CO concentrations near signalized intersections where idling vehicles interact with moving vehicles in complex configurations. Predictions of free flow traffic volumes using either CALINE3 or CAL3QHC would yield equivalent results.

The CAL3QHC CO dispersion model requires that each highway network be broken down into individual roadway links. A link is defined for any change in traffic volume, speed (emission

factor), or geometry. The information provided to the model includes the link end point coordinates, the link types (at grade, depressed, on fill, or structures), the link width for free flow lanes, link width for queue lanes, the average height of the emission release, the average rate of running emissions, average vehicle volume per link. Other input required by the model includes receptor coordinates, averaging time, surface roughness, settling velocity, deposition velocity, and a metric conversion scale factor. Variables held constant throughout the analysis are presented as follows:

**CAL3QHC INPUTS  
HELD CONSTANT FOR INTERSTATE 270**

<u>VARIABLE</u>	<u>VALUE</u>
Average Time	60 Minutes
Surface Roughness	108 cm
Settling Velocity	0.0 cm/second
Deposition Velocity	0.0 cm/second
Scale Factor	0.3048 meters/foot
Source Height	0.0 feet

For direct comparison to the S/NAAQS, CO concentrations were estimated for worst-case one-hour and eight-hour periods. The meteorological conditions which would result in the maximum one-hour concentrations are: (1) conditions of very light wind speeds (1.0 m/sec) and (2) very stable atmospheric conditions (F Stability). The wind direction which results in the maximum receptor concentration is dependent upon roadway/receptor geometrics. In general, for receptors near a limited access or free flow roadway, wind angles nearly parallel to the roadway yield the highest CO concentrations. For receptors near a signalized intersection, wind angles which yield the highest CO concentrations are dependent upon the interaction of moving and idling vehicles, e.g., level of service, signal cycle length, approach link red time, and average speed. The interaction of multiple variables at signalized intersections results in a complex condition which may result in worst case wind angles varying from those nearly parallel to the roadway to those nearly perpendicular to the roadway.

The worst case 1-hour average analyses conducted for this study were performed using the highest one-hour traffic volumes, Stability Class F, and a 1.0 m/sec wind speed. Both a.m. and p.m. peak hours were analyzed. Wind angles were varied in five degree increments through a full 360 degrees. The maximum one-hour CO impact was obtained for each air quality sensitive receptor by adding the background concentration to the one-hour CO receptor-specific



concentration. The maximum CO impacts for each receptor was then compared to the S/NAAQS to determine if any violations of the standards would occur.

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst cast meteorological conditions, the background levels are considered in addition to the levels directly attributable to the facility under consideration.

The background levels were derived from the application of rollback methodology to on-site monitoring conducted by the Maryland Air Management Administration at their Rockville Pike Site in Montgomery County during the period of 1992.

**Background CO, PPM**

	<u>1 Hour</u>	<u>8 Hour</u>
2000	4.4	2.6
2020	4.4	2.6

Data obtained from Maryland Air Quality Data Report 1992

Maryland Department of the Environment  
Air Management Administration  
2500 Broening Highway  
Baltimore, Maryland 21224

TABLE IV-9

YEAR 2000 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 2C, 2D, AND 2E

RECEPTOR	2000 NO-BUILD		2000 ALT. 2C		2000 ALT. 2D		2000 ALT. 2E	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-10	9.8/9.3	4.9	9.8/9.3	4.9	9.9/9.3	4.8	10.4/9.9	5.3
R-11	8.4/8.5	4.0	8.4/8.5	4.0	8.6/8.5	4.1	9.1/8.6	4.1
R-12	7.8/7.5	3.7	7.8/7.5	3.7	7.9/7.6	3.7	8.0/7.5	3.7
R-12a	7.1/6.8	3.6	7.1/6.8	3.6	7.3/6.8	3.6	7.2/6.7	3.6
R-13	7.8/7.7	3.8	7.8/7.7	3.8	7.8/7.6	3.8	8.0/7.8	3.9
R-14	7.0/6.7	3.5	7.0/6.7	3.5	7.0/6.8	3.5	7.2/6.8	3.6
R-15	7.3/7.2	3.7	7.3/7.2	3.7	7.3/7.3	3.6	7.4/6.8	3.6
R-16	8.0/7.9	3.9	8.0/7.9	3.9	8.0/8.1	3.9	7.5/7.0	3.6
R-17	8.7/8.5	4.2	8.7/8.5	4.2	8.5/8.3	4.2	8.4/8.1	4.1
R-18	14.4/12.9	7.3	14.4/12.9	7.3	14.5/13.0	7.4	14.4/13.1	7.4
R-19	12.6/10.7	5.9	12.6/10.7	5.9	12.8/10.8	5.9	13.5/11.0	6.2
R-20	6.7/6.6	3.4	6.7/6.6	3.4	6.7/6.6	3.4	6.7/6.5	3.5
R-21	7.1/6.9	3.5	7.1/6.9	3.5	7.1/7.0	3.6	7.0/6.7	3.5
R-21a	7.1/6.9	3.5	7.1/6.9	3.5	7.1/7.0	3.5	7.0/6.7	3.5
R-22	7.3/7.2	3.7	7.3/7.2	3.7	7.3/7.3	3.7	7.4/7.3	3.6
R-23	7.6/7.3	3.7	7.6/7.3	3.7	7.7/7.5	3.7	7.8/7.6	3.8
R-24	7.0/7.0	3.7	7.0/7.0	3.7	7.0/7.0	3.7	7.2/7.0	3.7
R-24a	6.3/6.4	3.5	6.3/6.4	3.5	6.4/6.4	3.5	6.6/6.4	3.5
R-25	7.3/7.4	3.6	7.3/7.4	3.6	7.5/7.6	3.6	7.7/7.4	3.6

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-10

YEAR 2020 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 2C, 2D, AND 2E

RECEPTOR	2020 NO-BUILD		2020 ALT. 2C		2020 ALT. 2D		2020 ALT. 2E	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-10	11.1/14.1	5.9	11.1/14.1	5.9	11.2/14.3	5.9	10.3/12.4	5.9
R-11	8.2/8.5	4.0	8.2/8.5	4.0	8.2/8.5	4.1	8.7/8.4	4.0
R-12	7.5/7.6	3.8	7.5/7.6	3.8	7.5/7.6	3.8	7.6/7.3	3.7
R-12a	6.9/6.8	3.6	6.9/6.8	3.6	6.9/6.8	3.6	6.9/6.7	3.6
R-13	7.6/7.7	3.6	7.6/7.7	3.6	7.6/7.9	3.9	7.7/7.5	3.8
R-14	7.4/7.5	3.7	7.4/7.5	3.7	7.4/7.5	3.7	7.0/7.2	3.6
R-15	7.7/7.7	3.8	7.7/7.7	3.8	7.7/7.6	3.8	7.1/7.2	3.7
R-16	7.9/8.2	4.1	7.9/8.2	4.1	8.0/8.3	4.1	7.2/7.1	3.7
R-17	9.4/10.7	4.7	9.4/10.7	4.7	9.3/10.6	4.6	8.4/8.8	4.3
R-18	13.5/12.8	7.9	13.5/12.8	7.9	13.6/13.0	7.6	13.6/13.0	7.6
R-19	12.7/14.0	6.1	12.7/14.0	6.1	12.7/13.9	6.1	13.4/12.7	6.4
R-20	6.9/8.7	3.8	6.9/8.7	3.8	6.9/8.9	3.8	6.8/7.7	3.6
R-21	7.0/7.8	3.7	7.0/7.8	3.7	6.9/7.8	3.7	6.9/7.6	3.5
R-21a	7.0/7.8	3.6	6.9/7.8	3.6	6.9/7.8	3.6	6.9/7.7	3.5
R-22	7.4/7.8	3.7	7.4/7.8	3.7	7.3/7.8	3.8	7.3/7.5	3.7
R-23	7.4/7.8	3.8	7.4/7.8	3.8	7.4/7.9	3.8	7.6/7.3	3.7
R-24	6.8/7.1	3.7	6.8/7.1	3.7	6.8/7.1	3.7	6.9/7.1	3.7
R-24a	6.4/6.6	3.5	6.4/6.6	3.5	6.5/6.6	3.5	6.5/6.6	3.5
R-25	7.4/7.4	3.7	7.4/7.4	3.7	7.5/7.5	3.7	7.4/7.3	3.6

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-11

YEAR 2000 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 3E, 3F, AND 3G

RECEPTOR	2000 NO-BUILD		2000 ALT. 3E		2000 ALT. 3F		2000 ALT. 3G	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-10	9.8/9.3	4.9	9.0/8.6	4.8	8.9/8.5	4.8	9.0/8.7	4.8
R-11	8.4/8.5	4.0	9.9/8.7	4.2	9.2/8.9	4.4	9.6/8.7	4.2
R-12	7.8/7.5	3.7	8.4/7.9	3.9	8.1/7.9	4.0	8.1/7.6	3.9
R-12a	7.1/6.8	3.6	7.2/7.1	3.6	7.3/7.1	3.5	7.2/7.1	3.6
R-13	7.8/7.7	3.8	8.6/8.0	3.8	8.4/8.1	4.1	8.6/8.0	3.9
R-14	7.0/6.7	3.5	7.2/7.0	3.6	7.1/6.9	3.6	7.3/6.9	3.6
R-15	7.3/7.2	3.7	7.9/7.1	3.7	7.6/7.6	3.8	7.2/7.0	3.6
R-16	8.0/7.9	3.9	8.4/8.0	3.9	8.6/8.3	4.1	7.7/7.7	3.8
R-17	8.7/8.5	4.2	10.0/9.1	4.4	10.5/9.5	4.5	9.1/9.0	4.2
R-18	14.4/12.9	7.3	14.4/14.1	7.8	14.4/14.1	7.7	14.4/14.1	7.8
R-19	12.6/10.7	5.9	12.7/12.4	6.1	12.7/12.4	5.5	12.7/12.4	6.1
R-20	6.7/6.6	3.4	6.7/6.5	3.5	6.7/6.6	3.4	6.7/6.6	3.5
R-21	7.1/6.9	3.5	7.5/7.3	3.6	8.3/8.2	4.3	7.8/7.0	3.7
R-21a	7.1/6.9	3.5	7.9/7.6	3.6	7.8/8.0	4.0	7.8/7.0	3.6
R-22	7.3/7.2	3.7	8.4/7.9	3.9	9.4/8.8	4.3	10.1/8.4	4.2
R-23	7.6/7.3	3.7	8.0/7.6	3.7	9.0/8.7	4.2	8.8/8.2	3.8
R-24	7.0/7.0	3.7	7.5/7.6	3.9	7.2/7.3	3.6	7.1/7.4	3.8
R-24a	6.3/6.4	3.5	6.8/6.8	3.6	6.9/6.7	3.5	6.7/6.4	3.5
R-25	7.3/7.4	3.6	7.7/7.5	3.7	8.1/8.3	4.0	7.9/7.6	3.7

## NOTES:

1-hour average CO concentrations include a 4.4 ppm background concentration

8-hour average CO concentrations include a 2.6 ppm background concentration

The S/NAAQS for the 1-hour average is 35.0 ppm.

The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-12

YEAR 2020 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 3E, 3F, AND 3G

RECEPTOR	2020 NO-BUILD		2020 ALT. 3E		2020 ALT. 3F		2020 ALT. 3G	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-10	11.1/14.1	5.9	8.6/10.1	4.6	8.7/9.8	4.8	8.8/10.3	4.6
R-11	8.2/8.5	4.0	9.4/10.4	4.2	9.2/9.3	4.4	9.8/10.6	4.2
R-12	7.5/7.6	3.8	7.9/8.9	3.8	7.8/8.1	3.9	8.1/9.1	3.8
R-12a	6.9/6.8	3.6	7.0/7.7	3.6	7.1/6.9	3.5	7.1/7.7	3.6
R-13	7.6/7.7	3.6	8.5/9.3	3.8	8.0/8.3	4.1	9.5/9.8	3.9
R-14	7.4/7.5	3.7	7.0/7.7	3.5	6.9/6.9	3.8	7.2/7.8	3.6
R-15	7.7/7.7	3.8	7.6/8.3	3.6	7.7/7.7	3.8	8.0/8.3	3.6
R-16	7.9/8.2	4.1	8.5/8.9	3.8	8.7/8.2	4.1	9.5/8.9	3.7
R-17	9.4/10.7	4.7	10.1/10.2	4.2	10.2/9.5	4.5	10.6/10.3	4.1
R-18	13.5/12.8	7.9	13.3/16.1	7.4	13.3/13.9	7.2	13.3/16.1	7.3
R-19	12.7/14.0	6.1	12.0/14.6	6.0	12.0/12.8	5.4	12.0/14.6	5.9
R-20	6.9/8.7	3.8	6.6/7.1	3.4	6.9/6.6	3.5	6.7/7.3	3.5
R-21	7.0/7.8	3.7	7.5/7.5	3.9	8.9/8.1	4.4	8.5/7.7	3.7
R-21a	7.0/7.8	3.6	8.2/7.6	4.0	8.2/8.2	4.2	8.6/7.6	3.7
R-22	7.4/7.8	3.7	8.0/8.5	3.9	8.8/8.7	4.4	11.5/9.2	4.2
R-23	7.4/7.8	3.8	8.0/8.5	3.8	9.0/8.8	4.2	9.8/9.4	3.9
R-24	6.8/7.1	3.7	7.8/8.1	3.9	7.2/7.2	3.6	7.3/8.0	3.8
R-24a	6.4/6.6	3.5	7.0/7.3	3.6	6.9/6.8	3.5	7.2/7.1	3.5
R-25	7.4/7.4	3.7	7.4/8.1	3.6	7.9/8.2	3.9	8.7/8.6	3.7

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-13

YEAR 2000 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 4A, 4B, 4C, AND 4D

RECEPTOR	2000 NO-BUILD		2000 ALT. 4A3		2000 ALT. 4B		2000 ALT. 4C		2000 ALT. 4D	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-1	7.4/8.0	3.9	7.3/8.0	3.9	7.8/8.3	4.0	7.4/8.3	4.0	7.5/8.1	4.0
R-1a	6.2/6.4	3.4	6.3/7.0	3.5	6.6/6.5	3.5	6.2/7.0	3.5	6.2/7.1	3.5
R-2	8.6/9.4	4.5	8.6/9.2	4.5	8.5/9.2	4.4	8.8/9.3	4.4	9.0/9.6	4.6
R-3	6.5/7.0	3.6	6.5/7.7	3.8	6.9/7.0	3.8	6.3/7.3	3.6	6.4/7.2	3.7
R-4	8.3/8.9	4.2	8.9/9.9	4.5	8.3/8.9	4.4	8.4/8.7	4.3	8.0/8.7	4.3
R-5	7.2/7.3	3.9	7.4/8.7	4.2	7.8/7.5	4.4	7.3/8.2	4.1	7.3/8.3	4.1
R-6	6.0/6.0	3.2	6.0/6.7	3.4	6.1/5.9	3.3	6.0/6.7	3.4	6.0/6.6	3.4
R-7	7.1/6.9	3.9	7.1/6.9	3.9	7.3/7.1	3.8	7.2/6.9	3.8	7.1/7.0	3.9
R-8	8.3/9.2	4.2	9.4/10.2	4.6	8.3/9.2	4.3	8.3/9.2	4.3	8.1/9.1	4.3
R-9	9.4/12.6	5.1	10.3/12.3	5.2	9.6/12.7	5.0	9.4/11.9	5.0	9.6/12.3	5.2

IV-51

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-14

YEAR 2020 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 4A, 4B, 4C, AND 4D

RECEPTOR	2020 NO-BUILD		2020 ALT. 4A3		2020 ALT. 4B		2020 ALT. 4C		2020 ALT. 4D	
	1-HOUR AM/PM	8-HOUR	1-HOUR AM/PM	8-HOUR	1-HOUR AM/PM	8-HOUR	1-HOUR AM/PM	8-HOUR	1-HOUR AM/PM	8-HOUR
R-1	7.3/8.1	4.1	7.4/8.1	4.2	7.5/8.5	4.3	7.5/8.1	4.3	7.5/8.3	4.1
R-1a	6.0/6.5	3.4	6.3/7.2	3.5	6.4/6.9	3.7	6.2/6.8	3.5	6.1/7.0	3.6
R-2	8.8/9.3	4.6	8.9/9.5	4.5	8.8/9.4	4.4	8.9/9.2	4.4	9.4/9.5	4.8
R-3	6.7/7.2	3.9	6.8/7.9	4.1	7.0/7.5	4.1	6.7/7.2	3.9	6.6/7.4	3.9
R-4	8.9/8.8	4.2	9.5/10.0	4.5	8.9/9.0	4.4	8.9/8.6	4.3	8.3/8.7	4.3
R-5	7.2/7.2	4.1	7.3/8.7	4.5	7.6/8.9	4.7	7.2/8.2	4.3	7.2/8.3	4.3
R-6	6.0/6.0	3.4	6.0/6.5	3.5	6.0/6.6	3.4	5.9/6.5	3.5	6.0/6.5	3.5
R-7	7.0/6.9	4.0	7.1/6.8	4.1	7.0/7.4	4.1	7.0/6.9	3.9	7.0/6.9	4.0
R-8	8.7/9.2	4.3	10.0/10.1	4.7	8.7/9.0	4.4	8.9/8.8	4.3	8.6/8.8	4.3
R-9	10.0/13.2	5.8	11.3/12.4	5.3	10.1/11.9	5.2	10.2/12.0	5.3	10.4/12.7	5.5

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-15

YEAR 2000 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 5B, 5C, AND 3H

RECEPTOR	2000 NO-BUILD		2000 ALT. 5B		2000 ALT. 5C		2000 ALT. 3H	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-1	7.4/8.0	3.9	7.4/7.7	3.9	7.4/7.8	4.0	7.4/7.9	4.0
R-1a	6.2/6.4	3.4	6.1/6.4	3.4	6.2/6.4	3.4	6.2/6.4	3.4
R-2	8.6/9.4	4.5	8.5/8.9	4.3	8.5/9.2	4.5	8.6/9.2	4.5
R-3	6.5/7.0	3.6	6.1/6.7	3.5	6.4/6.9	3.6	6.5/7.0	3.6
R-4	8.3/8.9	4.2	7.7/8.6	4.0	8.2/8.8	4.2	8.3/8.8	4.2
R-5	7.2/7.3	3.9	7.1/7.3	3.9	7.2/7.3	3.9	7.2/7.3	3.9
R-6	6.0/6.0	3.2	6.1/6.0	3.2	6.0/6.0	3.2	6.0/6.0	3.2
R-7	7.1/6.9	3.9	6.9/6.9	3.8	7.1/7.9	3.9	7.1/6.9	3.9
R-8	8.3/9.2	4.2	7.9/8.9	4.1	8.1/9.1	4.2	8.2/9.2	4.2
R-9	9.4/12.6	5.1	9.2/12.1	5.0	9.4/12.5	5.1	9.4/12.5	5.1
R-10	9.8/9.3	4.9	9.7/9.2	4.8	9.8/9.2	4.9	9.8/9.7	4.9
R-11	8.4/8.5	4.0	8.4/8.3	4.0	8.4/8.5	4.0	8.6/8.3	4.0
R-12	7.8/7.5	3.7	7.8/7.3	3.7	7.8/7.5	3.7	7.7/7.4	3.7
R-12a	7.1/6.8	3.6	7.1/6.8	3.6	7.1/6.8	3.6	7.1/7.0	3.6
R-13	7.8/7.7	3.8	7.8/7.4	3.7	7.8/7.7	3.8	7.9/7.9	3.8
R-14	7.0/6.7	3.5	6.9/6.6	3.5	7.0/6.7	3.5	7.0/8.1	3.6
R-15	7.3/7.2	3.7	7.2/7.2	3.6	7.2/7.2	3.7	7.1/8.1	3.6
R-16	8.0/7.9	3.9	8.0/7.6	3.8	8.0/7.9	3.9	8.0/8.0	4.0
R-17	8.7/8.5	4.2	8.5/8.3	4.1	8.7/8.4	4.2	8.3/8.6	4.0
R-18	14.4/12.9	7.3	14.4/12.9	7.3	14.4/12.9	7.3	14.4/14.1	7.3
R-19	12.6/10.7	5.9	12.6/10.7	5.8	12.6/10.7	5.9	12.6/12.4	5.9
R-20	6.7/6.6	3.4	6.7/6.4	3.4	6.7/6.6	3.4	6.7/6.5	3.4
R-21	7.1/6.9	3.5	7.0/6.8	3.5	7.1/6.9	3.5	6.9/6.8	3.5
R-21a	7.1/6.9	3.5	7.0/6.8	3.4	7.1/6.9	3.5	6.9/6.8	3.5
R-22	7.3/7.2	3.7	7.2/7.2	3.6	7.3/7.2	3.7	7.2/7.2	3.6
R-23	7.6/7.3	3.7	7.5/7.2	3.6	7.6/7.3	3.7	7.5/7.2	3.7
R-24	7.0/7.0	3.7	6.9/7.0	3.7	7.0/7.0	3.7	6.8/6.8	3.6
R-24a	6.3/6.4	3.5	6.4/6.4	3.5	6.4/6.4	3.5	6.3/6.6	3.4
R-25	7.3/7.4	3.6	7.2/7.2	3.5	7.3/7.4	3.6	7.1/7.1	3.6

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQs for the 1-hour average is 35.0 ppm.  
The S/NAAQs for the 8-hour average is 9.0 ppm.



TABLE IV-16

YEAR 2020 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVES 5B, 5C, AND 3H

RECEPTOR	2020 NO-BUILD		2020 ALT. 5B		2020 ALT. 5C		2020 ALT. 3H	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR
R-1	7.3/8.1	4.1	7.3/7.8	4.1	7.3/8.0	4.1	7.3/8.1	4.1
R-1a	6.0/6.5	3.4	6.1/6.5	3.4	6.0/6.4	3.4	6.0/6.4	3.4
R-2	8.8/9.3	4.6	8.6/8.9	4.4	8.6/9.1	4.6	8.0/9.2	4.5
R-3	6.7/7.2	3.9	6.4/6.9	3.7	6.7/7.1	3.9	6.7/7.2	3.9
R-4	8.9/8.8	4.2	8.3/8.7	4.0	8.6/8.8	4.2	8.7/8.8	4.2
R-5	7.2/7.2	4.1	7.1/7.2	4.1	7.2/7.2	4.1	7.2/7.2	4.1
R-6	6.0/6.0	3.4	6.0/6.0	3.4	6.0/6.0	3.4	6.0/6.0	3.4
R-7	7.0/6.9	4.0	6.7/6.8	3.9	7.0/6.8	4.0	7.0/6.9	4.0
R-8	8.7/9.2	4.3	8.2/9.2	4.2	8.4/9.2	4.3	8.7/9.2	4.3
R-9	10.0/13.2	5.8	9.9/12.4	5.6	9.9/13.0	5.8	9.9/13.2	5.7
R-10	11.1/14.1	5.9	9.7/12.1	5.2	11.0/14.1	5.9	9.6/13.9	5.9
R-11	8.2/8.5	4.0	8.1/8.2	3.9	8.1/8.5	4.0	8.3/8.5	4.1
R-12	7.5/7.6	3.8	7.5/7.5	3.7	7.5/7.5	3.8	7.3/7.6	3.8
R-12a	6.9/6.8	3.6	6.9/6.8	3.6	6.9/6.8	3.6	6.9/6.8	3.6
R-13	7.6/7.7	3.6	7.3/7.5	3.7	7.6/7.7	3.6	7.5/7.8	4.0
R-14	7.4/7.5	3.7	6.8/6.9	3.5	7.4/7.4	3.7	7.4/7.1	3.6
R-15	7.7/7.7	3.8	7.0/7.1	3.6	7.7/7.6	3.8	7.7/7.4	3.8
R-16	7.9/8.2	4.1	7.8/7.8	3.9	7.9/8.2	4.1	7.8/8.1	4.0
R-17	9.4/10.7	4.7	8.1/9.4	4.2	9.2/10.6	4.7	8.6/10.6	4.5
R-18	13.5/12.8	7.9	13.5/12.8	7.9	13.5/12.8	7.9	13.5/12.8	7.9
R-19	12.7/14.0	6.1	12.7/12.9	6.1	12.7/14.0	6.1	12.7/13.8	6.1
R-20	6.9/8.7	3.8	6.7/8.3	3.6	6.8/8.7	3.8	6.7/8.6	3.9
R-21	7.0/7.8	3.7	6.9/7.6	3.5	7.0/7.8	3.7	6.8/8.5	3.8
R-21a	7.0/7.8	3.6	6.9/7.5	3.5	7.0/7.8	3.6	6.8/8.6	3.8
R-22	7.4/7.8	3.7	6.8/7.4	3.6	7.4/7.7	3.7	7.0/8.3	3.9
R-23	7.4/7.8	3.8	7.2/7.1	3.7	7.4/7.8	3.8	7.1/8.0	3.8
R-24	6.8/7.1	3.7	6.7/6.9	3.8	6.7/7.0	3.7	6.6/7.0	3.7
R-24a	6.4/6.6	3.5	6.2/6.4	3.5	6.4/6.6	3.5	6.2/6.7	3.5
R-25	7.4/7.4	3.7	7.2/6.9	3.6	7.4/7.4	3.7	7.1/7.4	3.7

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

TABLE IV-17

YEAR 2000 AND 2020 CO CONCENTRATION ESTIMATES (PPM)  
ALTERNATIVE 6B

RECEPTOR	2000 NO-BUILD		2000 ALT. 6B		2020 NO-BUILD		2020 ALT. 6B	
	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM / PM	8-HOUR	1-HOUR AM/PM	8-HOUR
R-1	7.4/8.0	3.9	7.4/7.8	4.0	7.3/8.1	4.1	7.2/8.1	4.1
R-1A	6.2/6.4	3.4	6.1/6.4	3.4	6.0/6.5	3.4	6.0/6.4	3.4
R-2	8.6/9.4	4.5	8.4/9.1	4.5	8.8/9.3	4.6	8.7/9.1	4.6
R-3	6.5/7.0	3.6	6.5/6.8	3.6	6.7/7.2	3.9	6.5/6.9	3.7
R-4	8.3/8.9	4.2	7.4/8.4	4.0	8.9/8.8	4.2	8.0/8.5	4.1
R-5	7.2/7.3	3.9	7.2/7.3	3.9	7.2/7.2	4.1	7.2/7.2	4.1
R-6	6.0/6.0	3.2	6.1/6.0	3.3	6.0/6.0	3.4	5.9/6.0	3.4
R-7	7.1/6.9	3.9	7.3/7.0	3.9	7.0/6.9	4.0	7.1/6.9	4.0
R-8	8.3/9.2	4.2	7.5/8.8	4.1	8.7/9.2	4.3	7.9/8.8	4.2
R-9	9.4/12.6	5.1	8.9/12.4	5.5	10.0/13.2	5.8	9.6/12.8	5.5
R-10	9.8/9.3	4.9	9.0/8.6	4.7	11.1/14.1	5.9	8.6/10.1	4.6
R-11	8.4/8.5	4.0	9.9/8.7	4.2	8.2/8.5	4.0	9.4/10.4	4.2
R-12	7.8/7.5	3.7	8.4/7.9	3.9	7.5/7.6	3.8	7.9/8.9	3.8
R-12a	7.1/6.8	3.6	7.2/7.1	3.6	6.9/6.8	3.6	7.0/7.7	3.6
R-13	7.8/7.7	3.8	8.6/8.0	3.8	7.6/7.7	3.6	8.5/9.3	3.8
R-14	7.0/6.7	3.5	7.2/7.0	3.6	7.4/7.5	3.7	7.0/7.7	3.5
R-15	7.3/7.2	3.7	7.9/7.1	3.7	7.7/7.7	3.8	7.6/8.3	3.6
R-16	8.0/7.9	3.9	8.4/8.0	3.9	7.9/8.2	4.1	8.5/8.9	3.8
R-17	8.7/8.5	4.2	10.0/9.1	4.4	9.4/10.7	4.7	10.1/10.2	4.2
R-18	14.4/12.9	7.3	14.4/14.1	7.8	13.5/12.8	7.9	13.3/16.1	7.4
R-19	12.6/10.7	5.9	12.7/12.4	6.1	12.7/14.0	6.1	12.0/14.6	6.0
R-20	6.7/6.6	3.4	6.7/6.5	3.5	6.9/8.7	3.8	6.6/7.1	3.4
R-21	7.1/6.9	3.5	7.5/7.3	3.6	7.0/7.8	3.7	7.5/7.5	3.9
R-21a	7.1/6.9	3.5	7.9/7.6	3.6	7.0/7.8	3.6	8.2/7.6	4.0
R-22	7.3/7.2	3.7	8.4/7.9	3.9	7.4/7.8	3.7	8.0/8.5	3.9
R-23	7.6/7.3	3.7	8.0/7.6	3.7	7.4/7.8	3.8	8.0/8.5	3.8
R-24	7.0/7.0	3.7	7.6/7.5	3.9	6.8/7.1	3.7	7.7/8.0	3.9
R-24a	6.3/6.4	3.5	6.8/6.7	3.6	6.4/6.6	3.5	6.9/7.2	3.6
R-25	7.3/7.4	3.6	7.7/7.5	3.7	7.4/7.4	3.7	7.4/8.1	3.7

NOTES: 1-hour average CO concentrations include a 4.4 ppm background concentration.  
8-hour average CO concentrations include a 2.6 ppm background concentration.  
The S/NAAQS for the 1-hour average is 35.0 ppm.  
The S/NAAQS for the 8-hour average is 9.0 ppm.

**V. COMMENTS AND COORDINATION**

V. COMMENTS AND COORDINATION

PROJECT MEETINGS AND COORDINATION

An Alternates Public Meeting was held on March 3, 1988 at Walter Johnson High School in Bethesda, Maryland. Ten alternates for interchanges at MD 187, a new Rockledge Drive connector, Democracy Boulevard and Fernwood Road were presented to the public for its review and comment. Approximately 100 citizens attended the meeting. In general, citizens recognized the need for the project, but objected to the proposed development in the Davis Tract. Citizens requested that noise barriers and landscaping be provided to minimize noise impacts, including the St. Mark Church location.

Because SHA did not want to proceed with new interchange studies without an approved Master Plan, the project was put on hold until the Master Plan was approved in 1992.

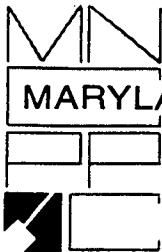
A Supplemental Alternates Public Meeting was held on June 8, 1994 at Walter Johnson High School in Bethesda, Maryland. Twelve alternates for interchanges at MD 187, a new Rockledge connector, Democracy Boulevard, Fernwood Road and the I-270 Y-Split were presented to the public for its review and comment. Approximately 150 citizens attended the meeting. Alternates 3A and 3B and 6A and 6B were more supported than alternates 4A, 4B, 4C, and 4D. Citizens requested that noise barriers be provided to minimize noise impacts, including the St. Mark Church location. Citizens requested that pedestrian access be considered at MD 187 and at Rock Spring Drive. They also requested that a transit option be considered.

The project was discussed at two Quarterly Interagency Meetings. On October 21, 1992, a project update was presented. SHA indicated that additional traffic data was being developed for the interchanges and would be included in the project purpose and need in the future. Representatives from National Marine Fisheries Service, Maryland Historical Trust, Environmental Protection Agency, and Baltimore Metropolitan Council were present. The agencies requested a status update of the inside widening projects occurring within the same location and any development plans.

On October 19, 1994, the project purpose and need and preliminary alternates were presented. The alternates included 2A, 2B, 3A, 3B, 4A, 4B, 4C, 4D, 5B, 5C, 6A, 6C, and HOV connections from Grosvenor Lane bridge to I-270. Representatives from Environmental Protection Agency, the U.S. Army Corps of Engineers, the Maryland Office of Planning, the

Department of Natural Resources, and the Maryland Historical Trust were present. SHA requested agency concurrence that the combined NEPA/404 process would not be required.

The U.S. Army Corps of Engineers requested quantification of length of stream impacted, and subsequently concurred that the combined NEPA/404 process would not be required (see correspondence) conditioned upon a field review and further consultation with SHA. While an interagency field review was conducted in December, 1994, a wetland jurisdictional field review was held on July 18, 1995 (See correspondence).



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

January 23, 1986

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

BUREAU OF  
PROJECT PLANNING  
JAN 27 9 22 AM '86

RE: Contract No. M 401-153-372 (N)  
I-270, west segment from Y-split  
to south of Maryland Route 191  
P.D.M.S. No. 151104

Dear Mr. Ege:

In response to your letter of January 13, 1986 regarding the above referenced item, I am providing the following material:

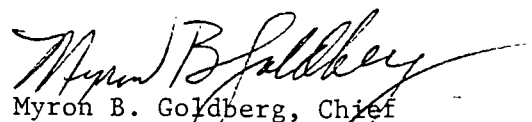
1. Copy of our property survey of Stratton Local Park;
2. Copy of our facilities map showing the layout and types of equipment present in the park. This map should give you a good idea as to how this park is used;
3. Copies of our recorded deeds to the parcels which make up the park; and
4. A copy of a street map showing Stratton Park and the neighborhood it is intended to serve.

With regards to your question of what funding sources were used in creating this park, be advised that both Maryland's Program Open Space and HUD's Open Space Land Program contributed monies to acquire this parkland. Commission bond monies were used to fund the development while maintenance costs are covered by the Commission's operating budget.

In response to your question of the significance of Stratton Park to the local community and whether or not it is critical to the community's recreational needs, I can only respond by saying that Stratton Park is indeed both significant and critical to the recreation needs of the community it serves. Stratton Park is the only local park serving the residential neighborhood of Bethesda which is bounded on the north by Democracy Boulevard, on the east by Old Georgetown Road, on the south by the Capital Beltway, and on the west by I-270. This situation is evident when looking at the enclosed street map which has these major roadways highlighted in yellow.

If I can provide additional information concerning this matter, please let me know.

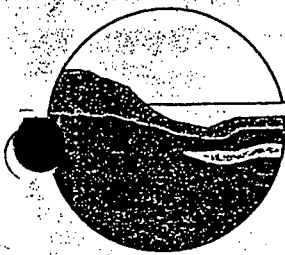
Sincerely,

  
Myron B. Goldberg, Chief  
Park Planning, Engineering  
and Design

\_ MBG:WEG:lmk

Enclosures

cc: Don Cochran, Director of Parks



Maryland Department of Natural Resources

Water Resources Administration  
Tawes State Office Building  
Annapolis, Maryland 21401  
Telephone: (301) 974-2265

William Donald Schaefer  
Governor

Torrey C. Brown, M.D.  
Secretary

James W. Peck  
Director

July 23, 1987

Mr. Ronald T. Burns, P.E.  
Johnson, Mirmiran and Thompson, P.A.  
810 Gleneagles Court - Suite 200  
Baltimore, MD 21204

Re: Interstate 270 at MD Route 187  
Rock Spring Center  
JMT Job No. 86132

Dear Mr. Burns:

This is in response to your inquiry if a Waterway Construction Permit is required on the above referenced project.

We have reviewed the information you submitted and have determined this watershed is Class I Waters and the size of the drainage area for this project is less than 400 acres. We have also examined the Flood Insurance Rate Map for Montgomery County and do not find any of the project area included in an area identified as having a special flood hazard.

Based on these considerations, a Waterway Construction Permit is not required from the Water Resources Administration.

Thank you for allowing us an opportunity to review and provide comments on this project.

Sincerely,

*Stan Wong*

Stan Wong  
Chief, Waterway Permits Division

SW:MMG:das

cc: WRA Enforcement Division

*Cathy Pecora*

RECEIVED

*ROA*  
JUL 27 1987

*DAN*

JOHNSON, MIRMIAN & THOMPSON

87113

*L Jack for Me*





United States Department of the Interior

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

448  
RECEIVED

ALLS  
Bone  
Jan

JOHNSON, MIRMIRAN & THOMPSON

86132

August 7, 1987

Mr. Ronald T. Burns  
Johnson, Mirmiran and Thompson, P.A.  
810 Gleneagles Court  
Baltimore, Maryland 21204

Dear Mr. Burns:

This responds to your July 9, 1987 request for information on the presence of Federally listed endangered or threatened species within the area of the proposed interchange improvements to I-270 at Maryland Route 187, Montgomery County, Maryland.

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

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

Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Judy Jacobs of our Endangered Species staff at (301) 269-5448.

Sincerely yours,

G. A. Kinser

for Glenn Kinser  
Supervisor  
Annapolis Field Office

Don Sparklin

449



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
PRO. BOX 1715  
BALTIMORE, MD-21203-1715  
DEVELOPMENT  
DIVISION

REPLY TO  
ATTENTION OF

JAN 5 9 11 AM '94

Operations Division JAN 5 9 11 AM '94

Subject: MD SHA/I-270 AT MD 187 AND I-270 SPUR AT DEMOCRACY BLVD

Maryland State Highway Administration  
Attn: Mr. Louis Ege, Jr.  
707 North Calvert Street  
Baltimore, Maryland 21202

Dear Mr. Ege:

I am replying to the December 1, 1994 field review which was conducted by State Highway Administration (SHA) representatives to discuss the I-270 spur upgrade at Democracy Boulevard and Old Georgetown Roads, in Montgomery County, Maryland.

After reviewing potential impacts to waters of the United States, including wetlands, occurring from the subject project, this office has concluded that it will not be necessary to carry the project through the NEPA/404 process.

We entreat the SHA to continue future presentations of proposed projects at monthly Interagency meetings so that a determination, such as the subject project, can be achieved as to whether the project needs to follow the NEPA/404 process.

Although the subject project will not require NEPA/404 review, it does not exempt SHA from acquiring a Section 404 permit for activities in waters of the United States, including wetlands.

If you have any questions concerning this matter, please call Mr. Arthur Coppola of this office at (410) 962-1723.

Sincerely,

*Paul R. Wittanper*

for Keith A. Harris  
Chief, Special Projects  
Permits Section

cc: MD, DNR  
FWS  
MDE  
MHT

THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117

OFFICE MEMORANDUM

DATE TYPED: July 18, 1995

PROJECT: I-270 at MD 187 and I-270 Spur at Democracy Boulevard

FILE: 0100-190.05

SUBJECT: Wetland Jurisdictional Field Review held on July 13, 1995

PRESENT: Mr. Tom Folsie State Highway Administration - PPD  
 Mr. Bill Carver State Highway Administration - PPD  
 Ms. Anne Elrays State Highway Administration - PPD  
 Mr. Mike Callahan State Highway Administration - Env. Prog.  
 Mr. Art Coppola Army Corps of Engineers  
 Mr. Greg Golden DNR Env. Review  
 Mr. Al Wiedmann MDE/WMA  
 Mr. John Nichols NMFS  
 Dr. Howard Erickson The Wilson T. Ballard Company  
 Mr. Mark Lotz The Wilson T. Ballard Company

A Wetland Jurisdictional Field Review was held on July 13, 1995, starting at 10:00 a.m. This review allowed participants an opportunity to provide comments on wetland and Waters of the U.S. boundaries, established by The Wilson T. Ballard Company, and the alternatives developed in this study. A handout indicating the wetlands, Waters of the U.S., the alternatives and their impacts was provided.

As a general comment, Mr. Golden inquired as to whether this project would include any stormwater management retrofitting. Mr. Lotz responded that the Spur widening project will include a pond filling most of the vacant northwest I-270 Spur/Democracy Blvd. quadrant. The East Segment widening, completed last year, included several infiltration locations.

Mr. Coppola stated that the Corps of Engineers wants to be on record in its request for 1:1 replacement for all Waters of the U.S., and 2:1 or 1:1 replacement for all wetlands, depending upon classification.

The field review began at the Democracy Blvd. interchange, along SB I-270 Spur, proceeded along the NB I-270 Spur to Democracy Blvd., and then to the East Segment. Comments pertaining to each wetland and Waters of the U.S. location are summarized as follows:

Office Memorandum  
July 18, 1995  
Page 2

### U.S. 1

Participants felt it unnecessary to view this location. The upstream side of this stream which is the outfall for the Marietta pond was observed without comment.

### W-1 and W-2

W-1 is located at the upstream and downstream ends of an existing 60" pipe which would be lengthened under the Alt. 3's. Mr. Coppola requested that these two segments be given separate designations. W-2 is strictly along the south side, adjacent to the recently constructed retaining wall. It appears that the stream channel at the outfall (north side of I-270) is not shown accurately on photogrammetry. The existing channel is actually close to where the alternatives displays indicate the stream would be relocated. Therefore, stream relocation may not be required as part of the Alt. 3's. At this location and in general, pipe inverts should be depressed when extended to allow fish passage. Rip-rap should not be placed in the stream channel. There are concerns at this location regarding water quality and fish passage; DNR would like to see water and fish sampling made as part of any further studies. It appears that minnows and/or micro invertebrates may be present.

Pipe extensions should be avoided if possible. DNR and COE support the use of the south side (near W-2 location) for stormwater management retrofit. In-stream stormwater management may be advisable, as clearing for stormwater management is a concern. Participants concurred on delineation.

### W-3

W-3 would be impacted by 2E, 3E, 3F or 3G. Mr. Coppola questioned the need for a two to three lane ramp as part of the 3's. (Based on heavy SB MD 187 and NB I-270 movement into Rock Spring Park.) This would be a good location for stormwater management retrofit including a shallow marsh with vegetation. Participants concurred on delineation.

### W-4 and U.S. 2

W-4 is a high quality wetland in the northwest I-270/MD 187 quadrant that would be impacted by Alt. 2E only. Mr. Coppola requested that this alternative be modified to reduce impacts and that other alternatives be developed. Alternatives 2D, 3E, 3F and 3G are all alternatives to 2E. Given a choice, agencies would support impacting W-1/W-2 to build the 3's vs. impacting W-4 to build 2E. Several questions arose concerning this site that affect how impacts should be addressed: 1) What is the history of the pond? (Determines who has jurisdiction -- if pond is old, it is exempt from COE jurisdiction); has it been recently recreated? and 2) Would it need to be restored if impacted? Mr. Coppola stated that the COE would take jurisdiction over this wetland. Mr. Nichols concurred. Participants concurred on delineation.

Office Memorandum  
July 18, 1995  
Page 3

**W-5, W-6 and U.S. 3**

These areas, located east of MD 187 and south (or west) of the I-270 SB roadway, were not viewed as they are well outside the area affected by any alternative.

**Unnamed and Undelineated channel upstream of W-1**

Participants viewed this area which is the potential location for the Rockledge Drive Connector roadway with Alt. 3E, 3F or 3G. These alternatives would require a new culvert and possibly some stream channel relocation. This area was observed to be a high quality headwaters location, although it would not have a Waters of the U.S. or wetland designation. Further investigation will be made into the use of retaining walls to avoid stream relocation.

Mr. Coppola stated that this study's delineations should include all wetlands associated with the Davis Tract and that these wetlands should be listed as secondary impacts caused by the Alt. 3's. Mr. Folse explained that these areas would not be affected by the I-270 interchange improvements. The areas are being addressed as part of the Davis Tract development process.

**U.S. 4, W-7, and W-8**

These areas, located in the vicinity of the Y-Split, were not viewed as they are located outside the areas affected by any alternative.

**W-9 and W-10**

These areas, located east of I-270 Spur and north of Democracy Blvd., were not viewed as they are located outside the areas affected by any alternative.

**W-11 (and new Waters of the U.S. area)**

W-11 is located along the south side of Democracy Blvd., east of I-270 Spur. A portion of the stream channel along the NB to EB ramp, from the western edge of W-11 to 150' west of the W-11 edge, is to be designated as Waters of the U.S. Retaining walls to avoid impacts to W-11 will be investigated. Mr. Nichols requested that, if regrading is required along the drainage channel outside the NB to EB ramp, the regraded area be revegetated.

Office Memorandum  
July 18, 1995  
Page 4

U.S. 5 and W-12

These areas are located in the vicinity of the I-270 Spur/Democracy Blvd. Interchange. W-12 does not satisfy all wetland criteria; therefore, its designation should be changed to Waters of the U.S. In general, the concrete channels in the interchange area should be replaced with vegetated swales and check dams to limit velocities. Agency representatives concluded that the main culvert under I-270 Spur and Democracy Blvd. is probably not passable for fish. A small additional wetland area (150' x 10') was found in the drainage ditch along NB I-270 Spur between the NB to EB ramp and the EB to NB loop. In general, the culverting, channel bank retaining wall construction and stream rechannelizations that may be necessary for Thomas Branch (U.S. 5) with Alternatives 4C or 4D are objectionable to the agencies. Mr. Coppola requested that minimization measures such as mainline alignment shifts (reduce I-270 median) and fewer lanes on ramps be investigated. Mr. Golden requested that ramps cantilevered over the stream be considered. If culvert outfalls into Thomas Branch are extended, the inverts should be depressed to accommodate fish passage. Implementation of baffles may also be beneficial. Ideally, the channel itself should be left alone and banks stabilized as necessary.

U.S. 7

Comments at this location (stream channel along NB I-270 Spur) were very similar to those provided at Thomas Branch (U.S. 5). The potential impacts from Alt. 4A or 4B are quite objectionable to the agencies. If, as a last resort, stream relocation is required, the "Razdan" method may need to be considered. If this meandering method is found to result in too many impacts or not be feasible, check dams should be implemented. Alternatives 4A and 4B will be evaluated to determine how well they will operate if the retaining/jersey wall that is currently under construction along the NB roadway is left at its current location.

By Mark B. [Signature]

MDL  
cc: attendees

454

F  
SHA

EX / EAH

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator



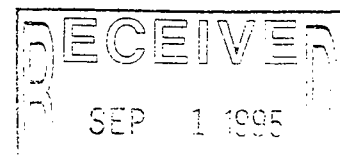
**Maryland Department of Transportation**  
**State Highway Administration**

OCT 10 10 48 AM '95  
August 29, 1995

9502278

RE: Contract No. M 401-156-372 (P)  
I 270 at MD 187 and  
I-270 Spur at Democracy Boulevard  
Montgomery County MD

Mr. J. Rodney Little  
State Historic Preservation Officer  
Maryland Historical Trust  
100 Community Place  
Crownsville MD 21032-2023



Dear Mr. Little:

The State Highway Administration is proposing to reconfigure and/or modify the existing I-270 interchanges at MD 187 and at Democracy Boulevard, modify the Y-Split at I-270 and I-270 Spur, and construct a connector between I-270 and existing Rockledge Drive. These proposed improvements are included within the study area of a Project Planning Study which occurred in the late 1980's (I-270, from the Y-Split to I-495, M 401-154-372). The locations of these proposed improvements are noted on Enclosures 1 and 2.

The area of potential effect for historic standing structures is identified on Enclosure 2. It was subject to an historic sites reconnaissance conducted for the I-270 project (Y-split to I-495). There is one historic standing structure within the APE and it was identified in the previous study--the Davis Farm (M30/19). Our offices concurred that it would not meet the criteria for listing in the National Register of Historic Places. The April 4, 1986 letter concerning that earlier project is included as Enclosure 4.

Recent inspection and inquiries concerning the property, indicates that deleterious changes have occurred. Its immediate environs has been subject to intense development, in the form of office, educational, commercial and residential construction. All of the buildings on the Davis property (see photographs), with the sole exception of a residence constructed in the second quarter of the twentieth century, have been removed or destroyed. The acreage which remains of the property is only a small portion of the original farm which is the current location of a major development known as the Rock Spring Office Park. The environs of the twentieth century dwelling is the location of the final installment of the

*Structures IA. Reaffirm prior determination of not eligible 10/2/95 EAH*

Rockville: Kensington

Archives: IA BC 10/4/95

My telephone number is \_\_\_\_\_  
Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. J. Rodney Little  
Page Two

complex. The site has not been utilized for agriculture for many years and all agricultural buildings have been removed. The current state of the property confirms our earlier assessment that it would not meet the criteria for listing in the National Register of Historic Places. The July 25, 1995 letter from a representative of the owner is included as Enclosure 6.

The area of potential effect for archeological resources is depicted on Figures 7a, 7b and 7c in the Phase Ib Archeological Survey Report prepared by John Milner Associates, included as Enclosure 7. Alternates which propose construction within existing right-of-way, or extend into disturbed areas immediately adjacent to existing right-of-way, were excluded from the Phase IB reconnaissance.

Current plans included Alternates 2A, 2B, 3A, 3B, 4A, 4B, 4C, 4D, 5B, 5C, 6A, and 6B, which were presented at a Supplemental Alternates Public Meeting on June 8, 1994. Subsequent to the meeting, Alternate 2B was modified and renamed Alternate 2E; Alternate 2C, 2D, 3E, 3F, 3G, HOV-1, and HOV-2, were added. Since that time, Alternates 2A, 3A, 3B, 6B, and HOV-2 have been dropped from study. Consequently, Alternates 2C, 2D, 2E, 3E, 3F, 3G, 4A, 4B, 4C, 4D, 5B, 5C, 6B, and HOV-1, have been retained for study. These alternates are depicted in Enclosure 3.

Prior to the initiation of archeological studies, the project area was assessed for archeological potential by Mary F. Barse. The assessment included several field visits and informal walk-over of all the alternate corridors. Based upon observations of field conditions and the scope of work planned under each alternate scenario, several alternates were deleted from the archeological survey universe. Alternates which propose construction within existing right-of-way, or extend into disturbed areas immediately adjacent to existing right-of-way, were excluded from the Phase IB survey due to low archeological potential. Excluded alternates are: 2C, 4A, 4B, 4C, 4D, 5B, and 5C. Alternates retained for study which propose construction within new right-of-way and were subject to archeological survey are: 2D, 2E, 3E, 3F, 3G, 6B, and HOV-1.

The enclosed draft technical report (Enclosure 5) presents the findings and recommendations of the archeological survey for your review and comment. No archeological sites were identified. Our comments on the draft report itself are appended as Enclosure 7. Aside from some minor changes to the report, we believe our consultant has adequately documented an absence of archeological resources within this project's proposed area of potential effects, and no additional archeological work is warranted.

We seek your concurrence that the proposed project encompassing Alternates 2C, 2D, 2E, 3E, 3F, 3G, 4A, 4B, 4C, 4D, 5B, 5C, 6B, and HOV-1 will have no effect on National Register eligible historic standing structures or archeological resources. Please document your agreement in this determination by signing the concurrence line below, and returning this correspondence by September 25, 1995.



Mr. J. Rodney Little  
Page Three

Thank you for your consideration. Should you have any questions or wish additional information, please feel free to contact Ms. Rita Suffness for structures at (410) 333-1183, or Ms. Mary Barse for archeology at (410) 321-2213.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Cynthia D. Simpson  
Cynthia D. Simpson  
Deputy Division Chief  
Project Planning Division

Concurrence:

Ephraim J. Cole  
State Historic Preservation Officer

10/4/95  
Date

LHE:MFB/RMS

Enclosures (7)

- cc: Ms. Mary F. Barse
- Ms. Anne Elrays
- Mr. Tom Folse
- Mr. Bruce M. Grey
- Dr. Charles L. Hall
- Ms. Rita M. Suffness



Maryland Department of Transportation  
State Highway Administration

O. James Lighthizer  
Secretary  
Hal Kassoff  
Administrator

May 24, 1994

Mr. Samuel H. Suls, President  
Heritage Walk Homes Corporation  
P. O. Box 2025  
Pike Station  
Rockville MD 20847-2025

Dear Mr. Suls:

Thank you for your informative response to our February 3 letter. In approximately one week you should receive a brochure from us briefly describing the alternatives under consideration in our project planning study of the I-270 interchange at MD 187 and the I-270 Spur interchange at Democracy Boulevard.

To see larger scale drawings you can either attend our Supplemental Alternates Public Meeting, June 8th at 7:30 p.m., at Walter Johnson High School or we can meet with your association independently at another time.

Following the public meeting, detailed studies will begin, including noise studies. Decisions concerning the inclusion of noise barriers will be made after the studies are completed.

Please call the project manager, Thomas K. Folse, at (410) 333-1109, or toll-free at 1-800-548-5026 to discuss this further.

Sincerely,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by: Thomas K Folse  
Thomas K. Folse  
Project Manager  
Project Planning Division

Folger

PROJECT DEVELOPMENT DIVISION

MAR 8 11 15 AM '94

# HERITAGE WALK

HOMES CORPORATION  
Post Office Box 2025  
Pike Station  
Rockville, Maryland 20847-2025

Telephone 301+530-6666  
Fax 301+340-6659

March 1, 1994

Maryland Department of Transportation  
State Highway Administration  
707 N. Calvert Street  
Baltimore, Maryland 21203-0717

ATTENTION: Anne Elrays

RE: Heritage Walk/Winderemere

Dear Ms. Elrays:

My letter responds to Mr. Ege's letter to us of February 3, 1994. The Heritage Walk Homes Corporation is a homeowners association that maintains the community property of Heritage Walk, now called Winderemere. Some 202 homes are members. Apparently you are studying modifications to two roads, MD 187 (Old Georgetown Road) and I-270, the latter of which runs along one of the borders of our property. One of our officers, J.T. Holt, talked with you by telephone and indicated that this letter would follow.

The following sections answer your questions and provide amplifying information.

The corporation does in fact own the following properties which lie adjacent to I-270:

- Parcel 999, Liber 5717, District 4,, Subdivision 401, Folio 506,
- Parcel 8, Liber 4856, District 4, Subdivision 10, Folio 823, Block D,
- Parcel P670, Liber 4856, District 4, Subdivision 510, Folio 823,
- Parcel B, Liber 5286, District 4, Subdivision 10, Folio 448, Block H.

I enclose a copy of a community map that we periodically include in our annual reports to members; our community's properties are those shaded dark. Each parcel is labeled, although the exact boundaries between our parcels are not clear. We do not have more detailed maps readily available to send to you but you can certainly find these kinds of plats in the Montgomery County Courthouse.

No "Program Open Space" or "Land Water Conservation" funds were used to acquire or develop these properties, which actually were deeded to the Corporation by the developer about fifteen years ago. This land area was needed in order to provide the requisite amount of land/house to permit being one-half acre zoning.

459

Maryland Department of Transportation  
ATTN: Anne Elrays

March 1, 1994

In the early 1970's the developer built a community swimming pool, two tennis courts, a clubhouse, a parking lot, and several storm drains on the south part of Parcel 8, most of which improvements are noted briefly on the enclosed community map. Since obtaining title from the developer, the Corporation has added various improvements: basketball, volleyball, picnic areas, a gate, and a hiking trail. In addition, we have planted numerous trees, especially evergreen trees to shield our pool area from the unwanted sights and sounds of I-270 right-of-way,, now have grown high enough to shield the swimming pool from direct view from I-270. We have not yet had to plant any trees on Parcel P999 but anticipate the possibility of having to do so in the future (see note below.)

These facilities are used by our member families every day from late May to mid-September, for that is when the pool is open. Usage generally is from mid-morning through early evening. Further, usage of the tennis courts for at lease a few hours per day (in daylight) extends from about mid-March to mid-November, with occasional usage in the winter as weather permits. Volleyball use occurs mainly in the summer; basketball is played for a few hours per week all-year, except when severe weather keeps people inside. The clubhouse is used for meetings and small parties, mainly from mid--April to mid-October. The parking lot is used not just for parking but for skating and hockey, mainly in the April to October period and a few times in the winter. It is important to note that the trees on parcel P999 are "used" to try to screen much of our community from the unwanted sights and sounds of I-270,, the latter of which has grown greatly since our community was started in 1971. The trees on P999 are mainly deciduous trees, and thus this screening is effective only against sight and mainly during the April-October period when leaves are out.

None of our facilities are open to "the public", but only to members of the residences that make up the Corporation.

Our master plan for these properties is to maintain them in their present state and improve them where possible, and when our resources permit. The fixed facilities will not move; there is nowhere else to go. The large areas darkened on our map (mainly parcel B) are steep hillsides and a flood plain for Old Farm Creek. The Washington Suburban Sanitary Commission (WSSC) has a 50-foot wide construction right-of-way lying on our properties (parcels P999, 8i, and B) where they border with I-270. Whenever the WSSC used this strip of land to lay a pipeline, a good many trees will probably be lost. Hopefully, WSSC will replant this land with trees; if not we will have to plant replacement trees (or possibly bamboo) because these trees (and the others on the I-270 right-of-way and in the back of some of our houses) are our community's only barrier to the unwanted sights and sounds of I-270.

These points should answer your questions. Thank you for soliciting information on our activities and plans for our property. We are quite interest in learning what specific improvements the SHA is considering or is proposing for our neighborhood. Could you please let us know what alternatives are being considered and where and when any road-associated construction might occur? Also, it is our understanding that if the I-270 roadway were to be brought closer to our community, then noise barriers would be included and budgeted in the project's cost; is this correct? Indeed, we would appreciate your leaving existing trees on

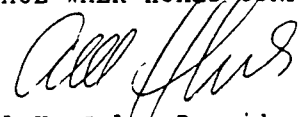
March 1, 1994

Maryland Department of Transportation  
ATTN: Anne Elrays

the I-270 right-of-way,, unless a solid noise barrier is built there, for your trees as well as ours help to screen us from I-270 today.

In closing, I would ask you to not heighten I-270's impact on our community. It is noisy enough already, and unsightly when it is visible. Make it quieter and less visible, if that is possible. If you have further questions, write or call me at 301+340-6655, or Mr. J.T. Holt at 703+697-0521 weekdays.

Very Truly Yours,  
HERITAGE WALK HOMES CORPORATION

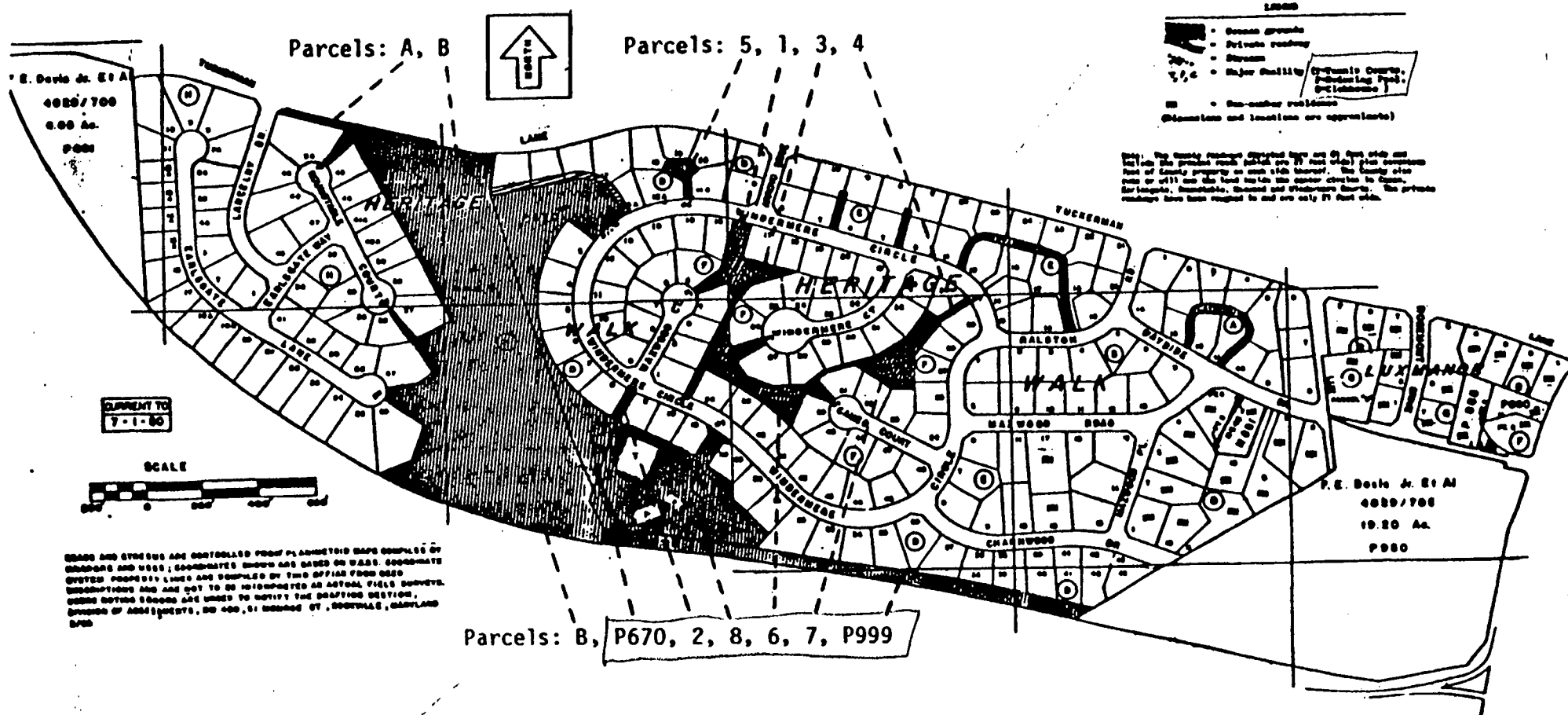


Samuel H. Suls, President

Copy: Mr. J.T. Holt  
6200 Charwood Drive  
Rockville, Maryland 20852

Mr. Joel Michaels, President  
Luxmanor Citizens Association  
6208 Meadow Court  
Rockville, Maryland 20852

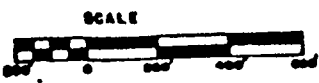
FIGURE ONE  
 HERITAGE SALES HOME CORPORATION  
 LOCATION OF HERITAGE RESIDENCES AND COMMON AREAS



- LEGEND**
- Common grounds
  - Private roadway
  - Stream
  - Major Utility
  - (F) Public Courts, (P) Public Parks, (P) Public Schools
  - Non-numbered residences
- (Distances and locations are approximate)

Note: The utility easements depicted here are 20 feet wide and follow the private road (public are 75 feet wide) plus easements from of land's property on each side thereof. The boundary lines or will not be interpreted as actual field surveys. All lengths, bearings, distances and directions shown. The private roadways have been roughed in and are only 75 feet wide.

CURRENT TO  
 7-1-80



ROADS AND STREAMS ARE CONTROLLED FROM PLANNING MAPS COMPILED BY ENGINEERS AND SURVEYORS; COORDINATE SYSTEMS ARE BASED ON W.A.S. COORDINATE SYSTEMS PROPERTY LINES ARE BASED ON FIELD SURVEYS. THESE NOTING SHOULD BE USED TO VERIFY THE DRAFTING SECTION. DIVISION OF ADJUSTMENTS, 200 400, 51 WINDERMERE ST., BOONVILLE, MARYLAND 21038

Parcels: B, P670, 2, 8, 6, 7, P999

10/17



Maryland Department of Transportation  
State Highway Administration

O. James Lighthizer 462  
Secretary  
Hal Kassoff  
Administrator

February 3, 1994

Heritage Walk Home Corporation  
P.O. Box 2025 Pike Station  
Rockville MD 20852

Dear Sir or Madam:

The State Highway Administration is proposing improvements to the I-270 and MD 187 roadways in the vicinity of the Windermere recreational center.

We request the following information concerning this center:

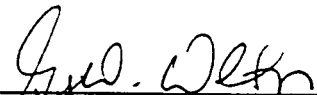
- ◆ Verification that the corporation, as stated above, owns the center
- ◆ Mapping showing the center boundaries
- ◆ Funding sources: Were Program Open Space or Land Water Conservation (6(f)) funds used to acquire or develop this area?
- ◆ Types of uses or facilities associated with the center
- ◆ Frequency with which the public uses these facilities
- ◆ Master plans for the center

We have enclosed mapping which outlines the project area and indicates the approximate location of the Windermere recreation center.

Very truly yours,

Louis H. Ege, Jr.  
Deputy Director  
Office of Planning and  
Preliminary Engineering

by:

  
George W. Walton  
Assistant Division Chief  
Project Planning Division

LHE:AE:sc  
Attachment  
cc: Mr. Tom Folsie

My telephone number is \_\_\_\_\_

THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117

OFFICE MEMORANDUM

*H*

DATE TYPED: June 15, 1994  
PROJECT: I-270 at MD 187 and I-270 Spur at Democracy Boulevard  
FILE: 0100-190.05  
SUBJECT: Comments heard at the wall displays prior to and following the formal presentation at the Supplemental Alternates Public Meeting held at Walter Johnson High School on June 8, 1994.

The following is summary of comments received at the wall displays by Ronald Rye, Joseph DeMent, and Mark Lotz. A subsequent memorandum will contain a complete summary of the meeting, including formal comments made by citizens immediately following the presentation.

The following comments were heard once unless otherwise noted:

1. Support alternatives which address no merge areas at the ends of ramps on MD 187.
2. Now that the Fernwood Road bridge is open, consider allowing the thru movement across Democracy Boulevard (2 people).
3. Do not change the Democracy Boulevard/Fernwood Road intersection. Additional traffic on Fernwood Road would disrupt neighborhood.
4. Noise walls are strongly urged throughout the project.
5. The SHA did not reach enough people early enough. Suggested direct mailings.
6. Strongly opposed to Alternate 4A since it adds traffic to the ramp adjacent to Stratton Commons. Noise walls would make this alternative more acceptable.
7. Look at pedestrian accessibility at MD 187 and Rock Spring Drive.
8. What is the source of transitway funding? Is federal money available?
9. How much funding are the commercial/business occupants of the Rock Spring Park going to contribute?
10. Has a loop ramp in the southwest quadrant of the I-270/MD 187 interchange been considered?



- 11. Shift MD 187 to the west in the vicinity of I-270 to avoid St. Mark's Church.
- 12. Traffic operations are poor at the entrance to St. Mark's Church. The proposed improvements would only make the situation worse.
- 13. The SHA needs to be in more frequent contact with community groups.
- 14. Shift Alternative 3A away from Charnwood Drive residences.
- 15. The existing traffic volumes and the projections given are overstated.
- 16. High accident areas are questioned. Long time resident has not seen any accidents at locations having high accident status.
- 17. Alternatives 3 and 6 are supported over alternatives in Category 4. Alternative 4A is opposed because it introduces another signal on Democracy Boulevard.
- 18. A representative from the Bethesda Fire Department stated the following:
  - They are in the process of revising their signal system (Driveway detector will be moved and new signal heads installed)
  - They are in support of building a merge lane on eastbound Democracy Boulevard as with Alternates 4A and 4B. However, an advance signal may be required on the ramp to stop traffic in emergencies.
  - The curbing proposed to prohibit weaving from the NB to EB ramp into the left turn lanes at Democracy Boulevard / Fernwood Road can be depressed allowing emergency vehicles to return to the station. It was requested that the mountable median be designed with a storage bay for vehicles turning left into the station.

Office Memorandum

June 15, 1994

Page 3

- During construction, an SHA representative should keep in contact with the fire station regarding road closures and water service/fire hydrant disruptions.

19. The study area should be expanded along the East Segment to Grosvenor Lane and include (or not preclude) consideration of a busway along the shoulder with a bus-only interchange at I-270/Grosvenor Lane.

By: Mark D. Fj

MDL:ah

CC: Mr. Thomas Folse  
File

4/6/94

THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117

OFFICE MEMORANDUM

**DATE TYPED:** July 5, 1994

**PROJECT:** I-270 at MD 187 and I-270 Spur at Democracy Blvd.

**FILE:** 0100-190.05

**SUBJECT:** Summary of formal comments given at the Supplemental Alternates Public Meeting held on June 8, 1994

Approximately 150 citizens attended the public meeting, held at Walter Johnson High School in Bethesda, Maryland.

Comments were received outside of the formal meeting and are summarized in a separate memorandum, dated June 15, 1994. Following the formal presentation by the State Highway Administration's Creston Mills, Thomas Folsie and Anne Elrays, 24 individuals gave formal comments at the microphone. The following is a summary of the speakers and key points made:

1. Vicky Solben  
6734 Surveywood Lane  
Stratton Woods/Stratton Commons/Bethesda Place
  - Supports direct access ramps to Rock Spring Park (supports alternatives 3A or 3B)
  - Support alternative 4D (eliminates signal controlled intersection on Democracy Blvd.)
  - Supports merge lanes, uninterrupted ramp operations and sound barriers along interchange ramps
  - Does not support Alternatives 4A, 4B, 5B and 5C
  - Opposes 4A because it introduces another signal
  
2. Gerald Garson  
12912 Michen Wood Way  
Potomic, MD
  - Recommends none of the alternates
  - Traffic patterns are different today compared to four years ago
  - Today 1512 vehicles join I-270 and 285 exit at Democracy Blvd., where as in 1990, 690 vehicles joined and 1037 exited because of construction at the time. This is the reason for the over-loading of I-270
  - Extend right lane 0.6 miles NB on West Spur
  - HOV makes no sense because it slows traffic down as a result of the additional lane changes that are required.
  - Provide ramp metering for WB Democracy to NB I-270
  - Provide merge lane from I-270 to EB Democracy

3. Tom Marciniak  
6400 Windermere Circle  
Rockville, MD

- Office Park is not the only thing causing traffic problems
- Impact on quality of life has not been considered
- Impact of residences has not been considered
- Alternative 5A residents may want to use it
- Alternatives 3A and 3B are very complex interchanges, and these complex interchanges can introduce traffic safety problems

4. Kenneth Mason  
Elder St. Mark's Church

- Supports Alternative 1
- Opposes Alternatives 2A, 2B and 3A
- Opposes action to remove trees on church property because they act as a natural sound barrier to the sanctuary
- There are ashes scattered between the sanctuary and the R/W fence along the ramp and they should not be disturbed
- The drainage of the septic system could be affected, which in turn could adversely affect the environment
- Opposes acceleration lane at exit from I-270 onto NB MD 187 because it will promote a high speed exit
- The church's landscaping should be left alone
- If land is needed, take from vacant parcel opposite the church property

5. John Byner  
11515 Danville Drive  
North Bethesda Congress of Citizens Associations

- Include consideration of E. Spur for express bus lanes as an alternative to the proposed transitway. Provide a bus only lane from Grosenor Road through Rock Spring Park to Montgomery Mall

6. Melvine Blume  
10521 Farnham Drive  
Wildwood Manor Area

- 23 year resident
- Supports No-Build

7. Mary Ann Rubenstein  
7501 Democracy Boulevard

- Pedestrian crosswalks are not marked
- Pedestrian signals should include an all red phase
- Need a safe passage from north side to south side of Democracy Boulevard

8. Charles Markel  
750 Lakeside Terrace Condo Association

- Increase use of alternatives that take traffic off Democracy Boulevard
- In favor of 3A, 3B, 4B, 4C, 4D and 5B
- Acceleration lane for NB I-270 Spur to WB Democracy Boulevard is favorable
- Loop from WB Democracy to SB I-270 Spur is favorable because it would eliminate a signal and a left turn
- Concern with impact to community stormwater management facility which handles run off from Montgomery Mall
- Increase number of crosswalks on Democracy Boulevard from MD 187 to a point far west of the mall
- Analysis of floodplain impacts is needed
- Supports improved ingress and egress

9. J.T. Holt  
6200 Charnwood Drive

- Opposes 3A and 6A
- Expand I-270 to the south if expansion is needed
- Look at impacts of Lux Lane closure
- Is there room enough to build noise barriers and how much will that add to the cost?

10. Burton Hoffman  
6724 Surreywood Lane  
Bethesda, MD

- Director of 123 Units in Stratton Woods/Stratton Commons
- Opposes 4A and 4B on grounds of added noise and air pollution
  - Supports sound barriers

11. Eric Eisen

- Supports sound barriers
- What percentage of cost is taken up by sound barriers?
- Residents need protection

12. Herbert Rupman  
7505 Democracy Boulevard

- On I-270 Spur between I-495 north to Democracy Boulevard, there is an overgrowth of trees along the NB to EB (Democracy Boulevard) ramp, preventing visibility of headlights until it is too late
- Suggestion is to cut back trees 50' or 60' to allow clear visibility of traffic

13. Ellen Paul  
11004 Round Table Court

- Opposes 3A and 3B because issues are not addressed (i.e. signals, merge areas, length of ramp, crosswalks, and sound barriers)

14. John Starhold  
Pine Haven Terrace

- Need for sound barrier
- Noise studies need more emphasis

15. Susan Cohen  
9814 Ingleview Drive

- No human dimension
- What are the impacts on Fernwood Road residents?

16. Bob Wall  
Old Georgetown Villiage

- HOV progress report should have been made available at or prior to this meeting, as promised

17. Gail Shomberg  
10804 Windemere Circle

- Promised access to Rock Spring, but has not seen any change
- Don't allow any more development

18. Davis McHarm  
Windemere

- Option 7 should be considered: entrance to commercial park from an interchange north of Westlake Terrace

19. Arnold Meteller  
George Washington University Engineering Professor  
10131 Ashburyon Lane  
Bethesda, MD

- Alternate 2A is extremely difficult
- Shift alternate 2B west onto Davis property
- Why not a third loop in clover leaf
- Opposes alternate 3B because it takes too much land from residents
- Supports 3A because it doesn't take as much residential land
- Slight relocation of MD 187 a lane or tow to the west so it doesn't impact the church

20. Arlene Allen  
President of North Bethesda Congress

- Office park was supposed to be an island unto itself; make it that way
- Put public transit to forefront of planning efforts

21. Betty Trapinski  
Surveywood Lane

- Object is to get traffic off of Democracy and Old Gerogetown Road
- Supports 6B

22. George Wolfhand  
9925 Derby Shire  
V.P. of Sales and Marketing

- Did not show pedestrian right-of-ways, or address noise pollution and air pollution

Office Memorandum

July 5, 1994

Page 6

23. Fran Darby  
6725 Surreywood Lane

- Developers should pay

24. Gerald Lawson

- All roads in Montgomery County are overloaded
- Remove HOV signs, they just cause distractions

By: Mark D. [Signature]

MDL:ah

CC: Mr. Thomas Folse  
File



THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117

OFFICE MEMORANDUM

DATE TYPED: July 22, 1994

PROJECT: I-270 at MD 187 and I-270 spur at Democracy Boulevard

FILE: 0100-190.05

SUBJECT: Debriefing Meeting held on July 11, 1994

PRESENT:	Mr. Robert Houst	Project Planning Division
	Ms. Cynthia Simpson	Project Planning Division
	Mr. Tom Folse	Project Planning Division
	Mr. Rich Cutshaw	Project Planning Division
	Mr. Bill Carver	Project Planning Division
	Ms. Anne Elrays	Project Planning Division
	Mr. Marty Cohn	Highway Design Division
	Mr. Glenn Smith	Regional and Intermodal Planning
	Ms. Gina Anthony	District #3 Right-of-Way
	Mr. Bob Simpson	Montgomery County
	Mr. Mark Lotz	The Wilson T. Ballard Company

The purpose of the meeting was to discuss the comments received at the Supplemental Alternates Meeting held on June 8, 1994 and to discuss the next steps in the study.

I. Citizen Comments Provided

A. Wall Displays

A memorandum, prepared by The Wilson T. Ballard Company (June 15, 1994), summarizing comments heard by their personnel, was distributed. In addition, other SHA representatives heard the following:

- Pedestrian crossings on Democracy Boulevard need to be addressed.
- Direct access to the Rock Spring Park should be provided.
- The Stratton Commons and Wildwood Hills communities requested that noise studies consider the cumulative effects of all highway improvements.
- Timberlawn residents requested noise barriers.

- Direct access should be provided into Rock Spring Park without widening MD 187 or Democracy Boulevard.
- The Windermere area residents are concerned with the impacts resulting from the proposed cul-de-sac on Lux Lane (additional traffic at MD 187/Tuckerman Lane).

**B. Formal Meeting Comments**

A Wilson T. Ballard Company Memorandum, dated July 5, 1994, which summarized comments made by those speaking formally at the public meeting, was distributed.

**C. Written Comments**

Mr. Folse gave an overview of the comment forms received subsequent to the meeting. He is in the process of tallying all comments (alternatives favored, opposed, etc.). These comments generally echoed the formal and informal public meeting comments. Mr. Folse will respond to all written comments by mid-August.

**II. Next Steps/Miscellaneous Issues**

A. Based on public meeting comments, Mr. Houst recommended the following:

1. Regarding St. Mark's Church:

- Coordinate with Environmental Management regarding what, if anything to do about the Memorial Gardens scattered ashes issue.
- If something needs to be analyzed, tell that to the church.
- Be sensitive to the Memorial Gardens issue.
- Sunday morning traffic observations should be made.

2. Regarding the request for a report on HOV lane performance, Mr. Folse will research what commitments, if any, have been made to the public.

- 3. Pedestrian issues need to be carefully addressed. Mr. Folse will coordinate with the Office of Traffic and Maj Shakib to determine what strategies are underway and what opportunities for better pedestrian mobility can be created with this project.
- 4. Regarding requests for direct access to Rock Spring Park, research should be conducted to develop a statement as to why direct access to private developments from interstate highways is not allowed.
- 5. A list of "people issues" and how they are being addressed needs to be developed.
- 6. Plans need to be provided to the Office of Traffic and Safety and to District #3 traffic personnel to review overall traffic operations of the alternatives.

B. Ms. Simpson gave the following comments:

- 1. Statements made concerning noise should be made with extreme caution. Research should be performed into previous community coordination, as Mr. Kasoff has made several commitments in this area.
- 2. Noise receptor locations selected should include some of the receptors from previous studies. The Wildwood Manor community has requested that they be involved in the receptor selection process.
- 3. Steps in the development of the Environmental Document should include:
  - An assessment of Congestion Management Strategy
  - An analysis of the impacts of providing HOV facilities
  - Multi-Modal Study
  - Major Investment Study (Ms. Simpson will coordinate with Mr. Folse on this issue)

C. The team should give consideration to a concept suggested by Neil Pedersen for an HOV ramp at Grosvenor Lane.

D. A team meeting to select alternates for detailed studies was scheduled for August 10. (Subsequent to this meeting, Mr. Folse postponed the team meeting until September because traffic analysis, being performed by BMI, will not be completed until late August.

E. Mr. Simpson provided the following comments:

1. Access at Grosvenor Lane would have master plan implications. Could an interchange ramp be for general use for access to the metro station, or would it need to be HOV only?
2. The County is still pursuing the transitway
3. This study should give consideration to the master plan's proposed bikeway plan (excerpt provided at meeting) which includes a corridor for a Class I bikeway (i.e. independent bikeway on separate R/W or easement) throughout the study area. A bikeway is related to both multi-modal and pedestrian issues associated with this project.

By Mark A. [Signature]

MDL:kd

cc: Mr. Tom Folse  
File

THE WILSON T. BALLARD COMPANY  
17 GWYNNS MILL COURT  
OWINGS MILLS, MARYLAND 21117

OFFICE MEMORANDUM

**DATE TYPED:** October 24, 1994

**PROJECT:** I-270 at MD 187 and I-270 Spur at Democracy Boulevard

**FILE:** 100-190.05

**SUBJECT:** Meeting held at St. Mark Presbyterian Church on Old Georgetown Road in Bethesda on October 12, 1994

**PRESENT:**

Rev. Jim Macdoennel	St. Mark Church
Mr. Ken Mason	St. Mark Church
Mr. Tom Folse	State Highway Administration
Mr. Mark Lotz	The Wilson T. Ballard Company

The purpose of the meeting was to visit the St. Mark site and discuss issues of concern for the Church. General comments were as follows:

- The St. Mark Church accommodates a variety of functions in addition to two Sunday morning services, including meetings for 4-5 community associations, day care, weddings and AA meetings.
- The church was originally built in 1965; several additions have been constructed since. A future addition to the classroom building is being considered.
- Vehicles accessing the site from the north make u-turns at the signal for the SB MD 187 to SB I-270 movement. U-turns are made at Tuckerman Lane for vehicles exiting to the south.
- The Church property includes a 55 space paved parking lot and 45± space auxiliary gravel lot, both of which fill on Sundays.

Mr. Mason described four areas of concern related to proposed I-270/MD 187 interchange improvements, as follows:

1. Extension of the northbound MD 187 accel lane from I-270 and extension of the decel lane to Tuckerman Lane.

The existing merge area for the northbound I-270 to northbound MD 187 ramp is very short and ends 600'± south of the church entrance. The auxiliary right turn lane for Tuckerman Lane begins 300'± south of the church entrance. If the auxiliary lane is made continuous between I-270 and Tuckerman Lane, Mr. Mason believes that the potential for rear end collisions will increase at the church entrance.

2. Impacts to Wooded Area

Any interchange improvements that require church property will impact trees that provide an important buffer between the highway and sanctuary. One oak tree, approximately 35' from the right of way line, is believed to be registered because of its significance. The church would be in favor of noise barriers along I-270, but not along MD 187 north of the ramp merge point.

3. Memorial Gardens

There are several areas within the property with buried ashes. These areas were sketched on mapping. Several of the alternates, as currently configured would impact these areas.

4. Septic System

The church is served by a septic system with tank and leaching pits that are close to the existing I-270 R/W line. We received copy of the site plan showing the septic system location and made measurements of several surface features.

By: Mark D. [Signature]

MDL:ah  
CC: File

**VI. SELECTED REFERENCES**

**VI. SELECTED REFERENCES**

Bolt, Beranek and Newman, Inc., "Fundamentals and Abatement of Highway Traffic Noise", Federal Highway Administration, 1980.

Approved and Adopted North Bethesda - Garrett Park Master Plan Interim Reference Edition, The Maryland-National Capital Park and Planning Commission, December, 1992.

Bowlby, William et. al., "Noise Barrier Cost Reduction Procedure STAMINA 2.0/OPTIMA User's Manual", Federal Highway Administration, Arlington, VA., April, 1982.

FHWA and Maryland State Highway Administration, Environment Assessment for Contract No. M 401-154-372 I-270 East Segment from the Y-Split to I-495, December, 1986.

FHWA and Maryland State Highway Administration, Finding of No Significant Impact for Contract No. M 401-154-372 I-270 East Segment from the Y-Split to I-495, February, 1989.

FHWA and Maryland State Highway Administration, Environmental Assessment for Contract No. M 401-153-372 I-270 West Spur from the Y-Split to I-495 Including I-495 to North of MD 190, August, 1987.

FHWA and Maryland State Highway Administration, Finding of No Significant Impact for Contract No. M 401-153-372 I-270 West Spur from the Y-Split to I-495 Including I-495 to North of MD 190, January, 1989.



**VII. APPENDICES**

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

All State Highway Administration projects must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) as amended by Title IV of the Surface Transportation & Uniform Relocation Assistance Act of 1987 (P.L. 100-17), the Annotated Code of Maryland entitled "Real Property Article" Section 12-112 and Subtitle 2, Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Office of Real Estate administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State laws require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments include replacement housing payments and moving costs. The maximum limits of the replacement housing payments are \$22,500 for owner-occupants and \$5,250 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to these payments, there are also moving expense payments to persons, businesses, farms and non-profit organizations. Actual moving expenses for residences are reimbursed for a move of up to 50 miles or a schedule moving payment of up to \$1,300 may be used.

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, reestablishment expenses limited to \$10,000 or fixed payments "in lieu of" actual moving expenses of \$1,000 to \$20,000. Actual moving expenses may also include actual direct losses of tangible personal property and expenses for searching for a replacement site up to \$1,000.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Payments for the actual reasonable expenses are limited to a 50-mile radius unless the State determines a longer distance is necessary. The expenses claimed for actual cost moves must be supported by firm bids and receipted bills. An inventory of the items to be moved must be prepared in all cases. In self-moves, the State will negotiate an amount for payment, usually lower than the lowest acceptable bid. 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 participate in the move, the cost of actual supervision of the move, replacement insurance for the personal property moved, costs of licenses or permits required and other related expenses.

In addition to the actual moving expenses mentioned above, the displaced business is entitled to receive a payment for the actual direct losses of tangible personal property that the business is entitled to relocate but elects not to move. These payments may only be made after an effort by the owner to sell the personal property involved. The costs of the sale are also reimbursable moving expenses.

If the business elects not to move or to discontinue the use of an item, the payment shall consist of the lesser of: the fair market value of the item for continued use at the displacement site, less the proceeds from its sale; or the estimated cost of moving the item.

If an item of personal property which is used as part of a business or farm operation is not moved and is promptly replaced with a substitute item that performs a comparable function at the replacement site, payment shall be of the lesser of: the cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item; or the estimated cost of moving and reinstalling the replaced item.

In addition to the moving payments described above, a business may be eligible for a payment up to \$10,000 for the actual expenses of reestablishing at the replacement site. Generally, reestablishment expenses include repairs and improvements to the replacement site, increased operating costs up to \$5,000, exterior signing up to \$1,500, advertising the replacement location up to \$1,500 and other fees paid to reestablish. Receipted bills and other evidence of these expenses are required for payment. The total maximum reestablishment payment eligibility is \$10,000.

In lieu of all moving payments described above, a business may elect to receive a fixed payment equal to the average annual net earnings of the business. This payment shall not be less than \$1,000 nor more than \$20,000. 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 more than three other establishments in the same or similar business that are not being acquired; and the business contributes materially to the income of a displaced owner during the two taxable years prior to the year of the displacement. A business operated at the displacement site solely for the purpose of renting to others is not eligible. 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 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 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, owner's spouse, or dependents during the period. Should a business be in operation less than two years, the owner of the business may still be 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, or certified financial statements, for the tax years in question.

Displaced farms and non-profit organizations are also eligible for actual reasonable moving costs up to 50 miles, actual direct losses of tangible personal property, search costs up to \$1,000 and reestablishment expenses up to \$10,000 or a fixed payment "in lieu of" actual moving expenses of \$1,000 to \$20,000. The State may determine that a displaced farm may be paid a minimum of \$1,000 to a maximum of \$20,000, based upon the net income of the farm, provided that the farm has been relocated or the partial acquisition caused a substantial change in the nature of the farm. 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 a fixed payment or an "in lieu of" actual moving cost payment, in the amount of \$1,000 to \$20,000 based on gross annual revenues less administrative expenses.

A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms and non-profit organizations is available in the "Relocation Assistance" brochure that will be distributed at the public hearing for this project and be given to displaced persons.

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies must be completed by the State Highway Administration before "housing as a last resort" can be utilized.

Federal & State laws require that the State Highway Administration shall not proceed with any phase of a project which will cause the relocation of any persons, 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.

**REPORT NO. FHWA -EA-96-01-F  
FEDERAL HIGHWAY ADMINISTRATION  
REGION III**

**FINDING OF NO SIGNIFICANT IMPACT**

**I-270 AT MD 187  
AND  
I-270 SPUR AT DEMOCRACY BOULEVARD**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**

**and**

**STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION**

The FHWA has determined that a Build Alternatives Combination, consisting of:

**Alternative 2D - Modified:** Improvement of the existing I-270/MD 187 Diamond Interchange;

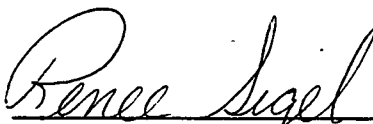
**Alternative 3E:** Construction of a new diamond interchange north of MD 187 to provide a direct connection between I-270 and Rockledge Drive;

**Alternative 4A - Signalized - Modified:** Widening of the ramp connecting Northbound I-270 Spur to eastbound Democracy Boulevard to 2-lanes and providing a signal; (Note: In the Final Design Phase, consideration will be given to removal of the loop ramp connecting northbound I-270 Spur to westbound Democracy Boulevard and providing this movement by means of a 2-lane ramp spur, connecting the northbound-to-eastbound ramp to westbound Democracy Boulevard at a signalized intersection.)

**Alternative 4C:** Improvement of the west side of the I-270 Spur/Democracy Boulevard interchange including bridge widening to improved capacity or operations for all movements; and

**Alternative 5C:** Construction of a 1-lane reversible median ramp connecting the north side of the Fernwood Road bridge to the median I-270 Spur HOV lanes south of the Y-Split,

will have no significant impact upon the environment. The Selected Action is located in a serious ozone nonattainment area, but is not in a nonattainment area for carbon monoxide. The Selected Action conforms to the State Implementation Plan as it originates from a conforming Transportation Improvement Program and transportation plan. This FONSI has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. The FHWA takes full responsibility for the accuracy, scope, and contents of the Environmental Assessment and attached documentation.

  
\_\_\_\_\_  
for Division Administrator

3-3-97  
Date



**Maryland Department of Transportation**  
**State Highway Administration**

Parris N. Glendening  
Governor

John D. Porcari  
Secretary

Parker F. Williams  
Administrator

10/06/00  
Re: Project No. MO401B16  
I-270 at MD 187 and  
I-270 Spur at Democracy Boulevard  
Montgomery County, Maryland

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
The Rotunda - Suite 220  
711 West 40<sup>th</sup> Street  
Baltimore, Maryland 21211

10/6/2000  
RE-EVAL.

Attn: Mr. Peter Kleskovic

Dear Mr. Castellanos:

The environmental consequences of currently proposed improvements to I-270 at MD 187, the I-270 Spur at Democracy Boulevard and the I-270 Spur at Westlake Terrace have been reviewed and reevaluated for consistency with the Finding of No Significant Impact (FONSI) for I-270 at MD 187 and I-270 Spur at Democracy Boulevard (FHWA-EA-96-01-F). The Federal Highway Administration (FHWA) approved the FONSI on March 3, 1997. A Location/Design Public Hearing was held on December 12, 1995.

**REVIEW**

The purpose of this project is to provide adequate capacity throughout the I-270/MD 187 and I-270 Spur/Democracy Boulevard interchanges to accommodate existing and future traffic volumes safely and efficiently. Under existing conditions, frequent and severe traffic congestion occurs at these interchanges. The lack of merge areas, deceleration lanes, and left-turn lane storage on existing roadways in the study area also contributes to these unsafe conditions. Planned growth, in accordance with current zoning and Master Plan recommendations, is expected to continue in the study area, intensifying existing traffic congestion. This project will provide improvements intended to alleviate the adverse conditions caused by inadequate capacity and safety deficiencies at the I-270 interchanges at MD 187 and Democracy Boulevard.

My telephone number is 410-545-0400 or 800-206-0770

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 2

The FONSI Selected Alternative consists of the following combination of alternatives: 2D-Modified, 3E, 4A-Signalized-Modified, 4C and 5C. These alternatives are described below and are illustrated on Figure 1.

Alternative 2D-Modified: This portion of the Selected Alternative provides improvements to the I-270/MD 187 interchange, including widening MD 187 to the west through the interchange area, resulting in three through lanes southbound, four through lanes northbound and double left turns for all interchange movements. To accommodate this improvement, the MD 187 bridge over I-270 would be widened approximately 51 feet.

Alternative 3E: This portion of the Selected Alternative would operate in tandem with the improved interchange at I-270/MD 187 (Alternative 2D-Modified) and provide direct access to and from the Rock Spring Business Park, via a new diamond interchange, north of MD 187, which would connect I-270 to Rockledge Drive.

Alternative 4A-Signalized-Modified: This portion of the Selected Alternative includes widening the ramp connecting the northbound I-270 Spur to eastbound Democracy Boulevard to 2 lanes and providing a signal. Also included is the widening of westbound Democracy Boulevard at and east of the bridge over I-270 Spur to provide an acceleration lane for the northbound to westbound loop ramp. It is noted in the FONSI that, during final design, consideration will be given to removal of the loop ramp connecting the northbound I-270 Spur to westbound Democracy Boulevard and providing this movement by means of a 2-lane ramp spur, connecting the northbound-to-eastbound ramp to westbound Democracy Boulevard at a signalized intersection.

Alternative 4C: This portion of the Selected Alternative consists mostly of improvements to the western half of the I-270 Spur/Democracy Boulevard interchange. The Democracy Boulevard bridge over the I-270 Spur would be widened to accommodate a deceleration lane for the eastbound-to-northbound loop ramp, and a double left-turn bay for the westbound-to-southbound movement. The southbound ramp from the I-270 Spur would be widened to allow a double left-turn onto eastbound Democracy Boulevard. The southbound-to-westbound ramp would be reconstructed with a smaller turning radius to allow more weaving distance between the ramp and the entrance to Montgomery Mall. Also, the acceleration lane would be extended for the northbound I-270 Spur to westbound Democracy Boulevard loop ramp to connect with the acceleration lane from the southbound I-270 Spur to westbound Democracy Boulevard ramp.

Alternative 5C: This portion of the Selected Alternative proposes a one-lane reversible median ramp connecting the north side of the Westlake Terrace bridge to the median I-270 Spur HOV lanes south of the Y-Split.

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 3

After Location Approval, the I-270 project was split into several design stages. The stages as originally set forth are defined as follows and indicated on Figure 1.

- Stage I: Improvement of the ramp from northbound I-270 Spur to eastbound Democracy Boulevard
- Stage II: Construction of an interchange to provide a direct connection between the I-270 East Segment and the Rockledge Drive Connector and construction of a bridge over I-270 to connect the interchange ramps to the Rockledge Drive Connector.
- Stage III: Improvements to the I-270 East Segment/MD 187 interchange
- Stage IV: Improvement of the southbound side of the I-270 Spur/Democracy Boulevard interchange
- Stage V: Construction of a HOV median ramp connecting I-270 Spur to the north side of the Westlake Terrace bridge

Stages II and III have subsequently been combined into a single design contract, as have Stages IV and V. This reevaluation discusses all stages of the I-270 project. Stage I has been constructed and a reevaluation approved; however, the reevaluation of noise issues was deferred, as agreed with FHWA, until design plans were developed for the original Stage IV of the I-270 project. The discussion of noise issues for the entire project is included in this reevaluation.

Design changes in Stages II and III of the project were previously addressed in the environmental reevaluation of the P.I. plan, dated September 11, 1998, and a subsequent P.I. design revision, dated November 9, 1998. An environmental reevaluation of the Semi-Final (65%) plans for Stage II, dated April 8, 1999, was submitted to FHWA and subsequently approved by FHWA on April 13, 1999. A reevaluation consultation meeting to review subsequent design changes reflected on the Final Review plans for Stage II was held with Mr. Peter Kleskovic of FHWA on October 25, 1999, and documented in a memorandum dated December 1, 1999. The primary difference between the Stage II Final Review plans and the FONSI Selected Alternate was the change from a retaining wall to embankment to support Ramp A (a ramp from the Rockledge Drive Connector to northbound I-270 along the Heritage Walk community – see Figure 3). Another Stage II change was the addition of minor Tuckerman Lane/MD 187 intersection improvements that had been identified as part of the SHA Congestion Relief Study (CRS) (see Figure 5). These changes did not result in environmental impacts as compared to the FONSI. As a result, Mr. Kleskovic concurred that the minor design changes shown on the Final Review plans for Stage II would not result in a substantial difference in environmental impacts, that the FONSI remains valid and that no formal written reevaluation was required.



Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 4

CURRENT DESIGN

Stage I

A Final Review consultation for Stage I was held on February 19, 1998. Based on the information presented, FHWA representatives, Pam Stephenson and Renee Sigel verbally concurred that the minor changes between the FONSI Selected Alternative and the final design plans for Stage I would not result in any significantly different social, economic or natural environmental impacts, that no formal written reevaluation need be prepared, that the FONSI remains valid and that supplemental environmental documentation is not required. However, it was recognized that when the ultimate improvements are constructed, the FONSI noise analysis in the southeast interchange quadrant would not be valid due to design and noise policy changes, and would be reevaluated when final plans were developed. The noise reanalysis, attached, and summarized in the Environmental Considerations section of this letter indicates that NSA B-1 did not meet the criteria for consideration of Type I noise abatement measures.

Stage II

A subsequent Final Review (90%) plan submission, dated July 11, 2000, for Stages II and III combined has been reviewed and the following design changes are noted for Stage II since the October 25, 1999 consultation (Figures 2 and 3).

- The current design (90%) plans propose a 10-foot high barrier along the east side of Ramp A, from Station 213+50 to Station 657+00, existing Ramp A, as a result of coordination between SHA and community residents. The width of the proposed area adjacent to Ramp A, between the ramp and the barrier, is 11 feet to allow a visually appealing landscape buffer. This differs from the October 25 plans which provided, within the same limits adjacent to Ramp A, an 8-foot high screen wall with as little as 3.5 feet of space between the ramp and wall. SHA offered the community, based on value-engineering, the construction of a 10-foot high barrier equivalent to the length of the screen wall. This would be in return for the community's donation of the right-of-way that SHA needed for the construction of the interchange. The basis for this offer was that the combined cost of the right-of-way and the screen wall was similar to the cost of a 10-foot high barrier of the same length as the screen wall. Currently, the community is considering SHA's offer. It is expected that this issue will be resolved prior to advertisement of the project. The current design proposes steepening the supporting fill slope along the east side of Ramp A to avoid increasing the footprint of the overall improvements due to the proposed increase in backing as compared to the October 25 plans. This would be accomplished by holding the toe of fill based on the October 25 plans and providing the necessary steepness of fill slope to the hinge point at the edge of the proposed backing. Thus, there would be no

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 5

additional environmental impacts or right-of-way required as a result of this design change when compared to the October 25 plans.

- The October 25 plans showed alignments for Ramps A and D that would tie in to the existing ramp termini on the west side of MD 187 with no improvement to MD 187. Under the current design, Ramps A and D are aligned to accommodate the Stage III improvements to MD 187, rather than tying into the existing ramps, as proposed when Stages II and III were separate. However, the October 25 plans for these ultimate ramp alignments required the same right-of-way as proposed right-of-way under the current design. No additional environmental impacts would occur in the area of the current design ramp alignments under Stage II of this project.

Thus, the design changes reflected in the current design for Stage II would not result in additional environmental impacts when compared to the October 25, 1999 plans for Stage II, for which FHWA concurred that the FONSI remained valid.

Stage III

Based on the Final Review (90%) plan submission, dated July 11, 2000, differences between the current design for Stage III of the I-270 project and the FONSI Selected Alternative are discussed below. Stage III generally corresponds to Alternative 2D-Modified of the FONSI Selected Alternative. Although Stages II and III have been combined, for the purposes of this environmental reevaluation, Stage III improvements are discussed as they were originally established, from just west of MD 187 just east of MD 187 and along MD 187, north and south of I-270. The line distinguishing the Stage II area from the Stage III area is shown on Figure 3. All improvements west of MD 187 (and at the MD 187/Tuckerman Lane intersection) are considered to be part of Stage II of the I-270 project.

One difference between the current design and FONSI Selected Alternative of Stage III is at the MD 187 bridge over I-270. The current design provides a new steel girder bridge, whereas, the FONSI design consisted of widening the bridge to the west to accommodate additional lanes on MD 187. The advantages of the current design are that the new bridge allows use of continuous spans, provides better horizontal clearances than the existing bridge, and aesthetic applications are consistent with other new structures in the area. By utilizing the existing bridge, the FONSI design required a reduction in the width of the existing median shoulders along I-270 to permit deceleration/acceleration lanes for Ramps E and F to pass under the existing MD 187 bridge. With the new bridge, the acceleration/deceleration lanes are accommodated without reducing the median shoulders along I-270 and without requiring additional right-of-way.

Another difference between the current design and the FONSI design is in the limits of work. The current design limits of work extend beyond the FONSI design at the following locations as indicated on Figures 3 through 5: Ramp B widening on I-270, east of MD 187 (also, pavement overlay for I-270 extends an additional 2,450 feet east of this limit of widening shown

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 6

on Figure 3 to address defective pavement conditions); MD 187, north of I-270, and Rock Spring Drive, west of MD 187, including a portion of Rockledge Drive. The improvements shown in the current design along Rock Spring Drive and Rockledge Drive, beyond the FONSI limits of work, include pavement overlay to address defective pavement conditions and median reconstruction to better facilitate turning movements in this area and provide a good approach to the Rock Spring Drive/MD 187 intersection. Details of the current design in these areas are discussed below. Additional differences between the current design and the FONSI Selected Alternative are also discussed and indicated on Figures 3 and 4.

- Under the current design, Ramp B ties in to I-270 approximately 1,000 feet east of MD 187, which is approximately 200 feet east of where the existing Ramp B ties in to I-270. The FONSI design did not extend Ramp B improvements to I-270, but rather, tied into existing Ramp B approximately 380 feet east of MD 187. This difference is a result of the decision to completely reconstruct the MD 187 bridge over I-270 as a two-span bridge rather than widening and redecking the bridge as assumed in the FONSI. The higher profile with the two-span bridge necessitates complete reconstruction of Ramp B at its current location, but at a slightly higher grade. Also, the current design proposes a width of 26 feet for Ramp B and provides an infiltration trench for stormwater management near the Ramp B terminus with I-270. Due to these refinements, as indicated on Figure 3, the current design results in increased grading limits in the area of Ramp B, extending as much as an additional 55 feet north and stretching an additional 900 feet to the east, as compared to the FONSI design. Most of this work is contained within existing right-of-way with only minor additional right-of-way (0.01 acre - fee simple area, 0.04 acre - easement) being required under the current design in the area of St. Marks Church.
- The current design includes a noise barrier along the south side of I-270, east of MD 187, located within existing right-of-way. The proposed barrier will extend from approximately 1,100 feet east of MD 187 to 4,300 feet east of MD 187, benefiting the portion of the Wildwood Manor community that predates I-270. This Type II noise barrier is outside the limits of the FONSI project area and was not addressed in the FONSI. The barrier was originally developed as a separate project and recently merged with the Stage II/III contract for reasons pertaining to economics and constructibility. Attached is a completed Programmatic Categorical Exclusion Form dated July 14, 1999 for that barrier.
- Under the current design, Ramp C improvements extend approximately 450 feet east of MD 187, tying in to existing Ramp C near the gore at I-270. The FONSI showed the Ramp C improvements tying into existing Ramp C approximately 230 feet east of MD 187. As with Ramp B, the additional Ramp C work is a result of the reconstructed MD 187 bridge. The current design requires additional right-of-way (0.08 acre-fee simple/0.04 acre-easement) in the area of Ramp C, in the southeast quadrant of the I-270/MD 187 Interchange, for a proposed infiltration trench.

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 7

- The current design of the Ramp D tie-in to MD 187 is pushed further out from the existing edge of MD 187, as compared to the FONSI, because of the grade differential resulting from the higher MD 187 profile necessitated by complete reconstruction, as described above. As a result, the current design requires additional right-of-way (0.38 acres - fee simple/0.65 acre - easement) along the west side of MD 187.
- The current design provides an eight-foot wide bike path along the west side of MD 187 from Tuckerman Lane to I-270. Under the current design, southbound MD 187, just north of the bridge over I-270, has a proposed width of 65 feet, compared to 56 feet in the FONSI design. This is based on the decision to provide a safer design with additional lane widths and curb offsets, including a 14-foot curb lane for bicycle compatibility. Also, for the same reasons, the current design proposes a width of 60 feet on northbound MD 187, just north of the Ramp B tie in, as compared to 56 feet in the FONSI. As a result of these design refinements (see Figure 3), the grading limits for the current design extend beyond those indicated in the FONSI for this portion of Stage III, by as much as an additional 12 feet on the east side of MD 187 and as much as an additional 60 feet on the west side. Also, the right-of-way required for this portion differs from the FONSI design because the current design generally requires fee simple right-of-way to the hinge point of the roadway section and temporary easement for the roadway supporting slopes. The FONSI showed the area needed for supporting slopes as fee simple right-of-way. On the west side of MD 187, from north of the bridge over I-270 to Lux Lane, the current design requires 0.59 acre of fee simple and 0.87 acre of temporary easement while the FONSI design required 0.70 acre of right-of-way. On the east side of MD 187, in this area, the current design requires 0.05 acre of fee simple and 0.28 acre of easement, while the FONSI design required 0.12 acre of right-of-way.

Stage IV

As summarized previously, Stage IV of the project consists of improvements to the I-270 Spur interchange at Democracy Boulevard. Immediately following Location/Design Approval for the overall project in March 1997, staging scenarios were established whereby Stage I would consist of all improvements to the northbound side of the I-270 Spur/Democracy Boulevard interchange, and Stage IV would consist of all improvements to the southbound side of the interchange. The following information is based on 65 percent Semi-Final Review plans dated January, 2000 (Figures 6 and 7).

The principal differences between the FONSI and the current design at the I-270 Spur/Democracy Boulevard interchange are related to the decision to close the northeast quadrant loop ramp and provide this movement via a left turn ramp spur off of the northbound I-270 Spur exit ramp. This change was made at the recommendation of FHWA to eliminate the mainline weave between the two loop ramps along northbound I-270 Spur. The elimination of

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 8

"Cloverleaf-type" interstate interchange weaves is being implemented at many locations throughout the state to improve safety and capacity.

The specific changes necessary in the current design with the elimination of the northeast quadrant loop ramp include the following:

- Since the northbound exit ramp (Ramp B) needs to carry both eastbound and westbound Democracy Boulevard traffic, ramp widening is more extensive than that shown in the FONSI. The ramp remains one-lane upon diverging from northbound I-270 Spur, but begins tapering to two lanes 160 feet beyond the gore, 700 feet ± south of the beginning of the taper shown in the FONSI. All widening is to the inside (left side) of the ramp, within the FONSI footprint.
- The current design of Spur B diverges from the exit ramp 350 feet ± south of Democracy Boulevard and carries left turning traffic to a signalized intersection at Democracy Boulevard. No additional right-of-way is required for this work, This spur was not included in the FONSI design, but is between two ramps that were addressed in the FONSI design.
- In order to accommodate the exit ramp widening entirely to the inside (away from the existing right-of-way line and residential community), the Loop Ramp B, carrying eastbound-to-northbound traffic is proposed to be reconstructed with a tighter radius, as much as 40 feet inside the existing loop ramp. The proposed loop ramp ties into the existing loop ramp just south of the gore at the northbound I-270 Spur.
- All pavement associated with the northeast quadrant loop ramp will be removed.
- The triangular area between Loop B and Spur B is identified in the current design plans as a possible Stormwater Management - Water Quality Site.
- Westbound Democracy Boulevard is proposed to consist of three through lanes and two left turn lanes across the Democracy Boulevard bridge over the I-270 Spur, as compared to two lefts, three throughs and one acceleration lane included in the FONSI. The acceleration lane is not necessary in the current design due to the elimination of the northeast quadrant loop ramp.
- The current design includes a 5-foot wide sidewalk on the south side and a 10-foot wide bike path/sidewalk on the north side of Democracy Boulevard through the interchange area, as requested by Montgomery County to meet bicycle/pedestrian accessibility standards and goals. The FONSI included only a 5-foot sidewalk on the north side. The bike trail is within the original FONSI footprint because it basically offsets the elimination of the acceleration lane in the current design, and the basic typical section width is the same between the FONSI and current design.

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 9

- The Democracy Boulevard bridge over the I-270 Spur is proposed to be removed and reconstructed in the current design plan, as opposed to the widening and redecking included in the FONSI. The width of the bridge is identical between the FONSI and current design; however the alignment of Democracy Boulevard through the interchange area is 5 feet to 15 feet further south to better maintain the alignment of the through lanes with the above changes. No additional right-of-way is required for the alignment shift. The new bridge allows use of continuous spans, better horizontal clearances than the existing bridge and aesthetic applications consistent with the other new structures in the area.

Following is a comparison of the FONSI and current design plan on the southbound (west) side of I-270 Spur. The Selected Alternative for the southbound (west) side of the interchange is Alternative 4C.

- Functionally and geometrically, the FONSI and current plan are virtually identical on the west side of I-270 Spur.
- The limit of work is approximately 200 feet further west on Democracy Boulevard in the current design than in the FONSI due to some additional resurfacing to address deficient pavement conditions and the 10-foot wide bike path/sidewalk on the north side that was not included in the FONSI and is slightly outside the FONSI footprint. No additional right-of-way is required.
- With the 5 to 15-foot Democracy Boulevard alignment shift mentioned above, the existing 96-inch structural plate pipe (SPP) outfalling just south of the bridge requires a 32-foot, with 30-foot ± riprap apron, extension due to embankment grading.
- The current design plan proposes mechanically stabilized embankment (MSE) along portions of the I-270 Spur southbound roadway to allow 1:1 fill slope ratios, and open section with guard rail along the entire southbound roadway, generally reducing the width of impact five to ten feet, as compared to the FONSI. The structural plate pipe arch outfall, 1,400 feet ± south of Democracy Boulevard, requires a 10-foot extension, as compared to 10-feet ± assumed in the FONSI.
- The limit of work along southbound I-270 Spur is approximately 150 feet further north in the current design, as compared to the FONSI due to final design refinements to provide a slightly faster taper based on more detailed survey information. As with the FONSI, no right-of-way is required along the southbound I-270 Spur.
- The existing stormwater management pond in the northwest quadrant is proposed to be modified to include additional water quality treatment area. Details of this work had not been specified at the 65 percent stage but is located in the interchange area within existing right-of-way. The FONSI did not address stormwater management needs.

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 10

- The current design includes a 1,500 LF noise barrier along Thomas Branch Drive in the Wildwood Hills community (NSA A) located in the southwest interchange quadrant. This barrier did not qualify for Type I noise abatement measures in the FONSI, but was later developed as a separate project, under the Type II program. The barrier would be constructed entirely within SHA right-of-way, and will require a temporary construction entrance road, connecting eastbound Democracy Boulevard with Thomas Branch Drive. This road will be in a vacant grassed area, also within existing SHA right-of-way, and will require minor grading along the fence line at the top of the cut for I-270 Spur. Other than minor amounts of tree removal, there are no other anticipated impacts as a result of this work. See attached Programmatic Categorical Exclusion approval dated April 5, 1999.

Stage V

Stage V consists of the construction of median HOV ramps connecting the HOV lanes in the median of the I-270 Spur to and from the Westlake Terrace (previously referred to as Fernwood Road in the FONSI) bridge over the I-270 Spur. Alternative 5C is the FONSI Selected Alternative at this location. Following the 65 percent Semi-Final Review stage, on which this reevaluation of Stage V is based, the decision was made to merge Stages IV and V into one contract. However, since the Semi-Final Review plans were separate for Stages IV and V, and the limits of improvements for the two stages are not overlapped, the discussions of the two stages remain separate herein. The notable differences between the current design and the FONSI Selected Alternate are as follows (Figure 8):

- The current design consists of a two-lane, two-way median HOV ramp as compared to the one-lane reversible ramp included as part of the Selected Alternative. This change was made as a result of FHWA direction during the Interstate Access Point Approval process to provide a ramp structure width compatible with two-way operations. The current design includes a two-lane divided ramp with a 46-foot wide overall dimension, as compared to a 35-foot wide overall dimension included in the FONSI. However, the wider section associated with the current design is entirely within the FONSI footprint and requires no reconstruction of the I-270 Spur northbound and southbound roadways; all improvements along the I-270 Spur are contained within the median.
- The improvements along Westlake Terrace to accommodate the new interchange, including limits of work, are virtually identical between the current design and the FONSI and are entirely within the FONSI footprint. Under the current design, the Westlake Terrace bridge and approach roadways are to be widened up to 28 feet, entirely on the north side, to accommodate an auxiliary right-turn lane westbound-to-northbound, and an auxiliary left-turn lane, eastbound-to-northbound.

495  
Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 11

## ENVIRONMENTAL CONSIDERATIONS

As stated previously, the current design for Stage II would not result in additional environmental impacts when compared to the October 25, 1999 plans for Stage II for which FHWA concurred that the FONSI remains valid. A comparison of environmental impacts for the current design and corresponding FONSI Selected Alternative is contained in Table 1. Following is a discussion of the environmental considerations for Stages III, IV and V of the I-270 project.

Consistent with the FONSI, there are no residential relocations or business displacements required based on the current design plans for Stages III, IV and V. No effect to minority or low-income populations is anticipated since no residential or business displacements are required.

The current design plans for Stage III indicate approximately 1.3 acres of fee simple right-of-way and approximately 2.6 acres of easement (mostly temporary) are required. The FONSI Selected Alternative 2D-Modified required a total of 1.5 acres of right-of-way. The FONSI counted the area needed for supporting slopes as fee simple right-of-way. Also, the right-of-way requirements in the FONSI did not address stormwater management or sediment control. In addition, the current design plans contain refinements to the FONSI design, including an eight foot wide bike path along the west side of MD 187, an additional northbound lane on MD 187 approaching the bridge over I-270, and Tuckerman Lane improvements.

The current design for Stage IV requires approximately 0.02 acre of fee simple right-of-way from the Anne D. Camiler (Marriott) property. Also, some perpetual drainage easement (0.28 acre), and 0.07 acre of temporary grading easement is required from several adjacent parcels in the northeast quadrant, as shown on attached Figure 6. The FONSI did not indicate any right-of-way required for improvements proposed at the I-270 Spur/Democracy Boulevard Interchange.

The current design for Stage V indicates that one commercial property (Democracy Associates) will require fee simple right-of-way. The area is 0.019 acre as compared to 0.3 acre included in FONSI Selected Alternative 5C. A total of 0.167 acre of revertible easement will also be required from two parcels for the current design.

Consistent with the FONSI Selected Alternative 2D-Modified, the current design plans for Stage III do not indicate any stream relocations, stream crossings or wetland impacts.

The FONSI indicated no CO violations of 1-hr or 8-hr standards for air quality at any location with the Selected Alternative. This conclusion remains valid given the similarities between the FONSI and current design at each receptor for all stages of the design.

On April 14, 2000, representatives from SHA and the US Army Corps of Engineers held a wetland field review meeting to reevaluate the Jurisdictional Determination (JD) originally held in July, 1995. The review covered resources in the vicinity of both the Democracy



Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 12

Boulevard and Westlake Terrace interchange improvements associated with Stages IV and V. Minutes of this field review are an attachment to this reevaluation. The conclusions reached for resources in the vicinity of the I-270 Spur/Democracy Boulevard interchange are as follows:

- Resource US 6 (Figure 7) will remain as regulated Waters of the US
- US 5 within the northeast quadrant loop ramp will remain Waters of the US. An area of palustrine emergent persistent wetland designated W-13 has been added within the loop ramp, as shown on Figure 6.
- The remainder of US 5, US 7 and W-12 were accepted as previously delineated.

Also, at the April 14, 2000 wetland field review meeting in the vicinity of the I-270 Spur/Westlake Terrace interchange, Resource W-7 was previously determined to be a palustrine forested wetland; however, since the area consists of slightly entrenched stream channels surrounded by upland forest, W-7 it was redesignated as US 4.

The current design of Stage IV eliminates the northeast quadrant loop ramp and the acceleration lane along westbound Democracy Boulevard. Thus, neither US 5 nor recently designated W-13 is impacted at this location. The 275 LF of stream location identified at the entrance to the 96 inch structural plate pipe (SPP) in the northeast quadrant loop ramp for FONSI Selected Alternative 4C, has been eliminated. However, the southern shift in the Democracy Boulevard alignment shown on the current design plans, necessitating downstream culvert extension, results in a 60 LF impact to US 5 not included in the FONSI.

Included in the Stage V design, a stormwater management area will be added to this contract in the vicinity of US 4; however the size and location were unknown at the 65 percent stage. There will likely be minor impacts (up to approximately 400 feet) to Waters of the US that were not accounted for in FONSI Selected Alternative 5C.

Consistent with FONSI Selected Alternatives 2D-Modified and 5C, the current design plans for Stages III and V do not indicate any impacts to the 100-year floodplain. With the Stage IV current design, floodplain impacts along Thomas Branch (0.3 acre) are slightly lower as compared to the FONSI Selected Alternative 4C (0.4 acre) due to the use of open section/guardrail (as compared to closed section/jersey-barrier in FONSI) and the use of 1:1 slopes with mechanically stabilized embankment along portions of southbound I-270 Spur.

Woodland impacts estimated for the current design plans total approximately 4.7 acres for Stage III of the I-270 project. The FONSI Selected Alternative 2D-Modified did not indicate any woodland impact. These woodland impacts occur in the areas where refinements to the design have been made that were not in the FONSI, including infiltration trenches in the vicinity of Ramps B and C, proposed sidewalk along the east side of MD 187 south of I-270, and the widening of MD 187 to the west to provide an additional northbound lane on MD 187 approaching the bridge over I-270. Reforestation and Landscaping Plans are included in the

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 13

Final Review (90 percent) plans submission, dated July 11, 2000, for Stages II and III based on a combined total impact of 22 acres. On-site reforestation is anticipated for approximately 3.25 acres of this impact. Woodland impacts are 45 percent higher (4.2 acres vs. 2.9 acres) in the Stage IV current design as compared to the FONSI Selected Alternative 4C due to footprint differences in three areas:

- Spur B
- The tighter radius for Loop Ramp B
- The southerly shift in the Democracy Boulevard widening

Some on-site reforestation (0.5 acre ±) will be provided in the area of the removed northeast quadrant loop ramp. The remainder of the reforestation will be provided through a combination of on-site and off-site locations, not determined at the 65 percent design stage.

Woodland impacts for Stage V current design are unknown at the 65 percent complete stage, but are anticipated to be up to 0.8 acre based on conceptual design plans. FONSI Selected Alternative 5C did not indicate any woodland impacts.

The Maryland Historical Trust (MHT) concurred on October 4, 1995 that there will be No Effect on significant cultural resources including archeological resources and historic standing structures for the FONSI Selected Alternative and subsequent modifications. Additional coordination regarding this project was initiated with the MHT on April 9, 1999. They concurred that the previous No Effect determination remained valid on April 12, 1999. The current designs occur within the same footprint (area of potential effect) as the FONSI Selected Alternative.

Within the study area, there are several parcels, primarily the Davis-Camaliere tract in the Rock Spring Office Park, which have the potential to undergo further development in accordance with their current zoning or through modifications to current zoning recommended by the local Master Plan. Access to the Davis-Camaliere tract is currently provided from MD 187; this project will shift the access to the Rockledge Drive Connector via an interchange with I-270, improving the accessibility of the property. The current designs of the FONSI Selected Alternative will provide improvements to the existing interchanges at I-270/MD 187 and I-270 Spur/Democracy Boulevard, as well as, construction of new interchanges at I-270 Spur/Westlake Terrace and I-270/Rockledge Drive. These overall improvements will provide adequate capacity to safely accommodate existing traffic and traffic expected to be generated by planned development. The current designs are not expected to induce any additional unanticipated development beyond what is planned since the remainder of the study area is developed. Therefore, with respect to the minimal direct impacts associated with the current designs, and the lack of any reasonably foreseeable secondary development, the contribution of this project to cumulative effects on study area resources is expected to be minimal.

498

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 14

The noise analysis documented in the FONSI was completed using criteria consistent with the current SHA Noise Policy Guidelines. The analysis concluded that while NSA's B-1 (Stratton Commons), H (Windemere), and I (Windemere) also, were feasible, they did not meet the criteria for reasonableness. The analysis further concluded that NSA A (Wildwood Hills) was eligible for inclusion under the Type II program, and that NSA F-2 (St. Mark Church) met the reasonableness and feasibility criteria. A commitment was made to further investigate both NSA's A and F-2 during design.

An analysis of noise abatement issues for Stage II was presented, along with other design changes, at a Reevaluation Consultation Meeting with FHWA on October 25, and is documented in the December 1, 1999 memo. In summary, neither NSA H, nor I qualified for Type I noise abatement measures (see attached analysis results). Please refer to the Current Design section of this reevaluation, which discusses design changes associated with construction of a barrier at the NSA H location to screen the Windemere community.

#### Stage III Noise Reanalysis

The FONSI identified four NSA's (D, E, F-1, and F-2) within the Stage III portion of the project. No residences were impacted at 66 dBA at NSA D, therefore no further analysis was warranted. NSA's E and F-1 were outside the limits of the Selected Alternate, therefore no further analysis was warranted. However at NSA E, a portion of the predating area of the Wildwood Manor Community, qualified for noise abatement under the Type II program. This sound barrier is included along southbound I-270, south of MD 187, and is entirely within existing SHA right-of-way. Although plans and NEPA approval for this barrier were initially developed separate from this project (see attached Programmatic CE dated July 14, 1999), it has recently been incorporated into the Stage II/III contract.

A noise reevaluation was conducted for NSA F-2, Receptor 17 (St. Mark Church), located in the northeast quadrant of the I-270 East Segment MD 187 interchange. The reevaluation of potential noise impacts from the proposed project has determined that a sound barrier would not be reasonable based on several factors. Though the noise analysis indicated that the build versus no-build increase criteria of 3 dBA is not met, there is an increase of 2 dBA and the overall level exceeds 72 dBA. Cost criteria would be met based on 10 equivalent residences for the church. Total cost of a barrier would be approximately \$166,000.

A sound barrier was judged as not reasonable because an effective barrier cannot be built. Past indications by church officials proposed that any sound barrier not extend beyond the ramp along MD 187. Reevaluation of noise level contributions from the various roadways determined the following: the noise level contribution from traffic on Old Georgetown Road (MD 187) would limit noise reduction from a barrier along I-270 only to a maximum of 4 decibels (dBA) at the church property. In addition, future noise levels would still be above the impact threshold of 66 dBA. This would not meet the SHA minimum design goal noise reduction of 7 dBA. At a recent meeting with church officials held on August 22, 2000, no further concerns or inquiries regarding noise were received. Landscaping and privacy fencing is proposed for this area, to

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 15

provide a visual buffer for the rear portion of the church property closest to the proposed construction. This would target areas where construction would result in removal or thinning of existing vegetation within the highway right-of-way.

Stage I, IV and V Noise Reanalysis

The FONSI identified four NSA's (A, B-1, B-2, and C) within the Stage I/IV portion of the project. As previously stated, the FONSI analysis concluded that NSA A (Wildwood Hills) was eligible for inclusion under the Type 2 program. A Type 2 barrier will be included at this location in the construction contract for Stages IV/V. The FONSI analysis also concluded that NSAs B-2 and C were outside the limits of the Selected Alternate, and did not qualify for Type I noise abatement measures.

Due to the design changes outlined above for Stage IV, changes in the SHA noise barrier policy and the development of more comprehensive noise modeling tools, the noise prediction results contained in FONSI were reanalyzed. The Federal Highway Administration's TNM Version 1a was used to model noise levels in this reanalysis. As stated previously, the noise reanalysis associated with previously constructed Stage I have been combined with Stage IV noise reanalysis.

The specific area requiring reanalysis is designated NSA B-1 in the FONSI. NSA B-1 generally consists of residences along Derbyshire Lane and Surreywood Lane in the Stratton Commons community. The conclusion drawn in the FONSI was that NSA B-1 did not meet reasonableness criteria for consideration of a noise barrier. There was neither a 3 dBA or greater change in design year noise levels over design year no-build, nor over baseline noise levels. After reevaluating NSA B-1 through the use of TNM, the FONSI results are deemed valid. Again, the change in design year noise over design year no-build was less than 3 dBA, and the changes in design year build levels over baseline levels were less than 3 dBA. Therefore, NSA B-1 does not meet criteria for further investigation of a barrier. Additional details regarding the results of the NSA B-1 noise reanalysis are included as an appendix to this letter.

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MITIGATION

A "Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland" (Section 404 Permit) is required. An approved permit has been obtained for Stage II, there are no impacts requiring a joint permit for Stage III, and a permit application for Stages IV and V will be submitted in late September, 2000.

The initial reforestation plan submission for on-site reforestation to be provided as part of Stages II and III has been made to the Maryland Department of Natural Resources (DNR). The reforestation plan for on-site reforestation to be provided under Stages IV and V is currently being developed. Additional reforestation will be accomplished under a separate project in compliance, the Maryland Reforestation Law administered by DNR.

500

Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 16

Erosion and sediment control plans for Stages II and III have been submitted to MDE, and comments are currently being addressed.

None of the NSA's analyzed in conjunction with this project qualified for noise abatement measures under the Type 1 program. The Type 2 noise abatement measures proposed at two locations within the limits of the current design plans were initially developed as separate projects and have been included in the current design plans because it is cost effective.

**CONCLUSION**

Based on the information shown in the current design plans and the information presented above, we have determined that the current design of the I-270/MD 187 and I-270 Spur/Democracy Boulevard Interchanges, as compared to the FONSI Selected Alternate, will have no significantly different environmental impacts. We believe that the FONSI remains valid and that no supplemental NEPA documentation is required. If you agree with this determination, please indicate your concurrence on the signature line below. This reevaluation has been completed in accordance with 23 CFR 771.129.

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Mr. Nelson J. Castellanos  
Division Administrator  
Federal Highway Administration  
Attn: Mr. Peter Kleskovic  
October 6, 2000  
Page 17

Should you have any questions, please call Mr. Joseph Kresslein in the Project Planning Division at 410-545-8550.

Sincerely,

Parker F. Williams,  
Administrator

by: Cynthia D. Simpson  
Neil J. Pedersen,  
Deputy Administrator for  
Planning and Engineering

CONCURRENCE:

[Signature]  
Federal Highway Administration  
Division Administrator

11/9/00  
Date

Attachments

- cc: Mr. Charles Adams
- Ms. Anne Elrays (w/Attachments)
- Mr. Jim Hade (w/Attachments)
- Ms. Susie Jacobs
- Mr. Joseph Kresslein (w/Attachments)
- Mr. Keith Kucharek (w/Attachments)
- Ms. Cynthia D. Simpson

**TABLE 1: COMPARISON OF ENVIRONMENTAL IMPACTS**

	FONSI SELECTED ALT. 3E	STAGE II CURRENT DESIGN	FONSI SELECTED ALT. 2D- MODIFIED	STAGE III CURRENT DESIGN	FONSI SELECTED ALT. 4C	STAGE IV CURRENT DESIGN	FONSI SELECTED ALT. 5C	STAGE V CURRENT DESIGN
<b>Socioeconomic:</b>								
1. Relocation (Total Takes)								
a. Residence	0	0	0	0	0	0	0	0
b. Business	0	0	0	0	0	0	0	0
c. Church School	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2. Right-of-Way Required-Acres	4.4 <sup>1</sup>	3.7 fee simple 2.7 perpetual easement 2.6 temporary easement	1.5 <sup>1</sup>	1.3 fee simple 2.6 easement	0	0.02 fee simple 0.28 perpetual easement 0.07 temporary easement	0.3 <sup>1</sup>	0.019 fee simple 0.167 revertible easement
<b>Natural Environment:</b>								
1. Number of Stream Relocations -- Linear Feet -- LF	290	450 <sup>2</sup>	0	0	275	60 <sup>2</sup>	0	0
2. Number of Stream Crossings	3	3	0	0	2	2	0	0
3. Affected Threatened or Endangered Species	0	0	0	0	0	0	0	0
4. Area of Prime Farmland Affected	0	0	0	0	0	0	0	0
5. 100-Year Floodplain Impacted -- Acres	0.1	0.16	0	0	0.4	0.3	0	0
6. Wetlands Affected -- Acres	0.8	0.79	0	0	0	0	0	0
7. Waters of the U.S. Affected -- LF	35	956 <sup>3</sup>	0	0	50	60 <sup>2</sup>	0	0
8. Woodlands Impacted -- Acres	11.9	17.3	0	4.7	2.9	4.2	0	0
9. Noise	The FONSI indicated that 8 of the 9 project area NSA's exceeded abatement criteria. This conclusion remains valid. Abatement was considered at all locations recommended for further consideration in the Final Design Stage.							
10. Air Quality	The FONSI indicated no CO violations of 1-hr or 8-hr standards at any location with the Selected Alternative. This conclusion remains valid given the similarities between the FONSI and current design.							

<sup>1</sup>Includes area needed for supporting slopes as fee simple right-of-way

<sup>2</sup>These are stream impacts in the form of in-channel reconstruction due to culvert extensions and channel protection

<sup>3</sup>Based on design refinements and a redefinition of how impacts to Waters of the U.S. were previously calculated

\*Not finalized at the 65% complete stage

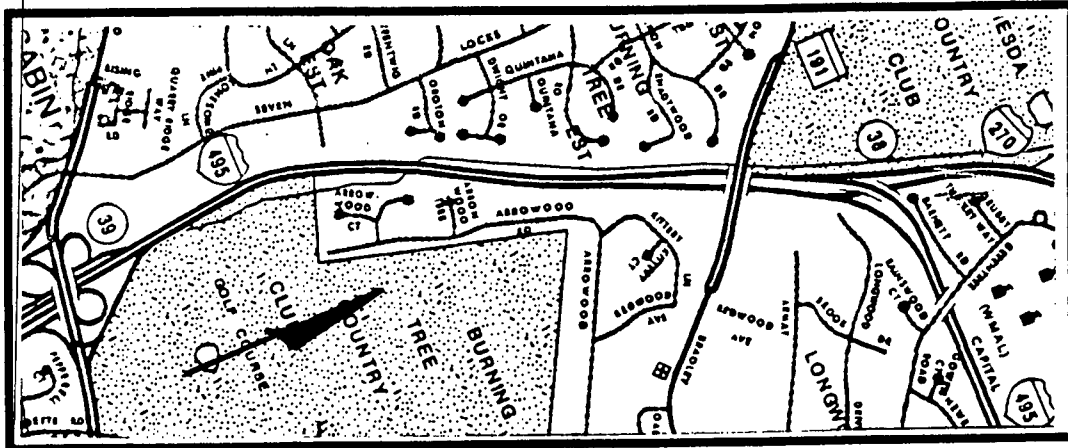
502

I-495 (CAPITAL BELTWAY)  
I-270 WEST SPUR JUNCTION TO RIVER ROAD (MD 190)

DEVELOPMENT CHRONOLOGY

Area Description

The subject area encompasses the Capital Beltway (I-495) at the interchange with the I-270 West Spur and I-495 south to the interchange at River Road (MD 190). (See vicinity map below)



- ORIGINAL CONSTRUCTION (6 Lanes / 3 per direction) ..... 1962

• **FINAL SYSTEM COMPLETION (CAPITAL BELTWAY) ..... 1964**  
 - Still 3 Lanes Per Direction Through Subject Area

- LANE ADDITIONS IN MEDIAN OR OUTSIDE OF EXISTING ..... 1993-94
  - Highway Section Variable From 4-5 Lanes Per Direction.
  - Convergence/divergence area of I-495 and I-270 West Spur essentially 5 lanes per direction, to just south of Bradley Blvd.
- RECONSTRUCTION OF INTERCHANGE AT I-495 AND I-270 WEST SPUR ..... 1995-96
  - Realignment of I-270 West Spur SB and I-495 Outer Loop
  - Total highway section (I-495) 6-lanes per direction at Bradley Blvd. transition to 5 lanes SB approx. 900 feet south of Bradley Blvd. I-495 NB 6 lanes (5 through-lanes plus aux. lane) to transition to 5 lanes through approx. 2400 feet north of MD 190 overpass at I-495.

NOTE:

The **SHADED** date is the current completion date for the Capital Beltway (I-495) and connecting interstate highways in the subject area for purposes of TYPE II eligibility determination.



## DEVELOPMENT CHRONOLOGY OF THE I-270 EAST SPUR

- 1957-58** INITIAL **4-LANE** CONSTRUCTION OF HIGHWAY (ORIGINAL DESIGNATION AS US 240)
  
- EARLY 1959** US 240 **OPENED** TO TRAFFIC
  
- 1972** REDESIGNATION OF US 240 AS **I-70S** (ROADWAY REMAINS 4 LANES , **NO EXPANSION**)
  
- 1974** REDESIGNATION OF I-70S TO PRESENT **I-270 (EAST SPUR)** (ROADWAY STILL 4 LANES, **NO EXPANSION**)
  
- 1992** CONSTRUCTION OF **5TH AND 6TH LANES** IN MEDIAN OF EXISTING ROADWAY (**CURRENT 6-LANE SECTION**)
  
- SEPT. 1993** NORTHBOUND LANE **OPENED** TO TRAFFIC AS HIGH OCCUPANCY VEHICLE (HOV) LANE
  
- JULY, 1994** SOUTHBOUND LANE **OPENED** TO TRAFFIC AS HOV LANE
  
- 1996** **SHIFT OF NORTHBOUND EAST SPUR HOV LANE** TO NORTHBOUND MAINLINE OF I-270. EAST SPUR MAINLINE ROADWAY REDUCED TO 2 LANES NORTHBOUND NEAR Y-SPLIT WITH MAINLINE I-270 AND WEST SPUR (HOV LANE SHIFTED AWAY FROM ADJACENT HOUSING ALONG NORTH SIDE OF EAST SPUR HIGHWAY).