FINAL

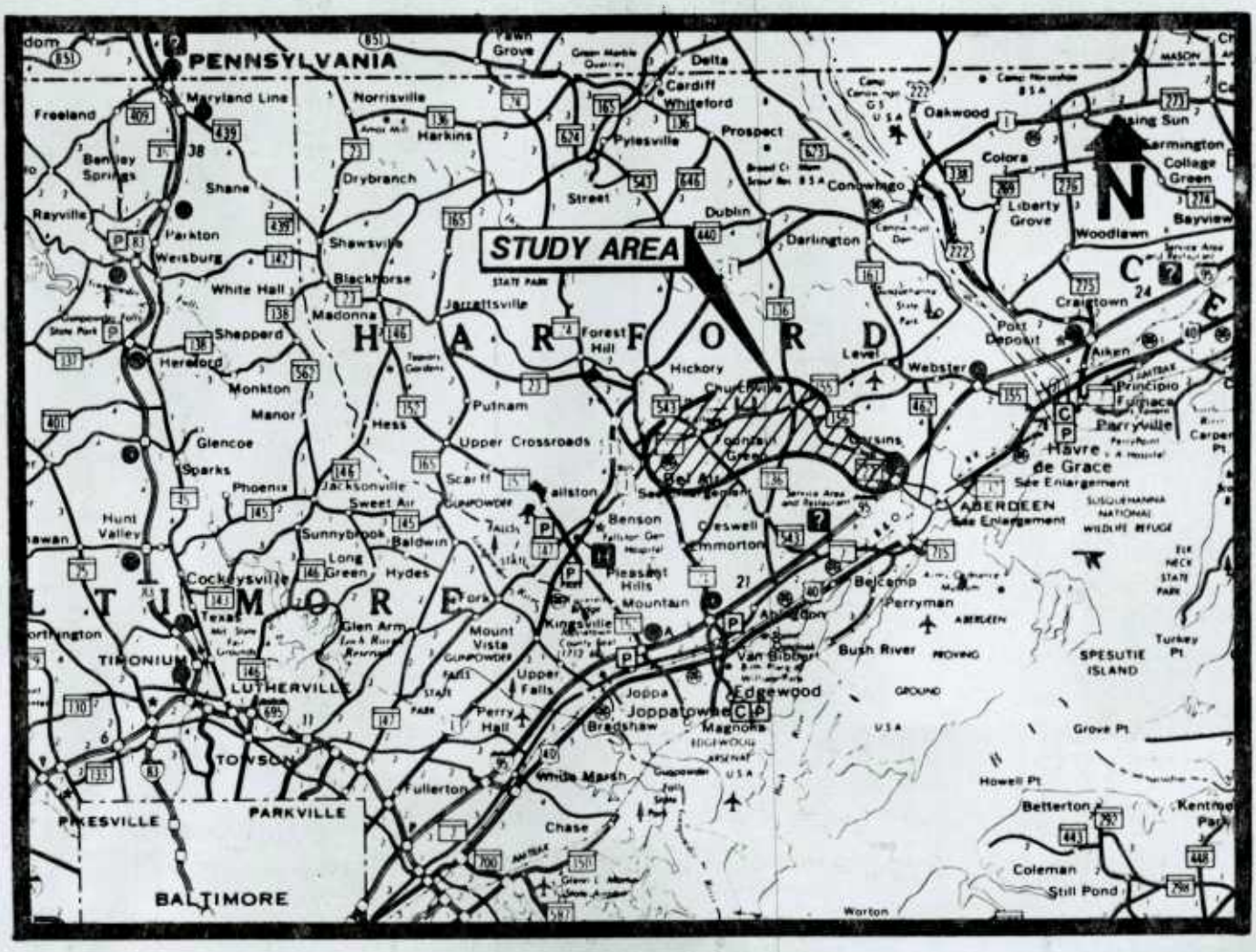
ENVIRONMENTAL IMPACT STATEMENT

Section 4(f) Evaluation

MARYLAND ROUTE 22

BEL AIR TO INTERSTATE ROUTE 95

Harford County, Maryland



PREPARED BY

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA-MD-EIS-87-01-FS

REGION III

MARYLAND ROUTE 22
FROM BEL AIR
TO INTERSTATE ROUTE 95
HARFORD COUNTY, MARYLAND

FINAL
ENVIRONMENTAL IMPACT STATEMENT
AND 4(f) EVALUATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

The following persons may be contacted for additional information concerning the document:

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Date _____ FOR MARYLAND STATE HIGHWAY ADMINISTRATION

DATE _____ FOR FEDERAL HIGHWAY ADMINISTRATION
DIVISION ADMINISTRATOR

The purpose of the project is to provide roadway and related improvements along the corridor to relieve local traffic congestion, improve highway safety, and improve the overall flow of traffic from Bel Air to Aberdeen. The project is in conformance with local and State Plans.

Several alternates were described in the Draft Environmental Impact Statement and presented at the Combined Location/Design Public Hearing. A combination of the four-lane divided and five-lane undivided highway alternates has been selected for the portion of the project from Bel Air to east of Maryland Route 543 and Alternate C has been selected for the connection to Maryland Route 155. The selection of an improvement alternate for the remainder of the project has been deferred.

FINAL
ENVIRONMENTAL IMPACT STATEMENT

AND

SECTION 4(f) EVALUATION

MARYLAND ROUTE 22
FROM BEL AIR
TO INTERSTATE ROUTE 95

HARFORD COUNTY, MARYLAND

Prepared by

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

and

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Submitted pursuant to 42 U.S.C. 4332(2)(c),
49 U.S.C. 303(c), 23 C.F.R. 771,
CEQ Regulations (40 CFR et seq)
and 16 U.S.C. 470 (f)

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SUMMARY

SUMMARY

1. Administrative Action Environmental Impact Statement

( ) Draft

(X) Section 4(f) Statement

(X) Final

2. Individuals who can be contacted for additional information concerning the proposed project and this document.

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3. Description of Selected Action

The project consists of roadway and related improvements to relieve local traffic congestion, improve highway safety, and improve the overall flow of traffic along Maryland Route 22 from Bel Air to Interstate Route 95. See Figure S-1.

The selected action for the corridor is as follows:

- Improve Maryland Route 22 from Shamrock Road to east of Maryland Route 543.
- Construct interim intersection and vertical stopping sight distance improvements from west of Prospect Mill Road to east of Thomas Run Road.
- Construct interim intersection improvements at the Maryland Route 22 - Maryland Route 136 intersection.
- Construct a new connection from Maryland Route 22 to Maryland Route 155 along the Alternate C alignment.
- Defer selection of an improvement alternate for Maryland Route 22 east of Maryland Route 543 until the new Maryland Route 543 - Interstate Route 95 interchange is completed and the effects of the new facility on Maryland Route 22 are evaluated. This deferment will also permit the results of the re-evaluation of

the Harford County Land Use Plan by the County's Department of Planning and Zoning be taken into consideration in future studies.

4. Alternates Considered

a. Segment 1 - Bel Air to Corns Drive

1) No Build Alternate

Maryland Route 22 would continue as a two-lane roadway. No major improvements would be made to the existing roadway. Normal maintenance and spot safety improvements, as scheduled by the State Highway Administration District Office, would be provided as required within the existing right of way.

2) Four-Lane Divided Highway Alternate

Maryland Route 22 would be reconstructed along the present route to provide two traffic lanes in each direction separated by a 20-foot curbed median. The proposed improvements would be constructed within a minimum right of way width of 80 feet with a variable width grading and utility easement along each side of the roadway.

3) Five-Lane Undivided Highway Alternate

Maryland Route 22 would be reconstructed along the present route to be a five-lane undivided, curbed, urban highway with a minimum right of way width of 80 feet and variable width grading and utility easements.

4) Hybrid Alternate (Selected Alternate)

This altenrate is a combination of the four-lane divided and five-lane undivided highway alternates described above. It proposes Maryland Route 22 being reconstructed to be a four-lane divided highway from Shamrock Road to Brierhill Drive; a five-lane undivided highway from Brierhill Drive to Moores Mill Road; a four-lane divided highway from Moores Mill Road to Hillside Drive and a five-lane undivided highway from Hillside Drive to approximately 500 feet east of Maryland Route 543.

No major improvements are proposed for Maryland Route 22 east of the Maryland Route 543 intersection. Design of interim intersection improvements are in progress for the Prospect Mill Road and Thomas Run Road intersections.

b. Segment 2 - Corns Drive to Snake Lane

The folliwng five alternates were considered for Maryland Route 22 within this segment of the project and it was decided to defer the selection of an improvement alternate.

1) No Build Alternate

Maryland Route 22 would continue as a two-lane roadway. No major improvements would be made to the existing roadway. Normal maintenance and spot safety improvements, as scheduled by the State Highway Administration District Office, would be provided as required within the existing right of way. Intersection improvements are currently being designed for the Maryland Route 136 intersection.

2) Four-Lane Divided Highway Alternate

Maryland Route 22 would be reconstructed along the present route to provide two traffic lanes in each direction separated by a 20-foot curbed median from Corns Drive to 1400 feet west of Maryland Route 136 and from 400 feet east of Glenville Road to Snake Lane. The proposed improvements would be constructed within a 80-foot minimum right of way width with a variable width grading and utility easement along each side of the roadway. From west of Maryland Route 136 to east of Glenville Road, Maryland Route 22 would be widened to be a four-lane undivided highway.

3) Five-Lane Undivided Highway Alternate

Maryland Route 22 would be reconstructed within the same limits described for the four-lane divided highway alternate to be a five-lane undivided, curbed, urban highway. The minimum right of way width would be 80 feet and a variable width grading and utility easement would be required along each side of the roadway.

4) Churchville Southern By-Pass Alternate A

This alternate consists of a new two-lane rural highway with paved shoulders and safety grading within a 150-foot minimum width right of way. This alternate would begin at Maryland Route 22 and Corns Drive, follow a new location in a southeasterly direction and intersect existing Maryland Route 22 at Snake Lane.

5) Churchville Southern By-Pass Alternate B

This alternate also consists of a new two-lane rural highway with paved shoulders and safety grading within a 150 foot minimum width right of way. This alternate would also begin at Maryland Route 22 and Corns Drive, follow a new location in a southeasterly direction and intersect existing Maryland Route 22 at Snake Lane.

Four "connection alternates" were considered for relocating the Maryland Route 22/Maryland Route 155 intersection to improve traffic operations in Churchville:

1) Maryland Route 155 Alternate Connection C (Selected Alternate)

This alternate consists of a new two-lane rural highway with paved shoulders and safety grading within an 80-foot minimum right of way width. Connection C would begin on the north side of existing Maryland Route 22 approximately 1400 feet west of the existing Maryland Route 22-Maryland Route 136 intersection. It would then follow a new location in a northeasterly direction, cross Maryland Route 136 approximately 1000 feet north of the existing Maryland Route 22-Maryland Route 136 intersection, continue easterly and tie into existing Maryland Route 155 at Glenville Road.

Two options were considered for the above alignment in order to reduce the impact on the property east of Maryland Route 136.

- Option 1 would begin on the north side of Maryland Route 22 at the same location as Connection C, follow a new location in a northeasterly direction, cross Maryland Route 136 approximately 750 feet north of the existing Maryland Route 22 - Maryland Route 136 intersection, continue easterly, meet existing Maryland Route 155 approximately 800 feet west of Glenville Road and extend along the existing road to Glenville Road.

- Option 2 is similar to Option 1 except that it would cross Maryland Route 136 approximately 940 feet north of the existing Maryland Route 22 - Maryland Route 136 intersection.

2) Maryland Route 155 Alternate Connection C-2

This alternate consists of constructing a new 36-foot wide curbed, urban street with a minimum right of way width of 80 feet on a new location from Maryland Route 22 to Maryland Route 155. Two options are being considered for this alternate:

- Option 1 would begin on the north side of Maryland Route 22 approximately 850 feet east of the existing Maryland Route 22-Maryland Route 155 intersection, extend in a northerly and northeasterly direction and connect to existing Maryland Route 155 approximately 1200 feet west of Glenville Road.

- Option 2 would follow the alignment for Option 1 from Maryland Route 22 to Maryland Route 155 and would include the improvement of Maryland Route 155 from the Option 1 tie-in to Glenville Road.

3) Maryland Route 155 Alternate Connection D

This alternate consists of a new two-lane rural highway with paved shoulders and safety grading within a minimum right of way width of 80 feet. Connection D would begin on the north side of Maryland Route 22 approximately 480 feet northwest of the Maryland Route 22-Maryland Route 156 intersection. It would then follow a new location in a northeasterly direction, passing east of the Churchville Recreation Complex and tie into existing Maryland Route 155 approximately 3350 feet northeast of the Maryland Route 155-Glenville Road intersection.

4) Glenville Road Alternate

This alternate consists of reconstructing Glenville Road from Maryland Route 22 to Maryland Route 155 to be a 36-foot wide curbed urban street with a minimum right of way width of 60 feet. The existing right of way line would be retained along the west side of the road and the road would be widened along the east side.

Two options were considered for improving Maryland Route 136 in the vicinity of the Maryland Route 22 intersection. It was decided to defer selection of an improvement option.

- Option 1 consists of widening Maryland Route 136 along the existing alignment to be a 36-foot wide curbed street from approximately 400 feet south of Maryland Route 22 to approximately 175 feet north of the intersection.

- Option 2 consists of improving Maryland Route 136 from approximately 600 feet south of Maryland Route 22 to approximately 500 feet north of the intersection. Under this option the road would be widened to 41 feet.

C. Segment 3 - Snake Lane to Interstate Route 95

The following three alternates were considered for Maryland Route 22 for this segment of the project and it was decided to defer the selection of an improvement alternate.

1) No Build Alternate:

Maryland Route 22 would continue as a two-lane roadway. No major improvements would be made to the existing roadway. Normal maintenance and spot safety improvements, as scheduled by the State Highway Administration District Office, would be provided as required within the existing right of way.

2) Four-Lane Divided Highway Alternate:

Maryland Route 22 would be reconstructed along the existing route to provide two traffic lanes in each direction separated by a 20-foot curbed median. The proposed improvements would be constructed within a minimum right of way width of 80 feet with a variable width grading and utility easement along each side of the roadway.

3) Five-Lane Undivided Highway Alternate:

Maryland Route 22 would be reconstructed along the existing route to be a five-lane undivided, curbed, urban highway with a minimum right of way width of 80 feet and variable width grading and utility easements.

Under both the Four-Lane Divided and Five-Lane Undivided Highway alternates, one of the three options being considered for improving the horizontal alignment for Maryland Route 22 in vicinity of the Carsins Run Road intersection will be selected. Also, under both of the Build Alternates, construction of a four-lane divided highway is proposed for Maryland Route 22 through the Interstate Route 95 interchange area from Gilbert Road to approximately 800 feet east of Interstate Route 95. This would include widening and rehabilitating the existing bridge, improving the Maryland Route 22 horizontal alignment from Gilbert Road to the Interstate Route 95 overpass and miscellaneous interchange ramp adjustments.

5. Summary Of Environmental Impacts

a. General

The No-Build Alternate would not affect any homes or require acquisition of any right of way. However, it is not consistent with area land use plans and would not relieve existing and projected traffic congestion.

The Build Alternates for improving Maryland Route 22 along the present road alignment and Alternates C and C-2 for improving the connection of Maryland Route 155 to Maryland Route 22 are consistent with Harford County land use plans. The Churchville Southern By-Pass Alternates and Alternate D for connecting Maryland Route 155 to Maryland Route 22 do not have the full support of the Harford County government because of the effect on agricultural land.

No minority communities would be affected. However, one minority family would be displaced by the Churchville Southern By-Pass Alternates.

No public park lands will be affected.

The Churchville Southern By-Pass Alternates would affect archeological sites.

There are no violations of State or National Ambient Air Quality Standards.

The significant impacts associated with each Build Alternate in each design segment are shown on the Alternates Comparison Matrix and summarized as follows:

b. Segment One - Bel Air to Corns Drive

1) Four-Lane Divided Highway Alternate - Impacts include: relocation of a maximum of six families; restricted access to 13 businesses and approximately 57 residences creating minor inconveniences; predicted noise levels exceed Federal Noise Abatement criterion on five sites; minor encroachment on the Bynum Run flood plain; affects 0.32 acre of wetland.

2) Five-Lane Undivided Highway Alternate - Impacts include: relocation of a maximum of two residences; predicted noise levels exceed Federal Noise Abatement criterion on five sites; minor encroachment on the Bynum Run flood plain; affects 0.39 acre of wetland.

3) Hybrid Alternate (Selected Alternate) - Impacts include: restricted access to approximately 15 residences creating minor inconviences; predicted noise levels exceed Federal Noise Abatement criterion on four sites; minor encroachment on the Bynum Run flood plain; affects 0.17 acre of wetland.

c. Segment 2 - Corns Drive to Snake Lane

1) Four-Lane Divided Highway Alternate - Impacts include: relocation of one family; restricted access to approximately 19 businesses and 46 residences creating minor inconveniences; predicted noise levels exceed Federal Noise Abatement criterion at three sites.

2) Five-Lane Undivided Highway Alternate - Impacts include: relocation of one family; predicted noise levels exceed Federal Noise Abatement criterion at three sites.

3) Churchville Southern By-Pass Alternate A - Impacts include: displacement of a maximum of four families including at least one minority family; right of way acquisition of 44 acres of agricultural land from 10 farms; may adversely affect three farms; three major stream crossings; affects 2.74 acres of wetland.

4) Churchville Southern By-Pass Alternate B - Impacts include: displacement of a maximum of five families including at least one minority family and two farm families; right of way acquisition of 50 acres of agricultural land from nine farms; may adversely affect six farms; four major stream crossings; affects 3.86 acres of wetland.

5) Maryland Route 155 Alternate C (Selected Alternate) - Impacts include: acquisition of approximately 13.7 acres of agricultural land from two farms; acquisition of approximately 9.0 acres from within the Homelands Historic Site Boundary (National Register Eligible).

6) Maryland Route 155 Atlernate C, Option 1 - Impacts include: acquisition of approximately 11.6 acres of agricultural land from two farms; acquisition of approximately 8.3 acres from within the Homelands Historic Site Boundary (National Register Eligible); displacement of a construction company office.

7) Maryland Route 155 Alternate C, Option 2 - Impacts include: acquisition of approximately 12.4 acres of

agricultural land from two farms; acquisition of approximately 8.8 acres from within the Homelands Historic Site Boundary (National Register Eligible).

8) Maryland Route 155 Alternate C-2, Option-1 - Impacts include: displacement of three families.

9) Maryland Route 155 Alternate C-2, Option-2 - Impacts include: displacement of three families; acquisition of approximately 1.2 acres from within the Homelands Historic Site Boundary (National Register Eligible).

10) Maryland Route 155 Alternate D - Impacts include: acquisition of approximately 19 acres of agricultural land from two farms; may adversely affect one farm.

11) Maryland Route 155 Glenville Road Alternate - Impacts include: displacement of three families; acquisition of grading easement from the Churchville Elementary School; acquisition of approximately 0.2 acre from Churchville Recreation Complex.

d. Segment 3 - Snake Lane to Interstate Route 95

1) Build Alternates with Option-1 at Carsins Run - Impacts include: displaces a maximum of 2 families, 10 individuals and 3 businesses; predicted noise levels exceed Federal Noise Abatement criterion at four sites.

2) Build Alternates with Option-2 at Carsins Run - Impacts include: displacement of 1 business; predicted noise levels exceed Federal Noise Abatement criterion at four sites.

3) Build Alternates with Option-3 at Carsins Run - Impacts include: displacement of a maximum of 2 families, 10 individuals and 2 businesses; predicted noise levels exceed Federal Noise Abatement criterion at four sites.

4) The four-lane divided highway alternate would restrict access to approximately 7 businesses and 87 residences creating minor inconveniences.

6. Areas of Controversy

The Maryland Route 22 Corridor Association and most of the individuals along Maryland Route 22 oppose widening the existing road because of the effects on the individual properties.

Other groups and individuals oppose the Southern By-pass altenrates because of the effects on agricultural property and wetlands.

7. Permits and Approvals Required

Construction of this project would require review and approval for the following:

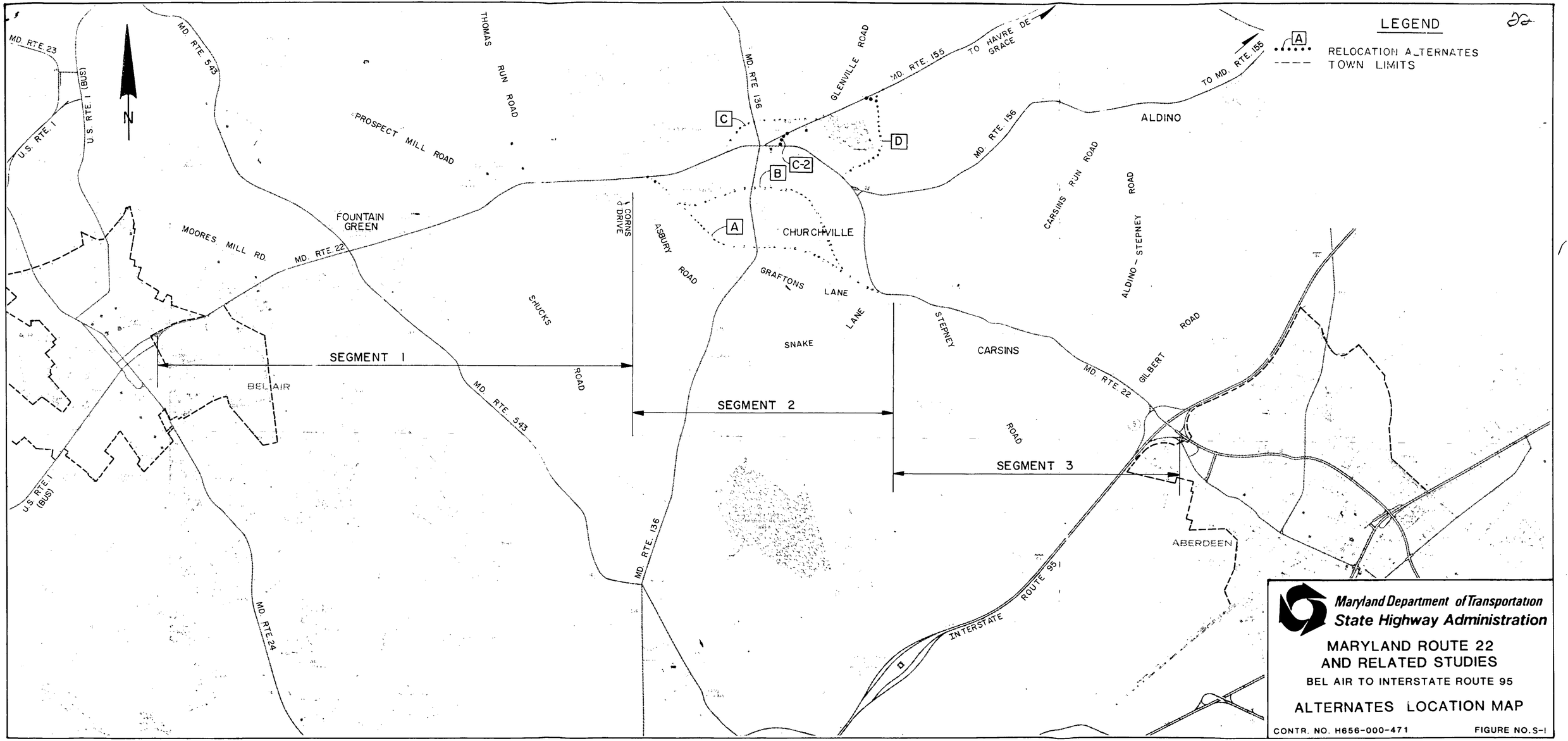
U.S. Army Corps of Engineers -- Section 404 Permit

Maryland Department of Natural Resources -
Sediment Control Plan

Maryland Department of Natural Resources -
Stormwater Management Plan

Maryland Department of Natural Resources - Waterway
Construction Permit

Maryland Department of Health and Mental Hygiene --
Water Quality Certificate


LEGEND
A
RELOCATION ALTERNATES
TOWN LIMITS
N
MD. RTE. 23
U.S. RTE. 1
U.S. RTE. 1 (BUS)
MD. RTE. 543
THOMAS RUN ROAD
PROSPECT MILL ROAD
FOUNTAIN GREEN
MOORES MILL RD.
MD. RTE. 22
BEL AIR
SHUCKS ROAD
CORNS DRIVE
ASBURY ROAD
MD. RTE. 136
GLENVILLE ROAD
MD. RTE. 155
TO HAVRE DE GRACE
TO MD. RTE. 155
C
D
C-2
B
A
CHURCHVILLE
GRAFTONS LANE
SNAKE LANE
MD. RTE. 156
ALDINO
CARSINS RUN ROAD
ALDINO - STEPNEY ROAD
STEPNEY
CARSINS
GILBERT ROAD
MD. RTE. 22
SEGMENT 1
SEGMENT 2
SEGMENT 3
ABERDEEN
INTERSTATE ROUTE 95
MD. RTE. 24
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
ALTERNATES LOCATION MAP
CONTR. NO. H656-000-471
FIGURE NO. S-1

ALTERNATES COMPARISON MATRIX

		SEGMENT 1			SEGMENT 2									SEGMENT 3						
		No Build	4 Lane Divided	5 Lane Undivided	No Build	4 Lane Divided	5 Lane Undivided	By-pass A (1)	By-pass B (1)	Conn. C	Conn. C-2 Option 1	Conn. C-2 Option 2	Conn. D	No Build	4 Ln. Div. w/Opt. 1	4 Ln. Div. w/Opt. 2	4Ln. Div. w/Opt. 3	5 Ln. Undlv. w/Opt. 1	5 Ln. Undiv. w/Opt. 2	5 Ln. Undiv. w/Opt. 3
Length in Miles		4.04	4.04	4.04	2.94	2.94	2.94	2.39	2.61	0.88	0.17	0.37	0.96	2.61	2.61	2.61	2.61	2.61	2.61	2.61
COSTS	Right of Way	0	1,599,000	1,040,000	0	921,000	803,000	1,124,000	1,788,000	64,000	214,000	233,000	305,000	0	1,270,000	997,000	776,000	1,165,000	818,000	615,000
	Relocation	0	127,000	49,000	0	21,000	21,000	104,000	98,000	0	52,000	52,000	0	0	122,000	20,000	66,000	122,000	20,000	66,000
	Construction	0	10,097,000	9,274,000	0	6,206,000	5,740,000	6,299,000	5,998,000	1,117,000	200,000	418,000	1,273,000	0	7,232,000	7,240,000	7,245,000	6,991,000	7,022,000	7,024,000
	Total	0	11,823,000	10,363,000	0	7,148,000	6,564,000	7,527,000	7,884,000	1,181,000	466,000	703,000	1,578,000	0	8,624,000	8,257,000	8,087,000	8,278,000	7,860,000	7,705,000
ACRES REQUIRED	Right of Way (Total)	0	8.31	3.23	0	2.59	1.44	46.62	54.75	13.0	0.34	1.50	17.41	0	5.05	5.19	4.96	1.67	1.36	1.48
	Residential		5.98	1.82		0.97	0.11	0.94	7.16	0	0.34	0.34	0		3.84	4.11	3.53	0.56	0.53	0.43
	Commercial		1.23	1.01		1.43	0.85	1.23	4.56	0	0	0	1.41		0.47	0.37	0.70	0.60	0.32	0.54
	Agricultural		1.10	0.40		0.19	0.48	44.45	43.03	13.0	0	1.16	16.0		0.74	0.74	0.73	0.51	0.51	0.51
	Easement		6.6	7.3		7.7	7.7	1.18	1.18	0	0	0	0		7.2	7.3	6.6	9.1	8.7	8.2
Businesses Displaced		0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	3	1	2
Families Displaced		0	6	2	0	1	1	4	5	0	3	3	0	0	2 FAMILIES & 10 INDIVIDUALS	0	2 FAMILIES & 10 INDIVIDUALS	2 FAMILIES & 10 INDIVIDUALS	0	2 FAMILIES & 10 INDIVIDUALS
NO. OF PROPERTIES AFFECTED	Residential	0	77	77	0	37	25	28	26	1	3	3	0	0	71	71	71	41	41	41
	Business	0	29	26	0	34	25	14	13	0	0	0	3	0	10	8	8	10	8	8
	Public/Recreational	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4(F) Historic Sites	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
	Farms	0	4	3	0	23	31	18	12	2	0	1	2	0	28	28	28	24	24	24
Woodland (Acres)		0	N/A	N/A	0	N/A	N/A	10.3	16.3	0	N/A	N/A	6.0	0	N/A	N/A	N/A	N/A	N/A	N/A
Stream Crossings		1	1	1	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0
Wetlands (Acres)		0	0.35	0.30	0	0	0	2.5	0.9	0.5	0	0	0.7	0	0	0	0	0	0	0
Probable Stormwater Management Areas		0	8	8	0	5	5	5	6	1	1	1	2	0	4	4	4	4	4	4

(1) Includes Md. Rte. 22 Improvements from Asbury Rd. to East of Md. Rte. 155.

MD. ROUTE 155 CONNECTION ALTERNATES

		CONN. C	CONN. C OPTION 1	CONN. C OPTION 2	CONN. C-2 OPTION 2	GLENVILLE ROAD	CONN. D
Length in Miles		0.88	0.88	0.96	0.37	0.26	0.96
COSTS	Right of Way	70,000	383,000	89,000	260,000	254,000	333,000
	Relocation	0	15,000	0	52,000	53,000	0
	Construction	1,235,000	1,250,000	1,367,000	462,000	292,000	1,407,000
	Prel.-Engineering	134,000	136,000	149,000	50,000	32,000	153,000
	Total	1,439,000	1,784,000	1,605,000	824,000	631,000	1,893,000
ACRES REQUIRED	Right of Way (Total)	13.0	14.06	12.54	1.54	0.59	17.41
	Residential	0	0.81	0	0.34	0.59	0
	Commercial	0	1.64	0.17	0	0	1.41
	Agricultural	13.0	11.61	12.37	1.16	0	16 0
	Easement	0	0	0	0	0.52	0
Businesses Displaced		0	1	0	0	0	0
Families Displaced		0	0	0	3	3	0
NO. OF PROPERTIES AFFECTED	Residential	1	3	0	3	12	0
	Business	0	1	1	0	0	3
	Public/Recreational	0	0	0	0	2	0
	4(F) Historic Sites	1	1	1	1	0	0
	Farms	2	2	2	1	0	2
Woodland (Acres)		N/A	N/A	N/A	N/A	N/A	6.0
Stream Crossings		1	1	1	0	0	0
Wetlands (Acres)		0.18	0.23	0.18	0	0	0.7
Probable Stormwater Management Areas		1	1	1	1	0	2

I. PURPOSE AND NEED

I - PURPOSE AND NEED

A. PROJECT LOCATION AND DESCRIPTION

1. PROJECT LOCATION

The project area is located in the central portion of Harford County, Maryland (See Figure I-1). The study corridor extends along existing Maryland Route 22 from Bel Air to Interstate Route 95, a distance of approximately 9.5 miles. In the vicinity of Churchville, the study corridor was extended north and south of the existing road to study by-pass alternates for Churchville.

2. PROJECT DESCRIPTION

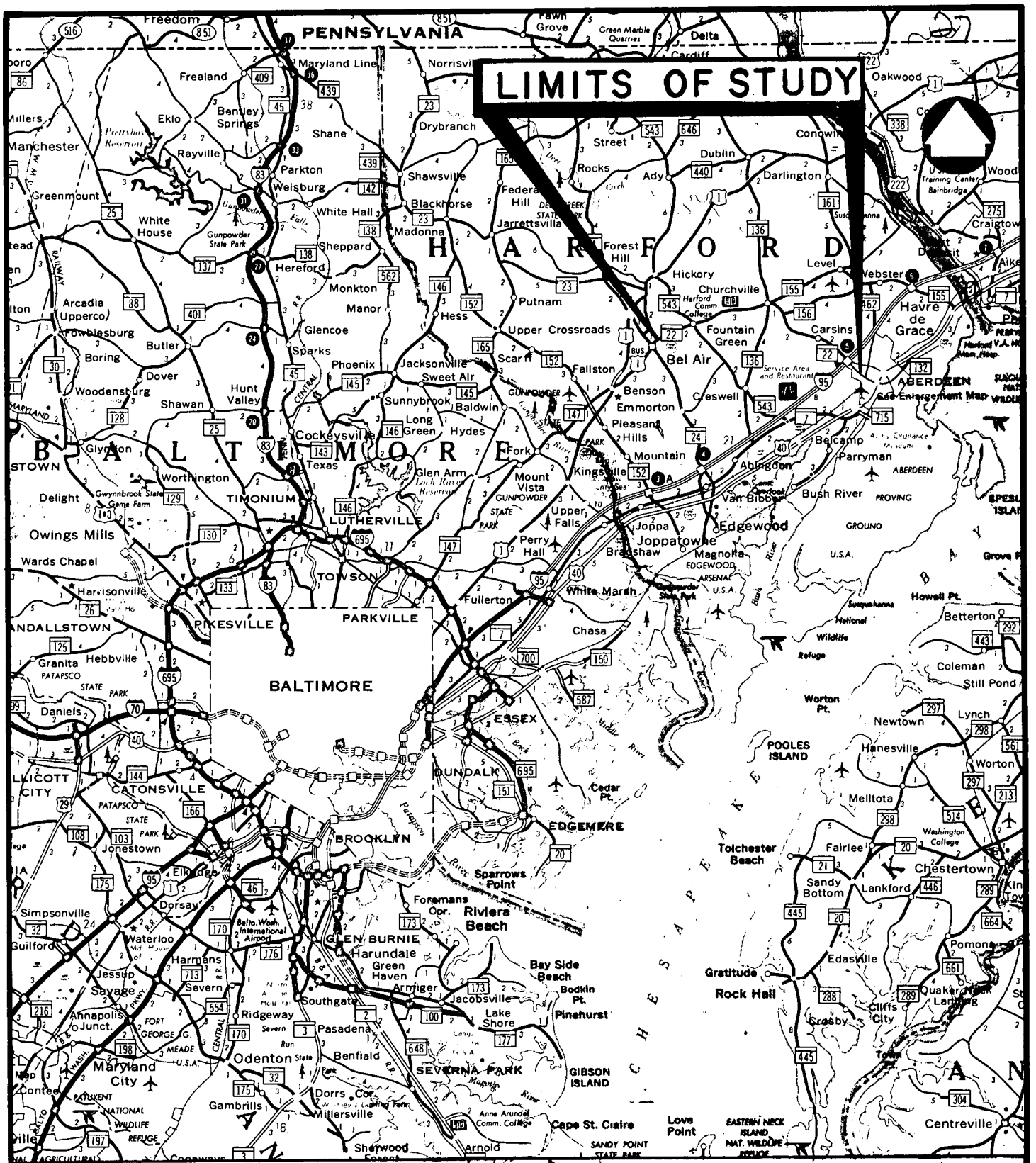
The project consists of roadway and related improvements along the corridor which are necessary to relieve local traffic congestion, improve highway safety, and improve the overall flow of traffic from Bel Air to Aberdeen. Improvements being considered include: reconstruction of the existing road to provide two through traffic lanes in each direction and auxiliary turning lanes, relocation of the existing Maryland Route 22-Maryland Route 155 intersection, relocation of Maryland Route 22 from Corns Drive to Snake Lane to by-pass Churchville on the south, relocation of Maryland Route 155 from west of Maryland Route 136 to Glenville Road to by-pass Churchville on the north and relocation of Maryland Route 155 around the east side of Churchville.

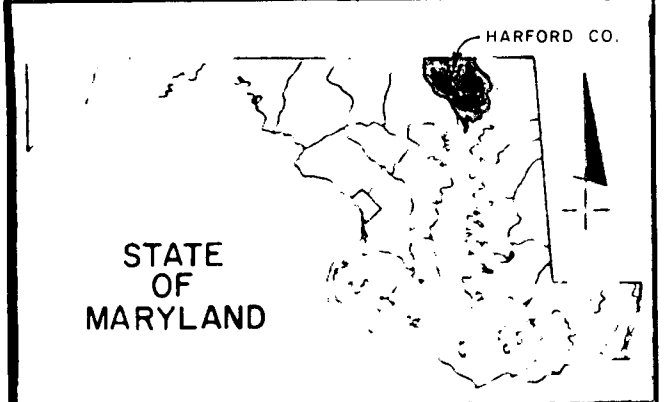
During the initial study process, it was determined that the project should be divided into the following three segments (see figure I-2).

Segment 1 - Bel Air to west of Churchville
(Shamrock Road to Corns Drive)

Segment 2 - Maryland Route 22 through Churchville
(Corns Drive to Snake Lane)

Segment 3 - East of Churchville to Interstate Route 95
(Snake Lane to I-95)





Maryland Department of Transportation

State Highway Administration

MARYLAND ROUTE 22
AND RELATED STUDIES

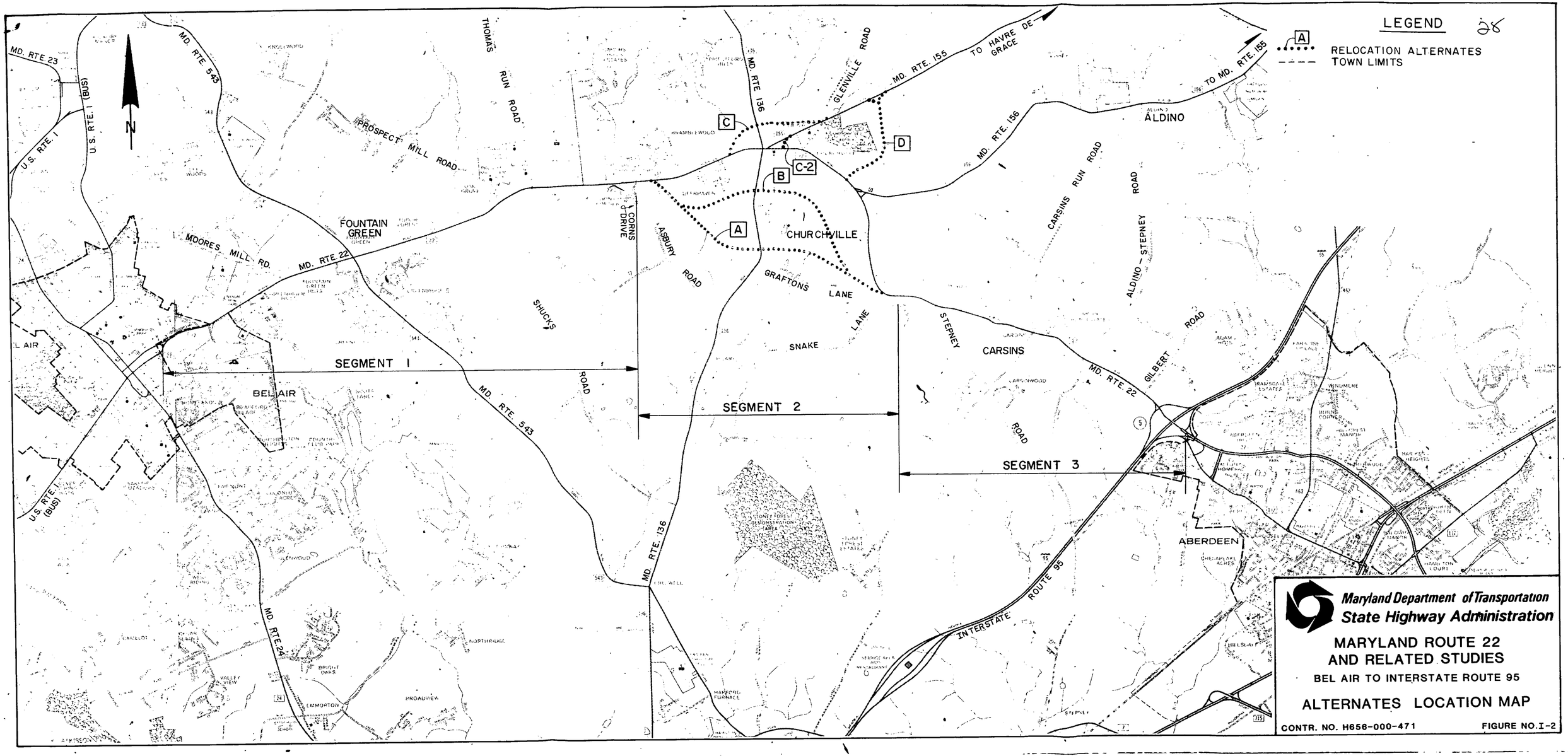
BEL AIR TO INTERSTATE 95

VICINITY MAP

SCALE: 1" = 6 MILES

CONTR. NO. H656-000-471

FIGURE NO. I-1



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

ALTERNATES LOCATION MAP

CONTR. NO. H656-000-471 FIGURE NO. I-2

B. NEED FOR PROJECT

1. GENERAL

Existing Maryland Route 22 serves as the major highway between Bel Air and Aberdeen. The section from Bel Air to Churchville in conjunction with Maryland Route 155 serves as the major route to Havre de Grace and the Route 40 corridor northeast of Harford County. The highway is also one of the County's four access routes to Interstate Route 95.

The population within the transportation zones which is served by Maryland Route 22 has more than quadrupled since 1950 and as of the 1980 Census, consisted of approximately 36 percent of the County's population with heavy concentrations in the Bel Air Zone (16,745), Aberdeen Zone (12,807) and Havre de Grace Zone (10,549). It is anticipated that the population will continue to increase in the Bel Air, Aberdeen and Havre de Grace Zones, but at a much slower rate than in the past.

The Maryland Route 22 project would relieve existing and projected traffic congestion and improve access for the growing residential development in the project area.

2. EXISTING ROAD CONDITIONS

Maryland Route 22 west of Churchville, is a Federal Aid Primary Highway with a functional classification of Minor Arterial, and east of Churchville is a Federal Aid Secondary Highway with a functional classification of Major Collector. It is basically a two-lane rural highway with paved or stabilized shoulders approximately 10 feet wide. Portions of the highway have been widened in recent years to provide turning lanes at intersections and shopping center entrances. Traffic bearing shoulder construction has also been performed in several areas. The horizontal alignment for the highway is adequate for a 50 mph design speed except for the horizontal curve in vicinity of the Maryland Route 156 intersection which has a 40 mph design speed. The vertical alignment for the highway generally meets the 1954 AASHTO criteria for a 50 mph design speed. However, increased development and traffic along the route have made it necessary to reduce the speed limit to 30 mph in the Churchville and Carsins Run areas. Traffic signals are located at the John Carroll School entrance, Moore's Mill Road, Maryland Route 543, Thomas Run/Shuck's Roads and Maryland Route 136 intersections.

3. PROJECT BACKGROUND

Project Planning Studies for the Maryland Route 22 Corridor from Bel Air to Interstate Route 95 have been ongoing since 1975. During the period from 1975 to 1979, the following projects were being studied concurrently:

a. Maryland Route 22, from Bel Air to Churchville and
b. Maryland Route 23 Extended from U.S. 1 north of Bel Air to Interstate Route 95.

The Maryland Route 23 Extended project included studies along existing Maryland Route 22 from Churchville to Interstate Route 95.

In 1980, Harford County, after an evaluation of the County's future highway and transit needs and a review of their comprehensive planning, recommended that the Maryland Route 23 Extended project be deleted from the 1980 Highway Needs Inventory (Draft) and that further efforts be directed to study the upgrading of Maryland Route 22 Corridor from Bel Air to Aberdeen. Harford County also requested that a southern by-pass for Churchville from Coon's Corner to Bodt's Corner (Corns Drive to Snake Lane) be examined.

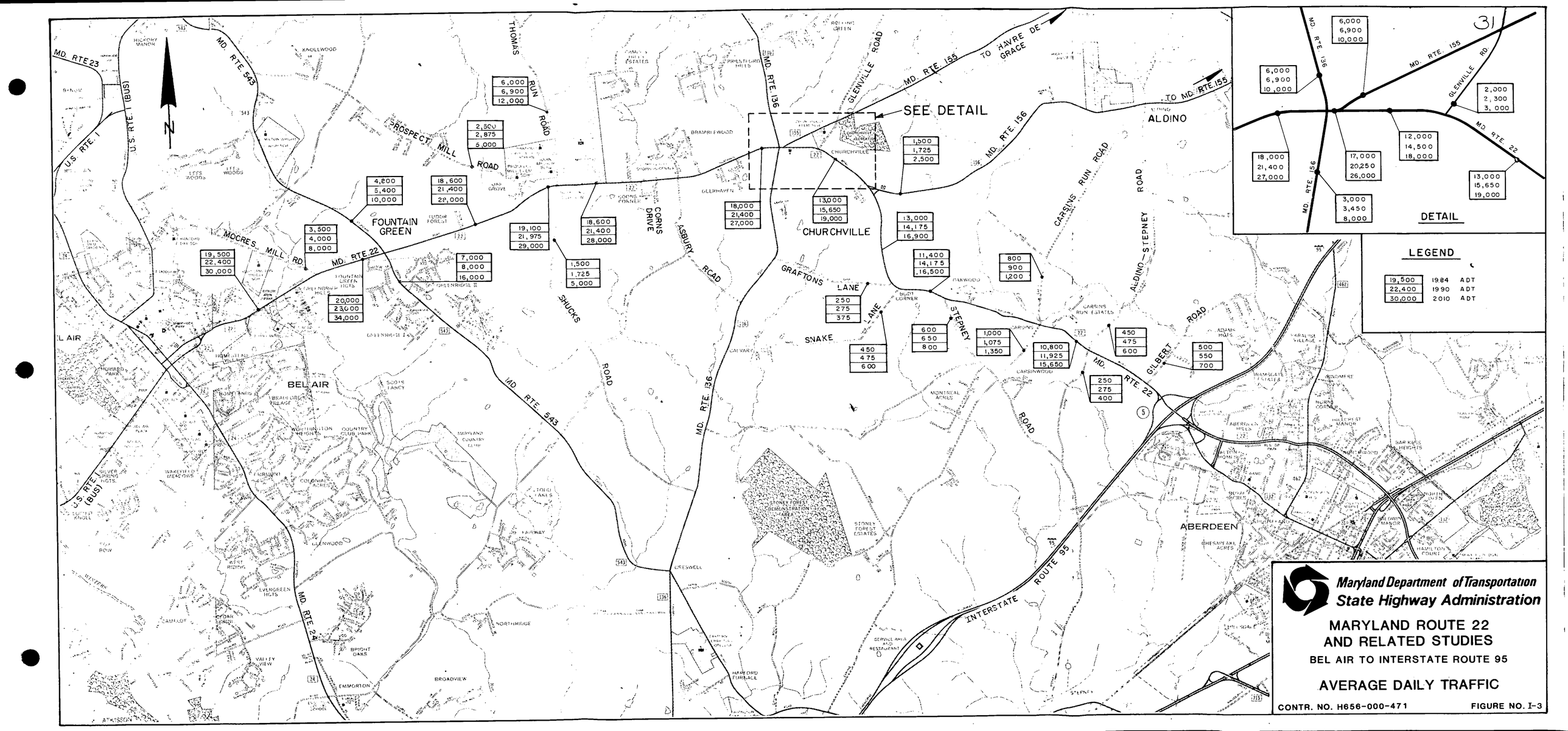
4. TRAFFIC DATA AND ANALYSIS

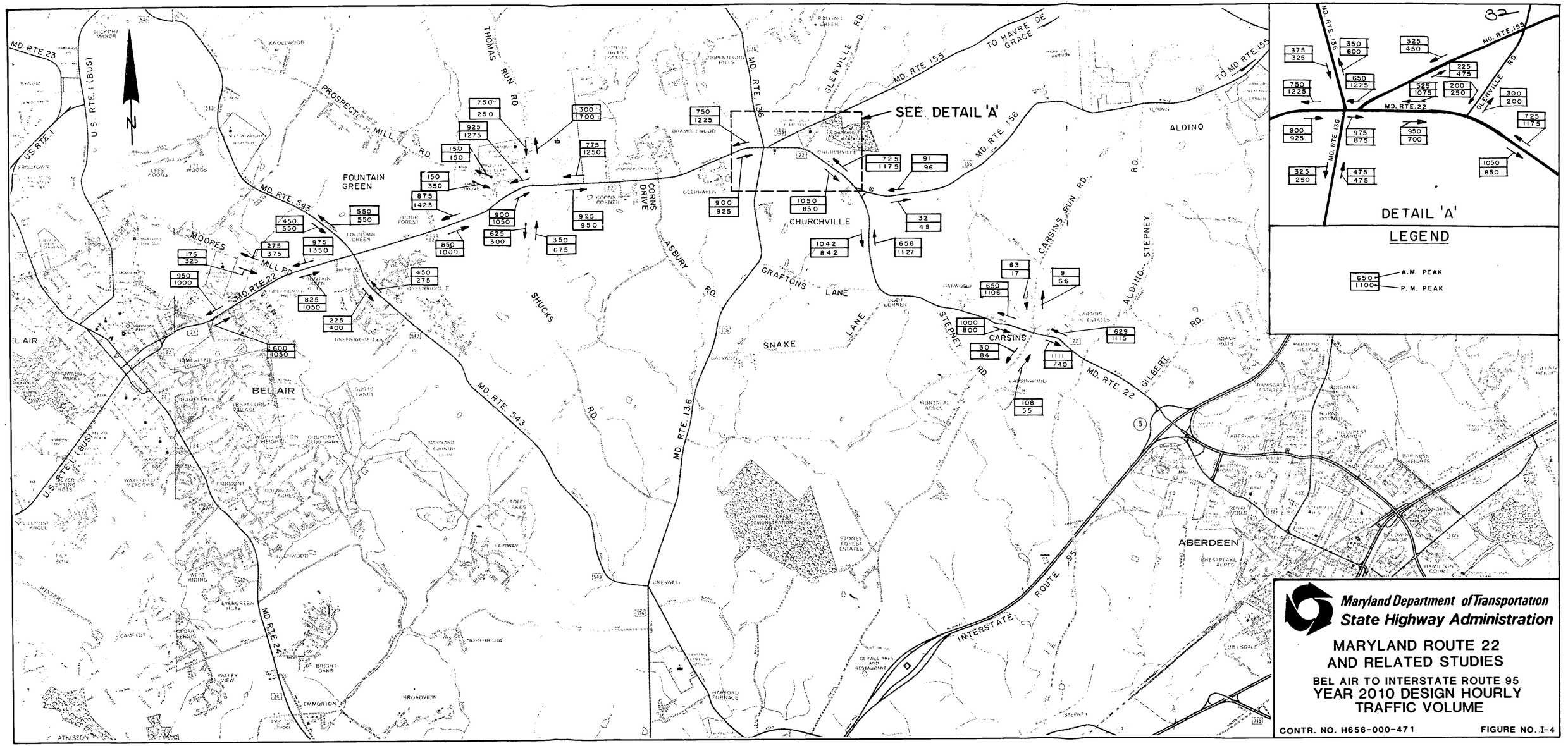
The Average Daily Traffic (ADT) and Design Hour Volume (DHV) traffic data contained herein have been developed by the Maryland State Highway Administration. A summary of this information is shown on Figures I-1 and I-2.

Quality of traffic flow along a highway is measured in terms of "Level of Service". This measure is primarily dependent upon traffic volume, number of lanes, truck percentage and the highway geometry. It is a measure of such factors as speed, traffic interruptions or restrictions, and freedom to maneuver. Six levels of service, designated A through F, from best to worst, have been established to identify traffic operation (Highway Capacity Manual, 1985). Level of Service A represents a condition of relatively free flow (low volumes and higher speeds). Levels of Service B and C describe conditions involving stable flow but increasing restrictions on operating speeds and maneuvering. Level of Service D represents high volume but stable flow with speed and freedom to maneuver being severely restricted. At Level of Service E volumes are at or near the capacity of the highway; speeds are low and maneuvering must be forced. Level of Service F represents conditions below capacity in which there are operational breakdowns with forced flow.

The "Levels of Service" experienced by motorists on existing Maryland Route 22 during the 1984 p.m. peak hour from 4:00 to 5:00 are as follows:

- Bel Air to west of Maryland Route 136 at Churchville: Level of Service E


MD. RTE 23
U.S. RTE. 1 (BUS)
U.S. RTE. 1
MD. RTE 543
PROSPECT MILL ROAD
THOMAS RUN ROAD
MD. RTE 136
GLENVILLE ROAD
MD. RTE. 155 TO HAVRE DE GRACE
SEE DETAIL
TO MD. RTE. 155
ALDINO
MD. RTE. 156
CARSINS RUN ROAD
ALDINO-STEPNEY ROAD
MOORES MILL RD.
MD. RTE 22
FOUNTAIN GREEN
CHURCHVILLE
CORNS DRIVE
ASBURY ROAD
SHUCKS ROAD
GRAFTONS LANE
SNAKE LANE
STERNEY ROAD
GILBERT ROAD
BEL AIR
MD. RTE 543
MD. RTE 24
INTERSTATE ROUTE 95
ABERDEEN
6,000 6,900 12,000
2,500 2,875 3,500
4,800 5,400 10,000
18,600 21,400 28,000
3,500 4,000 8,000
19,500 22,400 30,000
7,000 8,000 16,000
20,000 23,000 34,000
19,100 21,975 29,000
1,500 1,725 5,000
18,600 21,400 28,000
18,000 21,400 27,000
13,000 15,650 19,000
1,500 1,725 2,500
13,000 14,175 16,900
11,400 14,175 16,500
800 900 1,200
250 275 375
450 475 600
600 650 800
1,000 1,075 1,350
10,800 11,925 15,650
450 475 600
500 550 700
250 275 400
DETAIL
6,000 6,900 10,000
6,000 6,900 10,000
2,000 2,300 3,000
18,000 21,400 27,000
17,000 20,250 26,000
12,000 14,500 18,000
13,000 15,650 19,000
3,000 3,450 8,000
LEGEND
19,500 1984 ADT
22,400 1990 ADT
30,000 2010 ADT
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
AVERAGE DAILY TRAFFIC
CONTR. NO. H656-000-471
FIGURE NO. I-3



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

YEAR 2010 DESIGN HOURLY TRAFFIC VOLUME

CONTR. NO. H656-000-471 FIGURE NO. I-4

- West of Maryland Route 136 to east of Maryland Route 155: Level of Service F, because of insufficient vehicular storage length between intersections. Frequently there are insufficient gaps in the westbound traffic to accommodate the vehicles desiring to turn left onto Maryland Route 155 and the eastbound traffic backs up to west of Maryland Route 136. Also the westbound traffic queued at Maryland Route 136 traffic signal often prevents the Maryland Route 155 traffic from entering Maryland Route 22.

- East of Maryland Route 155 to Interstate 95: Level of Service D

- All intersections along the route operate at a Level of Service of C or better except for the Maryland Route 22 - Maryland Route 155 intersection which operates at Level of Service "F".

The "Levels of Service" for the year 2010 estimated a.m. and p.m. peak hour traffic volumes for Maryland Route 22 with the No-Build Alternate will be Level of Service F forced flow, with average operating speeds less than 30 mph. Therefore additional roadway capacity is needed for the Maryland Route 22 corridor to improve existing traffic operations and meet future demands.

5. ACCIDENT STATISTICS

Maryland Route 22 from Shamrock Road to Interstate 95, experienced 408 reported accidents for the five-year period from 1980 - 1984. The resulting accident rate of 168 accidents per one hundred million vehicle miles (acc/100mvm) is lower than the statewide average rate of 194 acc/100mvm for all similar design highways now under state maintenance. The monetary loss to the motoring and general public as a result of these accidents is approximately $1.3 million/100 mvm. The accidents are listed below by severity, indicating the number of persons killed and injured.

Severity		1980	1981	1982	1983	1984	Total
Fatal Accidents	1	1	0	1	0	3	
Persons Killed	1	1	0	1	0	3	
Injury Accidents	48	45	40	43	65	241	
Persons Injured	89	85	76	87	117	454	
Property Damage Accidents		29	28	25	46	36	164
Total Accidents	78	74	65	90	101	408	

There was one location within the study area which met the criteria for a high accident intersection (HAI) during the study period. This was the intersection of Maryland Route 22 with Maryland Route 543, which experienced 11 accidents in 1984. The number of accidents by type is as follows:

Opposite Direction	1
Rear End	1
Sideswipe	2
Left Turn	3
Angle	2
Other	2
	11

There were no high accident sections (HAS) identified in the study area during this period.

Over 40% of the accidents reported were intersection related. Left turn and rear end collisions were occurring at a rate significantly higher than their respective statewide averages for similar type highways. Sideswipe collisions were higher than average, but not significantly. These accident types are usually indicative of a congested traffic flow, mainly associated with peak hour traffic.

Although the five year average accident rate of 168 acc/100 mvm is below the statewide average, the total number of accidents and the yearly rate have been steadily increasing since 1982. The study area of Maryland Route 22 experienced 65 accidents with a rate of 145 acc/100 mvm in 1982. These numbers have risen to 101 accidents and a rate of 209 acc/100 mvm for 1984, a rate that is higher than the statewide average rate of 194 acc/100 mvm for similar type highways.

II. ALTERNATES CONSIDERED

II. ALTERNATES CONSIDERED

A. NO-BUILD ALTERNATE

No major improvements would be made to the existing roadway. Normal maintenance and spot safety improvements, as scheduled by the State Highway Administration District Office, would be provided as required within the existing right of way.

B. TRANSPORTATION SYSTEMS MANAGEMENT

It is the policy of the State Highway Administration to investigate Transportation Systems Management (TSM) improvements as part of all project studies. TSM is recognized as an alternate between the No-Build and Build Alternates and consists of improvements to the highway which add capacity and increase safety with little capital expenditure and/or right of way acquisition.

Generally, intersections may be regarded as the locations where traffic flow is constricted and there is a higher potential for accidents. Therefore, many TSM improvements take place at intersections. All the major intersections along Maryland Route 22 have been improved with traffic signals and turn lanes. In addition, geometric modifications to improve traffic operations and increase safety are under design for the following intersections along Maryland Route 22:

1. Moore's Mill Road
2. Maryland Route 543
3. Prospect Mill Road
4. Thomas Run and Shucks Road
5. Maryland Route 136

However, traffic analysis reveals that the major intersections, with the exception of the Maryland Route 22-Maryland Route 136/Maryland Route 155 intersection, are operating more efficiently than the through roadway. Therefore, the existing roadway width is the principal traffic constriction along Maryland Route 22, and the only way to improve this condition is to add additional lanes as proposed under the following Build Alternates.

C. BUILD ALTERNATES

The following Build Alternates were developed to evaluate the environmental effects of providing highway improvements along the Maryland Route 22 corridor which would accommodate the projected year 2010 peak hour traffic volumes at a satisfactory level of service and improve the safety of the highway. One of the alternates and a combination of the alternates was considered for each study segment.

The combination alternate could then become the adopted alternate for the Maryland Route 22 improvements.

1. Segment 1 - Bel Air to Corns Drive

The following three alternates were considered for improvement of Maryland Route 22 from Bel Air to west of Churchville (Corns Drive):

a. Four-Lane Divided Highway Alternate (see figures II-3A, 4A & 5A)

This alternate proposes reconstructing Maryland Route 22 along the present route to provide two traffic lanes in each direction separated by a 20-foot curbed median. (See figure II-1). The proposed improvements would be constructed within a minimum right of way width of 80 feet with a variable width grading and utility easement along each side of the roadway. Left turn lanes would be provided at the intersecting roads and cross-overs. Median openings would be located to meet the State Highway Administration's criteria. Truck turn-arounds are being considered at available areas along the route since the proposed roadway will not be wide enough for single unit and larger trucks to make U-turns at median openings. The highway would remain an Uncontrolled Access facility. The horizontal and vertical alignment for this alternate would meet the requirements for a 50 mph design speed.

b. Five-Lane Undivided Highway Alternate (see figures II-3B, 4B & 5B)

This alternate proposes reconstructing Maryland Route 22 along the present route to be a five-lane undivided, curbed, urban highway with a minimum right of way width of 80 feet and variable width grading and utility easements. (See figure II-1). Under this alternate, two through traffic lanes in each direction and a continuous center left turn lane would be provided. The highway would remain an Uncontrolled Access facility. The horizontal and vertical alignments for this alternate would also meet the requirements for a 50 mph design speed.

Under both the Four-Lane Divided and Five-Lane Undivided Highway alternates, the center of the proposed improvements will follow the center of the existing roadway for most of the length. However, in vicinity of

Bynum Run Park, Zion Methodist Church Cemetery and the Dibbs House and Stier House historic sites, the alignment has been moved to 10-15 feet northerly.

c. Hybrid Alternate (Selected Alternate) (See Figures II-3C, 4C & 5C)

This alternate is a combination of the four-lane divided highway and five-lane undivided highway alternates. It proposes reconstructing Maryland Route 22 to be a four-lane divided highway from Shamrock Road to Brierhill Drive; a five-lane undivided highway from Brierhill Drive to Moores Mill Road; a four-lane divided highway from Moores Mill Road to Hillside Drive and a five-lane undivided highway from Hillside Drive to approximately 500 feet east of Maryland Route 543. The improved roadway would then transition to meet existing two lane highway typical section.

No major improvements are proposed for Maryland Route 22 east of Maryland Route 543. Design of interim intersection improvements are in progress for the Prospect Mill Road and Thomas Run/Shucks Road intersections.

2. Segment 2 - Corns Drive to Snake Lane

In addition to the No-Build, four improvement alternates were considered for Maryland Route 22 in Segment 2. These are the No-Build, four-lane divided highway, five-lane undivided highway, and two southern by-passes of Churchville. The selection of an improvements alternate for Maryland Route 22 for this study segment has been deferred. In addition, four alternates were considered for improving the Maryland Route 155 connection to Maryland Route 22 and one alternate has been selected.

a. Maryland Route 22 Improvements

Two alternates, a four-lane divided highway alternate and a five-lane undivided highway alternate were developed for improving Maryland Route 22 from Corns Drive to Snake Lane. The following apply to both of the alternates:

- The highway would remain an uncontrolled access highway.

- The horizontal and vertical alignment of the highway would meet the requirements for a 50 mph design speed.

- The section of Maryland Route 22 from west of Maryland Route 136 to east of Glenville Road would be improved to be a four-lane undivided curbed urban highway (see figure II-1).

Descriptions of the alternates are as follows:

1) Four-Lane Divided Highway Alternate (See Figure II-6A, 7A, 8A)

This alternate proposes reconstructing Maryland Route 22 along the present route to provide two traffic lanes in each direction separated by a 20-foot curbed median (see figure II-1) from Corns Drive to 1400 feet west of Maryland Route 136 and from 400 feet west of Maryland Route 136 and from 400 feet east of Glenville Road to Snake Lane. The proposed improvements would be constructed within a 80-foot minimum right of way width with a variable width grading and utility easement along each side of the roadway.

2) Five-Lane Undivided Highway Alternate (See Figures II-6B, 7B & 8B)

This alternate proposed reconstructing Maryland Route 22 within the same limits described for the four-lane divided highway alternate to be a five-lane undivided, curbed, urban highway (see figure II-1). The minimum right of way width would be 80 feet and variable width grading and utility easements would be required along each side of the roadway.

b. Churchville Southern By-Pass Alternates (See Figure II-6A & 8A)

Several southern by-pass alternates for Churchville were investigated during the preliminary study phase for the project. As a result of public comments received and additional engineering and environmental analyses, two alternate routes were retained for detailed study. The following apply to both of the alternates:

- The highway would be a controlled access highway.

- The design speed for the highway would be 60 mph.

- Maryland Route 22 would be widened to four lanes from the by-pass intersection to the Maryland Route 155 Connection alternate selected.

1) Alternate A

This alternate consists of a new two-lane rural highway with paved shoulders and safety grading within a 150-foot minimum width right of way (see figure II-2). This alternate begins at Maryland Route 22 and Corns Drive, follows a new location in a southeasterly and easterly direction, crosses Maryland Route 136 approximately 600 feet north of the Maryland Route 136-Graftons Lane intersection, continues easterly and southeasterly and intersects existing Maryland Route 22 at Snake Lane.

2) Alternate B

This alternate also consists of a new two-lane rural highway with paved shoulders and safety grading within a 150 foot minimum width right of way (see figure II-2). This alternate begins at Maryland Route 22 and Corns Drive and follows the alignment for Route A for approximately 2000 feet. The alignment then curves to the east, crosses Maryland Route 136 approximately 1800 feet south of the Maryland Route 136-Maryland Route 22 intersection, continues easterly and southeasterly and intersects existing Maryland Route 22 at Snake Lane.

c. Maryland Route 155 Connection Alternates (See Figure II-7A or II-7B and II-7A-3)

Four alternates were considered for relocating the Maryland Route 22-Maryland Route 155 intersection a sufficient distance from the Maryland Route 22-Maryland Route 136 intersection to improve traffic operations within Churchville. Under all of the alternates, the existing Maryland Route 22-Maryland Route 155 intersection will be closed and a cul-de-sac or T-turnaround will be provided for existing Maryland Route 155.

1) Connection C (Selected Alternate)

This alternate consists of a new two lane rural highway with paved shoulders and safety grading within an 80-foot minimum right of way width (see figure II-2). Connection C begins at a point on the north side of existing Maryland Route 22 approximately 1400 feet west of the existing Maryland Route 22-Maryland Route 136 intersection. It then runs in a northeasterly direction and crosses Maryland Route 136 approximately 1000 feet north of the existing Maryland Route 22-Maryland Route 136 intersection. The facility then continues easterly

and ties into existing Maryland Route 155 at Glenville Road. This alternate would be a controlled access highway and would serve as a northern by-pass alternate for Churchville. The design speed for this alternate would be 50 mph.

Two options (see Figure II-7A-3) were considered for the above alignment in order to reduce the effects of the proposed construction on the property east of Maryland Route 136.

- Option 1 would begin on the north side of Maryland Route 22 at the same location as Connection C, follow a new location in a northeasterly direction, cross Maryland Route 136 approximately 750 feet north of the existing Maryland Route 22 - Maryland Route 136 intersection, continue easterly, meet existing Maryland Route 155 approximately 800 feet west of Glenville Road and extend along the existing road to Glenville Road.

- Option 2 is similar to Option 1 except that it would cross Maryland Route 136 approximately 940 feet north of the existing Maryland Route 22 - Maryland Route 136 intersection.

The design speed for both of the above options would be 50 mph.

2) Connection C-2

This alternate consists of constructing a 36-foot wide curbed, urban street with a minimum right of way width of 80 feet on a new location from Maryland Route 22 to Maryland Route 155 (see figure II-2). The design speed for this alternate would be 40 mph. and vehicular access would be controlled. Two options are being considered for this alternate:

- Option 1 (see Figure II-7A-1) would begin on the north side of Maryland Route 22 approximately 850 feet east of the existing Maryland Route 22-Maryland Route 155 intersection, extend in a northerly direction and connect to existing Maryland Route 155 approximately 1200 feet west of Glenville Road.

- Option 2 - (see Figure II-7A-2) would consist of the cross section and alignment for Option 1 from Maryland Route 22 to Maryland Route 155 and would include the improvement of Maryland Route 155 from the Option 1 tie-in to Glenville Road. The

improvement along the Maryland Route 155 portion would consist of reconstructing the existing road to provide two eleven foot traffic lanes with an eight foot paved shoulder and nine feet of safety grading along each side of the road. The horizontal alignment of the road would be shifted approximately twelve feet northerly to avoid encroachment on the Holy Trinity Church National Register eligible historic site.

3) Connection D

This alternate consists of a new two-lane rural highway with paved shoulders and safety grading within a minimum right of way width of 80 feet (see figure II-2). The design speed for this alternate would be 50 mph and vehicular access would be controlled. Connection D begins on the north side of Maryland Route 22 approximately 480 feet northwest of the Maryland Route 22-Maryland Route 156 intersection. It then runs northeasterly for approximately 1500 feet, curves to the north, continues northerly and ties into existing Maryland Route 155 approximately 3350 feet northeast of the Maryland Route 155-Glenville Road intersections.

4) Glenville Road

This alternate consists of reconstructing Glenville Road from Maryland Route 22 to Maryland Route 155 to be a 36-foot wide curbed urban street with a minimum right of way width of 60 feet. The existing right of way line would be retained along the west side of the road and the road would be widened along the east side.

This alternate was reconsidered after preparation of the draft environmental document at the request of the Harford County State delegation.

d. Maryland Route 22 - Maryland Route 136 Intersection

Two options were considered for improving Maryland Route 136 in the vicinity of the Maryland Route 22 intersection. The selection of an improvement option has been deferred.

- Option 1 (see figure II-7A-1) consists of widening Maryland Route 136 along the existing alignment to be a 36- foot wide curbed urban street from approximately 400 feet south of Maryland Route 22 to

approximately 175 feet north of the intersection. Vehicular access along Maryland Route 136 would be uncontrolled. The improvements would meet the requirements for a 40 mph design speed.

- Option 2 (see figure II-7A-2) consists of improving Maryland Route 136 from approximately 600 feet south of Maryland Route 22 to approximately 500 feet north of the intersection. Under this option the road would be widened to 41 feet. Vehicular access along Maryland Route 136 would be uncontrolled and the design features would comply with the criteria for a 50 mph design speed. The alignment at the Maryland Route 22 crossing would be shifted easterly so a 30-foot radius curb return could be constructed at the northwest corner of the intersection adjacent to the Churchville Presbyterian Church.

3. Segment 3 - Snakes Lane to Interstate Route 95

Two alternates were developed for improvement of Maryland Route 22 for this section of the project. The selection of an improvement alternate has been deferred. The following apply to both of the alternates:

- The horizontal and vertical alignment of the highway would meet the requirements for a 50 mph design speed.

- The highway would remain an uncontrolled access from Snake Lane to the Interstate Route 95 interchange area and a controlled access highway through the interchange area.

- The center of the proposed improvements will follow the center of the existing roadway except in vicinity of the Carsins Run intersection and the Interstate Route 95 interchange areas.

- Three options, as described hereinafter, are being considered for improving the horizontal alignment for Maryland Route 22 in vicinity of the Carins Run Road intersection.

Construction of a four-lane divided highway is proposed for Maryland Route 22 through the Interstate Route 95 interchange area from Gilbert Road to approximately 800 feet east of Interstate Route 95. This includes construction of a new bridge over Interstate Route 95, widening and rehabilitating the existing bridge to provide "Jersey Type" parapets, improving the Maryland Route 22 horizontal alignment from Gilbert Road to the Interstate Route 95 overpass and miscellaneous interchange ramp adjustments.

A description of the Maryland Route 22 improvement alternates and the Carsins Run Road intersection options are as follows:

a. Four-Lane Divided Highway Alternate (see Figures II-9A & 10A)

This alternate proposes reconstructing Maryland Route 22 along the present route to provide two traffic lanes in each direction separated by a 20-foot curbed median. (See figure II-1). The proposed improvements would be constructed within a minimum right of way width of 80 feet with a variable width grading and utility easement along each side of the roadway. Left turn lanes would be provided at the intersecting roads and cross-overs. Median openings will be located to meet the State Highway Administrations criteria and truck turn-arounds are being considered at available areas along the route.

b. Five-Lane Undivided Highway Alternate (see Figures II-9B & 10B)

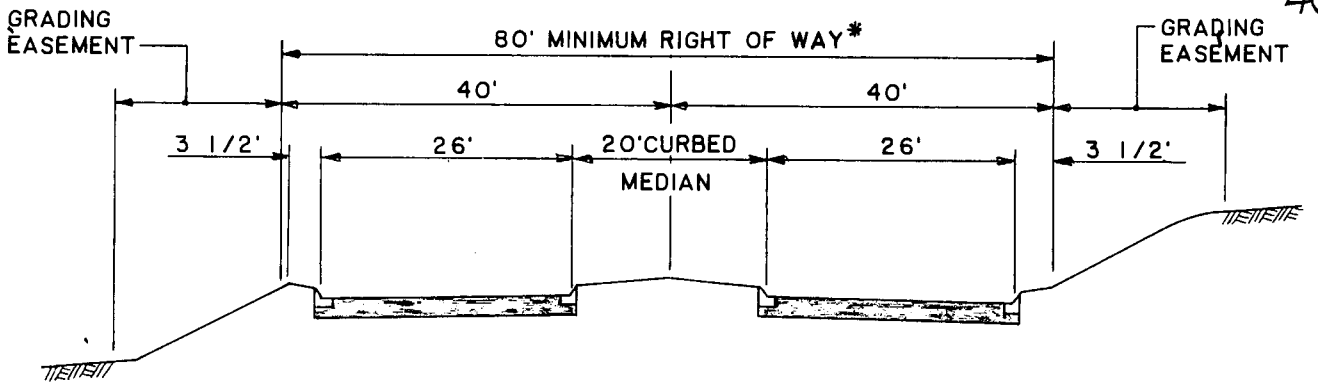
This alternate proposes reconstructing Maryland Route 22 along the present route to be a five-lane undivided, curbed, urban highway with a minimum right of way width of 80 feet and variable width grading and utility easements. (See figure II-1). Under this alternate, two through traffic lanes in each direction and a continuous center left turn lane would be provided.

c. Carsins Run Road Intersection Area Options

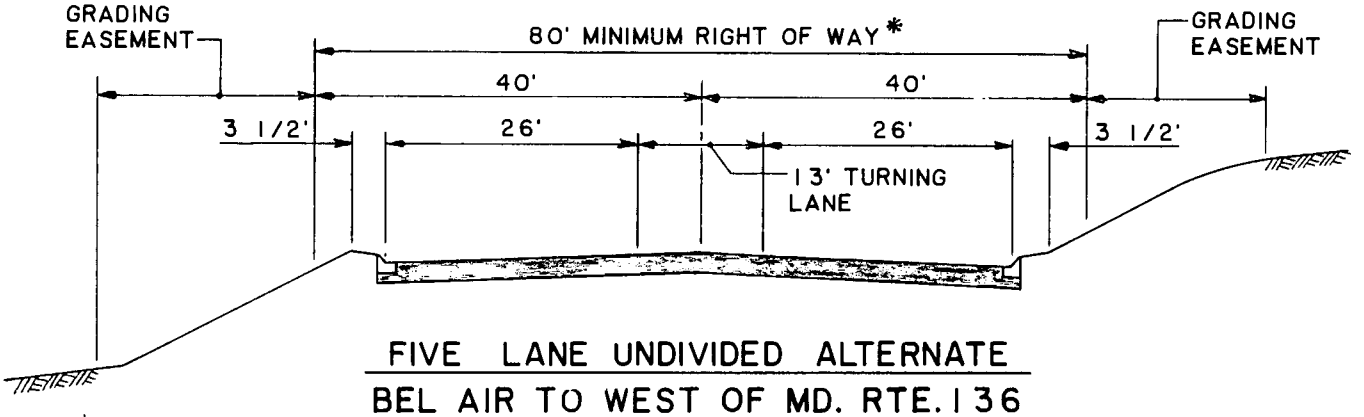
Option 1 (See figure II-9A-1) consists of improving the Maryland Route 22 alignment from approximately 400 feet west of to approximately 900 feet east of Carsins Run Road to eliminate the reversing horizontal curves through the intersection area.

Option 2 (See figure II-9A-2) consists of improving the Maryland Route 22 alignment from aproximately 2500 feet west of to approximately 500 feet east of Carsins Run Road. This option would reduce the number of horizontal curves within the described limits from six to four and would provide longer tangents between adjacent curves.

Option 3 (See figure II-9A-3) consists of improving the Maryland Route 22 alignment from approximately 2500 feet west of to approximately 900 feet east of Carsins Run Road. This option would also reduce the number of horizontal curves within the described limits from six to four and increase the length of the tangent between curves.

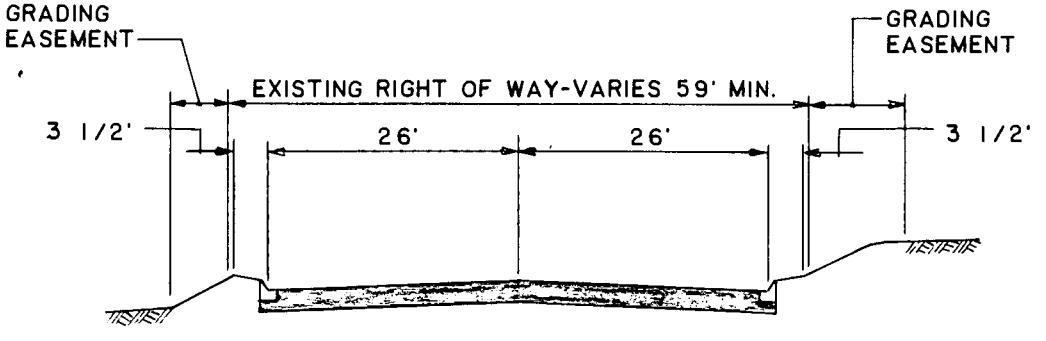


FOUR LANE DIVIDED ALTERNATE



FIVE LANE UNDIVIDED ALTERNATE

BEL AIR TO WEST OF MD. RTE. 136
EAST OF GLENVILLE ROAD TO I-95



WEST OF MD. RTE. 136 TO
EAST OF GLENVILLE ROAD

MARYLAND ROUTE 22 IMPROVEMENTS

* EXISTING RIGHT OF WAY WHERE FEASIBLE

NOTE:

DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ENVIRONMENTAL IMPACTS AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE. EASEMENTS WILL BE PURCHASED WHERE REQUIRED FOR UTILITY RELOCATIONS.

Maryland Department of Transportation
State Highway Administration

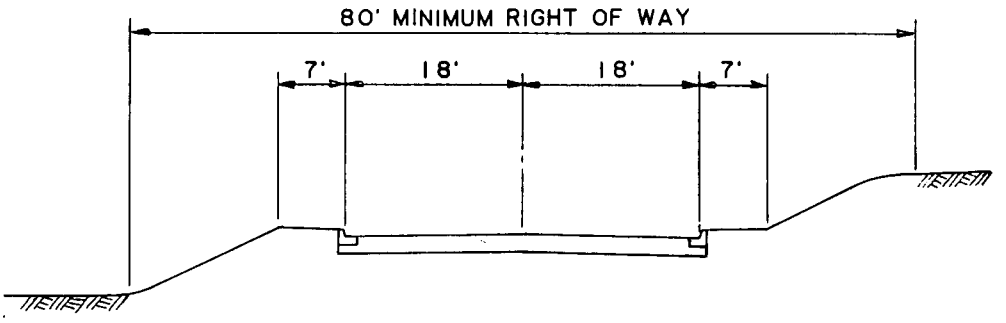
MARYLAND ROUTE 22
AND RELATED STUDIES

BEL AIR TO INTERSTATE 95

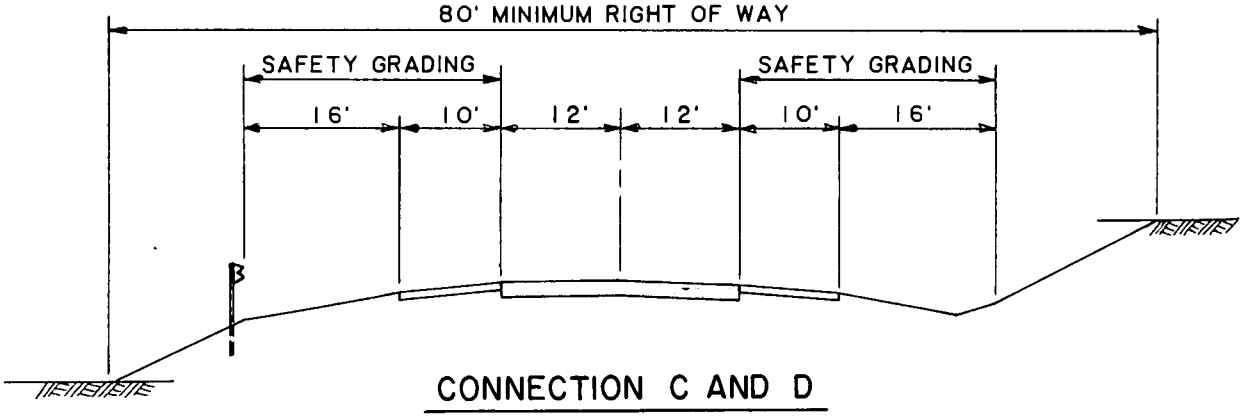
TYPICAL SECTIONS

CONTR. NO. H656-000-471

FIGURE NO. II-1

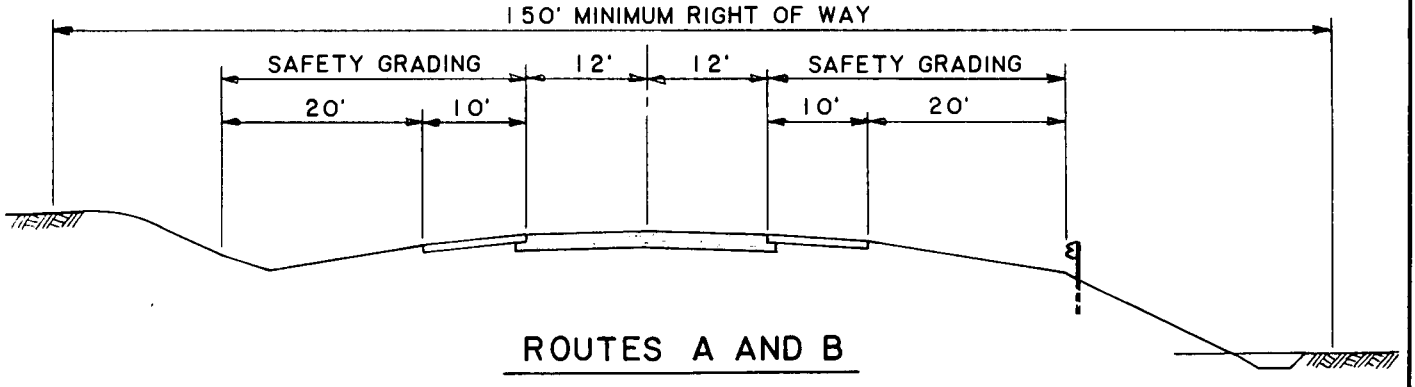


CONNECTION C-2



CONNECTION C AND D

RELOCATED MARYLAND ROUTE 155



ROUTES A AND B

SOUTHERN CHURCHVILLE BY-PASS

NOTE:

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

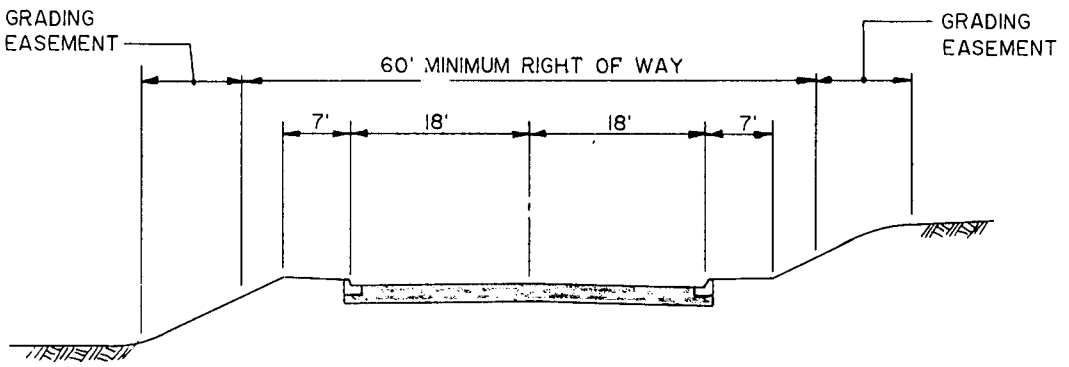
Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22
AND RELATED STUDIES

BEL AIR TO INTERSTATE 95

TYPICAL SECTIONS

CONTR. NO. H656-000-471 FIGURE NO. II-2



GLENVILLE ROAD

NOTE:

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

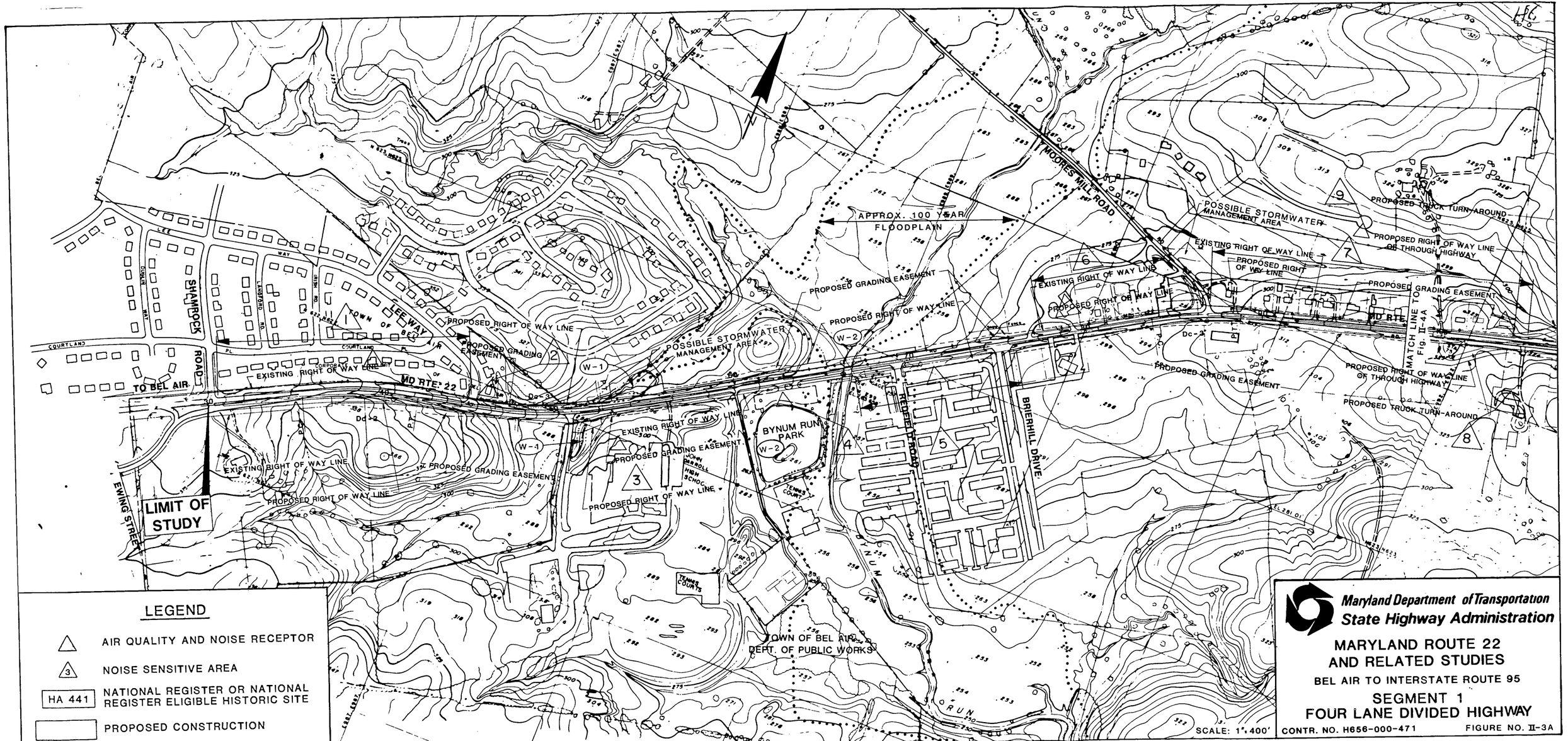
Maryland Department of Transportation
State Highway Administration

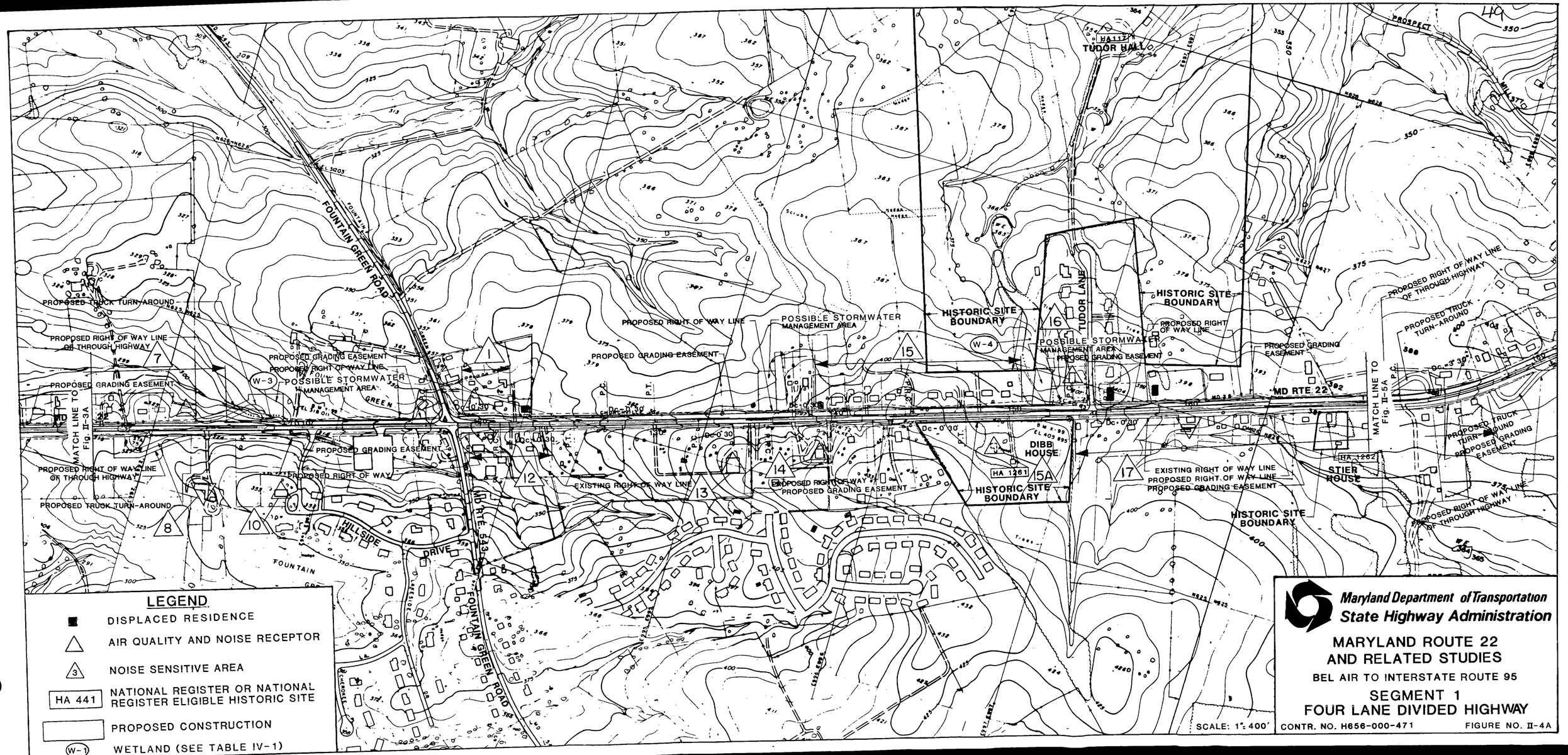
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

TYPICAL SECTIONS

CONTR. NO. H656-000-471 FIGURE NO. II-2A


LEGEND
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
(W-1) WETLAND (SEE TABLE IV-1)
LIMIT OF STUDY
TO BEL AIR
MD RTE. 22
SHAMROCK ROAD
LEE WAY
COURTLAND PL.
EWING STREET
TOWN OF BEL AIR
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
POSSIBLE STORMWATER MANAGEMENT AREA
APPROX. 100 YEAR FLOODPLAIN
MOORES MILL ROAD
BYNUM RUN PARK
REDPATH ROAD
BRIERHILL DRIVE
JOHN CARROLL HIGH SCHOOL
TENNIS COURTS
TOWN OF BEL AIR DEPT. OF PUBLIC WORKS
BYNUM RUN
PROPOSED TRUCK TURN-AROUND
MATCH LINE TO FIG. II-4A
SCALE: 1" = 400'
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 1
FOUR LANE DIVIDED HIGHWAY
CONTR. NO. H656-000-471
FIGURE NO. II-3A



Maryland Department of Transportation
State Highway Administration

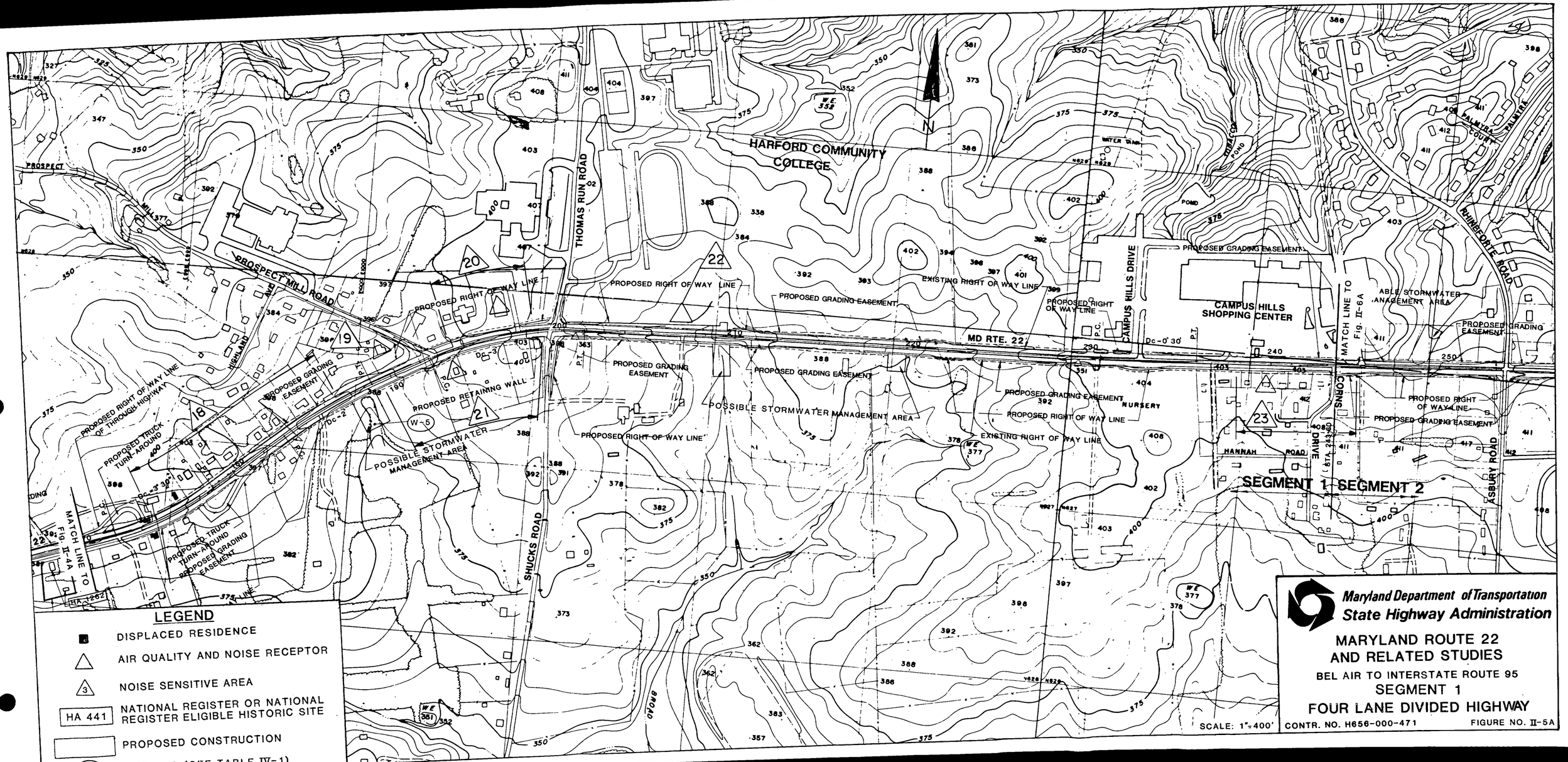
MARYLAND ROUTE 22 AND RELATED STUDIES

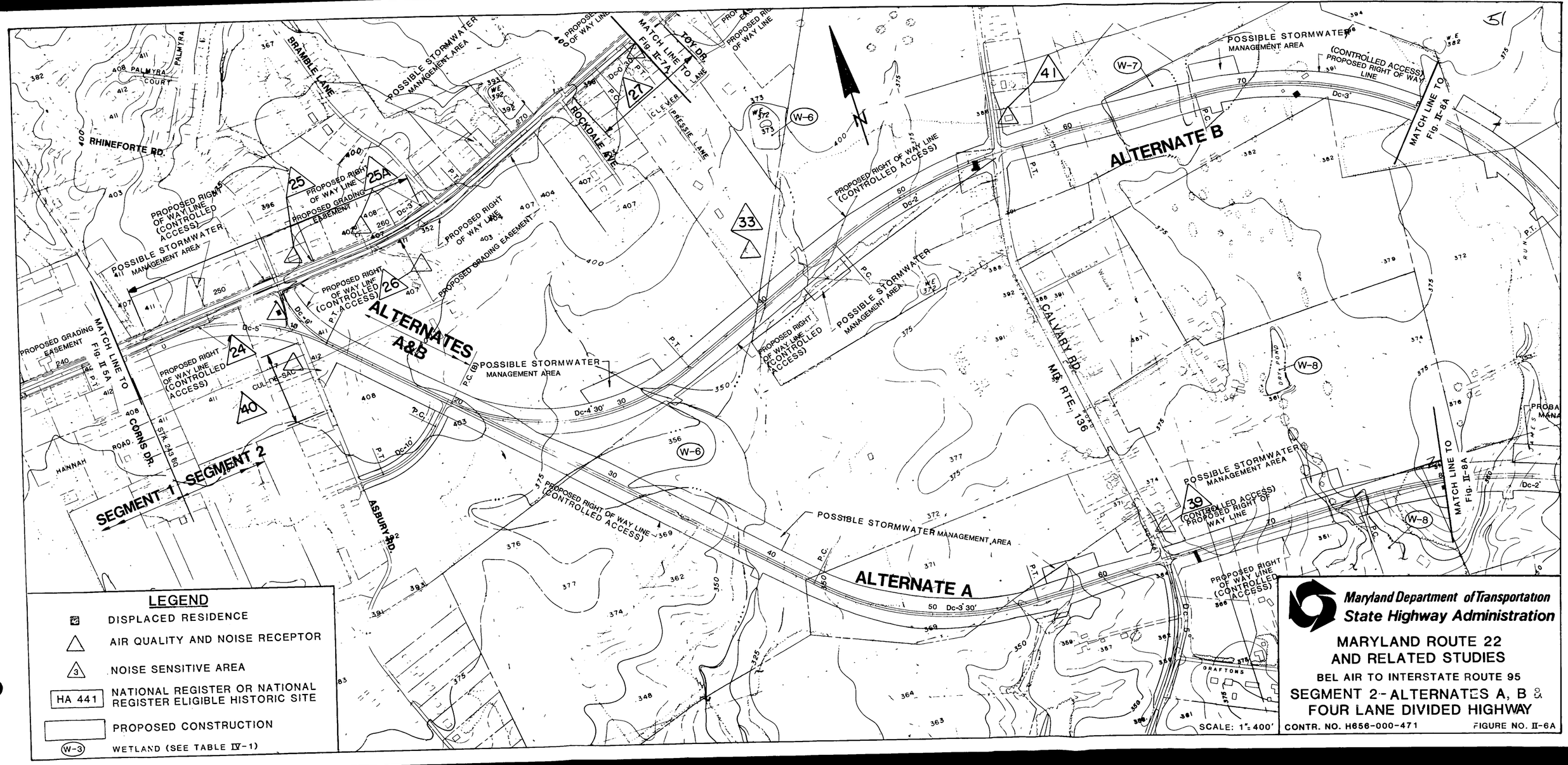
BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 1
FOUR LANE DIVIDED HIGHWAY

SCALE: 1" = 400'

CONTR. NO. H656-000-471 FIGURE NO. II-4A


HARFORD COMMUNITY COLLEGE
PROSPECT MILL ROAD
THOMAS RUN ROAD
MD RTE. 22
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
EXISTING RIGHT OF WAY LINE
CAMPUS HILLS DRIVE
CAMPUS HILLS SHOPPING CENTER
PROPOSED RETAINING WALL
POSSIBLE STORMWATER MANAGEMENT AREA
PROPOSED TRUCK TURN-AROUND
PROPOSED RIGHT OF WAY LINE OF THROUGH HIGHWAY
SHUCKS ROAD
HANNAH ROAD
ASBURY ROAD
RHINEFORTE ROAD
NURSERY
POND
MATCH LINE TO Fig. II-4A
MATCH LINE TO Fig. II-6A
SEGMENT 1
SEGMENT 2
LEGEND
DISPLACED RESIDENCE
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441
NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-1
WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 1
FOUR LANE DIVIDED HIGHWAY
SCALE: 1"=400'
CONTR. NO. H656-000-471
FIGURE NO. II-5A



LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- NOISE SENSITIVE AREA
- HA 441 — NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-3 — WETLAND (SEE TABLE IV-1)

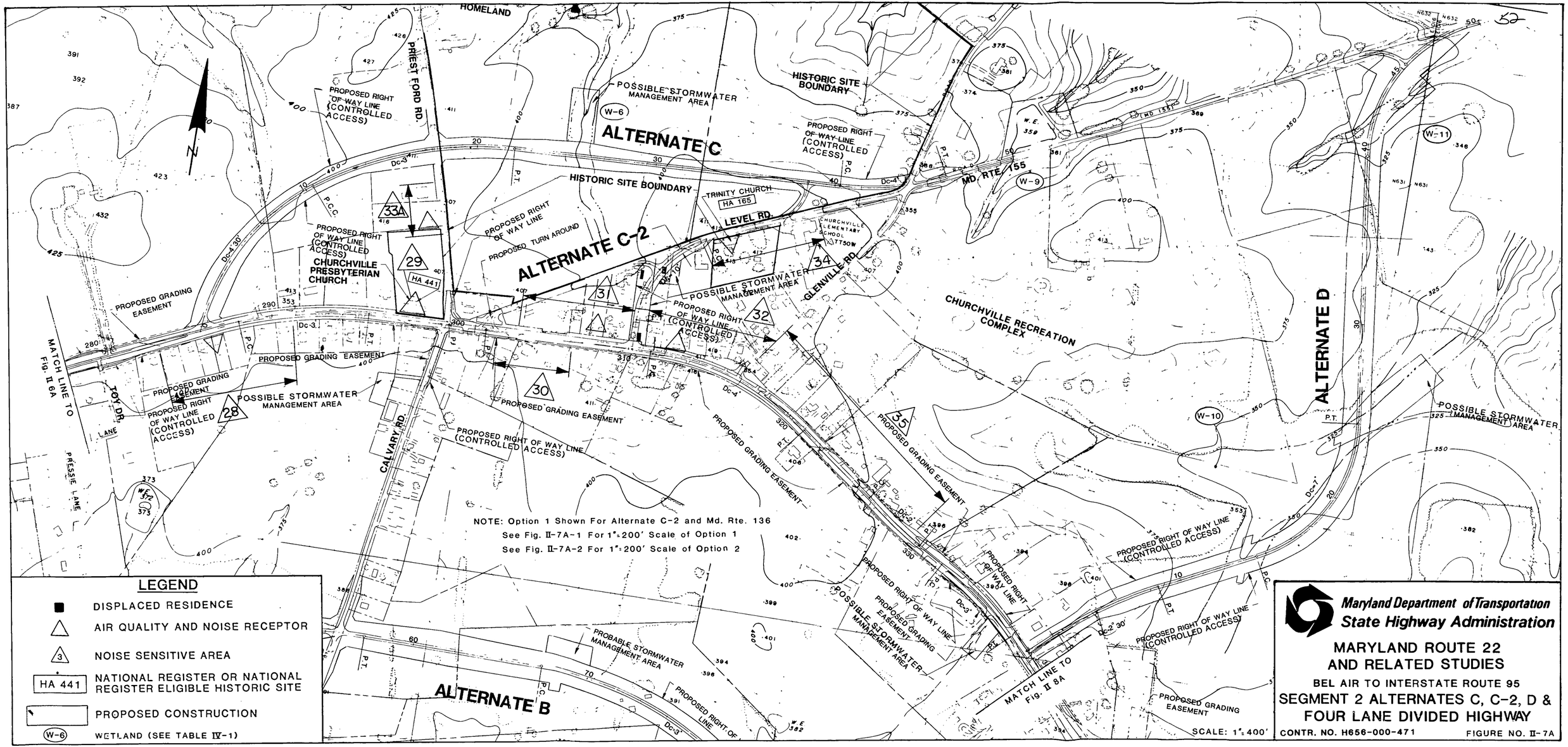
Maryland Department of Transportation
State Highway Administration

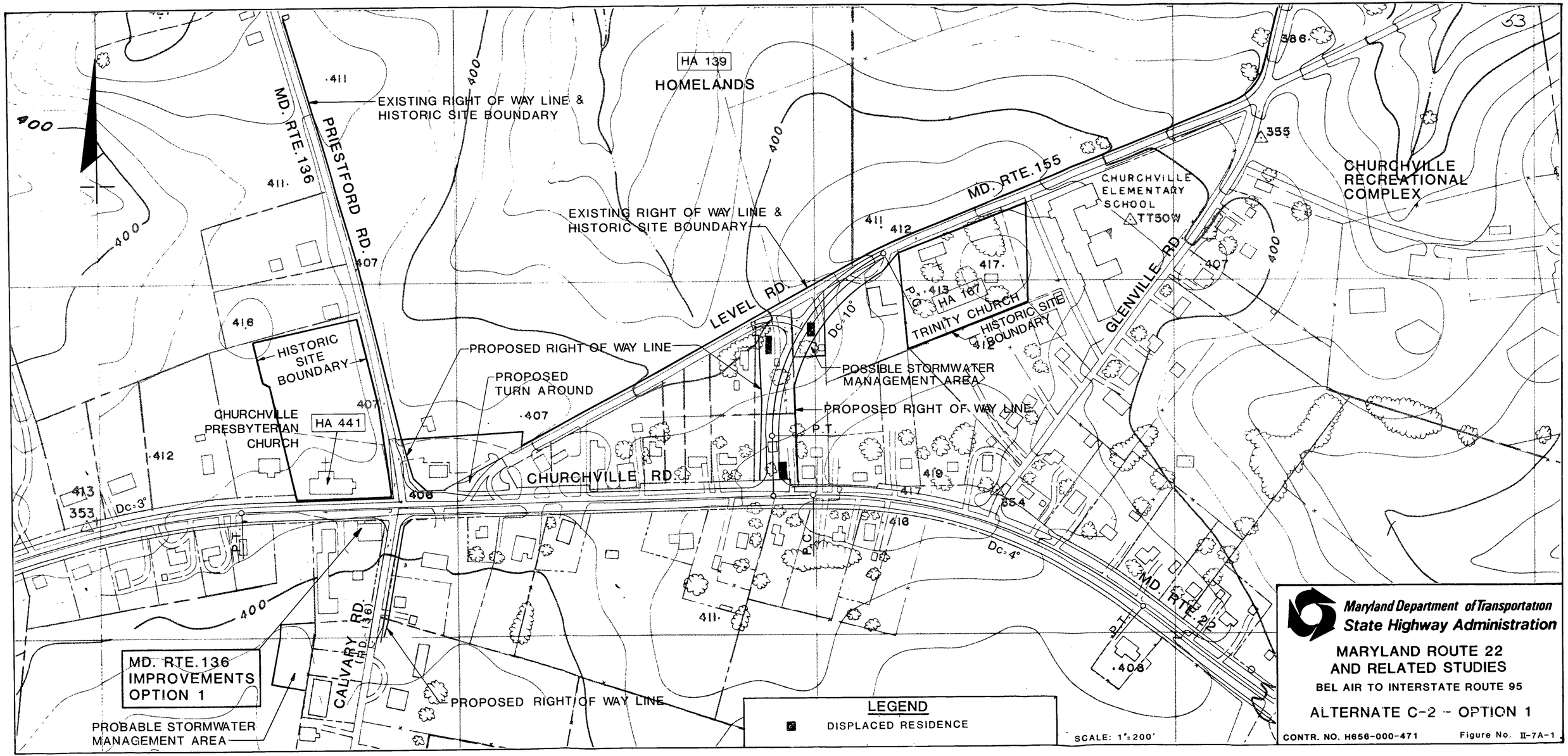
MARYLAND ROUTE 22 AND RELATED STUDIES

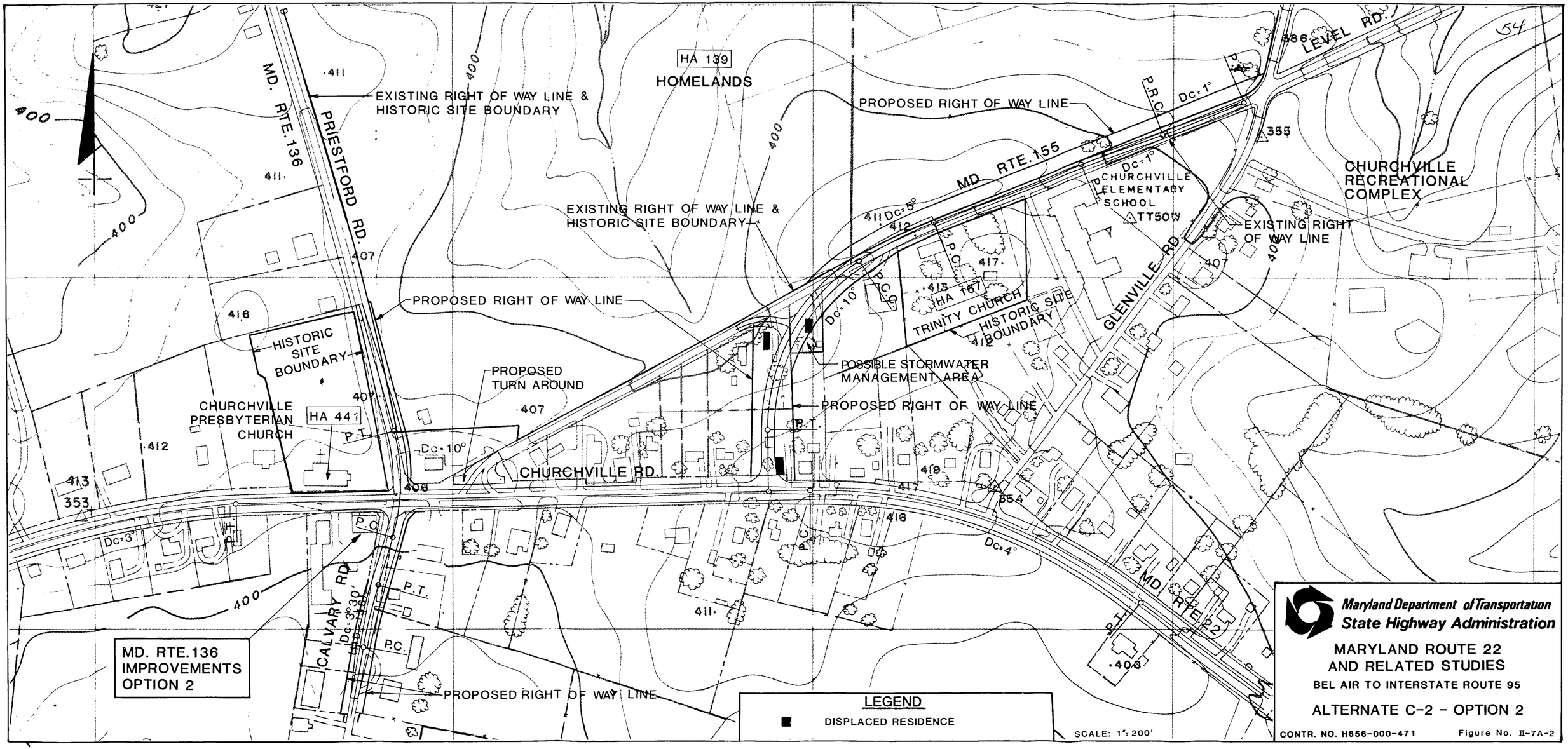
BEL AIR TO INTERSTATE ROUTE 95

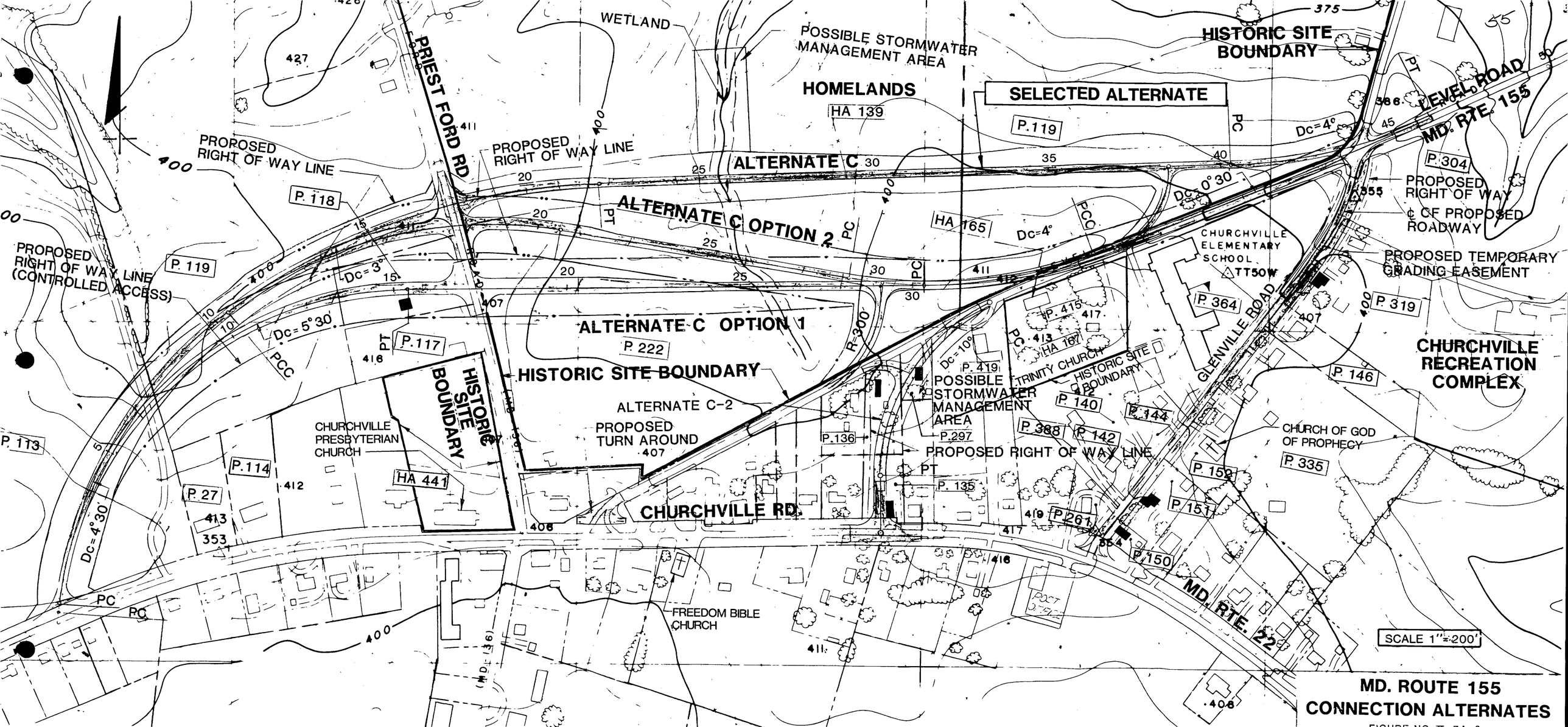
SEGMENT 2 - ALTERNATES A, B & FOUR LANE DIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-6A

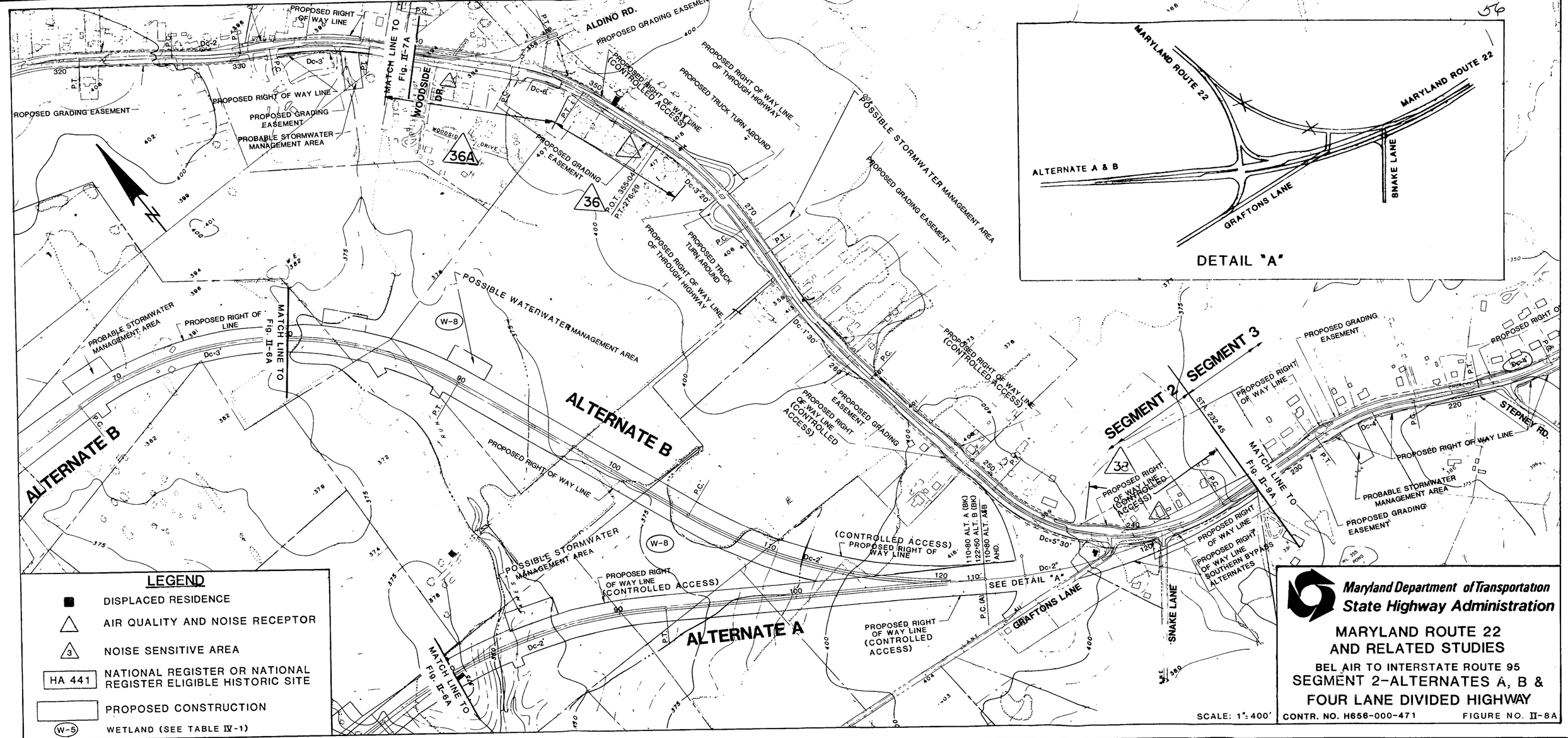

HOMELAND
PRIEST FORD RD.
PROPOSED RIGHT OF WAY LINE (CONTROLLED ACCESS)
POSSIBLE STORMWATER MANAGEMENT AREA
W-6
ALTERNATE C
HISTORIC SITE BOUNDARY
HISTORIC SITE BOUNDARY
TRINITY CHURCH
HA 165
LEVEL RD.
MD. RTE. 155
W-9
W-11
ALTERNATE C-2
PROPOSED TURN AROUND
CHURCHVILLE ELEMENTARY SCHOOL
CHURCHVILLE PRESBYTERIAN CHURCH
HA 441
GLENVILLE RD.
CHURCHVILLE RECREATION COMPLEX
ALTERNATE D
PROPOSED GRADING EASEMENT
MATCH LINE TO Fig. II 6A
TOY DR.
LANE
PRESSIE LANE
CALVARY RD.
W-10
POSSIBLE STORMWATER MANAGEMENT AREA
NOTE: Option 1 Shown For Alternate C-2 and Md. Rte. 136
See Fig. II-7A-1 For 1"=200' Scale of Option 1
See Fig. II-7A-2 For 1"=200' Scale of Option 2
PROBABLE STORMWATER MANAGEMENT AREA
ALTERNATE B
MATCH LINE TO Fig. II 8A
LEGEND
DISPLACED RESIDENCE
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-6 WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 2 ALTERNATES C, C-2, D &
FOUR LANE DIVIDED HIGHWAY
CONTR. NO. H656-000-471
FIGURE NO. II-7A
SCALE: 1"=400'


HA 139
HOMELANDS
EXISTING RIGHT OF WAY LINE & HISTORIC SITE BOUNDARY
MD. RTE. 136
PRIESTFORD RD.
EXISTING RIGHT OF WAY LINE & HISTORIC SITE BOUNDARY
MD. RTE. 155
CHURCHVILLE ELEMENTARY SCHOOL
TT50W
CHURCHVILLE RECREATIONAL COMPLEX
LEVEL RD.
GLENVILLE RD.
HA 167
TRINITY CHURCH
HISTORIC SITE BOUNDARY
HISTORIC SITE BOUNDARY
PROPOSED RIGHT OF WAY LINE
PROPOSED TURN AROUND
POSSIBLE STORMWATER MANAGEMENT AREA
PROPOSED RIGHT OF WAY LINE
CHURCHVILLE PRESBYTERIAN CHURCH
HA 441
CHURCHVILLE RD.
Dc=10°
Dc=3°
Dc=4°
P.C.
P.T.
CALVARY RD. (MD. 136)
MD. RTE. 22
MD. RTE. 136 IMPROVEMENTS OPTION 1
PROBABLE STORMWATER MANAGEMENT AREA
PROPOSED RIGHT OF WAY LINE
LEGEND
DISPLACED RESIDENCE
SCALE: 1"=200'
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
ALTERNATE C-2 - OPTION 1
CONTR. NO. H656-000-471
Figure No. II-7A-1


HA 139
HOMELANDS
EXISTING RIGHT OF WAY LINE & HISTORIC SITE BOUNDARY
MD. RTE.136
PRIESTFORD RD.
PROPOSED RIGHT OF WAY LINE
MD. RTE.155
LEVEL RD.
CHURCHVILLE ELEMENTARY SCHOOL
TT50W
CHURCHVILLE RECREATIONAL COMPLEX
EXISTING RIGHT OF WAY LINE
GLENVILLE RD.
HA 167
TRINITY CHURCH
HISTORIC SITE BOUNDARY
HISTORIC SITE BOUNDARY
CHURCHVILLE PRESBYTERIAN CHURCH
HA 441
PROPOSED TURN AROUND
POSSIBLE STORMWATER MANAGEMENT AREA
CHURCHVILLE RD.
CALVARY RD.
MD. RTE. 22
MD. RTE.136 IMPROVEMENTS OPTION 2
LEGEND
DISPLACED RESIDENCE
SCALE: 1"=200'
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22 AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
ALTERNATE C-2 - OPTION 2
CONTR. NO. H656-000-471
Figure No. II-7A-2



MD. ROUTE 155 CONNECTION ALTERNATES



DETAIL "A"

LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- 3 — NOISE SENSITIVE AREA
- HA 441 — NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-5 — WETLAND (SEE TABLE IV-1)

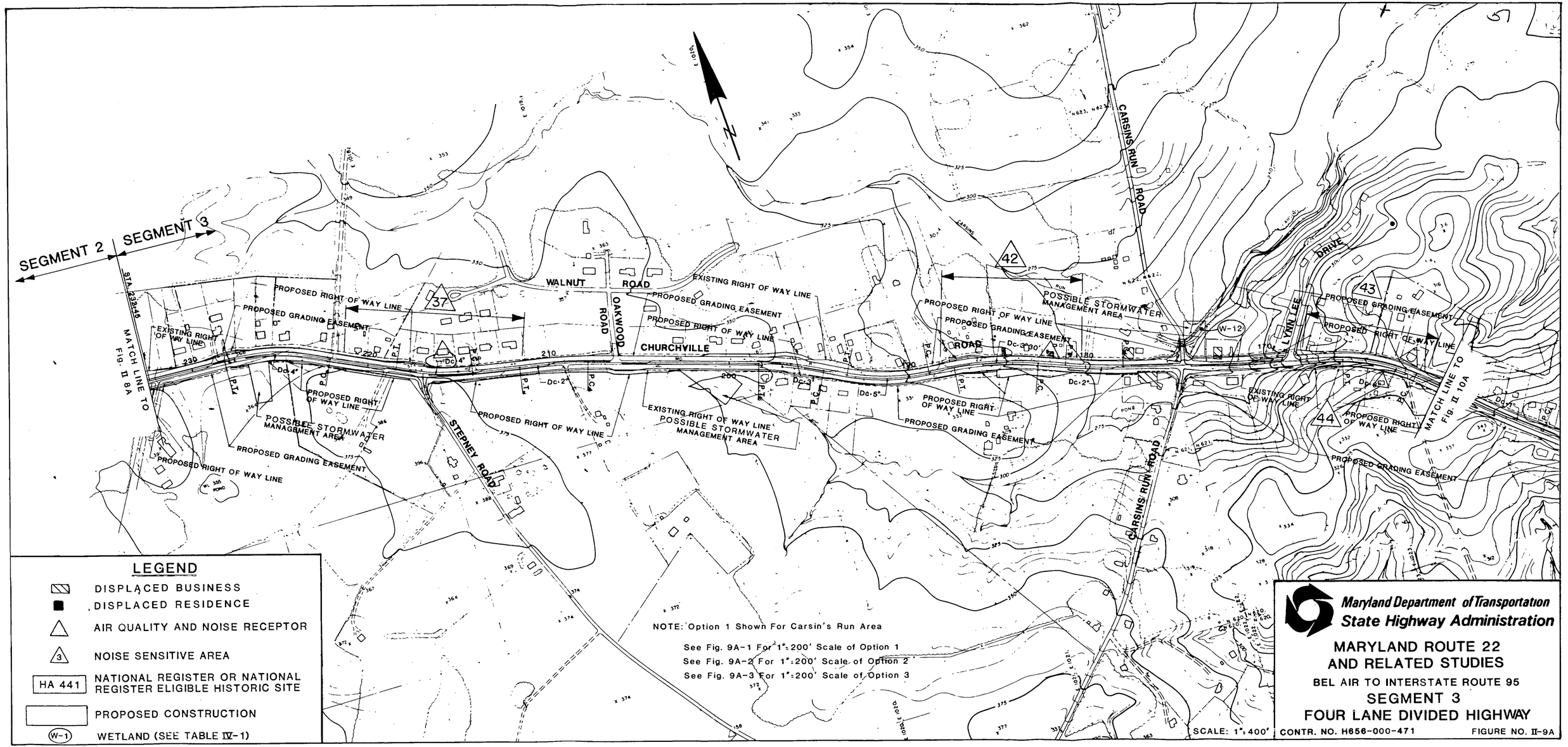
Maryland Department of Transportation
State Highway Administration

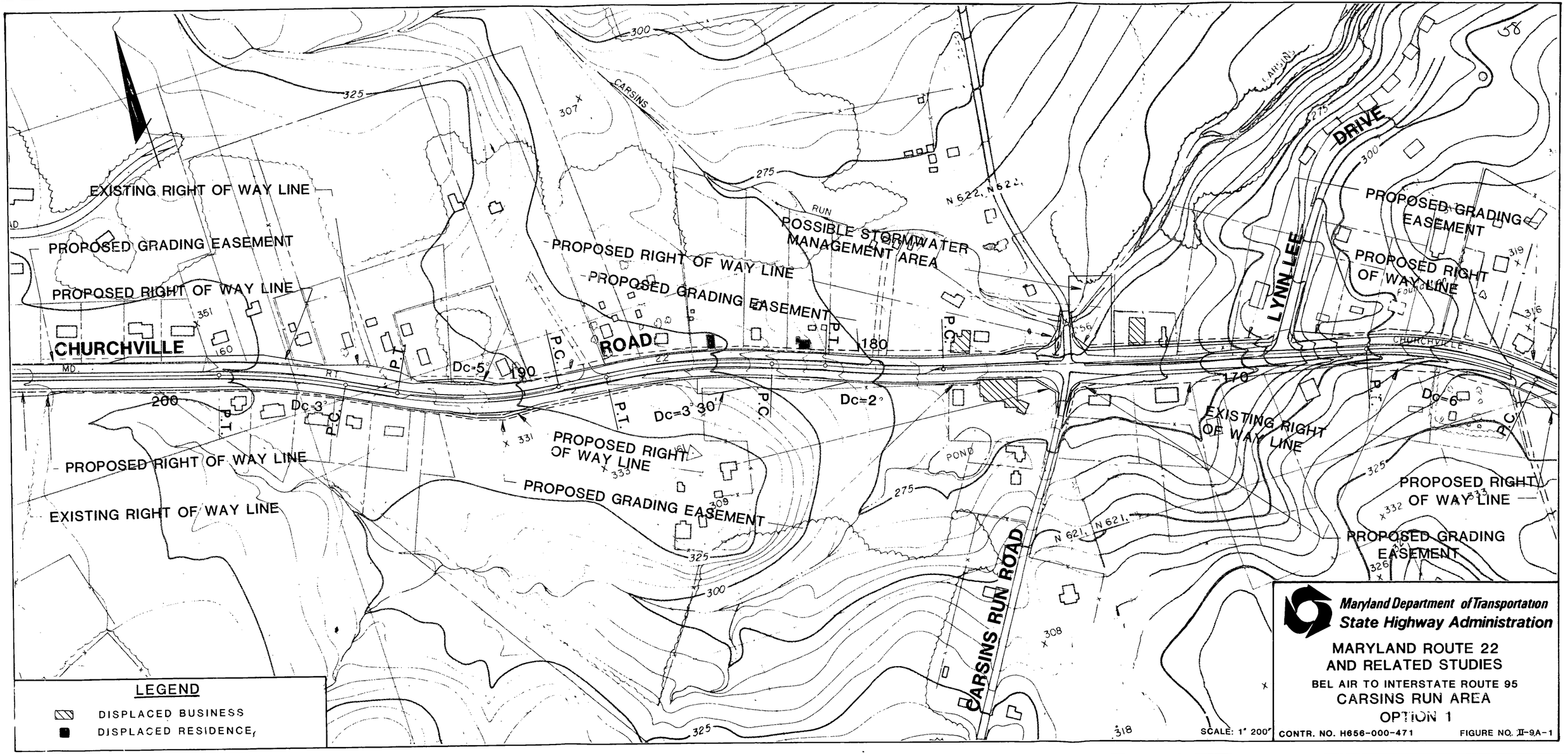
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 2-ALTERNATES A, B & FOUR LANE DIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-8A


SEGMENT 2
SEGMENT 3
STA. 232+45
MATCH LINE TO Fig. II 8A
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
EXISTING RIGHT OF WAY LINE
WALNUT ROAD
OAKWOOD ROAD
CHURCHVILLE ROAD
EXISTING RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
PROPOSED RIGHT OF WAY LINE
POSSIBLE STORMWATER MANAGEMENT AREA
STEPNEY ROAD
CARSINS RUN ROAD
LYNN LEE DRIVE
MATCH LINE TO Fig. II 10A
37
42
43
44
W-12
W-35
POND
NOTE: Option 1 Shown For Carsin's Run Area
See Fig. 9A-1 For 1"=200' Scale of Option 1
See Fig. 9A-2 For 1"=200' Scale of Option 2
See Fig. 9A-3 For 1"=200' Scale of Option 3
LEGEND
DISPLACED BUSINESS
DISPLACED RESIDENCE
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-1 WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 3
FOUR LANE DIVIDED HIGHWAY
SCALE: 1"=400'
CONTR. NO. H656-000-471
FIGURE NO. II-9A



LEGEND

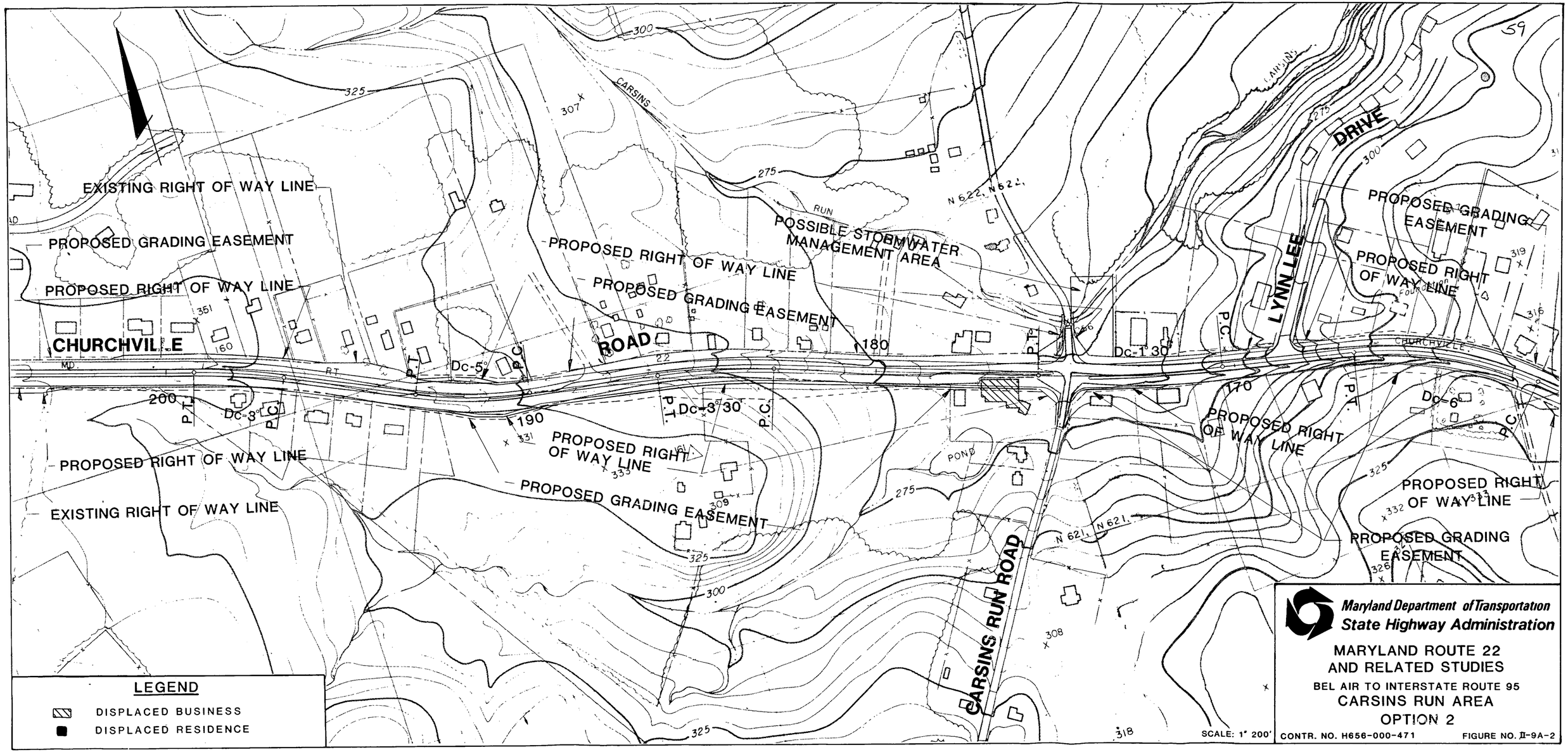
- DISPLACED BUSINESS
- DISPLACED RESIDENCE

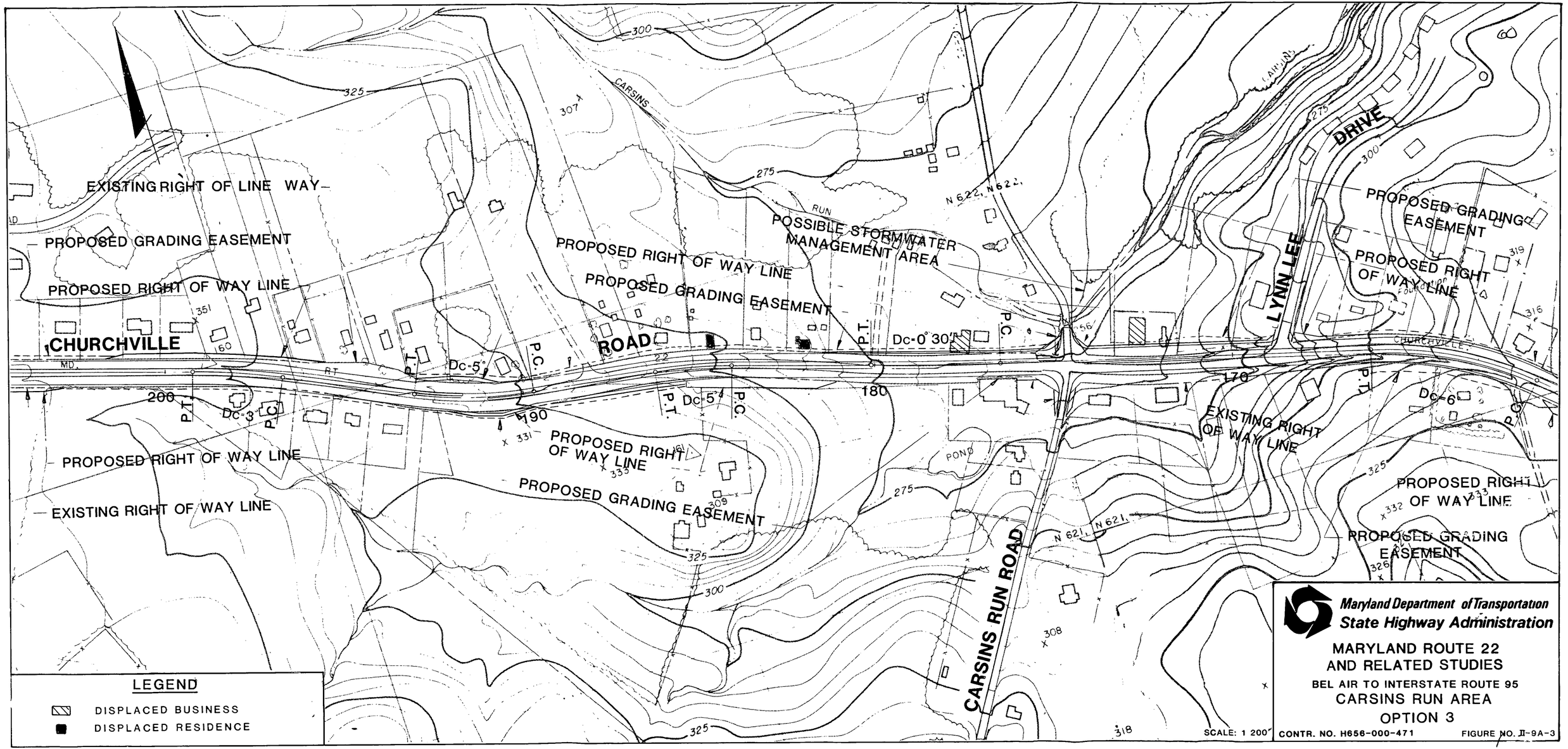
Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
CARSINS RUN AREA
OPTION 1

SCALE: 1" 200'

CONTR. NO. H656-000-471 FIGURE NO. II-9A-1


EXISTING RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
PROPOSED RIGHT OF WAY LINE
CHURCHVILLE
MD. 22
ROAD
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
POSSIBLE STORMWATER MANAGEMENT AREA
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
LYNNLEE DRIVE
PROPOSED GRADING EASEMENT
PROPOSED RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
CARSINS RUN ROAD
POND
CARSINS RUN
Dc-5°
Dc-3° 30'
Dc-3°
Dc-7° 30'
Dc-6°
P.C.
P.T.
N 62 1/2
N 62 1/2
N 62 1/2
N 62 1/2
N 62 1/2
N 62 1/2
LEGEND
DISPLACED BUSINESS
DISPLACED RESIDENCE
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
CARSINS RUN AREA
OPTION 2
SCALE: 1" 200'
CONTR. NO. H656-000-471
FIGURE NO. II-9A-2



LEGEND

- DISPLACED BUSINESS
- DISPLACED RESIDENCE

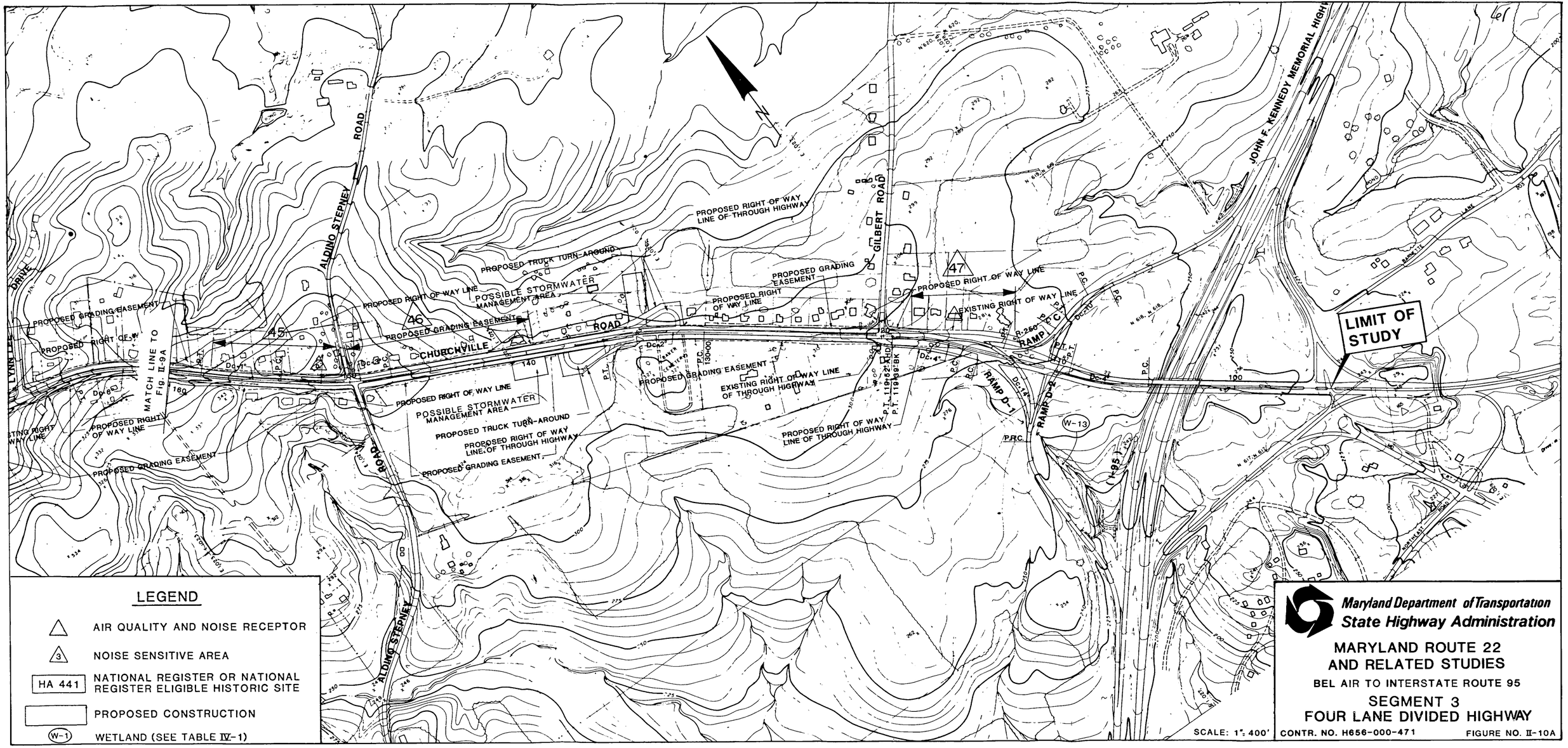
Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
CARSINS RUN AREA
OPTION 3

SCALE: 1 200'

CONTR. NO. H656-000-471

FIGURE NO. II-9A-3



LEGEND

- △ AIR QUALITY AND NOISE RECEPTOR
- △3 NOISE SENSITIVE AREA
- HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- (W-1) WETLAND (SEE TABLE IV-1)

Maryland Department of Transportation
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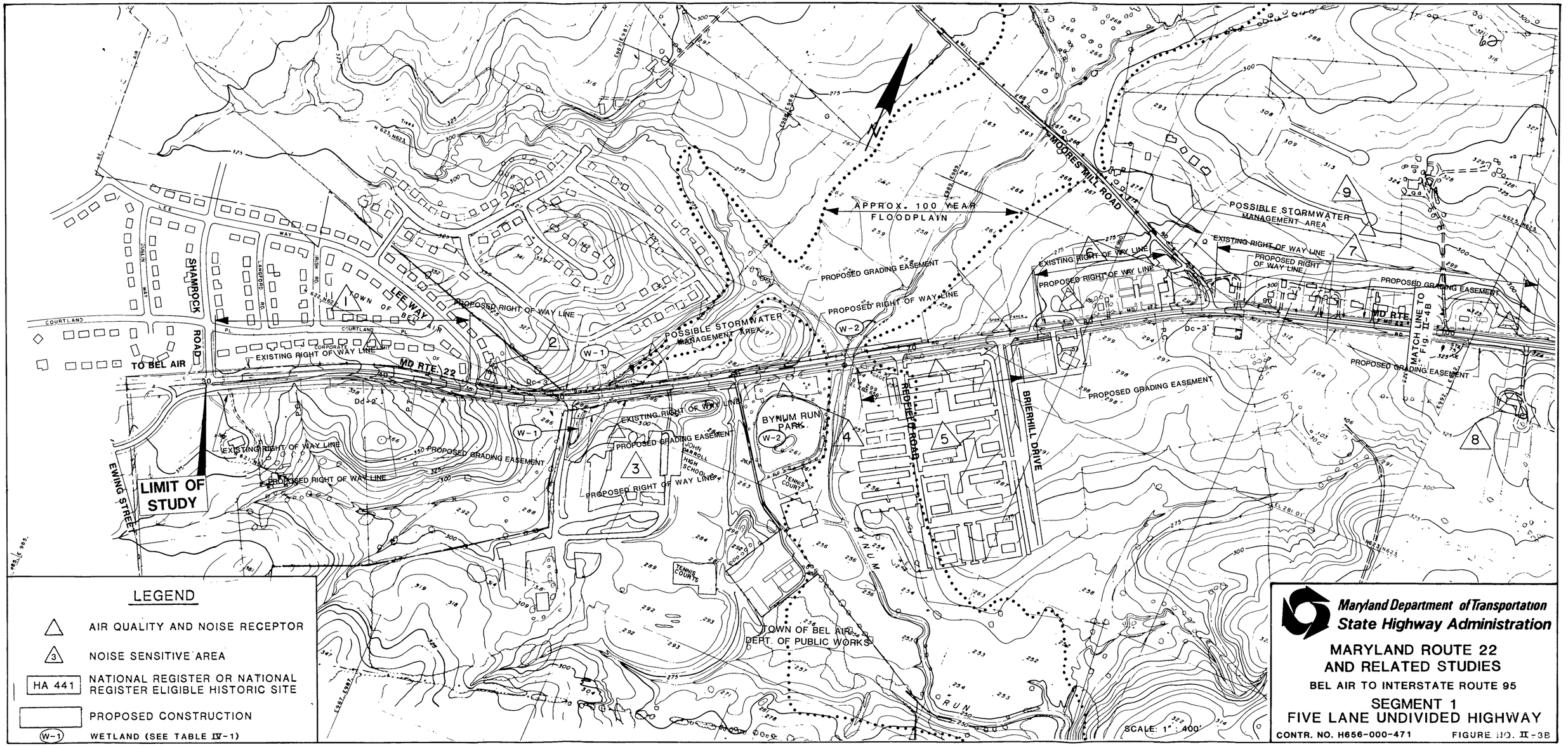
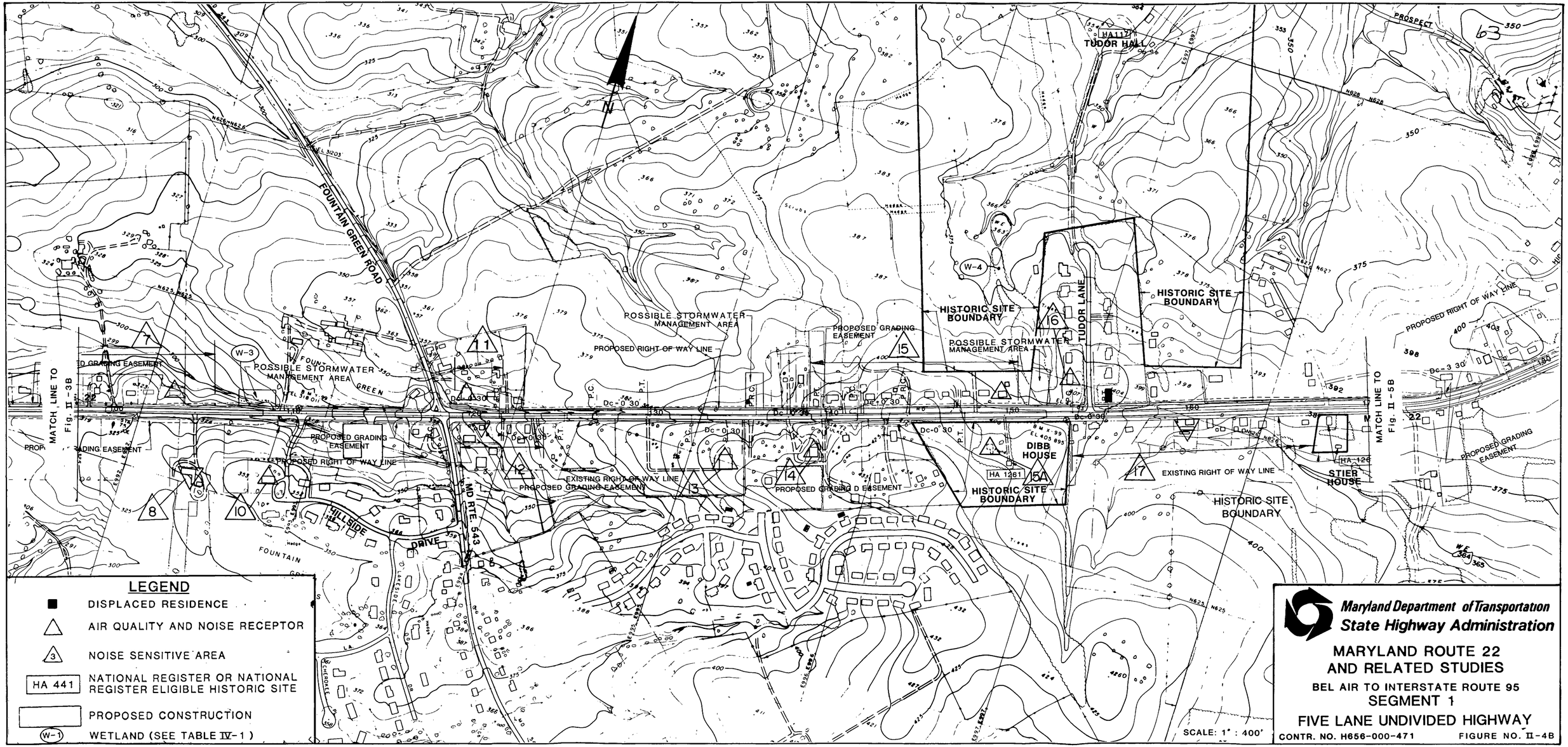
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 3
FOUR LANE DIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-10A


LEGEND
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
(W-1) WETLAND (SEE TABLE IV-1)
LIMIT OF STUDY
TO BEL AIR
MD RTE. 22
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
APPROX. 100 YEAR FLOODPLAIN
POSSIBLE STORMWATER MANAGEMENT AREA
MOORES MILL ROAD
BYNUM RUN PARK
REDDEL ROAD
BRIERHILL DRIVE
EWING STREET
SHAMROCK ROAD
LEE WAY
COURTLAND PL.
JOHN CARROLL HIGH SCHOOL
TENNIS COURTS
TOWN OF BEL AIR DEPT. OF PUBLIC WORKS
BYNUM RUN
MATCH LINE TO FIG II-4B
SCALE: 1" = 400'
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 1
FIVE LANE UNDIVIDED HIGHWAY
CONTR. NO. H656-000-471
FIGURE NO. II-3B



LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- 3 NOISE SENSITIVE AREA
- HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-1 WETLAND (SEE TABLE IV-1)

Maryland Department of Transportation
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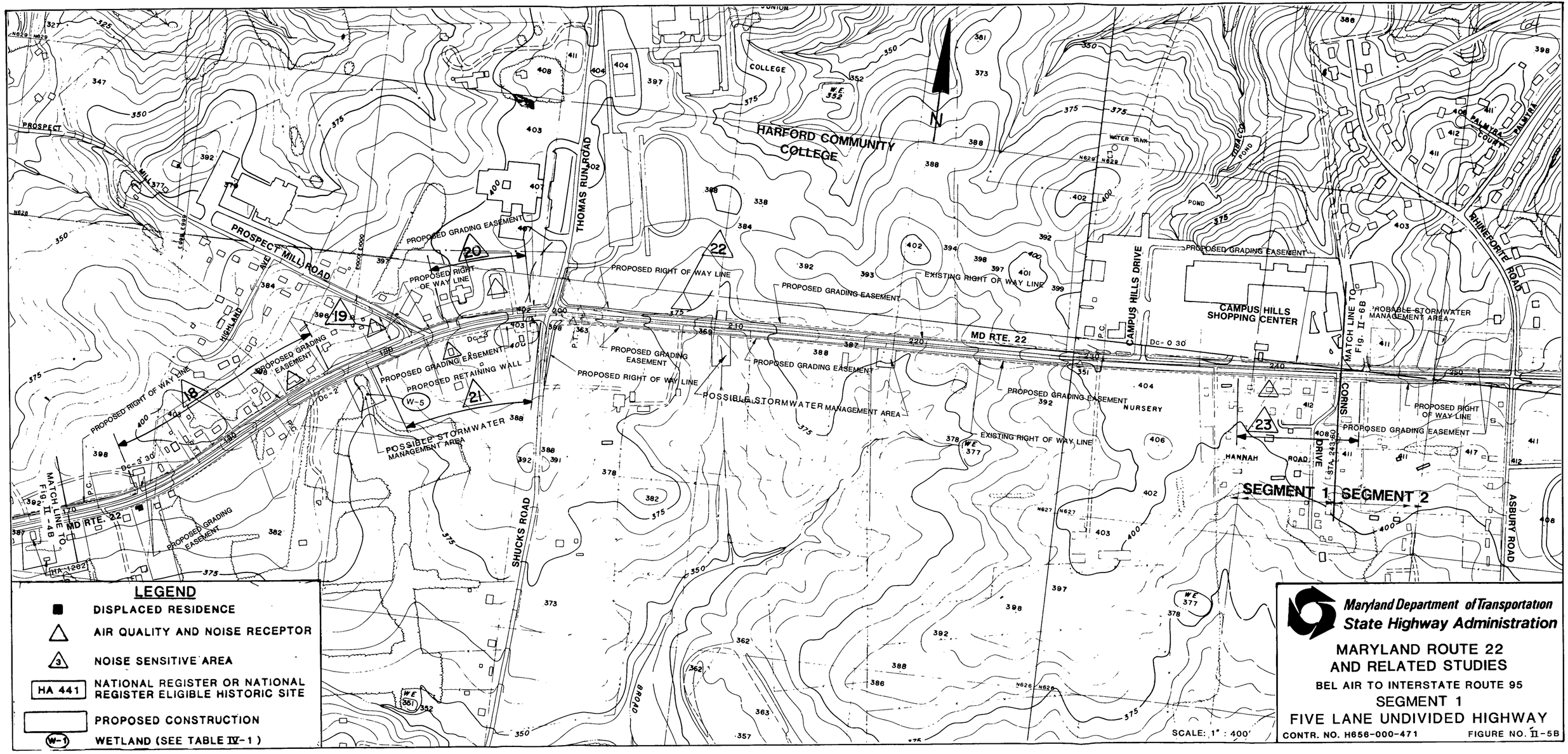
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 1

FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-4B



LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- 3 NOISE SENSITIVE AREA
- HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-1 WETLAND (SEE TABLE IV-1)

Maryland Department of Transportation
State Highway Administration

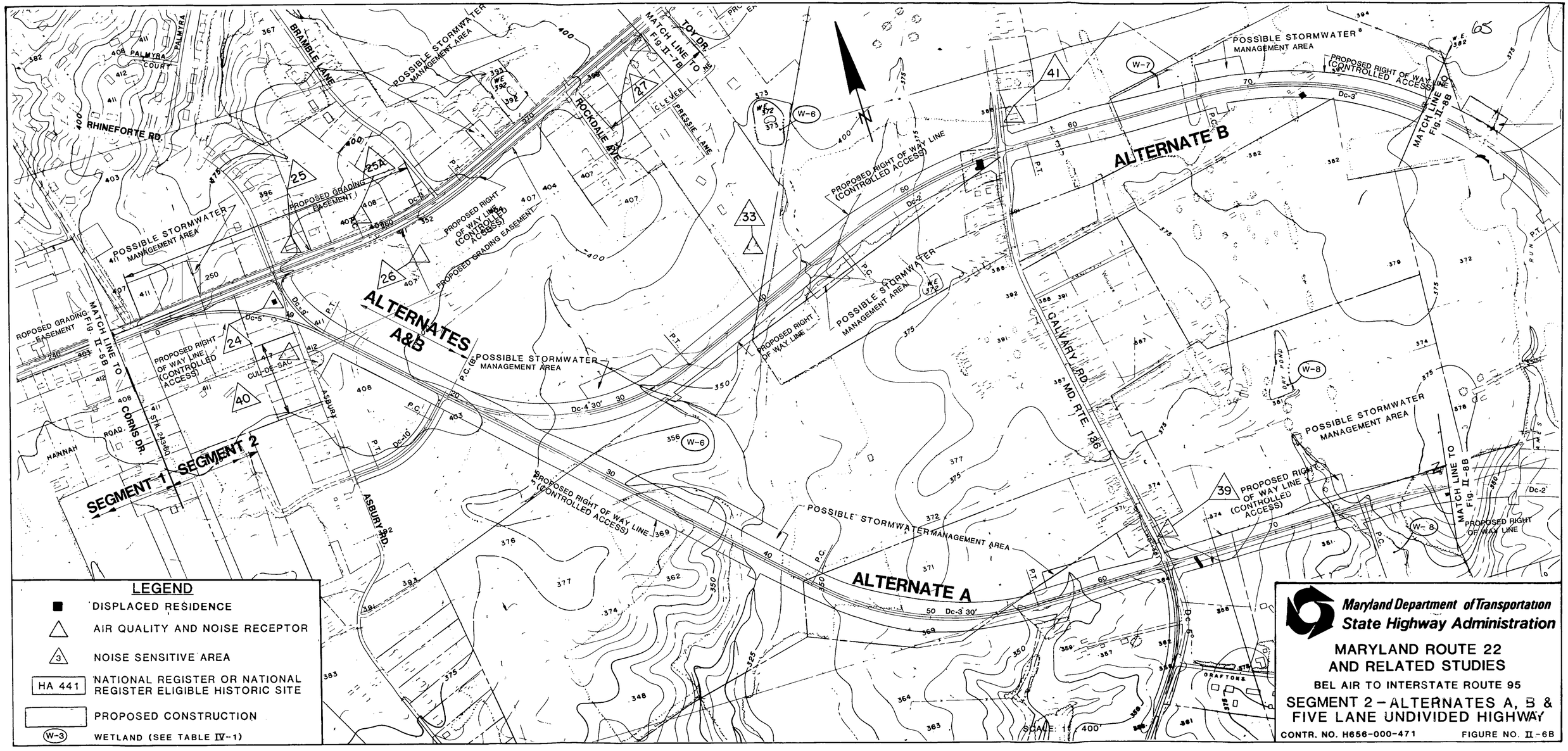
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 1

FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-5B



LEGEND

- ■ DISPLACED RESIDENCE
- △ AIR QUALITY AND NOISE RECEPTOR
- △3 NOISE SENSITIVE AREA
- HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- (W-3) WETLAND (SEE TABLE IV-1)

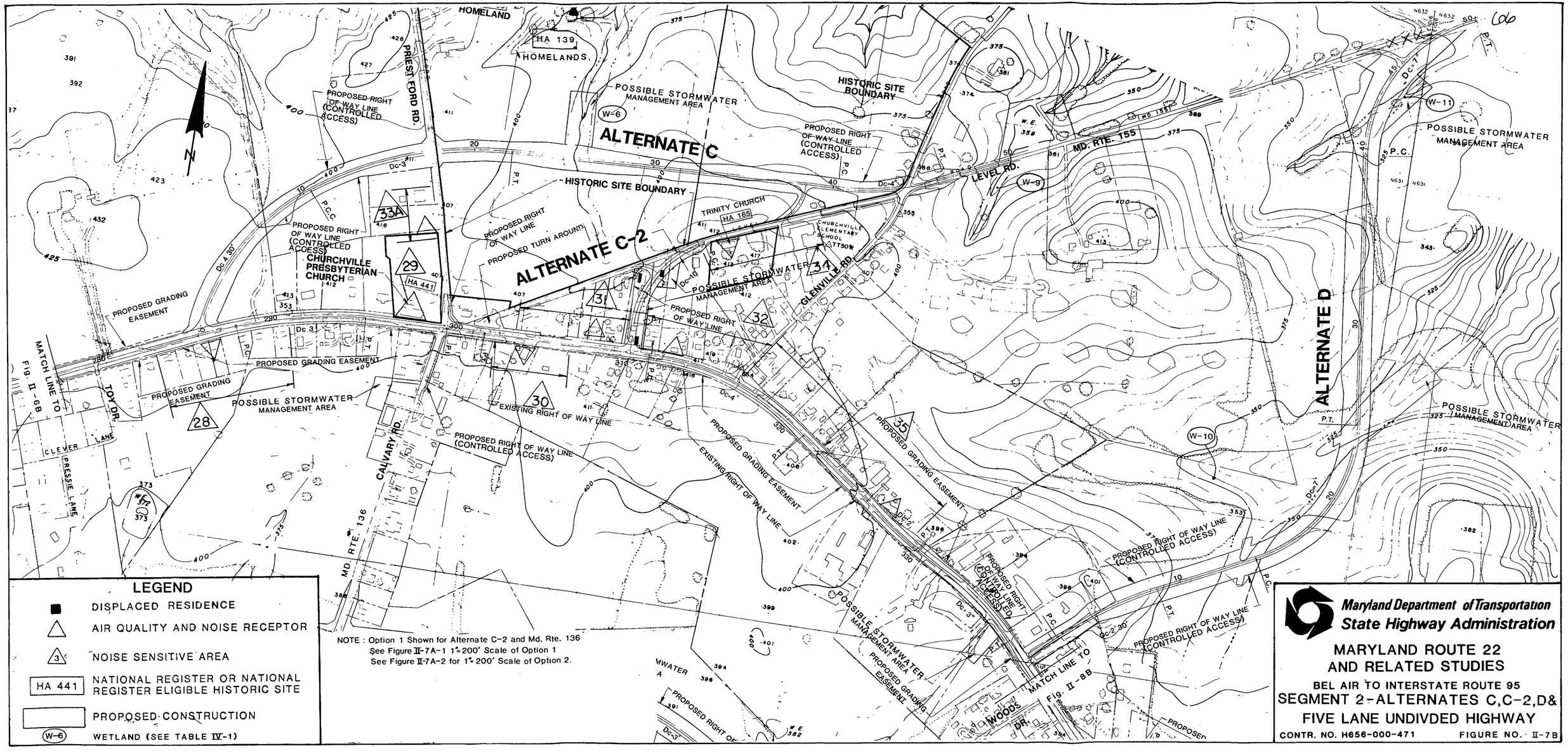
Maryland Department of Transportation
State Highway Administration

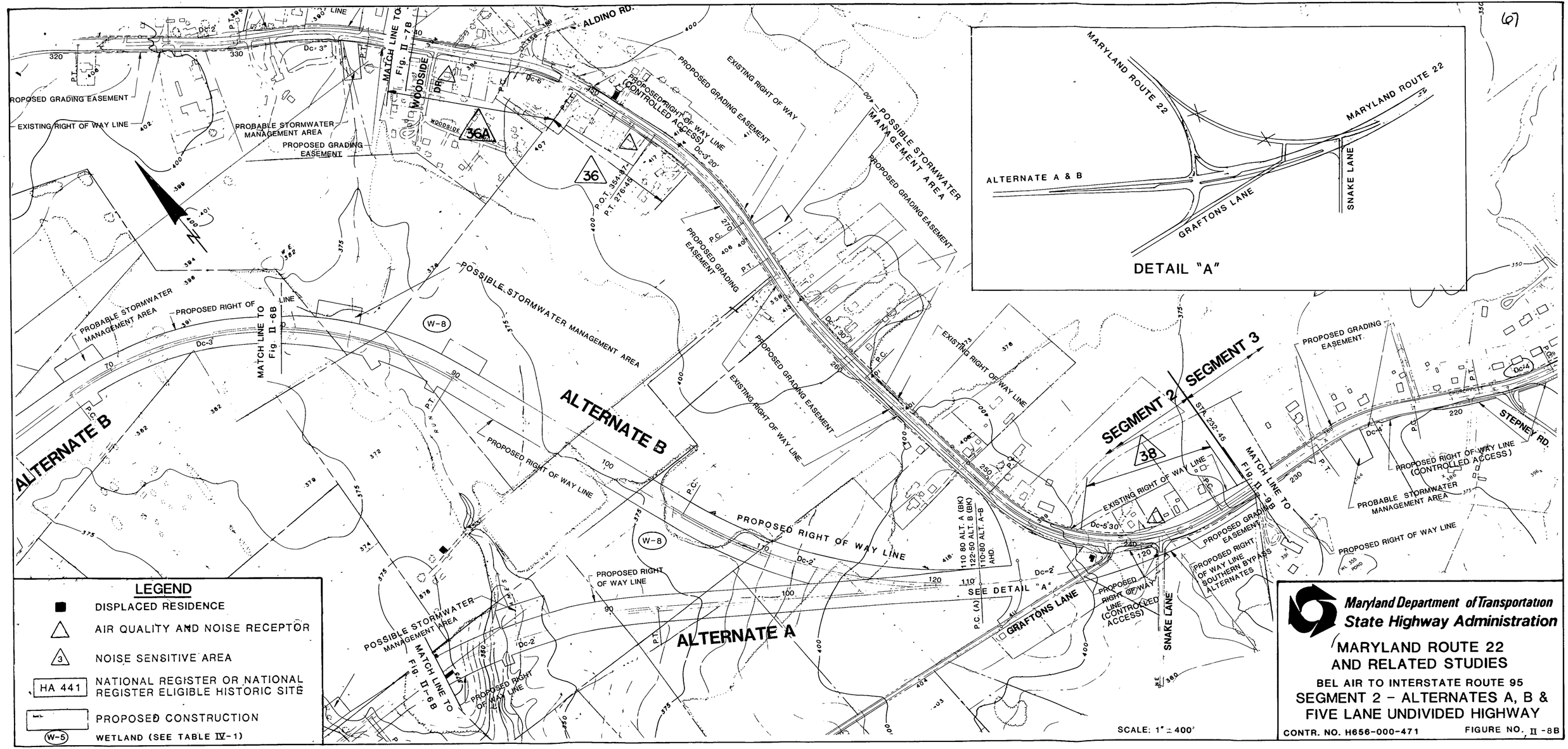
MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 2 – ALTERNATES A, B & FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-6B


HOMELAND
HA 139
HOMELANDS
PRIEST FORD RD.
PROPOSED RIGHT OF WAY LINE (CONTROLLED ACCESS)
POSSIBLE STORMWATER MANAGEMENT AREA
W-6
ALTERNATE C
HISTORIC SITE BOUNDARY
ALTERNATE C-2
TRINITY CHURCH
HA 165
CHURCHVILLE ELEMENTARY SCHOOL
CHURCHVILLE PRESBYTERIAN CHURCH
HA 441
PROPOSED TURN AROUND
PROPOSED GRADING EASEMENT
GLENVILLE RD.
LEVEL RD.
MD. RTE. 155
W-9
W-11
ALTERNATE D
W-10
TOY DR.
CLEVER LANE
PRESSIE LANE
CALVARY RD.
MD. RTE. 136
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE (CONTROLLED ACCESS)
MATCH LINE TO Fig. II-6B
MATCH LINE TO Fig. II-8B
WOODS DR.
28
29
30
31
32
33
33A
34
35
NOTE : Option 1 Shown for Alternate C-2 and Md. Rte. 136
See Figure II-7A-1 1"=200' Scale of Option 1
See Figure II-7A-2 for 1"=200' Scale of Option 2.
LEGEND
DISPLACED RESIDENCE
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-6 WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 2-ALTERNATES C,C-2,D&
FIVE LANE UNDIVDED HIGHWAY
CONTR. NO. H656-000-471
FIGURE NO. II-7B



(7)

LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- 3 — NOISE SENSITIVE AREA
- HA 441 — NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-5 — WETLAND (SEE TABLE IV-1)

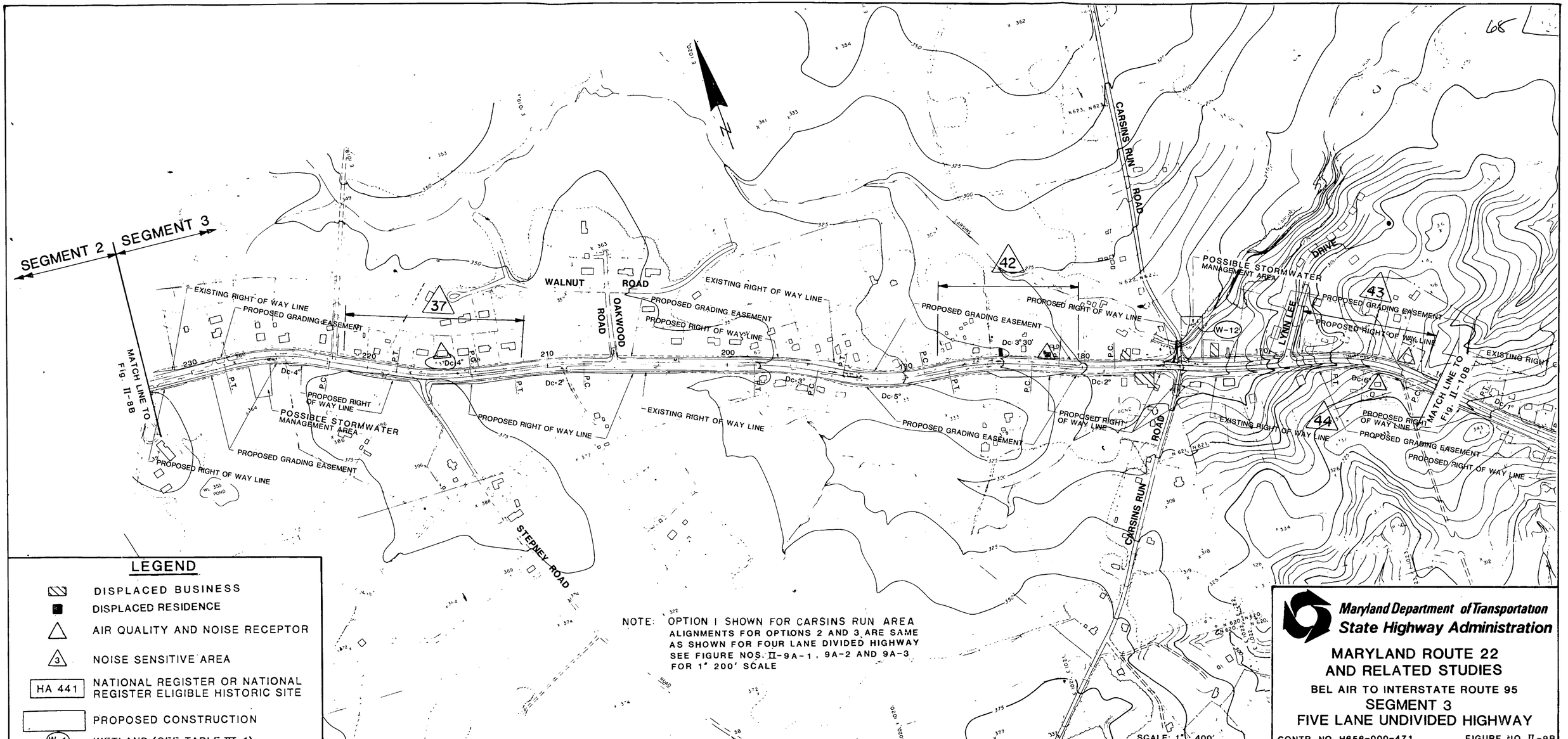
Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 2 – ALTERNATES A, B & FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-8B



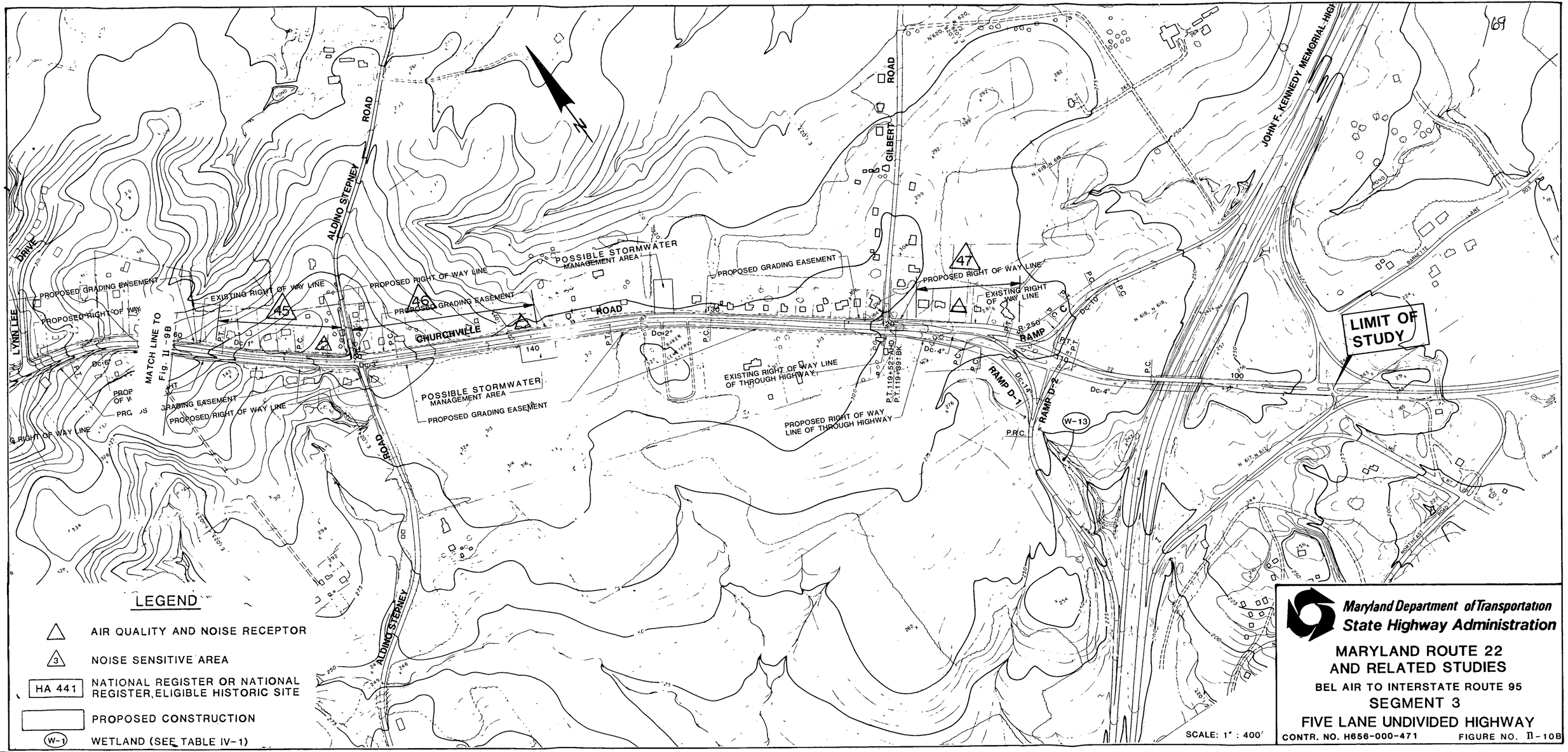
Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 3
FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-9B



LEGEND

- △ AIR QUALITY AND NOISE RECEPTOR
- △3 NOISE SENSITIVE AREA
- HA 441 NATIONAL REGISTER OR NATIONAL REGISTER, ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- (W-1) WETLAND (SEE TABLE IV-1)

Maryland Department of Transportation
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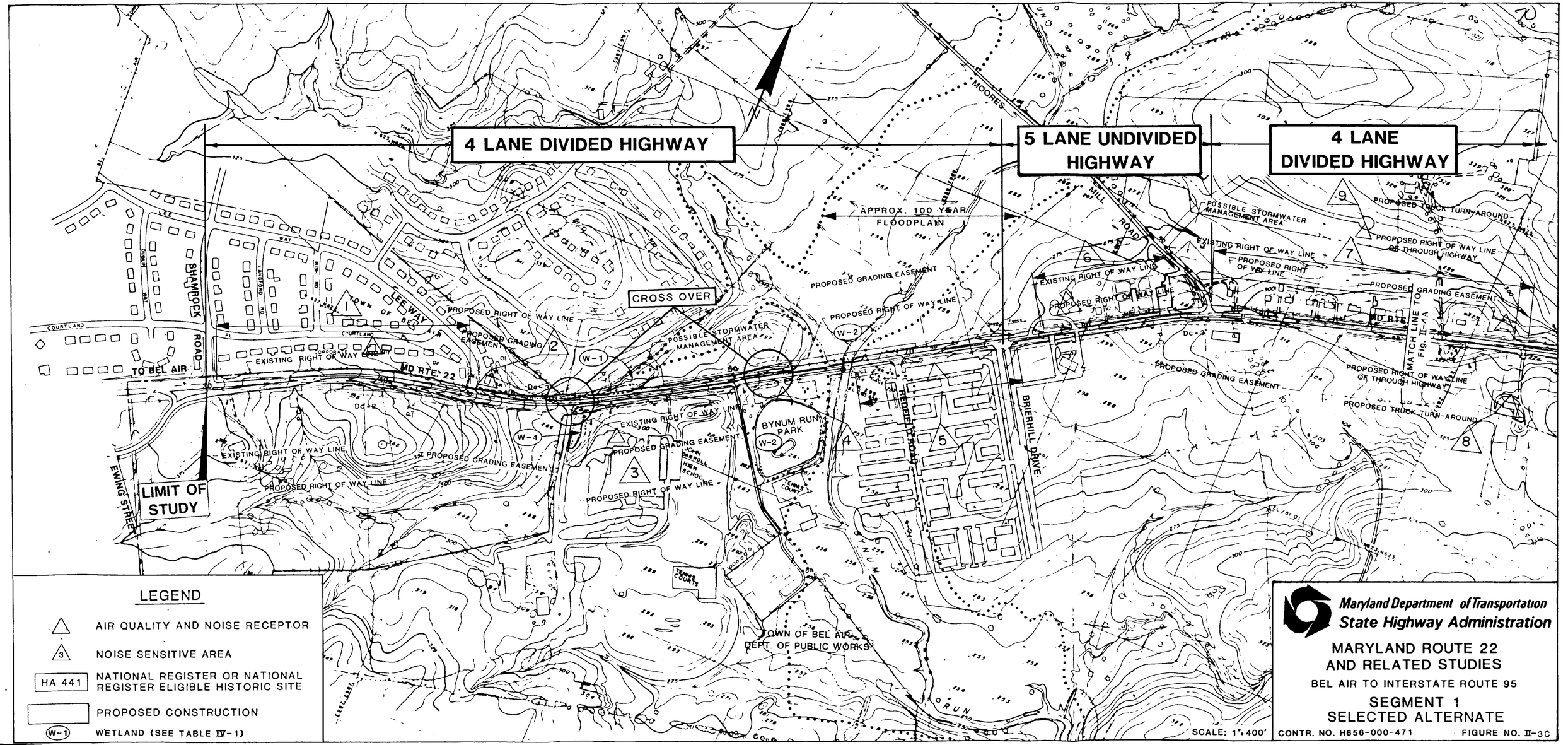
MARYLAND ROUTE 22 AND RELATED STUDIES

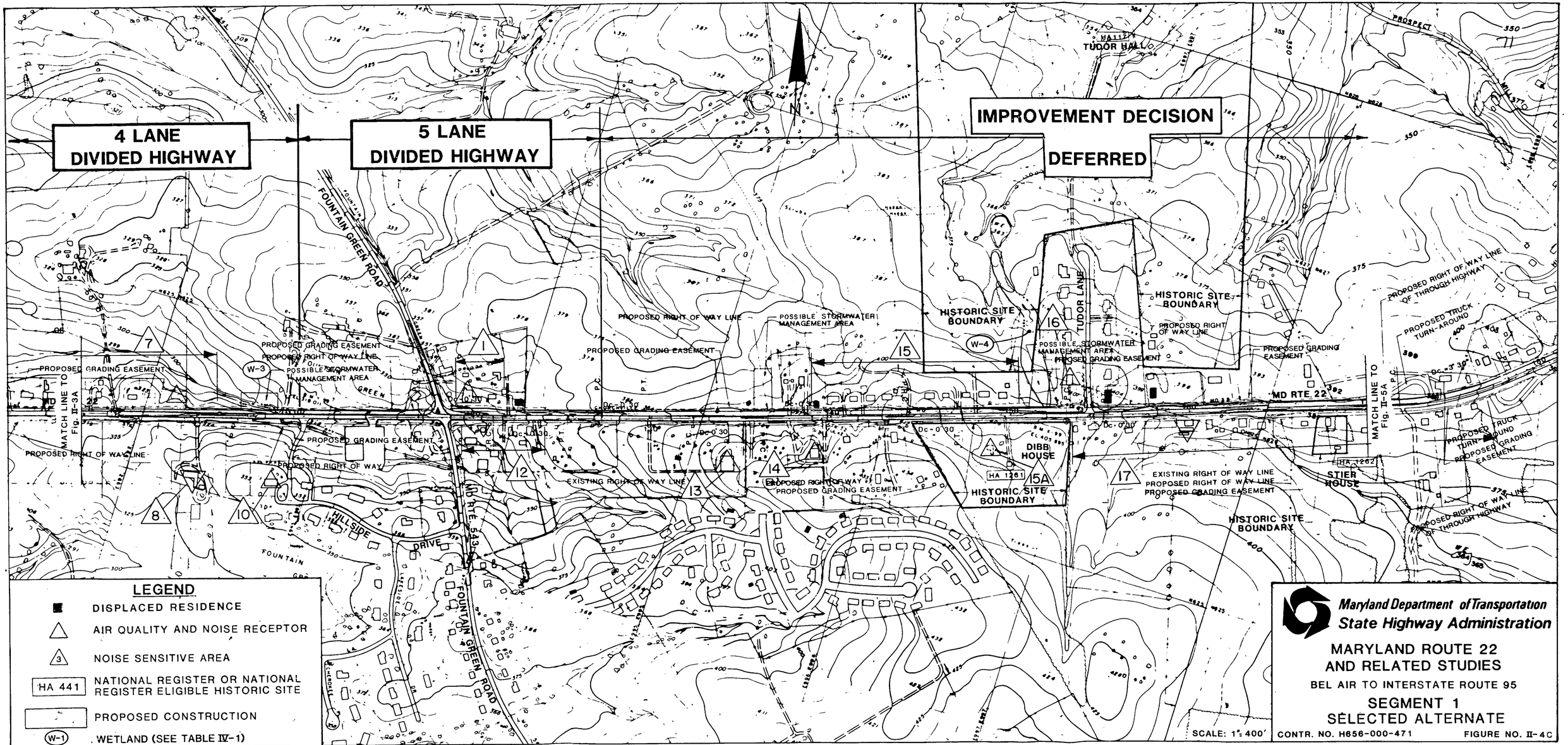
BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 3

FIVE LANE UNDIVIDED HIGHWAY

CONTR. NO. H656-000-471 FIGURE NO. II-10B


4 LANE DIVIDED HIGHWAY
5 LANE UNDIVIDED HIGHWAY
4 LANE DIVIDED HIGHWAY
LIMIT OF STUDY
SHAMROCK ROAD
TO BEL AIR
EWING STREET
LEE WAY
COURTLAND
MD RTE. 22
CROSS OVER
APPROX. 100 YEAR FLOODPLAIN
MILL RACE ROAD
PROPOSED RIGHT OF WAY LINE
EXISTING RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
POSSIBLE STORMWATER MANAGEMENT AREA
BYNUM RUN PARK
REDPATH ROAD
BRIERHILL DRIVE
JOHN CARROLL HIGH SCHOOL
TOWN OF BEL AIR DEPT. OF PUBLIC WORKS
PROPOSED TRUCK TURN-AROUND
PROPOSED RIGHT OF WAY LINE OR THROUGH HIGHWAY
MATCH LINE TO FIG. II-4A
W-1
W-2
Dc-2
Dc-3
LEGEND
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-1 WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 1
SELECTED ALTERNATE
SCALE: 1"=400'
CONTR. NO. H656-000-471
FIGURE NO. II-3C


4 LANE DIVIDED HIGHWAY
5 LANE DIVIDED HIGHWAY
IMPROVEMENT DECISION DEFERRED
FOUNTAIN GREEN ROAD
MD RTE 22
MD RTE 543
HILLSIDE DRIVE
TUDOR LANE
PROSPECT HILL
TUDOR HALL
HA 1172
HISTORIC SITE BOUNDARY
DIBB HOUSE
HA 1261
STIER HOUSE
HA 1262
PROPOSED RIGHT OF WAY LINE
PROPOSED GRADING EASEMENT
POSSIBLE STORMWATER MANAGEMENT AREA
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE OF THROUGH HIGHWAY
PROPOSED TRUCK TURN-AROUND
MATCH LINE TO Fig. II-3A
MATCH LINE TO Fig. II-5A
W-3
W-4
LEGEND
DISPLACED RESIDENCE
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
W-1 WETLAND (SEE TABLE IV-1)
Maryland Department of Transportation
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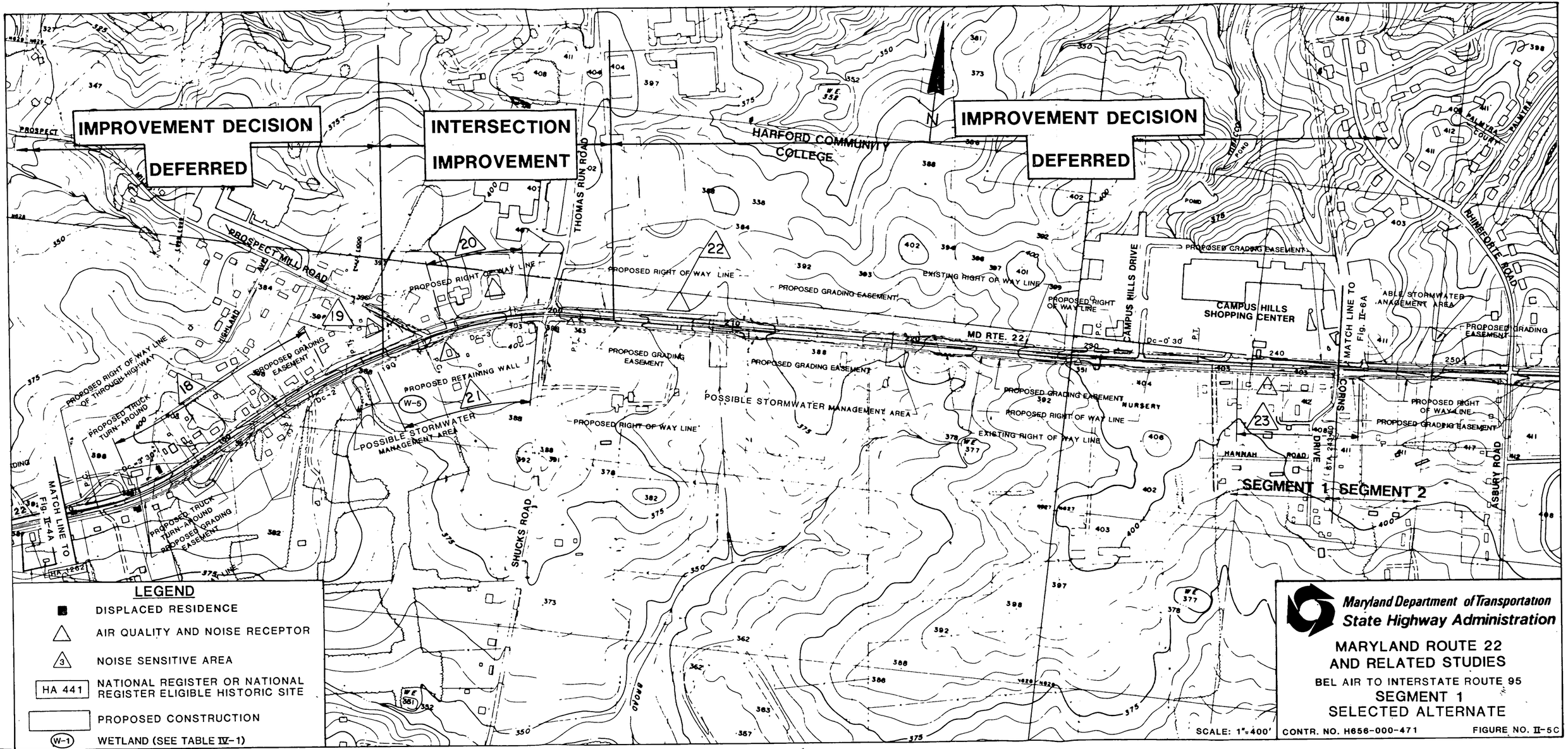
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
SEGMENT 1
SELECTED ALTERNATE
SCALE: 1" = 400'
CONTR. NO. H656-000-471
FIGURE NO. II-4C



LEGEND

- DISPLACED RESIDENCE
- AIR QUALITY AND NOISE RECEPTOR
- 3 — NOISE SENSITIVE AREA
- HA 441 — NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
- PROPOSED CONSTRUCTION
- W-1 — WETLAND (SEE TABLE IV-1)

Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

SEGMENT 1 SELECTED ALTERNATE

CONTR. NO. H656-000-471

FIGURE NO. II-5C

III. AFFECTED ENVIRONMENT

III. AFFECTED ENVIRONMENT

A. SOCIAL, ECONOMIC AND LAND USE

1. SOCIAL ENVIRONMENT

a. Population

The area of Harford County served by Maryland Route 22 and Maryland Route 155 consists of Harford Planning Districts numbered 2, 3, 4 and 10 (see Figure III-1). The overall population within these planning districts only increased 3.7 percent between 1970 and 1980. The population for the County increased 26.5 percent and the population for the State increased 7.5 percent during the same period.

The population for Planning District 2 which extends from Maryland Route 543 to Interstate 95 along Maryland Route 22 and Maryland Route 155 increased 20.7 percent between 1970 and 1980 and the population for Planning District 10, the Bel Air area, increased 28.7 percent. Planning District 3, the Havre De Grace area, and Planning District 4, the Aberdeen area, experienced 17.5 and 6.1 percent decrease in the population, respectively.

It is anticipated that the population within Planning District 2 will only increase 6.6 percent between 1980 and 2010 because of the limited potential for residential development. The population within Planning District 3 is also expected to remain fairly static for the next thirty years because of the aging population with low natural increase and the out-migration of young adults. A moderate increase in population is forecast for Planning District 4. However, future growth in the area is directly linked to the employment opportunities at Aberdeen Proving Ground. Planning District 10 should continue to experience population growth as long as undeveloped land is available for residential development.

b. Population Composition

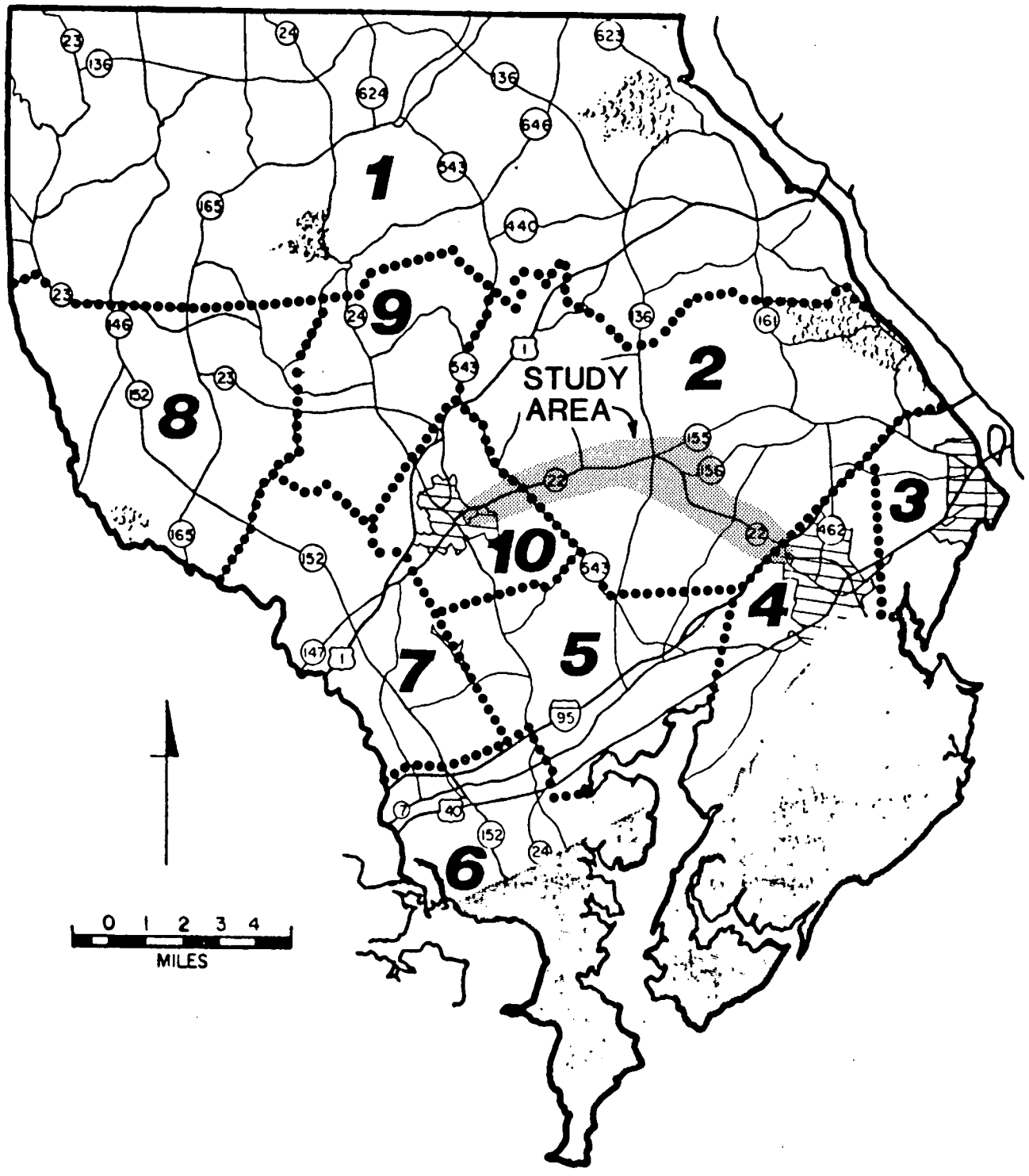
The 1980 population characteristics for the study corridor (Planning Districts 2 and 10) are included on Table III-2. The minority population in Planning District 2 and Planning District 10 is 5.6 and 3.4 percent, respectively. These percentages are lower than the County-wide average of 10 percent.

The median age of the population within the study area, 32.4 for Planning District 2 and 34.0 for Planning District

TABLE III-1 - POPULATION DATA

	CENSUS DATA		PROJECTIONS		
	1970	1980	1990	2000	2010
Plan. Dist. 2 (MD Rtes. 22 & 155 corridor)	10,604	12,796	13,060	13,443	13,641
Plan. Dist. 3 (Havre De Grace Area)	12,791	10,549	10,886	11,172	11,370
Plan. Dist. 4 (Aberdeen Area)	22,238	20,881	23,360	25,425	26,811
Plan. Dist. 10 (Bel Air Area)	13,016	16,745	19,389	22,066	23,848
Service Area Total	58,649	60,791	66,695	72,106	75,670
Harford County Total	115,378	145,930	163,800	179,100	189,000
State of Maryland	3,922,399	4,216,975			

Source: Harford Co., MD., Dept. of Planning & Zoning



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

HARFORD COUNTY PLANNING DISTRICTS

CONTR. NO. H656-000-471 FIGURE NO. III-1

10, is older than the County-wide median age of 28.9. The percentage of persons over 65 years of age is higher than the County average of 6.4 percent. 7.1 percent of the persons within Planning District 2 and 9.2 percent of the persons within Planning District 10 are over 65.

No concentrations of minority, handicapped or elderly persons have been identified in the study area.

c. Community Facilities (See Figure III-2)

There are approximately ten churches within the study area.

Schools located along or in close proximity to Maryland Route 22 include:

John Carroll High School
Southampton Middle School
C. Milton Wright High School
John Archer School
Prospect Mill Elementary School
Harford Community College
Harford Vocational and Technical School
Churchville Elementary School

There are no fire protection or emergency medical service facilities located within the study corridor. These emergency services are provided by Volunteer Companies located in Bel Air, Aberdeen, Havre De Grace, Darlington, Level and Abington. The closest hospitals are Harford Memorial Hospital in Havre De Grace and Fallston General Hospital located approximately 3.5 miles southwest of Bel Air.

Law enforcement for the study area is provided by the Maryland State Police located in Benson 2.6 miles southwest of Bel Air and the Harford County Sheriff's Department located in Bel Air.

Parks and open space within the study area include Bynum Run Park and Churchville Recreation Complex. Recreational Facilities are also available at the schools within the study area.

Public water and sewage are available along the Maryland Route 22 corridor from Bel Air to Maryland Route 543. The County has plans to extend the water and sewage systems east of Maryland Route 543 within the foreseeable future.

TABLE III - 2

1980 POPULATION CHARACTERISTICS

	PLANNING DISTRICT 2		PLANNING DISTRICT 10		HARFORD COUNTY	
	Population	Percent of total	Population	Percent of total	Population	Percent of total
Population	12,796	100.0	16,745	100.0	145,930	100.0
Minority Population	719	5.6	564	3.4	14,583	10.0
Age 0-17	3,933	30.7	4,404	26.3	45,622	31.3
18-34	3,184	24.9	4,620	27.6	43,306	29.7
35-64	4,771	37.3	6,185	36.9	47,631	32.6
65+	908	7.1	1,536	9.2	9,371	6.4
Male	6,426	50.2	8,090	48.3	73,416	50.3
Female	6,370	49.8	8,655	51.7	72,514	49.7
Median Age	32.4		34		28.9	

Source: Harford County, Md., Dept. of Planning and Zoning
DATA BOOK, DEMOGRAPHIC, ECONOMIC, & LAND USE TRENDS,
April 1985

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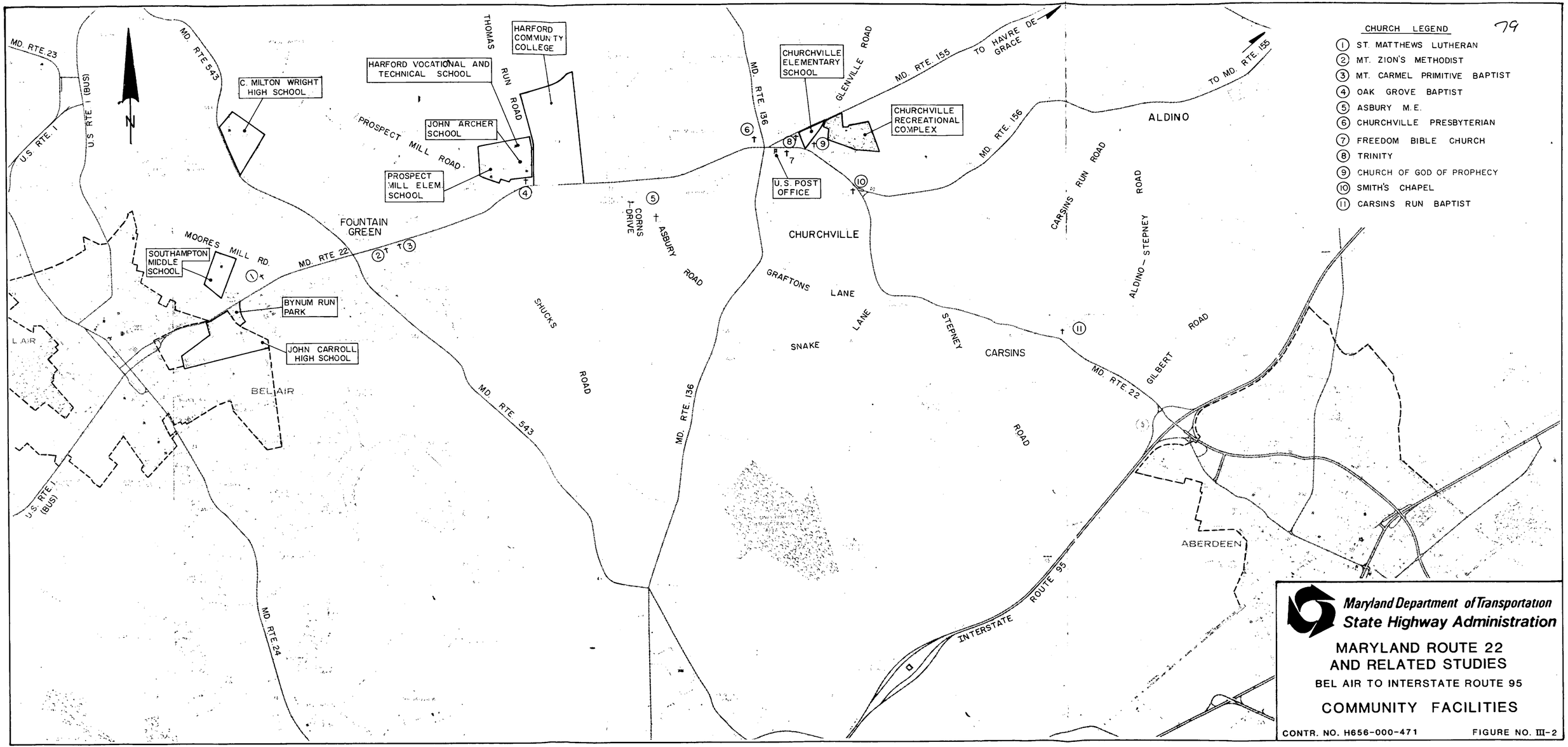

CHURCH LEGEND

1. ST. MATTHEWS LUTHERAN
2. MT. ZION'S METHODIST
3. MT. CARMEL PRIMITIVE BAPTIST
4. OAK GROVE BAPTIST
5. ASBURY M.E.
6. CHURCHVILLE PRESBYTERIAN
7. FREEDOM BIBLE CHURCH
8. TRINITY
9. CHURCH OF GOD OF PROPHECY
10. SMITH'S CHAPEL
11. CARSINS RUN BAPTIST

Maryland Department of Transportation
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MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

COMMUNITY FACILITIES

CONTR. NO. H656-000-471 FIGURE NO. III-2

2. ECONOMIC ENVIRONMENT

The 1980 General Income and Employment Characteristics for Employed Persons by Occupation - 1980 for the study area and Harford County are included on Table III-3 and Table III-4, respectively.

The median household income for both Planning District 2 and Planning District 10 was higher than the County-wide median. The percent of the resident labor force within the study area which was unemployed was 4.5 percent which was lower than the percent unemployed for the whole County (5.8 percent).

Over fifty percent of the civilian labor force in Planning District 2 and over two-thirds in Planning District 10 were employed in the administrative/managerial, clerical, professional specialty, sales and technician areas. Employment in wholesale trade, communications, finance, real estate, insurance, retail trade, services, state and local government have increased between 1970 and 1980. During the same period, employment opportunities in agriculture, construction, manufacturing and the military decreased. Construction has been on the rise since 1980.

There are over fifty commercial establishments along Maryland Route 22 between Bel Air and Interstate Route 95. Approximately 30 percent are located between Bel Air and Thomas Run Road, 60 percent are located in the Churchville area between Thomas Run Road and Maryland Route 156, and the remaining 10 percent located near Carsins Run Road. Typical businesses along the route include professional offices, specialty shops, service stores, convenience stores, fast food restaurants, etc. The largest commercial establishment along the corridor is the Campus Hills Shopping Center located just east of Harford Community College. This shopping center provides a full range of retail services.

3. LAND USE

a. Existing Land Use (See Figure III-3)

Approximately 70 percent of the land along the north side of Maryland Route 22 and approximately 45 percent of the land along the south side of the road is developed. The development along the road is primarily large lot, rural residential and the undeveloped land is agricultural. Commercial establishments are scattered along the entire route with small concentrations occuring at the following locations:

TABLE III - 3

1980 INCOME AND EMPLOYMENT CHARACTERISTICS

	Planning District No. 2 (MD Rtes. 22 & 155 Corridors)		Planning District No. 10 (Bel Air Area)		Harford County	
	Number	% of Total	Number	% of Total	Number	% of Total
Median Household Income	$23,631	--	$22,844	--	$20,830	--
Persons with Income below Poverty Level	650	5.1	787	4.7	10,638	7.3
Total Resident Labor Force	6,165	100.0	8,724	100.0	71,400	100.0
Civilian Labor Force	5,798	94.0	8,129	93.2	65,900	92.3
Military Labor Force	110	1.8	176	2.0	5,500	7.7
Unemployed	257	4.2	419	4.8	4,600	5.8
Net Out Commuters	1,460	23.7	2,724	31.2		

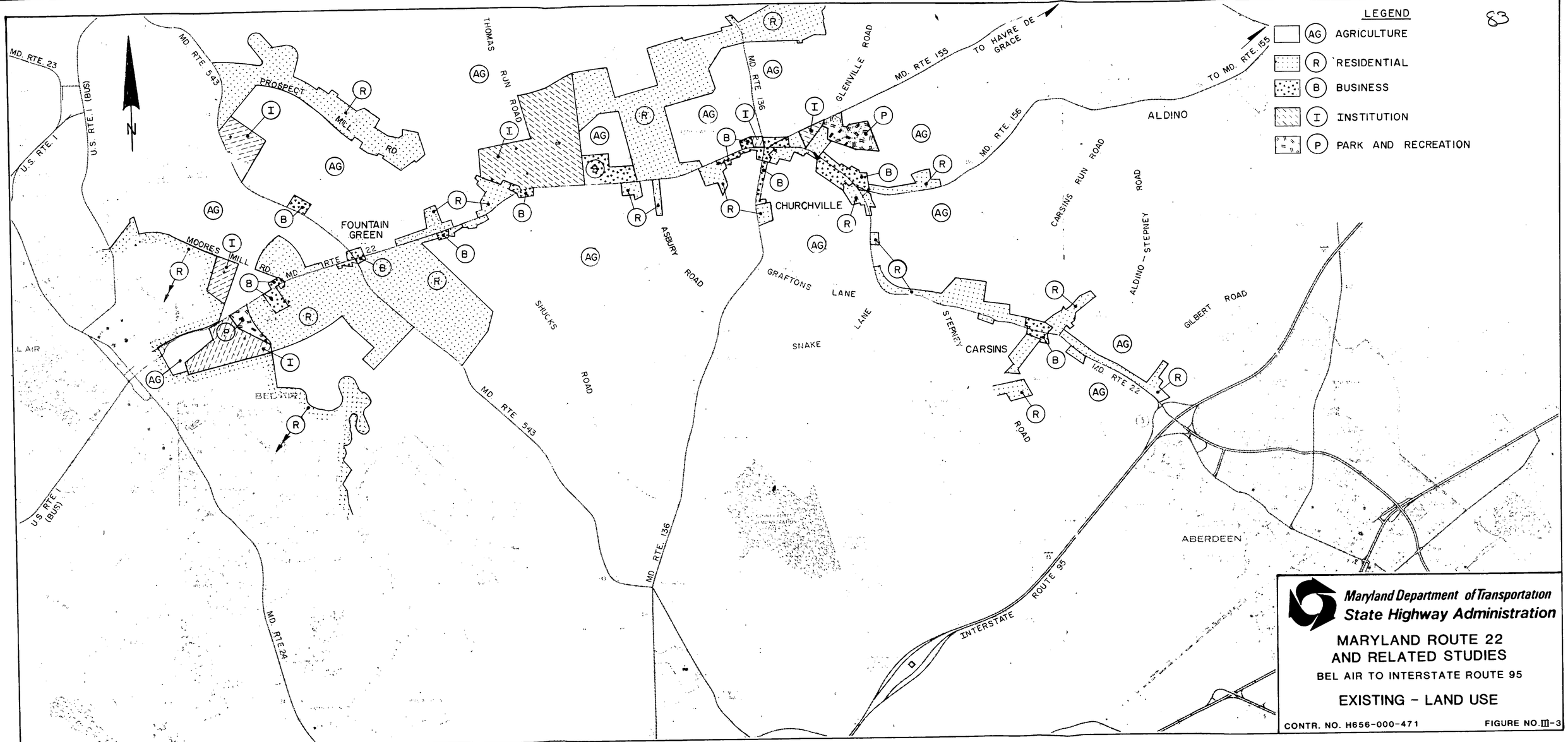
SOURCE: Harford County Maryland, Department of Planning and Zoning
DATA BOOK, DEMOGRAPHIC, ECONOMIC & LAND USE TRENDS
April 1985

TABLE III - 4

EMPLOYED PERSONS BY OCCUPATION - 1980

OCCUPATION GROUP	PLANNING DISTRICT 2		PLANNING DISTRICT 10		HARFORD COUNTY	
	Number	% of Total	Number	% of Total	Number	% of Total
Managerial & Professional	1557	26.9	3047	37.7	16,035	25.6
Technicians, Sales & Admin. Support	1670	28.8	2574	31.8	19,010	30.3
Service	638	11.0	814	10.1	7,419	11.8
Farming, Forestry & Fishing	155	2.7	47	0.6	1,129	1.8
Precision Production, Craft & Repair	997	17.2	856	10.6	9,105	14.5
Machine Operators, Assemblers & Laborers	517	8.9	558	6.9	7,178	11.4
Transportation & Material Moving	264	4.5	185	2.3	2,853	4.6
TOTAL	5798	100.0	8081	100.0	62,729	100.0

(SOURCE: 1980 U.S. Census Profile; Social, Economic and Housing Profile for Maryland)



Maryland Department of Transportation
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MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

EXISTING - LAND USE

CONTR. NO. H656-000-471 FIGURE NO. III-3

- Between Brierhill Drive and Moore's Mill Road
- In vicinity of Maryland Route 543 (Fountain Green)
- Campus Hills Shopping Center
- West of Maryland Route 136 to Maryland Route 156 (Churchville)
- In vicinity of Carsins Run Road

The existing land use beyond the fringe development along existing Maryland Route 22, east of Maryland Route 543, is primarily agricultural (pasture, crops, and woods). The area between the Bel Air town limits and Maryland Route 543 is in an active residential developing phase.

b. Future Land Use (See Figure III-4)

Most of the undeveloped land along the Maryland Route 22 corridor from Bel Air to one-half mile east of Maryland Route 543 (Planning District 10), has been zoned for moderate to high density residential development.

Zoning for the study area from east of Maryland Route 543 to Interstate Route 95 (Planning District 2) has been established to conform with the existing land use and provide protection of the agricultural industry. Village Business and Village Residential Districts have been established for the Churchville area to provide service to and preserve the character and function of rural settlement. Zoning for the existing rural residential area along Maryland Route 22 from Carsins Run Road to Interstate Route 95 has been changed to agricultural.

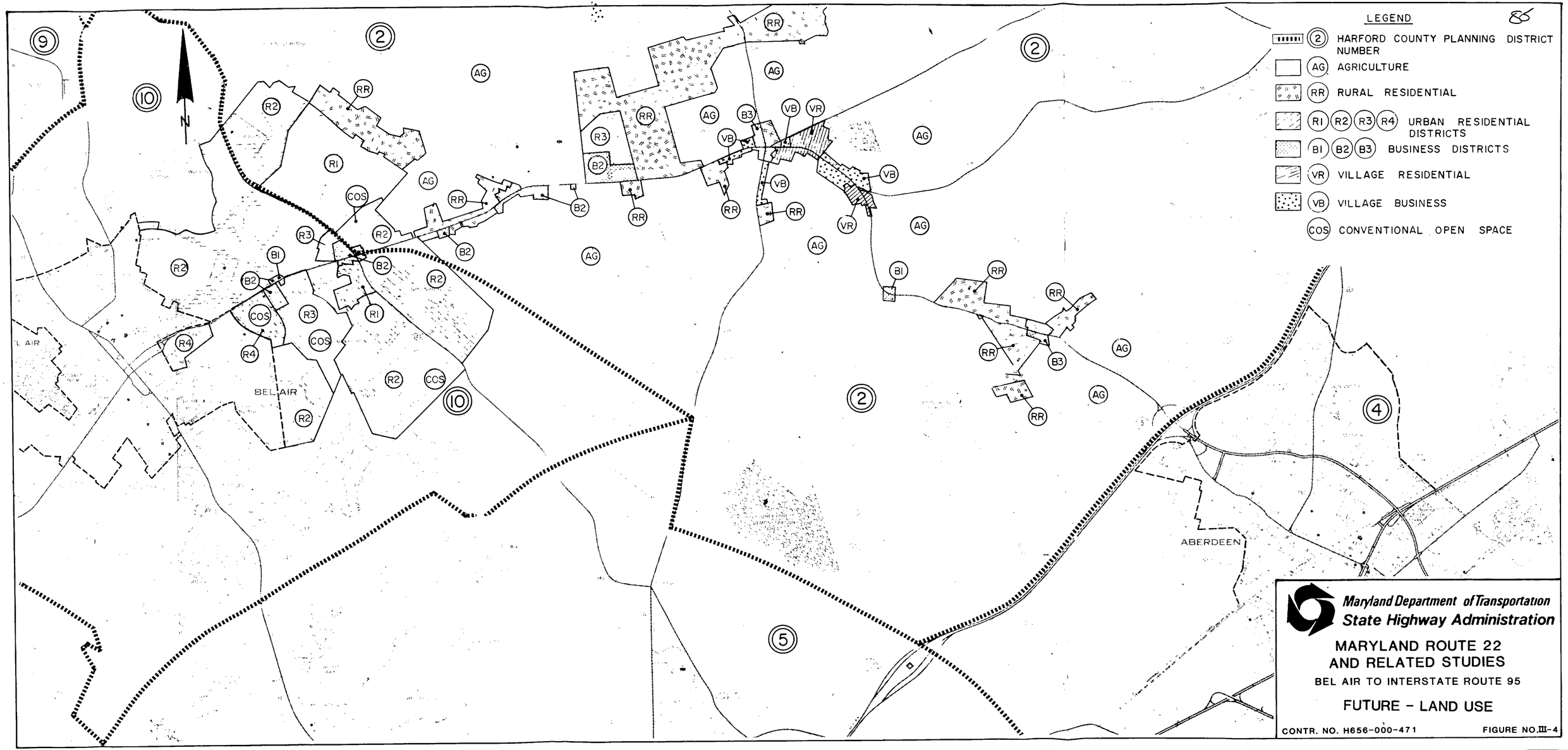
B. CULTURAL RESOURCES

1. HISTORIC SITES

The Maryland Historical Trust has identified 63 historic sites within the study corridor. Three of the sites are now listed on the National Register of Historical Places and five sites are considered as possibly being eligible for the National Register. The remaining fifty-six sites are currently listed on the Maryland Historic Site Inventory.

a. National Register of Historic Places
(See Figure III-5)

Tudor Hall (Ha 117)
Dibb House (Ha 1261)
Hays Heighe House (Ha 152)



Maryland Department of Transportation
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MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

FUTURE - LAND USE

CONTR. NO. H656-000-471 FIGURE NO. III-4

b. National Register Eligible (See Figure III-5)

Asbury M.E. Church (Ha 1267)
Churchville Presbyterian Church (Ha 441)
Stier House (Ha 1262)
Homeland (Ha 139)
Holy Trinity Church (Ha 167)

c. Maryland State Inventory

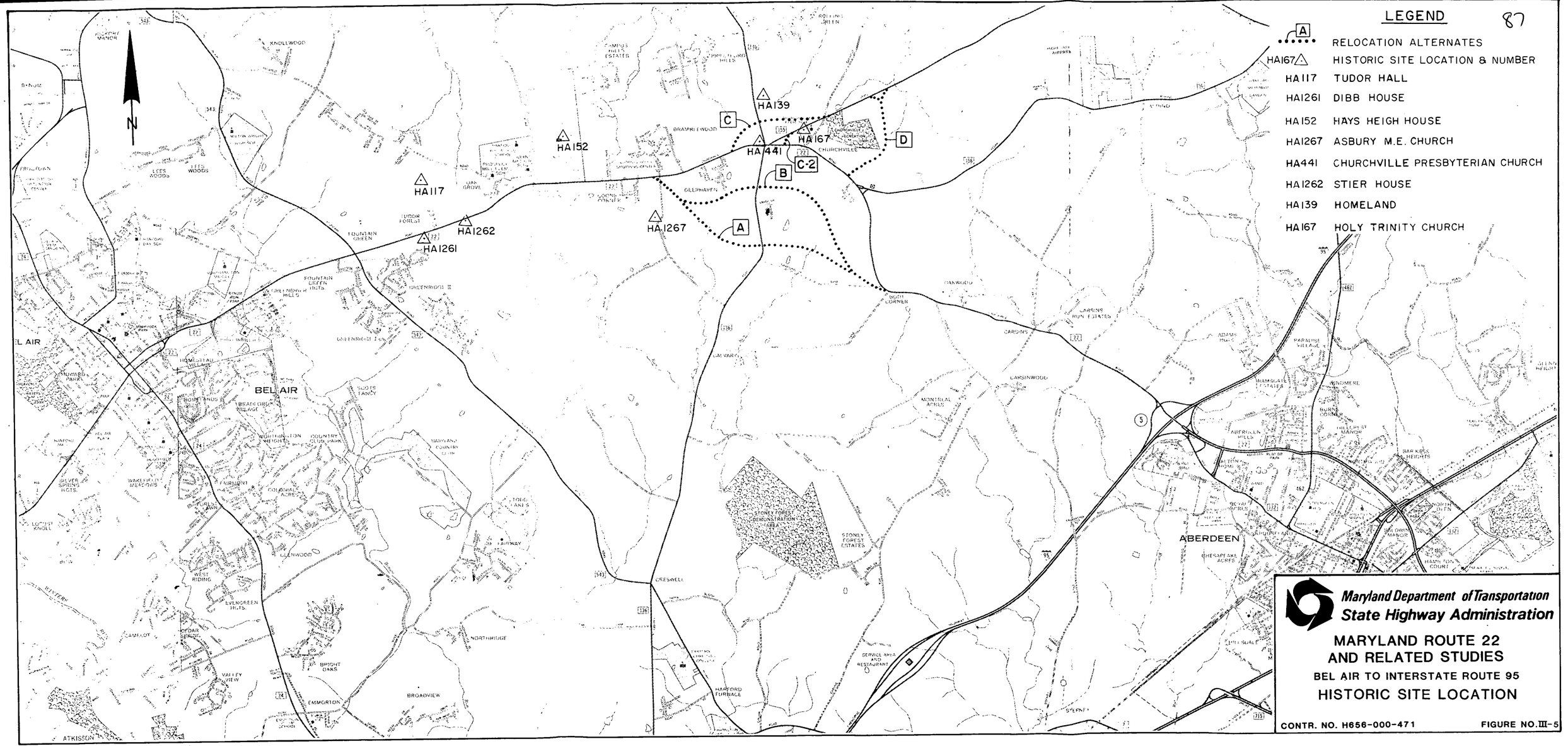
Old School House (A)
Jeffrey Tennant House (B)
Old Jeffrey House (C)
Earl Wagner Farm (Ha 1265)
Adelaide Taylor House (Ha 1314)
Russell Wilgis House (Ha 1263)
Booth Log House (E)
Shuck Tharpe House (Ha 1264)
Shuck's Store (F)
Colgate Nursery (Ha 1629)
Rice House (Ha 1628)
Frame House (Ha 1630)
Scarborough House (Ha 1626)
Hanby House (Ha 1522)
Homeland Tennant House (Ha 150)
Coale Store (Ha 1274)
Churchville Odd Fellows Hall (Ha 1275)
Albert Plummer House (Ha 1047)
Jones House (Ha 1518)
Chesney Bodt House (Ha 1524)
Bodt Sinclair House (Ha 1525)
Harlans Frame Cottage (Ha 115)
Bruggman's Gambrel-Roofed House (Ha 116)
Hawkins-Leftbridge House (Ha 1519)
Old Churchville Presbyterian Manse (Ha 994)
Captain Swan House (Ha 1520)
Greer House (Ha 1062)

Blackburn House (Ha 1280)

Jesse Plummer House (Ha 1048)
Blackburn House (Ha 1280)
Coale House (Ha 1625)
William H. Divers House (Ha 1050)
Wakeland - Sequin House (Ha 1049)
Zaleski House (Ha 1530)
Smith Chapel (Ha 1624)
Everett House (Ha 1623)
Smith-Blair House (Ha 1622)
Bevans House (Ha 1529)
Bungalow (Ha (1620)
Farmhouse (Ha 1621)
Keithley-Bodt House (Ha 1276)
Horkey-Katchman House (Ha 1290)
James Magness House (Ha 1531)
Diana's Thrift Store (Ha 1619)
Bowman House (Ha 1532)
Swanner House (Ha 1533)
Edwards Cottage (Ha 1618)
Burdell-Preston House (Ha 991)
DeSwan-Mahon House (Ha 1295)
Smith Store (Ha 1536)
Jewens-Schreiber House (Ha 1293)

Baker-Rodman House (Ha 999)
Baker Cemetary (Ha 1554)

George W. Baker House (Ha 1296)
Baker-Solley Outbuildings (Ha 1297)
DeSwan-Lillie House (Ha 1294)



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

HISTORIC SITE LOCATION

CONTR. NO. H656-000-471 FIGURE NO. III-5

2. ARCHEOLOGY

Phase I archeological studies were completed by the Maryland Geological Survey for the Churchville southern by-pass alternates, Route A and Route B and the Maryland Route 155 Connection alternates, Connection C and Connection D during 1982 and 1985. Two potential historic sites were identified during the 1982 survey and it was determined that site HA 150 would require no additional study. Fifteen tests sites were investigated during 1985, six sites along southern by-pass alternate Route A, four sites along southern by-pass alternate Route B, four sites along Maryland Route 155 alternate connection C and one site along Maryland Route 155 alternate connection D. Cultural material was found at ten of the fifteen 1985 test sites and it was determined that sites 18 HA 154, 18 HA 158, 18 HA 160, 18 HA 161 and 18 HA 162 were not eligible for the National Register. Additional Phase I work will be required at site 18 HA 156 and test site 4.

Phase II archeological studies will be required if one of the Churchville southern by-pass alternates is selected. Additional studies will be coordinated with the Maryland Geological Survey and the Maryland Historic Trust.

C. NATURAL ENVIRONMENT

1. TOPOGRAPHY AND GEOLOGY

Topography of the project area varies from level to steeply sloping, ranging from 0% to about 30%. Slopes adjacent to streams may exceed 30%. The maximum relief within the corridor is approximately 280 feet.

The project corridor lies within the Piedmont Plateau geologic province. Harford County's Piedmont is geologically old upland dissected by numerous small streams and drainages. Depths to rock vary from 2 to 28 feet or more.

The Port Deposit Gneiss geologic formation encompasses much of the project corridor. Rocks of this formation are schistose, strongly sheared, and contain muscovite, recrystallized sodic plagioclase and epidote along with chlorite, biotite, and/or quartz. Near Bel Air, the Baltimore Gabbro Complex occurs. This complex consists of massive lypersthene gabbro with norite and augite gabbro in subordinate amounts. Alluvium, chiefly micaceous silt and clayey sand, occurs in floodplain and valley fill deposits.

2. SOILS

The Soil Survey of Harford County published by the U.S. Department of Agriculture Soil Conservation Service provides the following information.

Soil textures are predominately silts and clays in the upland areas, silty sands in the terraces and predominately silts in the floodplains. About 90% of the soils belong to soil associations of the Piedmont Plateau; the remainder are floodplain soils or soils of the Atlantic Coastal Plain.

a. Glenelg-Manor Association

These soils are deep, gently sloping to steep, well drained to somewhat excessively well drained, and underlaid with acid crystalline rock. This association is mostly rolling to hilly upland dissected by streams. Steeper areas, cliffs, and bluffs are stony. Many of the steeper and stony areas are wooded. About 85% of this association is either moderately or severely eroded.

b. Chester-Glenelg-Manor Association

These soils consist of deep, nearly level to steep, well drained and somewhat excessively drained soils that are underlaid by acid crystalline rock. Soils of this association have few limitations except those imposed by slope and the hazard of erosion.

c. Neshaminy-Aldino-Watchung Association

These soils are deep, nearly level to steep, well drained to poorly drained, and underlaid with basic to semi-basic or mixed basic and acidic rocks. Erosion and stoniness in the steeper areas are major limitations. Drainage is a major limitation on flat or depressed areas.

d. Montalto-Neshaminy-Aldino Association

These soils are deep, steep to nearly level, well drained and moderately well drained soils that are underlaid by basic to semi-basic or mixed basic and acidic rocks. Erosion and stoniness are major limitations. Drainage is a limitation in level or depressed areas.

e. The Neshaminy-Chillum-Sassafrass Association

This soil association is grouped among the Atlantic Coastal Plain soils even though it also consists of Piedmont soils. These soils are deep, nearly level to steep, well drained soils that are underlaid by semi-basic or mixed basic and acidic rocks or sandy and gravelly Coastal Plain sediment on uplands.

f. The Codurus-Hatboro-Albureal Association

These soils exist within the study corridor along floodplains and low terraces. These soils are deep, nearly level, moderately well drained to very poorly drained and are underlaid by stratified alluvial sediment.

The U.S. Soil Conservation Service has designated most of the undeveloped land within the study area "Prime Farmland" or "Additional farmland of statewide importance." No "unique farmland" exists in the study area.

3. MINERAL RESOURCES

There are no known mineral resources within the project area.

4. WATER RESOURCES

a. Surface Water

The study corridor traverses the headwater area of watersheds in the following drainage basins:

- Bush River Basin: Bynum Run, James Run, Broad Run, Grays Run and Cranberry Run.
- Deer Creek Basin: Thomas Run, Tobacco Run, Coolbranch and Mill Brook.
- Swan Creek Basin: Carsins Run.

Existing Maryland Route 22 traverses the Bynum Run watershed from Bel Air to east of Maryland Route 543. From east of Maryland Route 543 to Maryland Route 156, Maryland Route 22 is constructed along a low ridge which is the division line between the Deer Creek drainage basin north of the road and the Bush River drainage basin south of the road. Maryland Route 22, from Maryland Route 156 to Interstate Route 95 continues along a low ridge between the Swan Creek Basin north of the road and the Bush River Basin south of the road.

Bynum Run and all tributaries are designated as Class III (Natural Trout Waters) by the Water Resources Administration of the Maryland Department of Natural Resources. Bynum Run crosses existing Maryland Route 22 approximately 0.77 miles east of the corporate limits of Bel Air. At the crossing of existing Maryland 22, Bynum Run is approximately 20 to 30 feet wide with a depth of about one foot or less. No anadromous fish species have been identified in Bynum Run. Bynum Run does support freshwater fish species such as white suckers, American eels, tesselated darters, black nose dace, creek chubs, and other minnows.

Deer Creek and all tributaries are Class IV (Recreational Trout Waters). Streams of this watershed should be considered of special significance since a rare and endangered species, the Maryland Darter, Eetheostoma sellare, is known to exist in Deer Creek. This species has only been reported in two streams - Deer Creek and, historically, Swan Creek.

The Swan Creek and the Bush River watersheds are Class I waters (Water Contact and Recreation). According to a survey by the Chesapeake Bay Foundation, portions of these watersheds have recently experienced elevated coliform bacteria counts, thus limiting their recreational value.

b. Groundwater

Harford County water systems and a part of the Bel Air system are supplied by the Patuxent Formation from the Perryman Well field near Aberdeen. The biggest use of groundwater supplies is by individual homeowners. The majority of these wells are located in the Piedmont section of the county. Currently, homeowners along Maryland Route 22 east of Greenbrier Hills Apartments utilize wells as their source of water. The average yield of about 70% of Piedmont wells is less than 10 gallons/minute. Only 2% of the wells exceed 50 gallons/minute. These figures imply that the average well can supply domestic needs for little more than a single dwelling.

Groundwater recharge is derived from rainwater percolating through the soil. The principal controlling factor of recharge is the permeability of the soil. Slopes less than 16% have little effect on recharge. Recharge is derived from precipitation in the immediate catchment area, and is not greatly affected by rock type or rock fracturing.

Groundwater derived from the area's schist, gneiss, and gabbro is generally of excellent chemical quality. Hardness is usually low, below 50 ppm. Iron is occassionally a problem, locally reaching as high as 4 ppm, but most analyses show less than 0.3 ppm, the ususal acceptable limit. Other objectionable dissolved constituents are not reported.

5. ECOLOGY

a. Terrestrial Ecology

The occurence and distribution of flora and fauna are greatly influenced by an extensive variety of available niches that result from a variety of climatic and edaphic factors (soil types, slope differences, wind exposure, etc). Topography has important interrelationships with temperature, moisture, and many other niche-related factors. The fauna of the uplands is quite diverse but the greatest diversity of fauna is associated with the edges of riparian bottomlands and nearby upland habitats.

1) Woodlands

Woodland plant communities within the project area are classified as oak-hickory or oak-gum. Little variation among woodland plots was noted because soils and topography show relatively little heterogeneity. Successional stages of woodlands in the corridor differed slightly from plot to plot with all woodlands in various stages of secondary succession. Woodlands in the area have been harvested several times for timber or wood products. The average tree diameter is about 8 inches. The range of canopy tree diameters is from 2 to 22 inches. The most abundant canopy tree species are white oak (Quercus alba) and American beech (fagus sylvatica).

Understory species of the woodlands consist of dogwood, cedar, red maple, and shagbark hickory. Herbbaceous plants vary seasonally as well as in response to soil and moisture conditions. Abundant herbaceous species include bearberry, poison ivy, blueberry, several grasses and honeysuckle.

2) Old Fields

Old fields are transitional communities succeeding from fields toward forests. Tree species include black locusts, red cedars, aspens, black cherries, and sassafras. Shrubs include sumacs, multiflora rose, autumn olive, and bush honeysuckle. Herbaceous species include goldenrod, ragweed, broomsedge, and other grasses.

3) Farmland and Pasture

Farmland and pasture occurs interspersed with patches of woodlands and developed areas along the alignments. Cultivated crops associated with general and livestock farming include corn, soybeans, barley, alfalfa, other hay crops, and small grains.

4) Wetlands

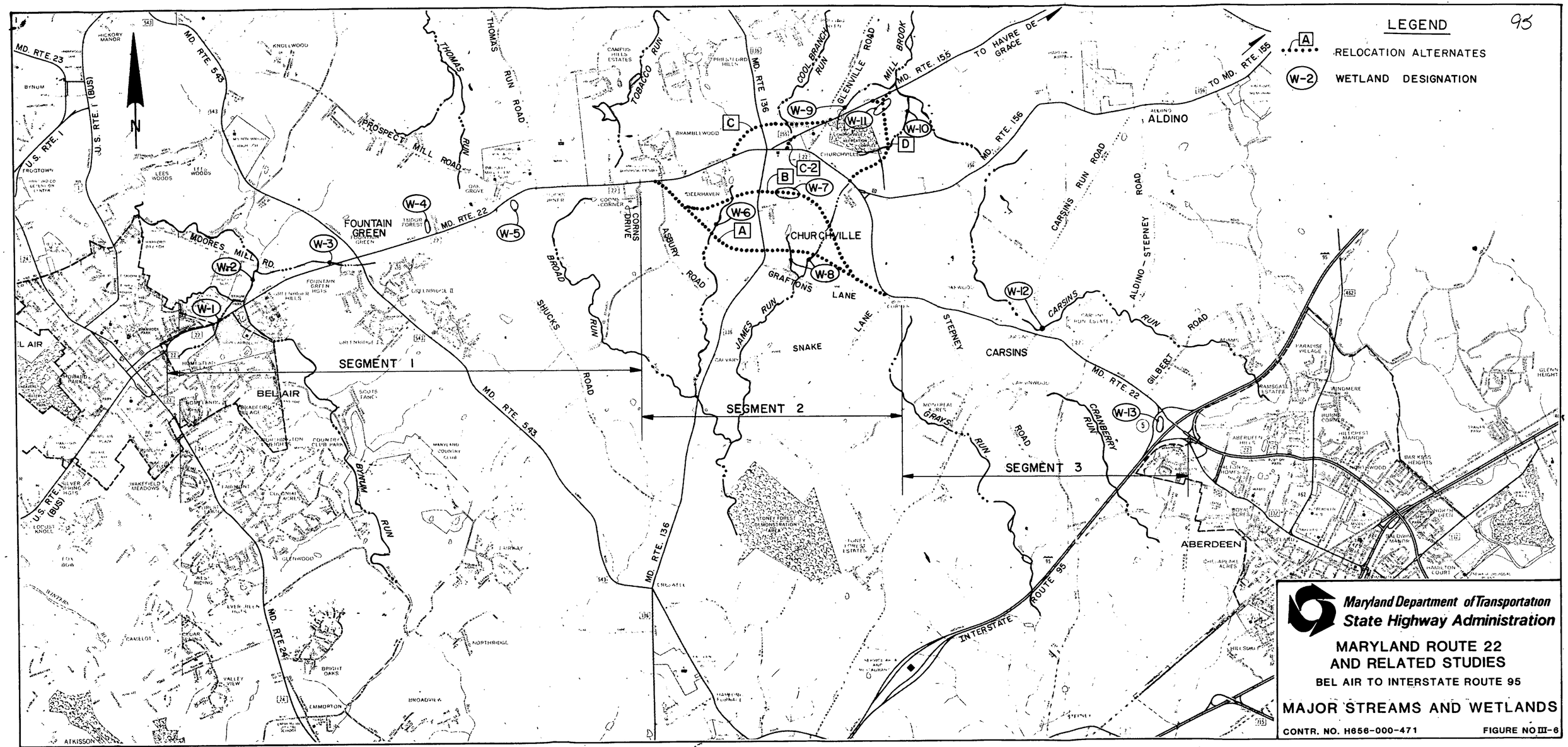
Wetlands in the study area were identified using the U.S. Fish and Wildlife Service system of Cowardon et al (1979). It is based on substrate material, flooding regime and vegetative life form. Palustrine wetlands are non-tidal wetlands. They are temporarily flooded and dominated by trees, shrubs, persistent emergent grasses, sedges, and mosses.

TABLE III-5 WETLANDS

WETLAND NUMBER	LOCATION	CLASSIFICATION*	DOMINANT SPECIES	INDICATOR STATUS**
W1	East of John Carroll School entrance at MD 22	PFO1A	Box Elder	OBL
W2	MD 22 at Bynum Run	PEM5A	Rushes	FACW
			Willows	OBL
W3	MD 22/Hillside Dr.	PEM5A	Rushes	FACW
W4	North of Dibb House	PFO1A	Box Elder	OBL
			Skunk Cabbage	
W5	Southwest of Prospect Mill Rd. at MD 22	PFO1A	Box Elder	OBL
			Red Maple	FAC
W6	Broad Run Tributary west of MD 136	PFO1C	Red Maple	FAC
			Skunk Cabbage	OBL
W7	James Run Tributary east of MD 136	PFO1C	Red Maple	FAC
			Black Willow	OBL
W8	James Run east of MD 136	PFO1C	Gums	FAC
			Musclewood	OBL
W9	MD 155 east of Glenville Rd.	PEM5C	Cattails	OBL
W10	East of Churchville Recreation Complex	PFO1A	Musclewood	OBL
W11	Alternate D at MD 155	PFO1C	Alders	FACW
W12	MD 22 at Carsins Run Road	PFO1A	Red Maple	FAC
W13	MD 22 at I-95	PFO1A	Red Maple	FAC

* PFO1C = Palustrine, Forested, Broad Leaved Deciduous, Seasonal
PFO1A = Palustrine, Forested, Broad Leaved Deciduous, Temporary
PEM5C = Palustrine, Emergent, Narrow Leaved Persistent, Seasonal
PEM5A = Palustrine, Emergent, Narrow Leaved Persistent, Temporary

** FAC = Facultative species (can live in wetlands or uplands)
FACW = Facultative Wetlands species (usually found in wetlands)
OBL = Obligative species (can only live in wetlands)



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

MAJOR STREAMS AND WETLANDS

CONTR. NO. H656-000-471 FIGURE NO III-6

Wetlands exist in the study area along the major stream channels. Bynum Pond is the largest palustrine aquatic bed in the area. The major streams and wetland locations are shown on Figure III-6. The classification of the wetlands is included on Table III-5.

b. Acquatic Ecology

The estuarine portion of Bush River has already shown signs of eutrophication. Algal blooms occur in Romney Creek downstream of the Sod Run Treatment Plant. A survey by the Chesapeake Bay Foundation found Coliform bacteria counts in Bush River periodically elevated, probably as a result of leaking septic systems. Waters are turbid and rates of siltation are excessive. Submerged aquatic vegetation is limited to sparse populations of milfoil. With the expansion of the Sod Run Sewage Treatment Plant, waste loading of the Bush River will continue to be a problem. Tidal marches in the estuary show no evidence of decline in productivity or diversity at this time.

Bynum Run, James-Broad Run, Grays Run, Cranberry Run, Carsins Run, and Thomas Run continue to show evidence of nutrient overload and bank erosion caused by flooding. Streams in most cases exhibited characteristic wide, shallow channels. These are common to streams which are subject to the periodic flooding associated with developed areas containing a high percentage of impervious surfaces. Unrestricted livestock access to streams has caused severe bank erosion in many places. Increased nutrient loads are largely the result of unrestricted livestock access to streams and urban runoff.

Declines in benthic diversity and number have resulted from reductions in overall water quality. Bush River tributaries have lower macro-invertebrate populations than comparable streams in the Deer Creek watershed.

c. Wildlife Ecology

Coordination with the U.S. Fish and Wildlife Service, the Maryland Department of Natural Resources, and field surveys in the study area revealed numerous wildlife species.

Herbivorous species include mice, moles, chipmunks, squirrels, woodchucks, muskrats, rabbits, deer, quails, pheasants, and a variety of songbirds.

Insectivorous species include shrews, moles, bats and a variety of songbirds.

Carnivorous and omnivorous species include weasels, mink, skunks, opossums, raccoons, foxes, hawks, and owls.

Woodlands support a diverse fauna of deer mice, chipmunks, red squirrels, gray squirrels, flying squirrels, shrews, opossums, occasional gray foxes, deer woodpeckers, blue jays, crows, vireos, tanagers, towhees, chickadees, phoebes, and many other woodland songbirds.

Bottomlands and wetlands including riverine forests and floodplains support a diverse faunal community of furbearers such as muskrats, mink, and raccoons, as well as rabbits, shrews, moles, bats, kingfishers, herons, woodcock, waterfowl and a great variety of songbirds.

Farmlands and old fields support varied fauna. Rabbits, voles, skunks, red foxes, woodchucks, quail, pheasants, many songbirds such as bluebirds, meadowlarks, robins, blackbirds, indigo buntings, catbirds, song sparrows, etc. inhabit these areas.

Ecotones, the borders between adjacent habitat types, support greater faunal diversity than any single habitat type. Hedges, the edges of woodlots, the various stream courses, and the borders between cultivated fields and old fields provide extensive ecotones in the project corridor. The interfaces between crop fields and wooded areas often show evidence of use by deer, raccoons, and squirrels.

Breeding bird surveys (Maryland Breeding Bird Atlas, in press), indicate high diversities of songbirds adapted to fill niches within wooded habitats, old fields, open areas, and bottomlands/wetlands.

Economically important terrestrial wildlife include the furbearers and game animals, particularly small game such as rabbits, gray squirrels, quail, and mourning doves. Muskrats, raccoons, and red foxes provide some income to a few local trappers. Whitetail deer are an important resource in Harford County, but development in the project area restricts hunting opporunity for this species.

Streams in the project corridor are too small to support viable fisheries.

d. Rare and Endangered Species

The Maryland Darter, Etheostoma sellare, is a federally-listed endangered species which is known to inhabit Deer Creek and historically was reported in Swan Creek. This species is not known to exist within or near the project corridor.

Coordination with the U.S. Fish and Wildlife Service, the Department of Natural Resources, Maryland Forest, Park & Wildlife Service and Maryland Department of Natural Resources, Natural Heritage Program, and field surveys has revealed no known populations of threatened, rare, or endangered species within the area of project influence. Letters from the above mentioned agencies are included in the COMMENTS AND COORDINATION section of this document.

D. AIR QUALITY

The study area for this project lies within the Metropolitan Baltimore Intrastate Air Quality Control Region, and therefore is subject to transportation control measures such as the Vehicle Emission Inspection Program. The impact of the proposed project on carbon monoxide (CO) concentrations has been studied using a detailed micro-scale air quality analysis. Residential, commercial, and religious sites in close proximity to the existing and proposed highways were given particular attention. Comparisons were made to the National Ambient Air Quality Standards to determine if there would be any violations of these standards. The results of this analysis are described in Section IV of this document.

E. NOISE

Local and highway traffic is the major contributor to existing noise levels in the study area. Highway traffic noise is usually measured on the "A" weighted decibel scale "dBA", which is the scale that has a frequency response closest to that of the human ear. To give some significance to the noise levels discussed, a quiet rural night would register about 25 dBA, a quiet urban daytime about 50 dBA, a gas mower at 100 feet about 70 dBA and a diesel truck at 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 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 FHWA, 1980). Ambient noise levels were measured along the project corridor using an ANSI Type 2 instantaneous sound level meter to determine existing levels of noise from both natural and manmade sources including existing traffic on Maryland Route 22. These measurements were taken at locations judged to be noise sensitive, such as residences, commercial areas and churches. A statistical approach was used during monitoring to obtain the L10 noise level, the level which is exceeded 10% of the time. The data was then used to develop the Leq noise level, which is the energy equivalent sound level. All ambient and predicted levels in this report are Leq exterior noise levels unless otherwise noted.

Ambient noise levels represent a general picture of the present noise levels in the study area. Since much of the noise along Maryland Route 22 results from the traffic on the roadway, variations will occur due to fluctuations in traffic volumes, speeds and truck traffic. Ambient Leq noise levels ranged from 48 dBA in areas distant from existing Maryland Route 22 to 73 dBA in areas along the Maryland Route 22 right of way. More information on the ambient noise survey conducted as part of this study is contained in Section IV of this document.

IV. ENVIRONMENTAL CONSEQUENCES

IV. ENVIRONMENTAL CONSEQUENCES

A. SOCIAL, ECONOMIC AND LAND USE

1. SOCIAL

a. Effects on Residences

An analysis of the probable residential displacement caused by the proposed alternates has been made by the State Highway Administration. Relocation of families and individuals displaced by the proposed project would be accomplished in accordance with the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 (P.L. 91-446). A summary of the relocation assistance program of the State of Maryland is given in the Appendix.

Methods to reduce the number or residential displacements will be studied during final design and right of way negotiations. These methods will include the following:

- Paying monetary damages for grading easements in close proximity to structures.
- Construction of retaining walls adjacent to the highway.
- Relocation of the structure on the same property if feasible.

Following is a summary of the effects on residences for the various alternates:

1) Segment 1 - Bel Air to Corns Drive

From two to six families would be displaced by the Four-Lane Divided Highway alternate and a maximum of two families would be displaced by the Five-Lane Undivided Highway alternate. No known minorities would be displaced.

For the Four-Lane Divided Highway alternate, three additional residences will be closer than twenty-five feet to the roadway grading and seven additional residences will be less than fifteen feet from the roadway grading.

For the Five-Lane Divided Highway Alternate, seven additional residences would be less than twenty-five feet from the roadway grading and five additional residences would be less than fifteen feet from the roadway grading.

For the portion of the route for which an alternate has been selected, no families would be displaced and no additional residences will be closer than twenty-five feet from the roadway grading.

2) Segment 2 - Corns Drive to Snake Lane

The selection of an improvement alternate for Maryland Route 22 for this segment of the project has been deferred.

The Four-Lane Divided Highway and Five-Lane Undivided Highway Maryland Route 22 improvement alternates may require acquisition of one single family farm dwelling.

For both the highway widening alternates, five additional residences would have less than a twenty-five foot front lawn and two additional residences would be closer than fifteen feet to the roadway grading.

Churchville Southern By-Pass Alternate A would displace from two to four families of which at least one is a minority family. The Southern By-Pass Alternate B would displace five families of which at least one family is a minority family.

No displacements are required for the Maryland Route 155 connection alternates designated C (selected alternate) and D. Connection Alternates C-2 and Glenville Road would displace three families. No known minorities would be displaced.

3) Segment 3 - Snake Lane to Interstate Route 95

The selection of an improvement alternate for Maryland Route 22 for this segment of the project has been deferred.

Option 1 for both of the Build Alternates for Maryland Route 22 would displace a maximum of two single family dwellings and six apartment units. The apartment units are predominantly low income rental units and house approximately 10 people. No known minorities would be displaced.

Option 2 for the Build Alternates would not have any residential displacements.

Option 3 for the Build Alternates would require acquisition of a maximum of two single family dwellings and a building containing six apartment units. The apartment units are predominantly low income rental units and house approximately 10 people. No known minorities would be displaced.

For the above options, the increased number of residences which would be significantly closer to the grading limit of the highway are as follows:

	Four Lane Divided Alternate		Five Lane Undivided Alternate	
	Less than 25 feet	Less than 15 feet	Less than 25 feet	Less than 15 feet
Option 1	14	5	13	2
Option 2	13	2	14	1
Option 3	15	2	13	1

Some of the persons which would be displaced by any of the Build Alternates being considered may be elderly. No known handicapped persons would be displaced.

Based on a survey of the Harford County housing market, replacement housing in the immediate area should be available for the single family dwellings which are involved. A number of housing of last resort cases may be anticipated, especially where apartment units and rental houses are displaced. It may be difficult to find rental units in the immediate area. The tenants may have to be relocated to Bel Air, Aberdeen or Havre De Grace. Displaced dwellings which are part of a farming operation will probably have to be replaced on the farm or close by to avoid damage to the operation.

The State Highway Administration will assist those displaced in relocating. All families will be provided decent, safe, and sanitary housing within their financial means. Housing of Last Resort will be provided if necessary. Relocation of residences is expected to occur in a timely and satisfactory manner and without undue hardship to the displacees.

A reasonable lead time of between 18 and 30 months would be necessary to properly administer the relocation assistance program. The right of way and relocation reports are available for review at the following locations:

State Highway Administration
Office of Planning & Preliminary Engineering
707 North Calvert Street
Baltimore, Maryland 21202

State Highway Administration
District 4 Office
2323 West Joppa Road
Brooklandville, Maryland 21022

b. Summary of Equal Opportunity Program of Maryland State Highway Administration

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

c. Effects on Community Facilities

The proposed road improvements should aid police and fire protection and ambulance services due to reduced travel times and decreased traffic congestion through the corridor. Access to the schools and recreational areas will also be improved.

The Four-Lane Divided Highway alternate for the Maryland Route 22 improvements would cause a minor inconvenience to the churches along the route since it will reduce the ease of access.

Median openings are proposed for the four-lane divided highway alternate at approximately 1000-foot intervals. The maximum increase in travel time caused by the median should be less than 45 seconds. A mountable curb could be specified for the median to permit crossing by emergency vehicles.

The Churchville Southern By-Pass Alternates would reduce noise and traffic volumes along the existing route.

The Maryland Route 155 alternate Connection C (selected alternate) would reduce traffic volumes within Churchville, resulting in a positive effect in terms of air, noise, and visual impacts on the Churchville Presbyterian Church, Holy Trinity Church and Churchville Elementary School.

The Maryland Route 155 alternate Connection C-2 would require the acquisition of approximately one-half acre of land from the Holy Trinity Church on Maryland Route 155. The acquisition would not be from within the historic boundary of the church's land that is eligible for The National Register of Historic Places. Heavy traffic flows would remain within Churchville. Thus, adverse impacts on sensitive sites such as the Churchville Presbyterian Church, Churchville Episcopal Church, Holy Trinity Church and Churchville Elementary School which are associated with the existing conditions would remain.

The Maryland Route 155 alternate Connection D would reduce traffic in front of the Holy Trinity Church. However, under this alternate more drivers would probably use Glenville Road, a local residential road, for access to Maryland Route 155.

No non-profit organizations should be displaced and no functional replacements will occur.

2. ECONOMIC

a. Effects on Existing Businesses

The Build Alternates under consideration for Segment 1 from Bel Air to Corns Drive and Segment 2 from Corns Drive to Snake Lane would not require the relocation of any businesses. The proposed grading easements should not cause a reduction in the number of parking spaces. One business, located on the southwest corner of the Maryland Route 22-Maryland Route 136 intersection would lose vehicular access to gasoline pumps.

The Build Alternates under consideration for Segment 3 from Snake Lane to Interstate Route 95 would affect businesses in the vicinity of the Maryland Route 22-Carsins Run Road intersection. The number of businesses which would be affected will depend on the construction option selected and will be as follows:

1) Option 1: This option would displace three businesses having an approximate total of twelve employees.

2) Option 2: This option would displace one business having an estimated seven employees and would encroach on the parking area of two businesses.

3) Option 3: This option would displace two businesses having an approximate total of five employees.

No known minorities would be affected by the business displacements.

The selection of an improvement alternate for this segment of the project has been deferred.

The State Highway Administration would assist all of these businesses in relocating. It is anticipated that business tenants will encounter difficulty in finding similar older commercial spaces for rent in the area. Sufficient undeveloped land is zoned for commercial use in the immediate area and may be available for replacement sites.

Businesses along Maryland Route 22 that are dependent on passing motorists such as convenience stores, fast food restaurants and gas stations may experience some reduction in business activity under the following alternates:

- The Four-Lane Divided Highway alternate which would restrict ingress and egress to be right turn in and right turn out in areas between cross-overs and intersections.

- Churchville Southern By-Pass Alternates and Maryland Route 155 Connection C alternate because these alternates would reduce the through traffic volume in the Churchville area.

b. Effect on Regional Business Activites

The No-Build Alternate would result in a decrease in roadway capacity in the study area, thereby increasing traffic congestion and making the area less attractive to businesses.

The Build Alternates would increase roadway capacity, thereby improving traffic operations and making the area more attractive to businesses. Increased business development in planned areas is consistent with Harford County's planning objectives.

Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95

IMPORTANT FARMLANDS

CONTR. NO. H656-000-471 FIGURE NO. IV-1

- One 110± acre farm would lose 6.7± acres of land for the highway right of way and stormwater management facilities. 47.3± acres of this farm would become landlocked if an alternate means of access is not provided.

- One 33± acre farm would lose 8.5± acres of land for the highway right of way and have a 10.5± acre parcel separated from the remaining 14.0± acres.

The Southern Churchville By-Pass Alternate B would require the acquisition of approximately 50 acres of farmland from 9 farms. Approximately 14 acres would be "Prime Farmland" and 33 acres would be "Farmland of Statewide Importance". Six farming operations may be adversely impacted by this alternate.

- An 84.5± acre farm would lose 11.3± acres for the highway right of way and stormwater management facilities. A 22.2± acre parcel of this farm would be separated from the remaining 50.6± acres.

- An 11.6± acre farm would lose 3.3± acres for highway right of way and would have 4.4± acre and 3.9± acre segmented parcels remaining.

- A 29.2± acre farm would lose 7.9± acres for the highway right of way and stormwater management facilities. 15.4± acres of land would be landlocked and a family would be displaced.

- A 39.0± acre farm would have a 31.7± acre portion of the farm landlocked and the residents would be displaced.

- A 32.5± acre farm would lose 3.1 acres for the highway right of way and a 9.2 acre parcel would become landlocked.

- A 33.0± acre farm would lose 9.3± acres of land for the highway right of way and a 13.1± acre parcel separated from the remaining 10.6± acres.

The Maryland Route 155 alternate Connection C (selected alternate) would require the acquisition of approximately 13.7 acres of active farmland from two farms. Approximately 13.1 acres would be "Prime Farmland" and approximately 0.6 acres would be "Farmland of Statewide Importance."

- A 146.9± acre farm would lose 2.3± acres for the highway right of way and would have a 2.1± acre parcel severed from the remaining 142.5± acres.

- A 55.6± acre parcel of the second farm would lose 2.8 acres for the highway right of way and would have 3.7 acres severed without access from the remaining 49.1 acres.

  The 220.3± acre remainder of the second farm would lose 8.6± acres for highway right of way and stormwater management facilities. A 23.1± acre parcel would be severed from the remaining 188.6± acres.

The Maryland Route 155 alternate Connection C-2 with the Maryland Route 155 improvement option would require acquisition of approximately 1.2 acres of "Prime Farmland" from one farm. The acquisition would be along the existing roadway and would not affect the farming operation.

Alternate Connection D for Maryland Route 155 would require acquisition of approximately 18.8 acres of land from two farms. Approximately 10.6 acres is classified "Prime Farmland" and approximately 8.2 acres is classified "Farmland of Statewide Importance".

- One of the farms, 110.6± acres in size, would lose 14.1± acres of land for highway right of way and stormwater management facilities. 44.2 acres of mostly wooded land would be severed without access from the remaining 52.3± acres.

- The other farm, 141.7± acres in size, would lose 4.7± acres for highway right of way and stormwater management facilities. A 1.9± acre parcel would be segmented from the remaining 135.1± acres.

3) Segment 3 - Snake Lane to Interstate Route 95

The Four-Lane Divided Highway and Five-Lane Undivided Highway alternates would require acquisition of small areas of right of way and/or grading easement along the existing road frontage from eight farms. No farming operation would be affected by the land acquisition.

3. LAND USE AND LAND USE PLANNING

The No-Build Alternate is not consistent with Harford County land use plans.

The Build Alternates for improving Maryland Route 22 along the present road alignment from Bel Air to Interstate Route 95 are consistent with the Harford County land use plans.

The Churchville Southern By-Pass concept, although it was included in the 1977 Harford County Master Plan, does not have the full support of the Harford County government because of the effect on agricultural land.

Alternates C and C-2 for improving the connection of Maryland Route 155 to Maryland Route 22 are consistent with Harford County land use plans. Maryland Route 155 alternate Connection D is not consistent with Harford County's current planning philosophy because of the effect on agricultural land.

The southern by-pass alternates for Churchville and Maryland Route 155 conncection alternates C and D may cause pressure on the Harford County Government to revise the "Land Use Plan" to permit more commercial and residential development in the Churchville area.

B. TRANSPORTATION

1. TRAFFIC VOLUMES

The projected year 2010 average daily traffic volumes for the Maryland Route 22 corridor vary from 30,000 vpd east of Bel Air to 34,000 vpd at Maryland Route 543 and 27,000 vpd at the Maryland Route 136/155 intersection in Churchville. From east of Glenville Road in Churchville to Interstate Route 95 the projected year 2010 Average Daily Traffic volumes vary from 19000 vpd to 16000 vpd.

If a Churchville Southern By-Pass is constructed from Corns Drive to Graftons Lane, it is anticipated that the split in traffic between existing Maryland Route 22 and the By-Pass would be as follows:

	MD Rte. 22	Southern By-Pass
Corns Drive to Md. Rte. 136	16,000	11,000
Md. Rte. 136 to Md. Rte. 155	12,300	13,700
Md. Rte. 155 to Glenville Rd.	4,300	13,700
Glenville Rd. to Md. Rte. 156	5,300	13,700
Md. Rte. 156 to Graftons Lane	3,200	13,700

2. TRAFFIC OPERATIONS

a. Level of Service (LOS)

As stated in Section I of this document, the levels of service for the year 2010 estimated a.m. and p.m. peak hour traffic volumes for Maryland Route 22 with the No-Build Alternate will be level of service F, forced flow, with average operating speeds less than 30 mph.

The levels of service for the year 2010 a.m. and p.m. peak hour traffic volume forecasts for the Build Alternates being considered for the project would be as follows:

1) Segment 1 - Bel Air to Corns Drive

The Maryland Route 22 improvement alternates, a four lane divided highway or five lane undivided highway would operate at LOS C or better.

2) Segment 2 - Corns Drive to Snake Lane

a) Maryland Route 22 Improvements with "No-Build" for Maryland Route 155:

Corns Drive to West of Md. Rte. 136 - LOS C
West of Md. Rte. 136 to East of Md. Rte. 155 - LOS E/F
East of Md. Rte. 155 to Snake Lane - LOS C

b) Maryland Route 22 Improvements with Maryland Route 155 Connection Alternate C:

Corns Drive to Glenville Road - LOS B
Glenville Road to Snake Lane - LOS C

c) Maryland Route 22 Improvements with Maryland Route 155 Connection Alternate C-2 - LOS C

d) Maryland Route 22 Improvements with Maryland Route 155 Connection Alternate D - LOS C

e) Southern Churchville By-Pass with Maryland Route 155 Connection Alternate C and no improvements along Maryland Route 22:

By-Pass: Md. Rte. 22 to Md. Rte. 136 - LOS C
Md. Rte. 136 to Snake Lane - LOS D
Md. Rte. 22: By-pass to Conn. C - LOS D/E
Conn. C to Glenville Rd. - LOS B
Glenville Rd. to Snake Lane-LOS C

f) Southern Churchville By-Pass with Maryland Route 155 Connection Alternate C-2 and no improvements along Maryland Route 22:

By-Pass: Same as Above
Md. Rte. 22: By-Pass to Md. Rte. 136 - LOS D/E
: Md. Rte. 136 to Conn. C-2 - LOS D
: Conn. C-2 to Snake Lane - LOS C

g) Southern Churchville By-Pass with Maryland Route 155 Connection Alternate D and no improvements along Maryland Route 22:

By-Pass: Same as Above
Md. Rte. 22: By-Pass to Md. Rte. 136 - LOS D/E
: Md. Rte. 136 to Conn. D - LOS D
: Conn. D to Snake Lane - LOS C

If a Southern Churchville By-Pass Alternate is selected and Maryland Route 22 is improved from Corns Drive to the selected Maryland Route 155 connection alternate, the level of service along Maryland Route 22 would improve to LOS B.

3) Segment 3 - Snake Lane to Interstate 95

The Maryland Route 22 improvement alternate, a four-lane divided highway or five-lane undivided highway would operate at LOS C or better.

b. Accidents

Under the No-Build Alternate, the collision types that are presently above statewide averages (rear end, sideswipe and left turn) are expected to occur even more frequently, as a result of increased congestion due to the anticipated growth in traffic volumes. Accident rates will probably continue the upward trend that has been experienced during the study period, to a point where the rate will be consistently higher than the statewide average for this type highway.

The five-lane alternate, with a continuous center left turn lane, would reduce the accidents now resulting from congestive conditions on the existing two-lane highway. However, most drivers do not properly utilize the center left turn lane, and the painted turn lane does not provide any physical protection to left turning vehicles. The statewide average accident rate for similar five-lane highways is 478

acc/100 mvm. However, the expected rate for this alternate would be much lower, since most of the highways with this design are located in urban areas of high commercial development.

The four-lane, divided highway alternate would reduce the incidence of rear end, left turn and sideswipe accidents more effectively than the five-lane alternate. It will also provide a physical barrier between opposing traffic flows, thereby protecting left turning vehicles and also decreasing the probability of opposite direction accidents. The projected accident rate for this alternate is approximately 78 acc/100 mvm, based on average rates for similar design highways. The accident cost anticipated for this alternate is $820,000/100 mvm, a savings of nearly $500,000/100 mvm compared to the existing facility.

Alternates A and B are both two-lane controlled access, undivided highways, proposed as a southern by-pass of Churchville. Both of these alternates are of similar design with slight differences in location and geometrics, and should experience similar accident characteristics. The statewide average rate for highways of this type is 151 acc/100 mvm, and the anticipated accident cost for these alternates would be approximately $1.6 million/100 mvm. However, the accident rates and costs for these alternates would be combined with the accident rate on existing Maryland Route 22, due to the amount of traffic which would continue on the present highway even with the construction of this by-pass. Therefore, the total accident experience in the study area is anticipated to be somewhat higher than the projected rate for these alternates alone, if either A or B is implemented.

Alternate C, C-2 and D, all two-lane undivided highways, are proposed as solutions to the congestion on Maryland Route 22 in the vicinity of the Maryland Route 136 and Maryland Route 155 intersections. Any one of these alternates would diminish the probability of rear end and left turn accidents in this area. Due to the short length of highway involved under these alternates, the projection of an accident rate would be misleading. However, it is felt that Alternate C would reduce accidents on Maryland Route 22 in this area by about 40%, by diverting the left turn movements and also lessening the congestion during peak periods.

C. CULTURAL RESOURCES

1. IMPACT ON HISTORIC SITES

The Homelands (HA 139) a National Register Eligible historic site would be impacted by the following Build Alternates and road improvement options which are under consideration:

a. Maryland Route 155 Connection C

b. Improvement of Maryland Route 155 from the Connection C-2 tie-in to Glenville Road

c. Improvement of Maryland Route 136 from Maryland Route 22, 600 feet northerly

The impacts are addressed in Section V-4(F) Evaluation of this document.

Determination of the effect on historic sites has been requested from the State Historic Preservation Officer in accordance with Section 106 of the Historic Preservation Act.

2. IMPACT ON ARCHEOLOGICAL SITES

The selection of an improvement alternate for Segment 2 from Corns Drive to Snake Lane has been deferred. If one of the Southern Churchville by-pass alternates is selected for this segment, a Phase II archeological study to determine site extent, degree of impact and National Register eligibility will be performed for sites along the route and the results will be coordinated with the State Historic Preservation Officer.

Southern Churchville By-Pass Alternate A would impact sites 18 HA 149, 18 HA 155 and may impact site 18 HA 157. A Phase I survey needs to be performed for test site number 4.

Southern Churchville By-Pass Alternate B would impact sites 18 HA 149, 18 HA 156 and 18 HA 159. A Phase I survey needs to be performed for test site number 14.

D. NATURAL ENVIRONMENT

1. EFFECTS ON TOPOGRAPHY, GEOLOGY, AND SOIL

Soils of the project corridor in general have low to moderate erosion potential except on steeper slopes adjacent to streams where erosion may be moderate to severe.

Erosion and sediment control factors are considered during the location phase of the project. The design phase of the project will incorporate measures to reduce or mitigate adverse effects of erosion/sedimentation. Specific techniques for erosion/sedimentation control include:

a. Temporary sediment traps and/or basins
b. Retaining streams in natural state
c. Stone embedded baffles in concrete channels to act as energy dissipaters
d. Berming of fills and installation of temporary slope drains
e. Permanent slope pipes at no-cut, no fill intersections
f. Construction of serrated cuts where soils permit
g. Rip-rap ditches for velocity control
h. Permanent seeding and mulching as soon as possible after grading, temporary seeding where grading will be exposed for an extended period.

2. EFFECTS ON WATER RESOURCES

a. Surface Water

1) Short Term Impacts

Short term impacts apply to all stream crossings as well as to those streams which drain areas where construction activities occur. Short term impacts may include:

- Siltation from increased erosion and sedimentation

- Changes in water quality stemming from altered riparian habitat

- Changes in stream flow patterns resulting from impoundments and debris

To minimize these impacts, sediment control plans will be developed by the State Highway Administration during final design and approved by the Water Resources Administration. Since the alternates pass through areas of varying slope, soil erodibility, stream size, and vegetative associations, specific control measures cannot now be identified but will include:

- Staging of construction activities to permanently stabilize ditches at the tops of cuts and at the bottoms of fill slopes prior to excavation and formation of embankments.

- Seeding, sodding, or otherwise stabilizing slopes as soon as practicable after grading to minimize the area exposed at any time.

- Appropriate placement and maintenance of sediment traps, temporary slope drains, and other control measures.

- Placement of diversion dikes, energy dissipaters, mulches, and netting on steep slopes.

With the application of the above procedures, no significant short term impacts on surface waters are anticipated.

2) Long Term Impacts

Long term impacts apply primarily to stream relocations but certain impacts may also be associated with stream crossings and streams which drain areas where construction activities have occurred. Long term impacts include:

- Potential changes in water quantity to receiving streams from alteration of drainage patterns or sources and stream flow characteristics. Highway construction may reduce infiltration and stream base flow, increase surface runoff and stream peak flow and reduce the time between precipitation and the rise in stream water level.

- Potential changes in water quality parameters in receiving streams from:

  a) erosion and sedimentation

  b) contamination by roadway runoff carrying pollutants such as vehicular oil, grease, gasoline, solvents, wear particles from clutches, brakes, and tires, exhaust emissions which collect on the roadway and nearby vegetation, and seasonal inputs of salt and other de-icing compounds.

3) Impacts For Specific Alternates

Reconstruction of Maryland Route 22 within Segment 1 including replacement of the Bynum Run Structure and extensions or replacement of existing pipe culverts will cause a temporary increase in sedimentation in Bynum Run during construction.

Construction of the southern Churchville By-Pass Alternates A or B and the related stream crossings, will cause a temporary increase in sedimentation in three headwater tributaries of James Run during construction.

The Maryland Route 155 Connection Alternate C crosses the beginning of Cool Branch Run and Connection Alternate D crosses the headwaters of Mill Brook, both tributaries of Deer Creek. Construction of one of these alternates will cause a temporary increase in sedimentation in the directly affected stream. A temporary increase in the sediment content of Cool Branch or Mill Creek would settle out before reaching Deer Creek which is located approximately three miles downstream. Therefore, the Maryland Darter, a rare and endangered species known to inhabit Deer Creek should not be affected.

Maryland Route 22 crosses a tributary of Carsins Run in Segment 3. Some deposition of sediment will occur in this stream during construction of any of the improvement alternates and the related culvert extensions being considered for this segment.

Strict attention to erosion/sedimentation control measures in this area will mitigate the impacts to the streams. With careful control of erosion, the impacts of construction should not be significantly greater than those caused by farming operations in the area.

b. Groundwater

Small to moderate yields of groundwater are provided by wells in the area. Generally, the project will not interfere with groundwater supplies.

Groundwater quality in the area is now excellent. With proper design there should be no deleterious effect on groundwater quality along the project corridor. Stormwater management measures will allow contaminants to be filtered out of the runoff before it reaches groundwater supplies.

The State Highway Administration will conduct a pre-construction survey of all wells in the vicinity of the selected alternate to determine their existing quantity and quality. If significant changes to either the quantity or quality of wellwater occur as a result of the roadway cosntruction, the State Highway Administration will either provide a replacement well for affected property or compensate the property owner.

3. EFFECTS ON WETLANDS

Pursuant to Executive Order 11990, Protection of Wetlands, wetland areas potentially affected by the project have been identified. Approximate wetland acreages within the proposed right of way are:

Segment 1 - 5 Lane - 0.39 acres: 4 Lane - 0.32 acres
Segment 2 - Alternate A - 2.74 acres; Alternate B - 3.86 acres; Alternate D - 1.46 acres
Segment 3 - 0 acres

These wetlands may be adversely affected by fill, drainage alteration, and sedimentation. A description of wetlands and the approximately acreage required for the highway construction is included on Table VI-1.

Palustrine wetlands, as defined by the U.S. Fish and Wildlife Service system of Cowardin et al (1979), occur in the study area. Palustrine wetlands are non-tidal wetlands that are temporarily flooded and dominated by trees, shrubs, persistent emergent grasses, sedges, and/or mosses. Four distinct types of palustrine wetlands occur in the study area: wooded swamps (two types - PFO1A and PFO1C) and fresh meadows/marshes (two types - PEM5A and PEM5C). The wooded swamps are dominated by box elders, gums and red maples. The fresh meadow/marshes are dominated by rushes and sedges.

The wetlands within the study site are generally of high quality based on functional analysis (see accompanying Checklist - Relative Wetland Value Based on Wetland Functions).

The sedimentaiton control procedures previously described should be adequate to provide protection to the existant, small wetlands. Wetland reconstruction in adjacent areas outside the highway construction limits may be provided where practicable to replace the wetlands taken.

Avoidance of Wetlands W1, W2, W3, W4 and W5 in Segment 1 is not feasible because the improvements being studied involve widening of an existing facility.

Avoidance of Wetland W6 would require shifting the alignments for the Churchville southern bypass alternates northerly throught the Deerhaven subdivision. This alignment shift would displace approximately five residences within the subdivision and two commercial properties along Maryland Route 136.

Avoidance of Wetland W7 would be accomplished by the Churchville southern bypass Alternate B alignment.

The Maryland Route 22 improvement alternates for Segment 3 would not required any right of way acquisition from wetland areas.

All wetlands which are encroached upon by the selected alternate(s) will be replaced in compliance with Federal requirements.

TABLE IV-1

WETLANDS POTENTIALLY AFFECTED BY MARYLAND ROUTE 22

WETLAND NUMBER	LOCATION	CLASSIFICATION*	DOMINANT SPECIES	INDICATOR STATUS**	ALTERNATE	IMPACTED ACREAGE*** (w/i ROW)
W1	East of John Carroll School entrance at MD 22	PFO1A	Box Elder	OBL	5 lane	0.08
					4 lane	0.08
W2	MD 22 at Bynum Run	PEM5A	Rushes	FACW	5 lane	0.05
			Willows	OBL	4 lane	0.05
W3	MD 22/Hillside Dr.	PEM5A	Rushes	FACW	5 lane	0.08
					4 lane	0.04
W4	North of Dibb House	PFO1A	Box Elder	OBL	5 lane	0.11
			Skunk Cabbage		4 lane	0.08
W5	Southwest of Prospect Mill Rd. at MD 22	PFO1A	Box Elder	OBL	5 lane	0.07
			Red Maple	FAC	4 lane	0.07
W6	Broad Run Tributary west of MD 136	PFO1C	Red Maple	FAC	A	1.00
			Skunk Cabbage	OBL	B	0.48
W7	James Run Tributary east of MD 136	PFO1C	Red Maple	FAC	A	0.00
			Black Willow	OBL	B	0.98
W8	James Run east of MD 136	PFO1C	Gums	FAC	A	1.74
			Musclewood	OBL	B	2.40
W9	MD 155 east of Glenville Road	PEM5C	Cattails	OBL	C	0.00
W10	East of Churchville Recreation Complex	PFO1A	Musclewood	OBL	D	1.00
W11	Alternate D at MD 155	PFO1C	Alders	FACW	D	0.46
W12	MD 22 at Carsins Run Road	PFO1A	Red Maple	FAC	5 lane	0.00
					4 lane	0.00
W13	MD 22 at I-95	PFO1A	Red Maple	FAC	5 lane	0.00
					4 lane	0.00

TOTAL WETLAND ACRES WITHIN PROJECT RIGHT OF WAY

Segment 1 - 5 lane = 0.39 acres; 4 lane = 0.32 acres
Segment 2 - Alt. A = 2.74 acres; Alt. B = 3.86 acres; Alt. D = 1.46 acres
Segment 3 - 0.00 acres

* PFO1C = Palustrine, Forested, Broad Leaved Deciduous, Seasonal
PFO1A = Palustrine, Forested, Broad Leaved Deciduous, Temporary
PEM5C = Palustrine, Emergent, Narrow Leaved Persistent, Seasonal
PEM5A = Palustrine, Emergent, Narrow Leaved Persistent, Temporary

** FAC = Facultative species (can live in wetlands or uplands)
FACW = Facultative Wetland species (usually found in wetlands)
OBL = Obligative species (can only live in wetlands)

*** Approximate

CHECKLIST - RELATIVE WETLAND QUALITY BASED ON WETLAND FUNCTIONS

This experimental evaluation is intended as a general working guide.

A. OCCURENCE

Wetland Number	Wetland Functions
2, 6-10, 12	(1) Passive Recreation (High Potential for) and/or Natural Heritage Value** (occurs often in Maryland wetlands)
1, 2, 4, 6-10, 12	(2) Quality Habitat for Wildlife or Fisheries
1, 2, 4, 6-11	(3) Sediment Trapping (shgort-term), High Potential for
1-11, 13	(4) Flood Desynchronization, High Potential for
4, 6-11	(5) Nutrient Retention (short term), High Potential for
1-3, 6-8, 10-12	(6) Food Chain Support (nutrient export), High Potential for
_____	(7) Dissipation of Erosive Forces (tidal or wave action), High Potential for
1, 6-9, 12	(8) Active Recreation, High Potential for
_____	(9) Groundwater Discharge, High Potential for
1, 4-8, 10-13	(10) Nutrient Retention, Removal (long-term), High Potential for
1, 4-8, 10-13	(11) Sediment Trapping (long-term), High Potential for
2, 9	(12) Groundwater Recharge, High Potential for (few occurrences in Maryland wetlands)

B. VALUE

Wetland Number	Rating	Value
1-3, 6-8, 10-12	Any combination of 3 functions including 2 and 6	High
4, 9, 13	Any combination of 3 functions from the list, excluding 2 and/or 6	Medium
5	Less than 3 functions	Low

C. TYPE OF WETLANDS - Non-tidal

** Threathened or Endangered Species' habitat or Areas of State Critical Concern are wetlands of "high" value regardless of function, size or location.

4. EFFECTS ON FLOODPLAINS

The 100 year floodplain of Bynum Run as determined by the Federal Emergency Management Agency is shown on Figures II-3A and II-3B. The Four-Lane Divided Highway alternate (selected alternate) would impact about .2 acres of the floodplain and the Five-Lane Undivided Highway alternate would impact about .1 acres. Both alternates would require replacing of the existing Bynum Run structure.

During final design the State Highway Administration will prepare a detailed hydrologic and hydraulic study to identify the existing 100-year storm discharge and floodplain. Specific mitigation measures will be considered for floodplain encroachment areas. All structures will be designed to meet the criteria set forth by the State Highway Administration and the Water Resources Administration.

The Bynum Run floodplain encroachment was evaluated in accordance with the requirements of FHPM 6-7-3-2 to determine if it was a significant encroachment. The Bynum Run floodplain encroachment will not cause the following:

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

The proposed floodplain encroachments will not significantly affect upstream water surface elevations or storage capacity.

By utilization of state-of-the-art sediment and erosion control techniques and stormwater management controls, there will be no risks or impacts to the beneficial floodplain values or direct or indirect support to further development within the floodplain. Therefore, the floodplain encroachment was determined to be non-significant.

5. EFFECTS ON TERRESTRIAL HABITATS

The impacts associated with construction alternates along the existing roadway in Segments 1, 2 and 3 are negligible. Such impacts include removal of trees and grass from lawns and primary plant growth bordering farm fields located directly adjacent to the existing roadway.

The alternates on new location in Segment 2 would affect the following approximate amounts of terrestrial habitats:

TABLE IV-2

Acres of Habitat Areas Affected By The New Location Alternates

ALTERNATE	HABITAT TYPES		
	WOODLAND	AGRICULTURAL	MOWED GRASS
A	10.3	18.3	2.8
B	16.3	17.5	2.8
C (Selected Alternate)	-	12.9	-
C-2	-	-	N/A
D	6	5	1

No "Old Fields" were identified within the proposed right of way for the above alternates.

Given the number of habitats in the region that exist outside the project corridor, it is unlikely that vegetative diversity would be measurably diminished. It is more likely that a shift in the relative abundance of those species that are already present would occur. The permanent loss of woodland resources is a special concern in Maryland where forests have declined to a greater extent than in most other states in the Northeast.

6. EFFECTS ON WILDLIFE

The most significant effect of the project on wildlife would be the loss of habitat, particularly in the Segment 2 section. Habitat loss would result in overall reduction in areas carrying capacities for most wildlife species. It is usually incorrect to assume that displaced wildlife simply move on - the areas to which they would move most frequently have resident populations at or near the levels which the remaining habitat will support. In a regional sense, however, the losses of habitat to the project would be negligible.

A minor effect of the Segment 2 alternates would be the segmentation of the ecosystems - the "island" effect. Such segmentation may reduce the ability of habitats to support resident fauna. Disturbance and alteration of movements would be expected for small mammals, reptiles, and amphibians. The total impact on the area should be minimal.

TABLE IV-3

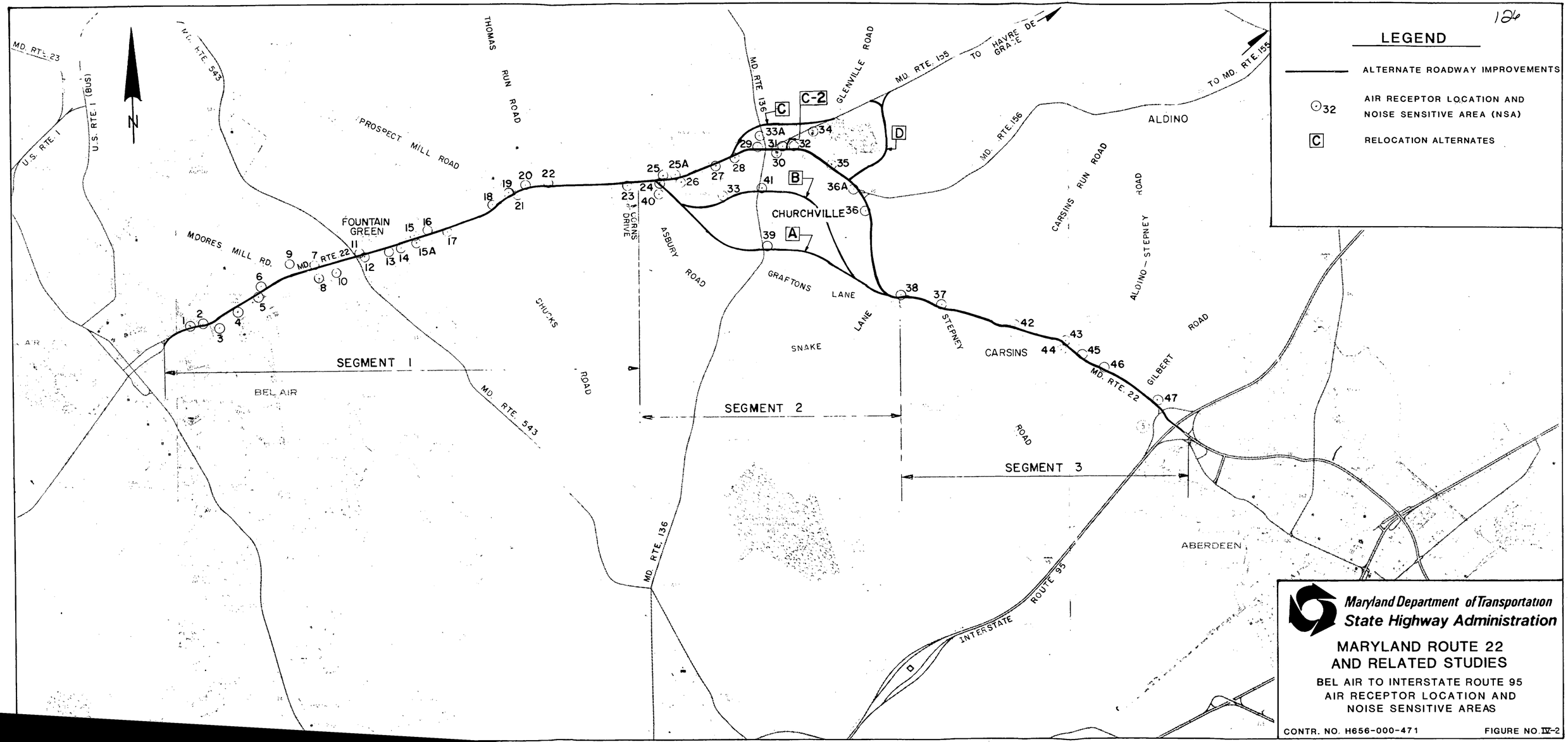
AIR RECEPTORS AND NOISE SENSITIVE AREAS

REC. #	STA.	DISTANCE FROM CENTERLINE (FEET)	DESCRIPTION
SEGMENT 1 - Bel Air to Corns Drive			
1	39+50	145	Residence-513 Courtland Place
2	46+00	55	Residence-624 Lee Way
3	52+50	260	John Carroll Senior High School
4	62+00	140	Bynum Run Park
5	73+50	50	Greenbrier Hills Apartments and Country Club
6	79+00	100	St. Matthew's Lutheran Church
7	103+50	85	Residence-1404 Churchville Rd.
8	104+50	300	Residence at Fountain Green
9	95+00	450	Residence-1319 Allenby Court
10	109+50	340	Residence-1500 Hill Drive
11	119+50	85	Fountain Green Professional Ctr.
12	120+50	80	Residence-1609 Churchville Rd.
13	135+00	225	Mt. Zion Methodist Church
14	139+00	185	Mt. Carmel Primitive Baptist Church
15	149+00	80	Residence-1726 Churchville Rd.
15A	149+00	190	*Residence-1737 Churchville Rd.
16	153+00	145	Residence-4 Tutor Lane
17	160+00	70	Residence-1829 Churchville Rd.
18	185+00	160	Residence-2012 Churchville Rd.
19	190+00	170	Residence on Prospect Mill Rd.
20	196+50	130	Oak Grove Baptist Church
21	193+50	90	Residence-2101 Churchville Rd.
22	205+50	70	Harford Community College Athletic Field
SEGMENT 2 - Corns Drive to Snake Lane			
23	239+00	100	Residence-2401 Churchville Rd.
24	252+50	125	Residence-2519 Churchville Rd.
25	255+00	110	Residence-2600 Churchville Rd.
25A	259+00	125	Residence-2608 Churchville Rd.
26	261+00	200	Residence at Churchville Rd. and Ashbury Road
27	277+00	50	Residence-2709 Churchville Rd.
28	286+50	55	Residence-2829 Churchville Rd.
29	298+00	40	*Churchville Presbyterian Church
30	304+50	55	Freedom Bible Church
31	309+50	80	Residence-2918 Churchville Rd.
32	312+50	40	Residence-2926 Churchville Rd.
33	46+00 (Alt.A)	240	Residence-26 Pressie Lane
33A	17+00 (Alt.C)	440	Residence on Priest Ford Rd.
34	Alt. C-2	40	*Trinity Church/Churchville Elementary School
35	328+00	60	Residence-3026A Churchville Rd.

*National Register or
National Register Eligible Historic Site

TABLE IV-3 (Continued)

REC. #	STA.	DISTANCE FROM CENTERLINE (FEET)	DESCRIPTION
36	354+00	100	Residence-3119 Churchville Rd.
36A	342+00	105	Residence at Churchville Rd. and Woodside Drive
37	217+00	100	Residence-3400 Churchville Rd.
SEGMENT 3 - Snake Lane to Interstate Route 95			
38	392+00	90	Residence-3252 Churchville Rd.
39	69+00 (Alt.A)	160	Residence-417 Calvary Road
40	252+50	435	Residence-8 Ashbury Rd.
41	61+50 (Alt.B)	120	Residence-111 Calvary Road
42	182+50	45	Residence-3468 Churchville Rd.
43	163+00	60	Residence-3530 Churchville Rd.
44	164+00	95	Residence-3523 Churchville Rd.
45	152+00	60	Residence-3548 Churchville Rd.
46	140+00	70	Residence-3618 Churchville Rd.
47	117+00	105	Residence-3708 Churchville Rd.



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22 AND RELATED STUDIES

BEL AIR TO INTERSTATE ROUTE 95 AIR RECEPTOR LOCATION AND NOISE SENSITIVE AREAS

CONTR. NO. H656-000-471 FIGURE NO. IV-2

TABLE IV-4

CO CONCENTRATIONS * AT EACH RECEPTOR SITE, PPM

SEGMENT 1

REC. #	1990 NO-BUILD 1-HR	1990 NO-BUILD 8-HR	1990 BUILD[1] 1-HR	1990 BUILD[1] 8-HR	2010 NO-BUILD 1-HR	2010 NO-BUILD 8-HR	2010 BUILD[1] 1-HR	2010 BUILD[1] 8-HR
1	2.6	1.3	2.5	1.2	2.7	1.3	2.5	1.2
2	3.3	1.6	3.1	1.5	3.6	1.6	3.1	1.5
3	2.5	1.2	2.4	1.2	2.6	1.2	2.4	1.2
4	3.0	1.4	2.7	1.4	3.2	1.6	2.7	1.4
5	3.3	1.6	3.4	1.5	3.7	1.6	3.4	1.5
6	2.8	1.4	2.6	1.3	3.0	1.4	2.6	1.3
7	2.9	1.4	2.7	1.3	3.2	1.5	2.7	1.3
8	2.3	1.1	2.2	1.1	2.4	1.2	2.2	1.1
9	2.4	1.2	2.2	1.1	2.5	1.2	2.2	1.1
10	2.4	1.1	2.2	1.1	2.5	1.2	2.2	1.1
11	2.8	1.3	2.6	1.2	3.2	1.6	2.6	1.2
12	3.1	1.5	2.9	1.3	3.5	1.6	2.9	1.3
13	2.5	1.2	2.5	1.1	2.8	1.3	2.5	1.1
14	2.6	1.2	2.4	1.2	2.9	1.3	2.4	1.2
15	3.1	1.5	2.8	1.3	3.5	1.6	2.8	1.3
15A	2.6	1.2	2.4	1.2	2.9	1.4	2.4	1.2
16	2.7	1.2	2.6	1.2	2.9	1.5	2.6	1.2
17	3.3	1.5	3.0	1.4	3.6	1.7	3.0	1.4
18	2.9	1.4	2.7	1.3	3.2	1.5	2.7	1.3
19	2.8	1.3	2.7	1.2	3.1	1.4	2.7	1.2
20	3.1	1.4	2.7	1.3	3.2	1.4	2.7	1.3
21	3.3	1.5	3.0	1.4	3.8	1.7	3.0	1.4
22	3.1	1.4	2.9	1.3	3.4	1.7	2.9	1.3
23	2.8	1.3	2.7	1.3	3.1	1.5	2.7	1.3

[1]Includes both the Four-Lane Divided and Five-Lane Undivided Highway Alternates

*Including Background Concentrations

Note: The S/NAAQS for CO: 1 HR-35 PPM
8 HR- 9 PPM

TABLE IV-4 (Continued)

CO CONCENTRATIONS * AT EACH RECEPTOR SITE, PPM

SEGMENT 2 - MARYLAND ROUTE 22 IMPROVEMENTS

REC. #	1990 NO-BUILD 1-HR	1990 NO-BUILD 8-HR	1990 BUILD[1] 1-HR	1990 BUILD[1] 8-HR	2010 NO-BUILD 1-HR	2010 NO-BUILD 8-HR	2010 BUILD[1] 1-HR	2010 BUILD[1] 8-HR
24	2.5	1.2	2.4	1.2	2.7	1.3	2.5	1.2
25	2.9	1.3	2.7	1.3	3.1	1.5	2.8	1.3
25A	2.9	1.4	2.7	1.2	3.2	1.5	2.9	1.4
26	2.7	1.3	2.6	1.2	2.9	1.3	2.7	1.3
27	3.1	1.4	3.0	1.4	3.4	1.5	3.2	1.5
28	2.8	1.4	2.9	1.4	3.1	1.5	3.1	1.4
29	4.0	1.9	4.1	1.9	4.6	2.1	4.6	2.2
30	3.5	1.6	3.4	1.5	4.2	1.9	3.9	1.8
31	2.9	1.4	2.8	1.4	3.4	1.6	3.2	1.6
32	2.6	1.3	2.6	1.3	3.1	1.5	2.9	1.4
33A	2.4	1.2	2.4	1.2	2.5	1.3	2.5	1.5
34	2.5	1.3	2.6	1.3	2.9	1.5	2.9	1.5
35	2.8	1.3	2.7	1.3	3.1	1.5	2.9	1.4
36	2.7	1.3	2.6	1.2	3.1	1.5	3.0	1.2
36A	2.5	1.2	2.4	1.2	2.7	1.3	2.6	1.4
38	2.9	1.3	2.7	1.3	3.3	1.6	3.0	1.3
40	2.5	1.1	2.4	1.1	2.6	1.2	2.5	1.1

[1] Includes both the Four-Lane Divided and Five-Lane Undivided Highway Alternates

Note: The S/NAAQS for CO: 1 HR-35 PPM
8 HR- 9 PPM

*Including Background Concentrations

TABLE IV-4 (Continued)

CO CONCENTRATIONS * AT EACH RECEPTOR SITE, PPM)

SEGMENT 2 - RELOCATION ALTERNATES-BUILD

REC. #	1990 1-HR	1990 8-HR	2010 1-HR	2010 8-HR	ALTERNATE
24	2.3	1.1	2.4	1.1	A,B
25	2.6	1.3	2.9	1.3	A,B
25A	2.4	1.2	2.6	1.2	A,B
26	2.1	1.0	2.1	1.1	A,B
28	2.7	1.3	2.8	1.3	C
29	2.6	1.3	2.9	1.3	C-2
30	2.9	1.3	3.1	1.4	C-2
31	3.0	1.3	3.1	1.5	C-2
32	2.7	1.3	2.8	1.4	C-2
33	2.1	1.0	2.2	1.0	B
33A	2.3	1.1	2.6	1.1	C
34	2.1	1.0	2.1	1.0	C
34	2.4	1.2	2.6	1.2	C-2
36A	2.5	1.2	2.7	1.3	D
38	2.5	1.2	2.8	1.4	A,B
39	2.3	1.1	2.4	1.2	A
40	2.2	1.0	2.3	1.1	A,B
41	2.4	1.2	2.5	1.2	B

*Including Background Concentrations

Note: The S/NAAQS for CO: 1 HR-35 PPM
8 HR- 9 PPM

TABLE IV-4 (Continued)

CO CONCENTRATIONS * AT EACH RECEPTOR SITE, PPM

SEGMENT 3

REC. #	1990 NO-BUILD 1-HR	1990 NO-BUILD 8-HR	1990 BUILD[1] 1-HR	1990 BUILD[1] 8-HR	2010 NO-BUILD 1-HR	2010 NO-BUILD 8-HR	2010 BUILD[1] 1-HR	2010 BUILD[1] 8-HR
37	2.7	1.2	2.5	1.2	2.9	1.4	2.7	1.3
42	2.8	1.4	2.8	1.3	3.3	1.5	3.3	1.5
43	2.9	1.3	2.6	1.2	3.3	1.5	2.9	1.4
44	2.6	1.3	2.5	1.2	2.8	1.4	2.6	1.3
45	3.0	1.4	2.9	1.3	3.6	1.6	3.4	1.6
46	2.6	1.2	2.5	1.2	2.7	1.4	2.7	1.3
47	2.9	1.3	2.6	1.2	3.1	1.5	2.9	1.3

[1] Includes both the Four-Lane Divided and Five-Lane Undivided Highway Alternates

*Including Background Concentrations

Note: The S/NAAQS for CO: 1 HR-35 PPM
8 HR- 9 PPM

The impacts associated with construction along the existing roadway in Segments 1, 2 and 3 are insignificant. These impacts include the removal of trees and grass from lawns, and the removal of primary plant growth bordering the farm fields adjacent to the roadway.

7. IMPACTS ON AQUATIC ECOLOGY

There should be no significant long-term impact on the aquatic ecology. This is due to the fact that stream encroachments by this project are minimal and those streams affected currently experience increased nutrient loads because of unrestricted livestock access to the streams and urban runoff.

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Document (see Section VIII COMMENTS AND COORDINATION) and determined the following:

- The proposed project will not adversely affect resources or habitates for which NMFS bears statutory authority.

- The proposed stream and wetland alterations will not significantly degrade water quality or reduce inflows that could adversely affect downstream fishery resources and their habitats.

The Department of Natural Resources' Tidewater Administration has determined that the project, which is located in the coastal zone, is not inconsistent with the Maryland Coastal Zone Management Program.

8. EFFECTS ON THREATENED OR ENDANGERED SPECIES

No known population of rare or endangered species occupies the study area. These determinations are documented in letters of correspondence with the U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources (see Section VIII-COMMENTS AND COORDINATION).

E. AIR QUALITY IMPACTS

1. ANALYSIS OBJECTIVES, METHODOLOGY, AND RESULTS

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

TABLE IV-5

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

LAND USE CATEGORY	DESIGN NOISE LEVEL - Leq	DESCRIPTION OF LAND USE CATEGORY
A	57dBA (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 officals for activities requiring special qualities of serenity and quiet.
B	67dBA (exterior)	Residences, motels, hotels, public meeting (exterior) rooms, schools, churches, libraries, hospitals, picnic areas, playgrounds, active sports areas, and parks.
C	72dBA (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	52dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

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

a. Analysis Inputs

A summary of analysis inputs is given below. More detailed information concerning these inputs is contained in the Maryland Route 22 Air Quality Analysis which is available for review at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

1) Background CO Concentrations

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst case meteorological conditions, the background CO concentrations are considered in addition to the levels directly attributable to the facility under consideration. The background concentrations resulting from area-wide emissions from both mobile and stationary sources were assumed to be the following:

	CO (PPM)	
	1 hour	8 hours
1990	2.0	1.0
2010	2.0	1.0

2) Traffic Data, Emission Factors and Speeds

The appropriate traffic data were utilized as supplied by the Bureau of Highway Statistics of the Maryland State Highway Administration.

The composite emission factors used in the analysis were derived from the Environmental Protection Agency (EPA) Mobile Source Emission Factors, and were calculated using the EPA Mobile 1 computer program.

Average vehicle operating speeds used in calculating emission factors were based on the capacity of each roadway link considered, the applicable speed limit, and external influences on speed through the link from immediately adjacent links. Average operating speeds ranged from 15 mph to 50 mph for the No-Build and Build Alternates depending upon the roadway and grade under consideration.

3) Meteorological Data

The following assumptions were made to approximate worst case meteorological conditions:

Atmospheric Stability Class: F (most stable)
Wind Speed: 1 meter/second
Mixing Height: 1000 meters
Ambient Temperature: 1 Hour - 20 F
8 Hour - 35 F

Wind directions were analyzed form 0 degrees to 360 degrees at 15 degree intervals to obtain the worst case CO concentration for each receptor.

b. Sensitive Receptors

Various locations throughout the study area were selected to be analyzed as sensitive receptors. The receptors selected were chosen to be representative of the effects on the communities and facilities adjacent to the roadway.

The geometrics of the proposed improvements were analyzed to determine the worst case combination of traffic volumes, proximity of the roadways to the receptors and travel speeds. The receptor site locations were verified during study area visits by the analysis team. Table IV-3 contains a list of receptors selected for the analysis. These receptors are shown on Figure IV-2 and the alternate maps contained in Chapter II.

c. Results of Microscale Analysis

The results of the calculations of CO concentrations at each of the sensitive receptor sites for the No-Build and Build Alternates are shown on Table IV-4. The values shown consist of predicted CO concentrations attributable to traffic on various roadway links plus projected background levels. The No-Build Alternate assumes that no improvements are made to Maryland Route 22. A comparison of the values in Table IV-2 with the S/NAAQS shows that no violations of the S/NAAQS will occur for the No-Build or with any of the Build Alternates in 1990 or 2010 for the one-hour or eight-hour concentrations of CO.

The projected CO concentrations vary between alternates depending on receptor locations as a function of the roadway locations and traffic patterns associated with each alternate. In all cases, the background concentrations are greater than the CO contributions from the roadway network associated with the alternates. The maximum one-hour

TABLE IV-6

Leq NOISE LEVELS (dBA)
SEGMENT 1 - NO-BUILD

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference
1	53	54		
2	73	67		
3	55	54		
4	61	61		
5	58	58		
6	61	60		
7	70	65		
8	58	56		
9	48	50		
10	53	51		
11	68	65		
12	70	67		
13	61	62		
14	60	60		
15	65	64		
15A	60	59		
16	59	61		
17	72	67		
18	68	65		
19	62	62		
20	61	62		
21	63	63		
22	59	57		
23	67	63		

TABLE IV-6a

Leq NOISE LEVELS (dBA)
SEGMENT 1 - BUILD

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference
1	53	57		
2	73	68	X	
3	55	57		
4	61	66		
5	58	63		
6	61	66		
7	70	70	X	
8	58	61		
9	48	56		
10	53	56		
11	68	70	X - Does not exceed 72dBA (Category C)	
12	70	71	X	
13	61	65		
14	60	65		
15	65	69	X	
15A	60	65		
16	59	66		
17	72	68	X	
18	68	66		
19	62	66		
20	61	67		
21	63	67		
22	59	62		
23	67	66		

TABLE IV-7

Leq NOISE LEVELS (dBA)
SEGMENT 2 - NO BUILD

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference
24	62	61		
25	63	61		
25A	63	64		
26	59	57		
27	68	66		
28	66	67		
29	62	61		
30	66	64		
31	65	63		
32	66	65		
34	61	63		
35	69	67		
36	57	60		
36A	63	62		
38	65	64		
39	57	61		
40	56	53		
41	59	61		

TABLE IV-7A

Leq NOISE LEVELS (dBA)
SEGMENT 2 - BUILD ALTERNATES

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference	Alternates
24	62	66			Md. Rte 22 w/ C, C-2, or D
25	63	66			Md. Rte 22 w/ C, C-2, or D
25	63	67			A or B
25A	63	68	X		Md. Rte 22 w/ C, C-2, or D
25A	63	67			A or B
26	59	63			Md. Rte 22 w/ C, C-2, or D
26	59	61			A or B
27	68	68	X		Md. Rte 22 w/ C, C-2, or D
28	66	69	X		Md. Rte 22 w/ C-2 or D
28	66	67			Md. Rte 22 w/C
29	62	63			Md. Rte 22 w/ C, C-2, or D
30	66	67			Md. Rte. 22 w/ C, C-2 or D
31	65	67			Md. Rte 22 w/C-2
31	65	65			Md. Rte 22 w/C or D
32	66	67			Md. Rte 22 w/ C-2
32	66	65			Md. Rte 22 w/C or D

TABLE IV-7A (Continued)

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference	Alternates
34	61	59			C
34	61	66			C-2
34	61	56			D
35	69	67			Md. Rte 22 w/ C, C-2, or D
36	57	64			Md. Rte 22 w/ C, C-2, or D
36A	63	66			Md. Rte 22 w/ C, C-2, or D
38	65	66			ALL
39	57	66			A
40	56	63			A, or B
41	59	67			B

TABLE IV-8

Leq NOISE LEVELS (dBA)
SEGMENT 3 - NO BUILD

REC #	Ambient Noise Level 1986	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference
37	64	63		
42	70	68	X	
43	66	65		
44	61	56		
45	69	67		
46	66	66		
47	70	69	X	

TABLE IV-8A

Leq NOISE LEVELS (dBA)
SEGMENT 3 - BUILD

REC #	Ambient Noise Level 1985	Projected Traffic Noise Level 2010	Exceeds 67dBA	+ 10dBA Difference
37	64	68	X	
42	70	70	X	
43	66	68	X	
44	61	59		
45	69	69	X	
46	66	66		
47	70	64		

TABLE IV-9

SUMMARY OF NOISE IMPACTS ANALYSIS

NSA #	AMBIENT LEVEL	Leq NO BARRIER	Leq W/ BARRIER	dBA ATTENUATION	LENGTH (FT)	HEIGHT (FT)	COST ($27/S F)	SITE TYPE (NO. OF SITES)
SEGMENT 1 - BUILD 2010								
2	73	68	58	10	500	13	$176,000	Residential (2)
7	70	70	60	10	2010	17	$923,000	Residential (12)
12	70	71	61	10	530	19/11	$216,000	Commerc./Resid. (3)
15	65	69	59	10	1240	9	$301,000	Residential (9)
17	72	68	58	10	2400	12	$778,000	Residential (16)
SEGMENT 2 - BUILD MD RTE 22 W/ALTERNATE C, C-2 OR D								
25A	63	68	58	10	780	15	$316,000	Residential (3)
27	68	68	58	10	700	11	$208,000	Residential (4)
28	66	69	59	10	1200	11	$356,000	Residential (10)
SEGMENT 3 - BUILD 2010								
37	64	68	58	10	1160	15	$470,000	Residential (7)
42	70	70	60	10	1100	12	$356,000	Residential (6)
43	66	68	58	10	580	11	$172,000	Residential (4)
45	69	69	59	10	1100	19	$564,000	Residential (5)

concentrations associated with any of the alternates is only 13% of the one hour S/NAAQS while the maximum eight-hour concentration is 24% of the eight hour S/NAAQS.

2. CONSTRUCTION IMPACTS

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

The Maryland Bureau of Air Quality Control was consulted to determine the adequacy of the Specifications in terms of satisfying the requirements of the Regulations Governing the Control of Air Pollution in the State of Maryland. The Maryland Bureau of Air Quality Control found that the specifications are consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03D) will be taken to minimize the impact on the air quality of the area.

3. CONFORMITY WITH REGIONAL AIR QUALITY PLANNING

This project is in an air quality nonattainment area which has transportation control measures in the State Implementation Plan (SIP). This project conforms with the SIP since it comes from a conforming transportation improvement program.

4. AGENCY COORDINATION

Copies of the Maryland Route 22 Air Quality Analysis have been circulated to the U.S. Environmental Protection Agency and the Maryland Air Management Administration for review and comment.

F. NOISE IMPACT ANALYSIS

1. NOISE ABATEMENT CRITERIA

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

a. The Federal Highway Administration has established Noise Abatement Criteria based on the specific land uses being analyzed. (See Table IV-5). If the traffic noise levels produced by the project improvements are higher in the design year than these Noise Abatement Criteria, mitigation measures must be studied.

b. A comparison is made between the ambient noise levels and the traffic noise levels produced by the Build Alternates to determine the effects of providing the improvements. If the Build Alternate produces traffic noise levels 10dBA or greater over the ambient noise levels, noise mitigation measures must be investigated.

2. DESCRIPTIONS OF NOISE SENSITIVE AREAS

Various locations throughout the study area were selected to be analyzed as sensitive receptors. Receptors were selected that would be representative of the effects on the communities adjacent to the roadway.

The Noise Sensitive Areas (NSA's) were determined by analyzing the geometrics of the proposed improvements to determine the worst case combination of traffic volumes, proximity of the roadways to the receptors and travel speeds. These NSA's are listed in Table IV-3 and shown on Figure IV-2 and the alternate maps contained in Chapter II.

3. AMBIENT NOISE LEVELS

A field measurement program to establish ambient noise levels and traffic volumes was conducted in September 1986 using the latest method of environmental noise analysis. 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 ANSI Type 2 sound level meter model 886 manufactured by Simpson Electric Co. In an acoustical analysis, measurement of ambient noise levels is intended to establish the basis for impact analysis. The ambient noise levels as recorded represent a generalized view of present noise levels.

The results of the ambient monitoring program are shown in tables 2 through 4.

4. PREDICTION METHODS

The method used to predict the future noise levels was developed by the Federal Highway Administration of the U.S. Department of Transportation. The computer model derived from this method, STAMINA 2.0, 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 number of vehicles and average vehicle speed; 2) distance adjustment comparing a reference distance 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 projections were performed by using the computer adaptation of the FHWA model, STAMINA 2.0/OPTIMA. Data from the field measurement program was used in the calibration of the model. Traffic volumes measured in the field along with existing geographic and roadway alignment data served as input to the model. Predicted noise levels were compared with the ambient noise measurements and any significant differences were resolved. The input was then adjusted to reflect all planned or foreseeable changes in the roadway alignment, traffic volumes and geographic conditions for each of the alternates and projected noise levels were obtained.

5. SUMMARY OF TRAFFIC PARAMETERS

Traffic information for this analysis was prepared by the Maryland State Highway Administration's Bureau of Traffic Engineering and Bureau of Highway Statistics for the Design Year (2010).

The Design Hour Volumes (DHV's) were used in this study since they produced the highest noise levels, representing the worst case conditions.

6. RESULTS OF ANALYSIS

The predicted traffic noise levels were analyzed for the design year 2010 along the No-Build and Build Alternates of Segments 1 through 3. Tables through summarize the results of this study.

All of the Noise Sensitive Areas along the project corridor, with the exception of NSA 11, are of Land Use Category B (see Table), with a noise abatement level of 67dBA Leq. NSA 11 is commercial property, which is of Land Use Category C and has a noise abatement level of 72dBA. Where projected traffic noise levels exceed this criterion or the 10dBA difference criterion under any of the Build Alternates, methods of noise abatement were studied. The effects of providing noise barriers at these locations are summarized in Table . Methods which are considered physically and economically reasonable are recommended for further study during final design.

Under the No-Build Alternate none of the NSA's in Segments 1 or 2 exceed the 67dBA criterion; however, two NSA's in Segment 3 exceed this criterion. None of the NSA's in Segments 1 through 3 exceed the 10dBA difference criterion.

Under the Build Alternates, six of the NSA's in Segment 1, three of the NSA's in Segment 2 and four of the NSA's in Segment 3 exceed the 67dBA criterion. None of the NSA's in Segments 1 through 3 exceed the 10dBA difference criterion.

7. NOISE IMPACT ASSESSMENT

a. General

The determination of environmental noise impact is based on the relationship between the predicted noise levels, the established noise abatement criteria, and the ambient noise levels in the project area. The applicable standard is the Federal Highway Administration's Noise Abatement Criteria/ Activity Relationship (Table IV-) published in FHPM 7-7-3.

When design year Leq noise levels are projected to exceed the abatement criteria or increase ambient conditions by 10dBA or more, noise abatement measures are considered to minimize impact. Noise barriers have been studied at such locations to determine their feasibility and cost effectiveness. Consideration is based on the size of the impacted area (number of structures, spatial distribution of structures, etc.), the predominant activities carried on within the area, the visual impact of the control measure, practicality of construction, and economic feasibility. In addition to barriers, earth berms were considered as a visual screen and/or noise abatement measure. However, because of the close proximity of the NSA's to the roadway, earth berms are not a feasible mitigative measure within this project corridor.

b. Segment 1 - Bel Air to Corns Drive

1) No-Build Alternate

Twenty-four Noise Sensitive Areas (NSA's) are associated with the No-Build Alternate along Maryland Route 22. The Federal noise abatement criterion is not exceeded at any of the NSA's. Also, none of the NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

2) Build Alterntes

The twenty-four NSA's considered for the No-Build Alternate are also associated with the Four-Lane Divided and Five-Lane Undivided Highway alternates. Since the results for both alternates are the same, they are addressed together as the Build Alternate. The Federal noise abatement criterion is exceeded at five NSA's: (2, 7, 12, 15 and 17). None of the NSA's are projected to

have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

c. Segment 2 - Corns Drive to Snake Lane

1) No-Build Alternate

Eighteen NSA's are associated with the No-Build Alternate. The Federal noise criterion is not exceeded at any of the NSA's. Also, none of the NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

2) Southern Churchville By-Pass Alternates

Of the southern alternates, six NSA's are associated with Alternate A and seven NSA's are associated with Alternate B. None of the predicted traffic noise levels at these NSA's exceed the Federal noise criterion. Also, none of these NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

3) Maryland Route 22 Improvements and Maryland Route 155 Connection Alternates

Fifteen NSA's are associated with the Maryland Route 22 improvements and Connection C for Maryland Route 155. The predicted noise levels at two of these NSA's (25A and 27) exceed the Federal noise criterion. None of the NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

Fifteen NSA's are associated with the Maryland Route 22 improvements and the C-2 and D Connection alternates for Maryland Route 155. The Federal noise criterion will be exceeded at three of these NSA's (25A, 27, and 28). This level is exceeded under both alternates for Maryland Route 155. None of the NSA's, under either alternate, are projected to have a 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

d. Segment 3 - Snake Lane to Interstate Route 95

1) No-Build Alternate

Seven NSA's are associated with the No-Build Alternate along Maryland Route 22. The predicted traffic noise level at two of the NSA's (42 and 47) exceeds the

Federal noise abatement criterion. None of the NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

2) Build Alternates

The same seven NSA's that were considered for the No-Build Alternate are also associated with the Four-Lane Divided and Five-Lane Undivided Highway alternates. Since the results for both alternates are the same, they are addressed together as the Build Alternate. The noise level at four NSA's (37, 42, 43 and 45) exceeds the Federal noise abatement criterion. None of the NSA's are projected to have a design year 2010 traffic noise level greater than or equal to 10dBA over the present ambient level.

8. MITIGATION MEASURES

As explained above, mitigation measures were investigated where the increase in noise levels was 10 dBA or greater or where the projected noise levels exceeded the Noise Abatement Criteria. The results of these site investigations are shown in Table IV-9 and described in detail below.

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

Since truck traffic is a major contributor to the noise produced by highway traffic, means of controlling or restricting truck traffic would be needed to reduce noise through traffic control measures. Since a major purpose of the freeway is to accommodate trucking, the possibility of restricting trucks on Maryland Route 22 is not considered. Also, the truck traffic diverted to other routes would create noise problems at other sensitive areas.

The possibility of reducing the tire noise generated by the traffic through the use of quieter types of pavement has been studied recently. Again, trucks create a major portion of the total traffic noise, much of which is engine and exhaust noise, which is not affected by quieter pavements. However, recent studies show the net reduction in traffic noise levels gained through the use of quieter pavements would be 2-3dBA. This measure should be considered during final design.

Several types of noise barriers including reflective (walls) or absorptive (berms) can be used to reduce noise levels at sensitive receptors. Berms can be effective and practical where right of way is not restricted and development is set back a considerable distance. Along the Maryland Route 22 right of way, the noise sensitive areas generally consist of residences located close to the right of way. Therefore, only reflective type noise walls are analyzed in the study.

Table IV-9 summarizes the noise analysis including the abatement measures studied. Below is a description of the specific sites analyzed for barriers and the noise reduction obtained. Detailed analysis of the barriers to be considered further will be performed during the final design phase of the project.

An effective barrier should, in general, extend in both directions four times the distance between receiver and roadway (source). In addition, an effective barrier should provide a 10dBA reduction in the noise level, as a preliminary design goal. For the purpose of comparison an assumed cost of $27.00 per square foot is used to estimate total barrier cost. At locations where noise barriers were considered, barrier heights were studied up to a maximum of 28 feet. The barrier height at which a 10dBA reduction was achieved was considered the effective height. If a 10dBA reduction could not be achieved at the maximum 28-foot barrier height, then the effect of the 28-foot barrier was addressed. A summary of the noise impact analysis is shown in Table IV-9.

The State Highway Administration currently uses a cost of $40,000/residence as the upset limit in determining cost-effectiveness or reasonableness of noise barrier construction. This is an average cost figure based on current and projected barrier costs by the Maryland State Highway Administration.

9. NOISE ABATEMENT CONSIDERATIONS AT SPECIFIC RECEPTORS

a. Segment 1

NSA 2 - 624 Lee Way - Two Residences

NSA 2 has a projected traffic noise level of 68dBA, which exceeds the Federal noise abatement criterion by 1dBA. A 2 section barrier with lengths of 155 feet and 345 feet and an average height of 13 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $176,000. The cost per residence of the barrier is $88,000.

NSA 7 - 1404 Churchville Road - 10 Single Family Residences

NSA 7 has a projected traffic noise level of 70dBA, which exceeds the Federal noise abatement criterion by 3dBA. A 2010-foot noise barrier with an average height of 17 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $923,000. The cost per residence of the barrier is $76,900.

NSA 12 - 1609 Churchville Road - Three Single Family Residences

NSA 12 has a projected traffic noise level of 71dBA, which exceeds the Federal noise abatement criterion by 4dBA. A 530-foot noise barrier with two sections of heights 19 and 11 feet would reduce the traffic noise level by 10dBA at an estimated cost of $216,000. The cost per residence for a barrier at this location is $72,000.

NSA 15 - 1726 Churchville Road - Nine Single Family Residences

NSA 15 has a projected traffic noise level of 69dBA, which exceeds the Federal noise abatement criterion by 2dBA. A 1240-foot noise barrier with an average height of 9-feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $301,000. The cost per residence is $33,400.

NSA 17 - 1829 Churchville Road - Twelve Family Residences

NSA 17 has a projected traffic noise level of 68dBA, which exceeds the Federal noise abatement criterion by 1dBA. A 2400-foot noise barrier with an average height of 12 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $778,000. The cost per residence of the barrier is $48,600.

b. Segment 2

NSA 25A - 2608 Churchville Road - Three Single Family Residences

NSA 25A has a projected traffic noise level of 68dBA, which exceeds the Federal noise abatement criterion by 1dBA. A 780-foot barrier with an average height of 15 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $316,000. The cost per residence of this barrier is $105,300.

NSA's 27 and 28 - 2709 and 2829 Churchville Road - Fourteen Single Family Residences

NSA 27 has a projected traffic noise level of 68dBA and NSA 28 a projected traffic noise level of 69dBA which both exceed the Federal noise abatement criterion by 1 and 2dBA, respectively. A 1900-foot barrier with an average height of 11 feet would reduce the traffic noise level at these sites by 10dBA at an estimated cost of $564,000. The cost per residence of this barrier is $40,300.

c. Segment 3

NSA 37 - 3400 Churchville Road - Six Single Family Residences

NSA 37 has a projected traffic noise level of 68dBA, which exceeds the Federal noise abatement criterion by 1dBA. A 1160-foot barrier with an average height of 15 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $470,000. The cost per residence of the barrier is $67,100.

NSA 42 - 3468 Churchville Road - Six Single Family Homes

NSA 42 has a projected level of 70dBA, which exceeds the Federal noise abatement criterion by 3dBA. A 1100-foot barrier with an average height of 12 feet would reduce the traffic noise level at this site by 10dBA at an estimated cost of $356,000. The cost per residence of the barrier is $59,300.

NSA 43 and 45 - 3530 and 3549 Churchville Road - Nine Single Family Residences

NSA's 43 and 45 have projected noise levels of 68dBA and 69dBA, respectively, which exceed the Federal noise abatement criterion by 1 and 2dBA. A 2 section 1700-foot barrier with section heights of 11 and 19 feet would reduce the traffic noise level by 10dBA at an estimated cost of $736,000. The cost per residence of the barrier is $81,800.

10. CONCLUSIONS

The cost per residence of providing noise barriers along Maryland Route 22 at the locations discussed ranges from $33,400 to $105,300. Although NSA 15 and NSA 27 meet the State Highway Administration criterion of approximately $40,000 per residence, provision of noise barriers at these locations would not be

feasible because of the need to provide vehicular and pedestrian access to affected properties. During final design consideration will be given to provide sufficient landscaping to minimize impacts of proposed construction.

11. CONSTRUCTION IMPACTS

An inevitable increase in the project area noise levels will occur during the construction of the proposed improvements. Such noise differs significantly from that generated by normal traffic due to its unusual spectral and temporal nature. The actual level of noise impact during this period will be a function of the number and types of equipment being used as well as the overall construction procedures.

A number of measures can be utilized in order to minimize noise resulting from such activities. Such measures include, but are not limited to, the following:

- Any internal combustion engine used for any purpose on or related to the job should be equipped with a properly operating muffler;

- Conduct truck loading, unloading and hauling so that noise is kept to a minimum;

- Route construction equipment and vehicles in areas that will cause the least disturbance to nearby NSA's where possible;

- When appropriate, place continuously operated diesel-powered equipment, such as compressor or generators, in areas as far from or shielded from noise sensitive areas.

- Maintain construction equipment regularly to minimize noise emissions because of inefficiently turned engines, poorly lubricated moving parts, poor or ineffective muffling systems, etc.

G. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The principal irreversible and, for all practical purposes, irretrievable commitment of resources would be the agricultural land and woodlands allocated for the highway right-of-way. Construction of the proposed project would also remove floodplain acreage and wildlife habitat. The land for the project can be considered as permanently committed to a transportation corridor. In addition, materials and suitable fill material for construction would be irretrievably committed.

H. RELATIONSHIPS BETWEEN SHORT-TERM EFFECTS AND LONG-TERM PRODUCTIVITY AND ENHANCEMENT

All of the build alternates would allow traffic to move efficiently though the study area at increased speeds, thereby reducing the amount of air pollutants per vehicle.

Long-term environmental effects include the elimination of productive agricultural lands and woodlands and the acquisition of floodplain and wetland acreage. Noise levels would also increase in some areas.

Construction impacts which would have a short-term effect on the project area include erosion, siltation and stream turbidity. Dust and noise associated with highway construction would also result in temporary impacts. Every effort will be made by the State Highway Administration to minimize effects to the environment.

V. 4(F) STATEMENT

MARYLAND ROUTE 22
BEL AIR TO INTERSTATE ROUTE 95
HARFORD COUNTY, MARYLAND

V. 4(f) STATEMENT

A. INTRODUCTION

Section 4(f) of the Department of Transportation Act (now Section 303C of Title 49 USC) states that utilizing land from a significant publicly-owned park, recreation area, wildlife refuge, or any significant historic site for a federally funded transportation project is permissible only if there is no feasible and prudent alternative and if all possible planning to minimize harm is included as part of the project.

B. DESCRIPTION OF PROPOSED ACTION

The proposed action consists of the construction of improvements to Maryland Route 22 from Bel Air to Interstate Route 95. Three alternates, the No-Build and two Build Alternates have been considered for Maryland Route 22 along the existing route for the total length of the project. In addition, within the section of the project in the vicinity of Churchville from Corns Drive to Snake Lane, two alternates were studied for a Churchville Southern By-Pass. In Churchville, six alternates were considered for improving the connection from Maryland Route 155 to Maryland Route 22. (See Figure V-1 and Figure V-2) A detailed description of these alternates is contained in Section II of this document.

The No-Build Alternate would not require the acquisition of property from any 4(f) resource. The Build Alternates for Maryland Route 22 and the Churchville Southern By-Pass Alternates would not require the acquisition of property from any 4(f) resource.

The selected alternate for the new connection from Maryland Route 155 to Maryland Route 22 is Alternate C. This alternate will require acquisition of property from the Homelands (HA 139) historic site which is possibly eligible for the National Register of Historic Places. Roadway improvements for Maryland Route 136 north of Maryland Route 22 will also require acquisition of property from the historic site.

C. DESCRIPTION OF 4(f) RESOURCES

1. Homelands - HA 139 (See Figure V-1)

The Homelands is a two-story gable roofed frame clapboard house located just north of Churchville and east of Maryland Route 136 (Priest Ford Road). The Maryland Historical Trust has

determined that the site should be eligible for the National Register. The State Highway Administration has subsequently undertaken steps required under Section 106 Historic Preservation procedures.

Homelands is the "manor house" of the Churchville area. The oldest section is said to have been built about 1806. The present appearance of the house is the result of several additions and alterations in the late 19th and early 20th centuries. Set on a low stone foundation, the house is T-shaped with two shed-roofed additions on the north end. The outbuildings include a two-story stone smokehouse east of the house and 5 structures northwest of the house.

The Homelands Farm was the most extensive landholding by a single owner in the area. Most of the houses in Churchville were built on lots purchased from the owners of Homelands, namely the Herberts and Dr. David Harlan. The farmstead has been continuously owned and farmed by the same family since John Herbert began acquiring the property around 1800. Thus, in addition to the architectural distinction of the residence, Homelands is significant for its important ties with the community of Churchville and as a farmstead that has remained in agricultural use while in the continuous ownership of one family for over 180 years.

The historic site consists of 220 acres designated to protect the rural environment of the site. The site is privately owned and not open to the public. The 220 acres is the portion of the farm located on the east side of Maryland Route 136. The 56 acre portion of the farm located on the west side of Maryland Route 136 is not part of the historic site.

D. IMPACTS TO RESOURCES

1. Maryland Route 155 Alternate Connection C - Selected Alternate (See Figures V-1 and V-2A)

This alternate is located over 900 feet south of the historic building. This alternate will require the acquisition of approximately 8 acres of land for construction of the highway and approximately 1 acre of land for a stormwater management facility from within the 220 acre Homeland's historic boundary. This alternate will sever approximately 23 acres of prime farmland from the remainder of the historic site. The elevation of the roadway would vary from 397 to 410 as it crosses the historic site. The ground elevation at the historic building is 420.

2. Maryland Route 155 Alternate Connection C - Option 1
(See Figure V-2A)

This alternate is located over 1200 feet south of the historic building. This alternate would require the acquisition of approximately 7.3 acres of land for construction of the highway and approximately 1 acre of land for a stormwater management facility from within the 220 acre Homeland's historic boundary. This alternate would sever approximately 8.8 acres of prime farmland from the remainder of the historic site. The elevation of the roadway would vary from 394 to 408 as it traverses the historic site. As stated previously the elevation at the historic building is 420.

3. Maryland Route 155 Alternate Connection C - Option 2
(See Figure V-2A)

This alternate is located over 1000 feet south of the historic structure. Acquisition of approximately 7.8 acres of land for construction of the highway and approximately 1 acre of land for a stormwater management facility would be required from the 220 acre historic boundary for this alternate. This alternate would sever approximately 11.6 acres of prime farmland from the remainder of the historic site. The elevation of the roadway along this alternate alignment would vary from 394 to 410 as it crosses the historic property.

4. Maryland Route 155 Alternate Connection C-2 - Option 2
(See Figure V-2)

This option would require the acquisition of approximately 1.2 acres of land from within the 220 acre Homeland's historic boundary. The acquisition would be a forty-foot wide strip of land along the north side of existing Maryland Route 155 and would extend from Glenville Road westerly approximately 1400 feet. This acquisition is proposed along the north side of Maryland Route 155 to avoid affecting the historic Trinity Church and the recreational area of the Churchville Elementary School. This acquisition is needed to widen the existing 20-foot roadway to two 11-foot wide lanes with 8-foot wide paved shoulders in order to provide the AASHTO recommended roadway cross section. The roadway cross section would then be the same as the existing road east of Glenville Road. The improvement would enhance the safety of the roadway in the vicinity of the Churchville Elementary School playground.

5. Maryland Route 136 Improvements Option 2 (See Figure V-2)

This design option would require the acquisition of approximately 0.2 acres of commercially zoned land from within the

220 acre Homeland's historic boundary. The acquisition would be a strip of land varying in width from thirteen to twenty-five feet along the east side of existing Maryland Route 136 approximately 400 feet long. This acquisition is needed to provide a 30-foot radius curb return at the northwest corner of the intersection at the Churchville Presbyterian Church and a left-turn lane which meets the AASHTO recommendation for a 40 mph design speed.

E. AVOIDANCE ALTERNATES AND THEIR IMPACTS

1. No-Build for Maryland Route 155 and Maryland Route 136

The proposed Maryland Route 22 improvements through Churchville with no improvements for Maryland Routes 155 and 136 would avoid acquisition of property from the Homeland's historic property. However, under this alternate the level of service for Maryland Route 22 from west of Maryland Route 136 to east of Maryland Route 155 would be LOS E/F for the year 2010 projected peak hour traffic volumes on Maryland Route 22.

2. Maryland Route 155 Alternate Connection C-2 Option 1 (See Figure V-3)

This alternate is the same as Alternate Connection C-2, Option 2 except it would not include improvement of Maryland Route 155 from the C-2 tie-in to Glenville Road and would avoid acquisition of property from the Homeland's historic property. Improvements of Maryland Route 155 can be eliminated without affecting the function of the C-2 connection. However, the roadway cross section would be less than desirable for safe operation and would not be as wide as the roadway and paved shoulder which exist east of Glenville Road. The impacts of the C-2 Option 1 connection alternate are as follows:

- This alternate, like alternate C-2, Option 2, would also require acquisition of three single family residences.

- This alternate would not reduce the traffic volume through Churchville. The year 2010 projected peak hour traffic volumes on Maryland Route 22 with the C-2 Connection Alternate would vary from 2150 vph west of Maryland Route 136 to 1775 vph west of Glenville Road (assuming no southern bypass). With Maryland Route 22 improvements and Connection C-2, the level of service along Maryland Route 22, based on uninterrupted flow conditions, would be LOS C. The intersections level of services at both Maryland Route 136 and Connection C-2 would also be LOS C.

With the Atlernate C Connection, the peak hour traffic volumes would vary from 1325 vph to 1475 vph and the level of service along Maryland Route 22, based on uninterrupted flow conditions, would be LOS B. The intersection levels of service with Maryland Route 22 improvements and Connection C would be a LOS A at both Connection C and Maryland Route 136.

3. Glenville Road Alternate (See Figure V-2A)

This alternate would also avoid acquisition of property from the Homeland's historic property. The effects of this alternate connection are as follows:

- Right of way acquisition would be required from the Churchville Recreation Complex and the Churchville Elementrary School property creating a 4(f) issue.

- The alternate would require acquisition of three residences and would reduce the building set-back distance from the right of way line for the remaining five structures from approximately 60 feet to approximately 30 feet.

- The alternate would not reduce the traffic volume through Churchville. The year 2010 projected peak hour traffic volumes on Maryland Route 22 with this alternate would vary from 2150 vph west of Maryland Route 136 to 1800 vph west of Glenville Road. Maryland Route 22 and the intersections would operate at LOS C.

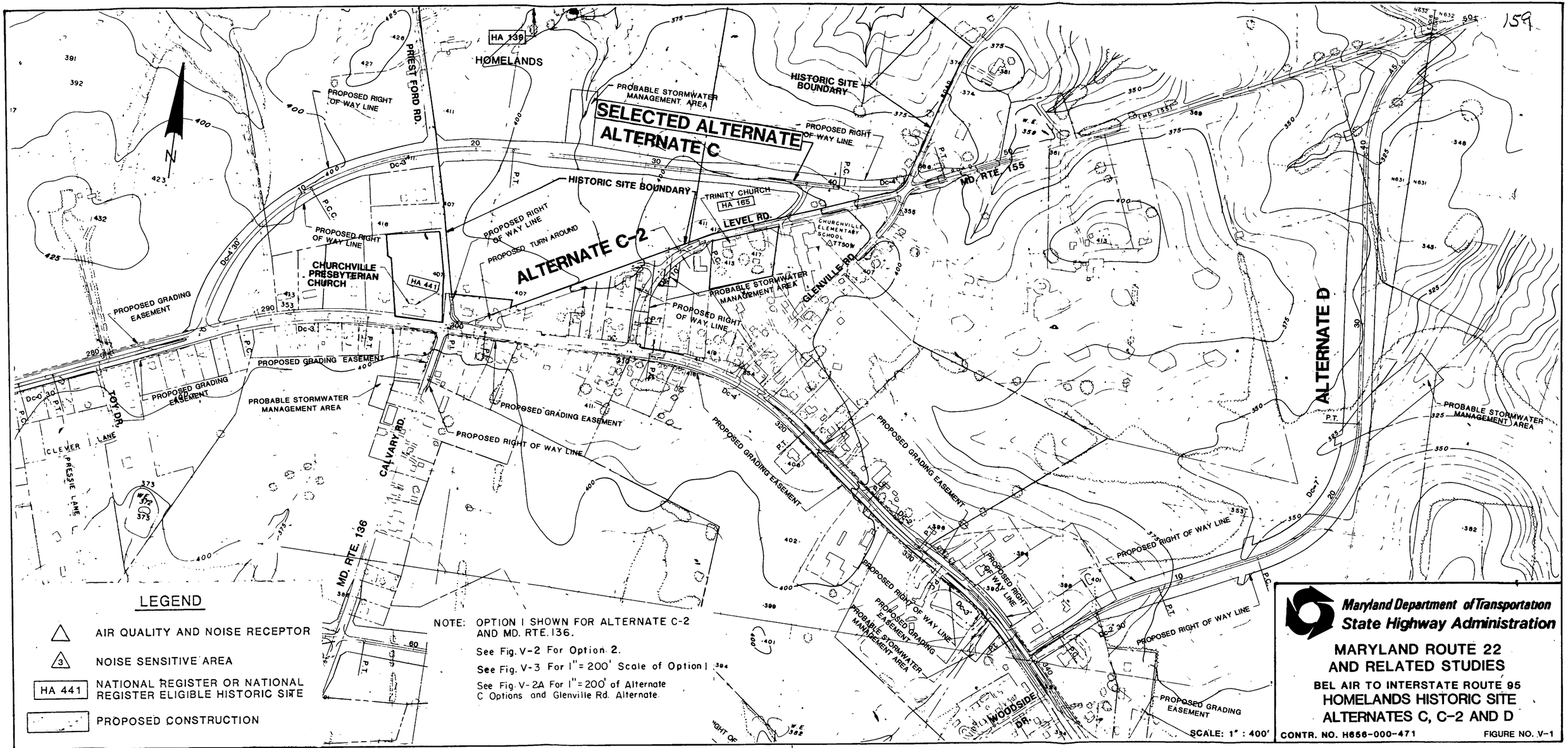
- The peak hour traffic volume on Glenville Road would increase from the 1984 level of 225 vph to the projected volume of 1375 vph by the year 2010.

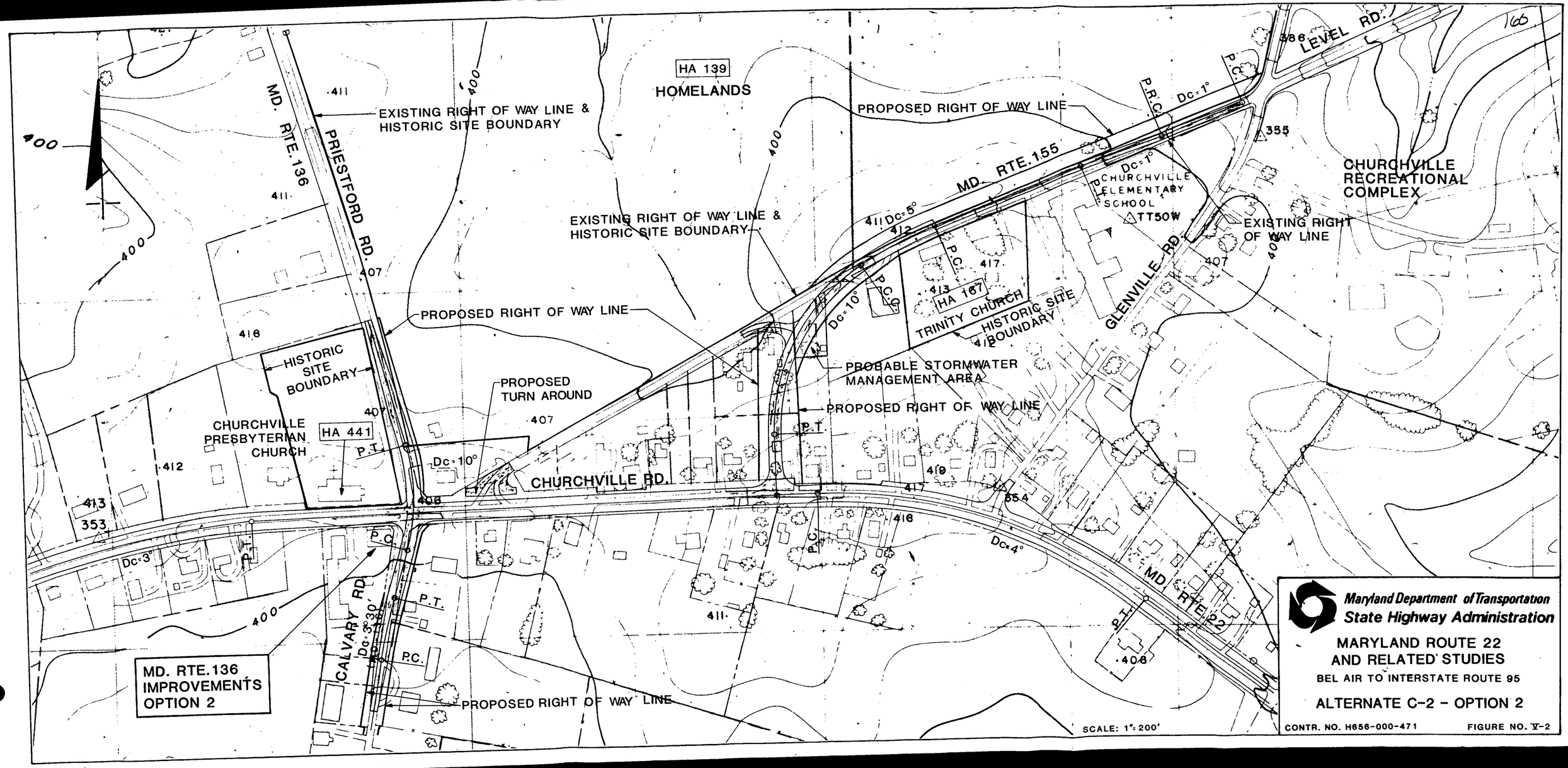
- The functional classification of the existing street would change from local residential to major collector.

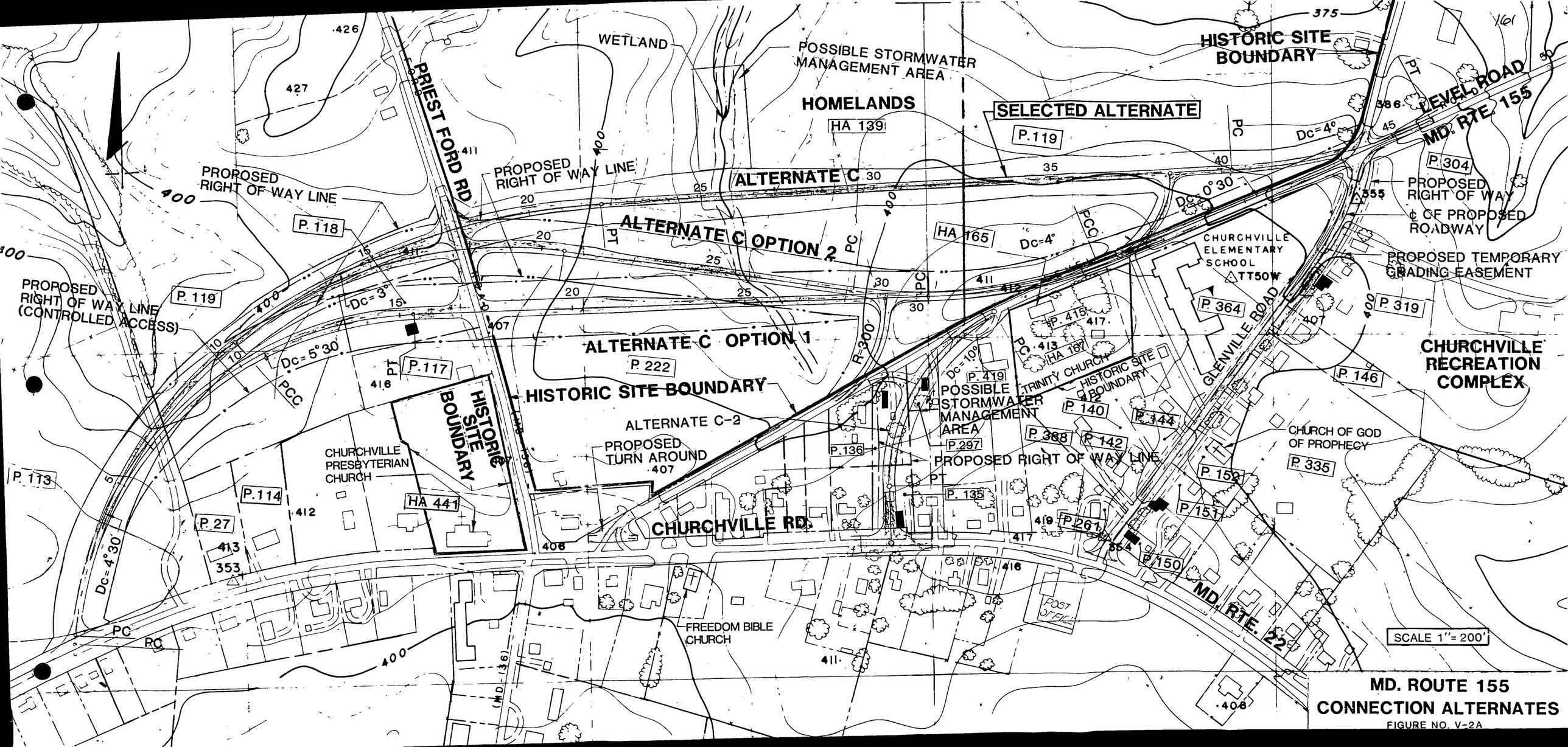
- Construction of this alternate would also require removal of several large trees (larger than 24" diameter trunk) from residential properties.

4. Maryland Route 155 Alternate Connection D (See Figure V-1)

This alternate would also avoid acquisition of property from the Homeland's historic property. The effects of this alternate connection are as follows:

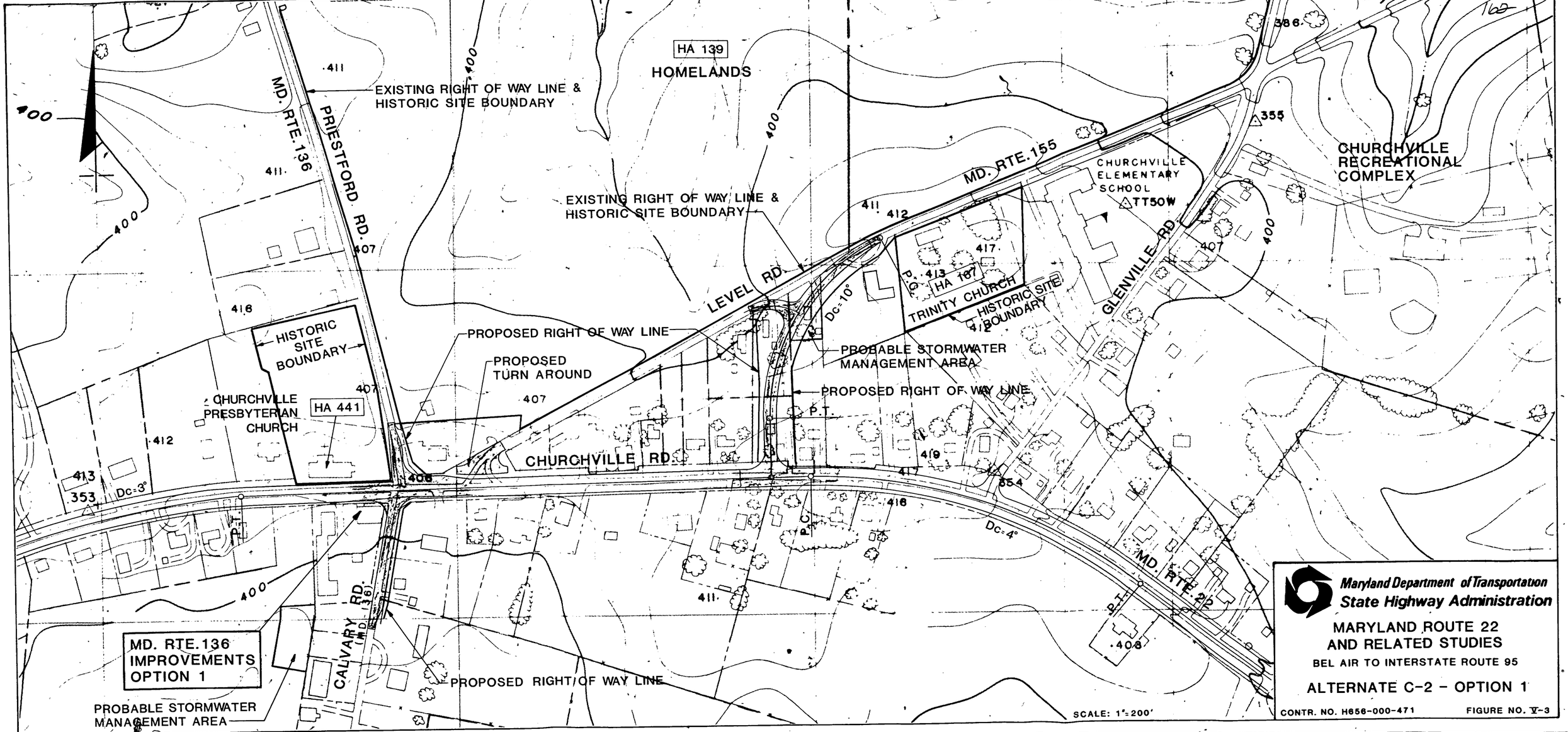

HOMELANDS
HA 139
HISTORIC SITE BOUNDARY
PROBABLE STORMWATER MANAGEMENT AREA
SELECTED ALTERNATE
ALTERNATE C
PROPOSED RIGHT OF WAY LINE
PRIEST FORD RD.
HISTORIC SITE BOUNDARY
TRINITY CHURCH
HA 165
LEVEL RD.
MD. RTE. 155
ALTERNATE C-2
PROPOSED TURN AROUND
CHURCHVILLE PRESBYTERIAN CHURCH
HA 441
CHURCHVILLE ELEMENTARY SCHOOL
GLENVILLE RD.
PROPOSED GRADING EASEMENT
TOY DR.
CLEVER LANE
PRESSIE LANE
CALVARY RD.
MD. RTE. 136
ALTERNATE D
WOODSIDE DR.
N
LEGEND
AIR QUALITY AND NOISE RECEPTOR
NOISE SENSITIVE AREA
HA 441 NATIONAL REGISTER OR NATIONAL REGISTER ELIGIBLE HISTORIC SITE
PROPOSED CONSTRUCTION
NOTE: OPTION I SHOWN FOR ALTERNATE C-2 AND MD. RTE. 136.
See Fig. V-2 For Option 2.
See Fig. V-3 For 1"= 200' Scale of Option I
See Fig. V-2A For 1"= 200' of Alternate C Options and Glenville Rd. Alternate.
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
HOMELANDS HISTORIC SITE
ALTERNATES C, C-2 AND D
SCALE: 1" : 400'
CONTR. NO. H656-000-471
FIGURE NO. V-1


HA 139
HOMELANDS
EXISTING RIGHT OF WAY LINE & HISTORIC SITE BOUNDARY
PROPOSED RIGHT OF WAY LINE
MD. RTE.136
PRIESTFORD RD.
MD. RTE.155
LEVEL RD.
CHURCHVILLE ELEMENTARY SCHOOL
CHURCHVILLE RECREATIONAL COMPLEX
EXISTING RIGHT OF WAY LINE
GLENVILLE RD.
HA 167
TRINITY CHURCH
HISTORIC SITE BOUNDARY
HISTORIC SITE BOUNDARY
PROPOSED TURN AROUND
PROBABLE STORMWATER MANAGEMENT AREA
HA 441
CHURCHVILLE PRESBYTERIAN CHURCH
CHURCHVILLE RD.
CALVARY RD.
MD. RTE.22
MD. RTE.136 IMPROVEMENTS OPTION 2
SCALE: 1"=200'
Maryland Department of Transportation
State Highway Administration
MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95
ALTERNATE C-2 - OPTION 2
CONTR. NO. H656-000-471
FIGURE NO. V-2



MD. ROUTE 155 CONNECTION ALTERNATES

FIGURE NO. V-2A



Maryland Department of Transportation
State Highway Administration

MARYLAND ROUTE 22
AND RELATED STUDIES
BEL AIR TO INTERSTATE ROUTE 95

ALTERNATE C-2 - OPTION 1

CONTR. NO. H656-000-471 FIGURE NO. V-3

- This alternate connection would impact an 111 acre farm from which approximately 14 acres of right of way would be required and 44 acres of land would be severed without access from the remaining area.

- This alternate would increase the traffic volumes in Churchville from existing Maryland Route 155 to the new intersection west of Maryland Route 156. The increase for the year 2010 would be approximately 300 vph for the p.m. peak hour.

- Under this alternate, people would probably use Glenville Road, a narrow, quiet, residential street for access to Maryland Route 155. Glenville Road would eventually require widening to accommodate the traffic increase. The widening would require land from The Churchville Recreation Complex and Churchville Elementary School.

5. Maryland Route 136 Improvements Option 1 (See Figure V-3)

Maryland Route 136 improvements Option 1 would not require right of way acquisition from the Homeland's historic site. The effects of this option area as follows:

- The maximum radius for the curb return at the Churchville Presbyterian Church would be ten feet. The right-turn movement from southbound Maryland Route 136 onto Maryland Route 22 would continue to be restricted and vehicles would not be able to take advantage of the "right-turn on red" policy. Furthermore, the substandard turning radius could result in some vehicles understeering and encroaching on the adjacent lane of Maryland Route 22. This would increase the potential for angle accidents.

- The length of the left-turn lane for southbound vehicles would be the minimum required for vehicular storage and would not provide for deceleration of the turning vehicles. Therefore, the potential for rear end accidents would be higher than for Option 2.

F. MITIGATION

Sufficient landscaping will be provided along the north right of way line of the selected alternate from Maryland Route 136 to Glenville Road to screen the new roadway from the property. This will be coordinated with the State Historic Preservation Officer during final design.

G. COORDINATION

Coordination has been initiated with the State Historic Preservation Officer for a determination of potential effects.

H. CONCLUSION

Based on the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from the "Homelands" historic property and that the proposed action includes all possible planning to minimize harm to the "Homelands".

I. CORRESPONDENCE

Correspondence from reviewing agencies and responses to comments made by these agencies appear on the following pages.

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Maryland Historical Trust

November 17, 1981

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Re: MD 22, East of Shamrock Road to 0.8 miles
west of Churchville
Contract No.: H 656-000-471

Dear Mr. Schneider:

At SHA's request, historic site boundaries for five sites in the Churchville By-Pass project area were drawn as shown on SHA's large-scale project maps. The sites are:

Homelands	(HA-139)
Churchville Presbyterian Church	(HA-441)
Asbury Methodist Episcopal Church	(HA-1267)
Coale's Store	(HA-1274)
Bodt-King House	(HA-1276)

All have been assessed as potentially eligible for the National Register.

Yours truly,

Janet L. Davis

Janet L. Davis
Historic Sites Surveyor

JLD/mf

cc: Mr. George J. Andreve
Mr. Louis Ege
Mrs. Rita Suffness
Mr. Guy Hager
Ken Evans w 200 scale map 11/20/81
Attachment

Maryland Historical Trust

May 10, 1982

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

RE: Md. Rt. 22 from Bel Air to I-95
Contract No. H656-000-471

Dear Mr. Schneider:

Thank you for your letter of April 15, 1982, regarding the project listed above. We agree that the Coale Store would not be eligible for the National Register and that the following would be eligible:

1. Homelands with the boundary drawn by Janet Davis (see attached map);

2. Churchville Presbyterian Church (boundary shown on attached map coincides with the wall); and,

3. Stier House (boundary described on separate page).

MAY 13 PM 1982

In addition, within the project's potential area of impact, we believe that Holy Trinity Episcopal Church would be eligible for the Register. Attached is our survey form for the Church and a map showing the proposed boundary. If you have questions, please call George Andreve at 269-2438.

Sincerely,

Mark R. Edwards

Mark R. Edwards
Deputy State Historic
Preservation Officer

MRK:GJA:mms
Enclosures
cc: Amy Schlagel
Audrey Delano
Ellen Coxe
James Wollon, Jr.
George Andreve

Maryland Historical Trust

February 8, 1983

Mr. Louis H. Ege, Jr., Chief
Environmental Management
State Highway Administration
P.O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

Re: Md. 22 from Bel Air to I-95
H-656-000-471
F.A.P. No. RF 902-1 (22)

Dear Mr. Ege:

Thank you for your letter of August 4, 1982, regarding historic properties within the area of impact of the project listed above. We believe that widening Rt. 22 on the north side will have no adverse effect on Tudor Hall since the boundary has been revised as shown on the attached map. There would also be no adverse effect on the Steier House or the Dibb House. We concur with your determination of no effect for the Hays-Heighe House since it is not within the impact area. In order to complete the Section 106 review for this segment, SHA must request determinations of eligibility for the Steier House and the Dibb House. The Advisory Council's comments must be requested regarding all determinations of no adverse effect.

In regard to the Churchville by-pass segment of this project, we believe the National Register boundary for Homelands should remain as drawn by Janet Davis. It includes the main house, the outbuildings and the surrounding pasture and is shown on the attached map. This boundary should be retained because:

1. Homelands has been the area's principal working farm since it was settled early in the nineteenth century. It remains a working farm, and the surrounding acreage was and is an integral part of the operation.

2. Situated on a knoll facing south, the house has historically had a visual link to Churchville which was built on a portion of the original tract. Churchville was known for a time as Herbert's Crossroads after Homelands' first owner, John Herbert.

3. The existing roads on the south, west and east sides, which Janet used for boundaries, visually and physically separate the historic farm from the surrounding areas.

Four alternates are being considered for the Churchville by-pass segment of the project. For them, we have made the following determinations of effect:

Alternate A-2

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Trinity Episcopal Church
No adverse effect on Asbury A.M.E. Church

Alternate C

Adverse effect on Homelands
No Adverse effect on Churchville Presbyterian Church
No Adverse effect on Trinty Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Alternate C-2

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Trinty Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Alternate C-3

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Holy Trinity Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Federal regulations require determinations of eligibility to be requested for each historic property within the area of impact of the selected alternate. When there are determinations of no adverse effect or adverse effect, the Advisory Council should be contacted as soon as possible. If you have any questions, please contact me or Ms. Kim Kimlin at 269-2438.

Sincerely,

George J. Andreve

George J. Andreve
Environmental Review
Administrator

GJA/KEK/bjs

Enclosure

cc: Mr. Ron Anzalone
Mr. Bruce MacDougal
Mrs. Raymond Delano
Ms. Pamela J. Caldwell
Ken Evans 5/13/83

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Maryland Historical Trust

October 14, 1986

PROJECT DEVELOPMENT DIVISION
OCT 16 10 00 AM '86

Ms. Cynthia Simpson
Environmental Management
Maryland Dept. of Transportation
State Highway Administration
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Contract No. H 656-000-471
Maryland Route 22 from
Bel Air to Interstate Route 95
F.A.P. No. RF 902-1 (22)

Dear Ms. Cynthia Simpson:

Thank you for your letter of September 23, 1986 concerning the above-referenced project.

Our office concurs with 79 of the 80 determinations of effect made by SHA for this project (see attached table). The exception concerns Maryland Route 155 alternate connection C. As we stated in our letter of February 8, 1983, we consider this alternate to have an adverse effect on the NR-eligible site Homelands (HA-139).

As always, your cooperation is appreciated. If you have any questions feel free to contact Al Luckenbach at 757-9000.

Sincerely,

Mark R. Edwards for
J. Rodney Little
Director State Historic
Preservation Officer

JRL/AHL/mmc
Enclosure
CC: Ms. Rita Suffness
Mr. Tim Dugan
Mr. Charles Keenan

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 269-2212, 269-2438, 269-2850

	SEGMENT 1,		SEGMENT 2							
						MD 155 Connection			MD 22/MD 136 Intersection	
	Four Lane	Five Lane	Southern Bypass Route A	Route B	Conn. C	C 2 Opt.1	C 2 Opt.2	Conn. D	Option 1	Option 2
bbs House	n.a.e.	n.a.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
dor Hall	n.e.	n.e.	"	"	"	"	"	"	"	"
ier House	n.a.e.	n.a.e.	"	"	"	"	"	"	"	"
ys-Heighe	n.e.	n.e.	"	"	"	"	"	"	"	"
bury M.E. Church	"	"	"	"	"	"	"	"	"	"
urchville P. Church	"	"	"	"	n.a.e.	"	"	"	n.a.e.	n.a.e.
melands	"	"	"	"	c.n.a.e.	"	n.a.e.	"	n.e.	n.a.e.
ly Trinity E. Church	"	"	"	n.e.	n.a.e.	n.a.e.	n.a.e.	"	n.e.	n.e.

ADVERSE EFFECT AS PER LETTER OF 2/8/83

e. - no effect

a.e. - no adverse effect

n.a.e. - conditional no adverse effect

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VI. LIST OF PREPARERS

VII. DISTRIBUTION LIST

VI. LIST OF PREPARERS

This Draft Environmental Impact Statement was prepared by the Maryland Department of Transportation, State Highway Administration in consultation with the Federal Highway Administration. The following personnel were instrumental in the preparation of this document:

STATE HIGHWAY ADMINISTRATION

Project Development Division:

Mr. Louis H. Ege, Jr.	Deputy Director, Project Development
Mr. Randy Aldrich	Project Manager
Ms. Cynthia D. Simpson	Chief, Environmental Management

CONSULTANTS

Mr. Kenneth L. Evans	The Wilson T. Ballard Company
Dr. Howard Erickson	Environmental Services, Inc.
Mr. Roy Pool	Environmental Services, Inc.

FEDERAL HIGHWAY ADMINISTRATION

Mr. Paul Wettlaufer	Transportation Planner

VII. DISTRIBUTION LIST

Contract No. H 656-000-461
F.A.P. No. ELIG-1X
Maryland Route 22
Shamrock Road to Interstate
Route 95 (including
Churchville Bypass)
P.D.M.S. No. 123007

Federal Agencies

Mr. Bruce Blanchard, Director
Office of Environmental
Project Review
U.S. Department of the Interior
18th and C. Streets, N.W.
Washington, D.C. 20242

U.S. Environmental Protection Agency
Region III
Mr. Richard V. Pepino, Chief
NEPA Compliance Section
841 Chestnut Street
Philadelphia, PA 19107
ATTN: Mr. Jeffery Alper

Regional Director
National Marine Fisheries Service
Federal Building
14 Elm Street
Gloucester, Massachusetts 09130

Mr. Larry Levine
Environmental Officer
Department of Housing and
Urban Development
Curtis Building
Sixth and Walnut Streets
Philadelphia, PA 19106

Office of the Secretary
Department of Agriculture
Washington, D.C. 20250

Ms. Joyce M. Wood, Director
Office of Ecology and Conservation
National Oceanic and Atmospheric
Administration
U.S. Department of Commerce
Room 5813 (PP/EC)
14th and Constitution Avenue, N.W.
Washington, D.C. 20230

Commander
Corps of Engineers
Baltimore District
Box 1715
Baltimore, Maryland 21201
ATTN: NABOP-F

Division of NEPA Affairs
Department of Energy
Room 4G 064
1000 Independence Avenue, S.W.
Washington, D.C. 20230

Office of Economic Opportunity
Director
1200 19th Street, N.W.
Washington, D.C. 20506

Mr. Paul Giordano
Regional Director
Federal Emergency Management Agency
Liberty Square Building
105 South 7th Street
Philadelphia, PA 19106
ATTN: Mr. Walter Pierson

State Conservationist
Soil Conservation Service
4321 Hartwick Avenue (Rm. 522)
College Park, Maryland 20740

Elected Officials and Local Government Agencies

Honorable Paul Sarbanes
U.S. Senator
1518 Federal Office Building
31 Hopkins Plaza
Baltimore, Maryland 21201

Honorable Barbara Mikulski
U.S. Senator
Russell Senate Office Building
Suite 387
Washington, D.C. 20510

Honorable Helen Delich Bentley
U.S. House of Representatives
1610 Longworth Building
Washington, D.C. 20515

Honorable Roy P. Dyson
U.S. House of Representatives
224 Cannon House Office Building
Washington, D.C. 20515

Senator Catherine I. Riley
20 Office Street
Bel Air, Maryland 21014

Senator William H. Amoss
2303 Bel Air Road
P.O. Box 496
Fallston, Maryland 21047

Delegate William A. Clark
2523 Bradfield Avenue
Bel Air, Maryland 21014

Delegate William H. Cox, Jr.
141 North Main Street
Bel Air, Maryland 21014

Delegate Ethel Ann Murray
P.O. Box 603
Rising Sun, Maryland 21911

Delegate Eileen M. Rehrmann
103 North Main Street
Bel Air, Maryland 21014

Delegate Barbara O. Kreamer
100 Curtis Street
Aberdeen, Maryland 21001

Delegate Joseph V. Lutz
1604 Churchville Road
Bel Air, Maryland 21014

Honorable Habern W. Freeman, Jr.
County Executive
220 South Main Street
Bel Air, Maryland 21014

Honorable John W. Hardwicke
President, Harford County Council
20 West Courthouse Street
Bel Air, Maryland 21014

Mr. Harold J. Hamilton, Director
Department of Public Works
220 South Main Street
Bel Air, Maryland 21014

Mr. Robert Lynch, Director
Office of Planning and Zoning
220 South Main Street
Bel Air, Maryland 21014

Mr. David Ranney, Jr.
Superintendent
Bel Air Department of Public Works
39 Hickory Avenue
P.O. Box 151
Bel Air, Maryland 21014

Mr. Thomas F. Smith
Harford County Division of
Engineering
220 South Main Street
Bel Air, Maryland 21014

Mr. Theodore S. Mayer
Harford County Sheriff
P.O. Box 150
Bel Air, Maryland 21014

Mr. Rocko Grabriel
Harford County Fire Marshall
34 North Philadelphia Boulevard
Aberdeen, Maryland 20001

Mr. Carol L. Deibel, Director
Department of Planning
Town of Bel Air
39 Hickory Avenue
Bel Air, Maryland 21014

Mr. Thomas P. Broumel
Police Chief
Town of Bel Air
39 Hickory Avenue
Bel Air, Maryland 21014

State Agencies

Ms. Kathleen Fay
State Depository Distribution Center
Enoch Pratt Free Library
400 Cathedral Street
Baltimore, Maryland 21201

Mr. Kirk Cover
Water Resources Administration
Department of Natural Resources
Annapolis, Maryland 21401

Director, Coastal Zone Management Administration
Energy and Coastal Zone Administration
Tawes State Office Building - Section B-3
Annapolis, Maryland 21401

Maryland Department of Transportation

Director
Public Affairs
Maryland Department of Transportation

Mr. Clyde E. Pyers, Director
Division of Systems Planning
and Development
Maryland Department of Transportation

State Clearinghouse

Local Governments
Department of State Planning
Department of Natural Resources
Department of Budget and Fiscal Planning
Department of General Services
Department of Economic and Community Development
Department of Education
Department of Health and Mental Hygiene
Interagency Committee for School Construction
Maryland Environmental Trust
Maryland Historical Trust
Department of Public Safety and Correctional Services
Maryland Geological Survey

Others

Colorado State University
Document Librarian
Fort Collins, Colorado 80523

Dr. Wilfred B. Hathaway, Chairman
MD 22 Corridor Association
P.O. Box 185
Churchville, Maryland 21028

VIII. COMMENTS AND COORDINATION

VIII. COMMENTS AND COORDINATION

A. COORDINATION

In additon to correspondence with appropriate resource agencies, this project has been coordinated with representatives from the U.S. Corps of Engineers at a Wetlands Review meeting on May 20, 1987. Representatives from the Environmental Protection Agency, Maryland Department of Natural Resources and U.S. Fish and Wildlife Service were invited but were unable to attend the meeting.

B. COMMENTS

1. Combined Location/Design Public Hearing

A Combined Location/Design Public Hearing for this project was held on April 22, 1987. Mr. C. Robert Olsen, District Engineer, State Highway Administration, presided. Representatives of the State Highway Administration's Office of Planning and Preliminary Engineering described the project process and the alternatives under consideration and provided an environmental overview of the study area. Representatives of the State Highway Administration explained the right-of-way acquisition process and the relocation assistance program. Persons attending the Public Hearing were provided a copy of the "Combined Location/Design Public Hearing" brochure, which summarizes features of the alternates. The Draft Environmental Impact Statement and a public information display were available for review prior to and at the Hearing.

An official transcript was prepared of the Location/Design Public Hearing. The hearing record contains the remarks of 40 speakers, responses from the State Highway Administration and several written statements. Copies of the transcript are available for review at the State Highway Administration and at the other locations where the Final Environmental Impact Statement is on display. A summary of the remarks is as follows:

- 21 speakers supported the "No-Build" alternate for Maryland Route 22.
- 6 people spoke against the Churchville southern by-pass alternates.
- 9 people spoke in favor of a new limited access highway from Bel Air to Aberdeen similar to the old Maryland Route 23 proposals.
- 1 person supported improving Maryland Route 22 from Bel Air to Maryland Route 543.

- 1 person suggested improved public transportation to alleviate traffic problems.

- 1 person spoke in favor of a new connection to Maryland Route 155.

- Several of the speakers also made comments how the alternates under consideration directly affected their property and/or local community.

2. Written Comments

Written statements were received from 55 interested parties after the Hearing. Copies of these statements and the responses thereto by the State Highway Administration are available for review at the locations where the Final Environmental Impact Statement is on display. A summary of the statements received is as follows:

- 33 letters supported the "No-Build" alternate along Maryland Route 22.

- 5 letters suggested constructing the Alternate D connection to Maryland Route 155.

- 11 letters supported one of the Churchville southern by-pass routes.

- 7 letters opposed the southern by-pass alternates.

- 1 letter supported improving Glenville Road for a new Maryland Route 155 connection.

- 1 letter supported improving Maryland Route 22 to be a 4-lane divided highway and constructing a new connection to Maryland Route 155.

- 1 writer was in favor of improving Maryland Route 22 to be a 5-lane undivided highway and constructing the Alternate C-2 connection to Maryland Route 155.

- 1 writer supported constructing the Atlernate C-2 connection to Maryland Route 155 only.

- 4 letter contained general comments only.

3. Agency Comments

Written comments were received from the following government agencies:

- United State Department of the Interior,
  Office of Environemtnal Project Review

- United States Environmental Protection Agency

- Town of Bel Air, Harford County, Maryland

- United States Department of Agriculture,
  Soil Conservation District

- Department of the Army
  Baltimore District Corps of Engineers
  Planning Division

- Maryland Department of State Planning
  Office of State Clearinghouse

- U.S. Department of Transportation
  Federal Highway Administration
  Office of Planning and Program Development

- U.S. Department of Housing and Urban Development
  Philadelphia Regional Office, Region III

- United States Department of Commerce
  National Ocean and Atmospheric Administration
  National Marine Fisheries

- U.S. Department of Transportation
  Federal Highway Administration
  Environmental Operations Division

- Maryland Department of Natural Resources
  Water Resources Administration and
  Tidewater Administration

- Unites States Environmental Protection Agency
  (Air Quality Analysis)

- Maryland Department of Health and Mental Hygiene
  Office of Environmental Programs
  Air Management Administration

Copies of the above correspondence and responses to the comments are bound herein.

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United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
WASHINGTON, D.C. 20240

ER 87/340

JUN 2 1987

JUN 4 1 47 PM '87
PROJECT DEVELOPMENT DIVISION

Mr. Emil Elinsky
Division Administrator
Federal Highway Administration
711 West 40th Street
Suite 220
Baltimore, Maryland 21211

Dear Mr. Elinsky:

This is in response to the request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for SR-22 (Bel Air to I-95), Harford County, Maryland.

SECTION 4(f) STATEMENT COMMENTS

Of the build alternatives discussed, our evaluation concludes that the Four-Lane Divided Highway Alternate for Segments 1, 2, and 3 is the feasible and prudent alternative to the use of Section 4(f) properties. Of the three "connection alternates" for improving the Maryland Route 22/Maryland Route 155 intersection, Alternate Connection C-2, Option 1 avoids the Section 4(f) properties entirely and would have the least impact on "Prime Farmland."

With regard to measures to minimize harm, we noted a Phase II archeological study to determine site extent, degree of impact, and National Register eligibility will be performed for sites along the selected alternate and coordinated with the State Historic Preservation Officer. A letter documenting concurrence with the project planning for this aspect of cultural resources management should be incorporated into the final document.

ENVIRONMENTAL STATEMENT COMMENTS

Fish and Wildlife Resources

The impacts upon fish and wildlife species and their habitats are addressed in the document, but in a cursory manner. The summation of project impacts upon fish and wildlife resources is a truncated

statement that they are minimal or insignificant (e.g., page IV-17, second paragraph; page IV-18, fourth paragraph; and page IV-21, fourth paragraph). The proposed project is not an isolated activity, and therefore its impacts, as well as impacts from other land alteration projects, do adversely impact fish and wildlife habitats.

Section IV. D. 2.(2), page IV-16 - Due to the potential for acidic runoff from project construction, we recommend that the designed sediment and erosion control measures and stormwater management practices incorporate effective treatment to ameliorate adverse instream impacts. We will recommend incorporation of such precautionary measures when the Corps permit is reviewed.

Section IV. D. 3., pages IV-18 through IV-20 - It is our understanding that the wetland areas are inaccurately delineated in the subject document. We, therefore, request that the final document include the revised information as a result of the upcoming field review. Field reviews of the project corridor prior to formal circulation of the draft environmental document is a prerequisite to resolving potentially controversial issues and/or providing accurate information.

Section IV. D. 4., page IV-20, fifth paragraph - Although project impacts may involve only a small percentage of the available terrestrial habitat, it is the synergistic effects from all land alteration activities that result in adverse population shifts. We, therefore, suggest an expansion in the final document of the discussion concerning the relationship between habitat losses and "displaced" wildlife.

Section IV. D. 7., page IV-22 - The discussion regarding project impacts upon the aquatic resources of the various streams is seriously deficient. Considering the plight of Chesapeake Bay resources, the SHA should not dismiss its activities within these Bay tributaries as not having significant long-term effects. Activities such as increased thermal loading, increases in acidic runoff, unnecessary clearing of riparian and/or terrestrial vegetation, and wetland/floodplain encroachments cause increased long-term damages to these Bay tributaries with repercussions extending downstream to the Bay proper. We recommend revision of this discussion.

Mineral Resources

Mineral resources are not mentioned, but the geology of the area is described in the draft statement (page III-11). Industrial sand and construction sand and gravel are produced near Magnolia in the southern part of the county several miles outside the project area. We believe the proposed project would not adversely impact mineral resources and we have no objection to the proposed project. For completeness, we suggest that a statement be added to subsequent drafts of the document stating that there are no known mineral resources within the project area.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

Without completion of the scheduled field review, it is difficult for the Fish and Wildlife Service (FWS) to provide its probable comments on a Corps permit. However, the FWS does recommend selection of alternates that involve the least number of stream crossings, wetland and floodplain encroachments, and other land disturbing activities, provided the values associated with these habitats among the alternates under consideration are relatively the same. Further coordination with the FWS is strongly encouraged prior to distribution of the final environmental document.

SUMMARY COMMENTS

The Department of the Interior recommends selection of the Four-Lane Divided Highway Alternate for Segment 1, Segment 2 (Connection C-2, Option 1), and Segment 3, as they avoid Section 4(f) resources. We object at this time to Section 4(f) approval of Alternate C, Alternate C-2 (Option 2), and Alternate D of Segment 2.

As this Department has a continuing interest in this project, we are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to recreational and cultural resources, please contact the Regional Director, National Park Service, Mid-Atlantic Region, 143 South Third Street, Philadelphia, Pennsylvania 19106 (telephone FTS 597-7013, commercial 215/597-7013). For matters pertaining to fish and wildlife resources, please contact the Field Supervisor, Fish and Wildlife Service, 1825-B Virginia Street, Annapolis, Maryland 21401 (telephone FTS 922-2007, commercial 301/269-5448).

Thank you for the opportunity to provide these comments.

Sincerely,

Bruce Blanchard, Director
Environmental Project Review

cc:
Mr. J. Rodney Little, Director
Maryland Historical Trust
1517 Ritchie Highway
Arnold, Maryland 21202

Mr. Louis H. Ege, Jr., Deputy Director
Project Development Division
State Highway Administration
707 North Calvert Street, Room 310
Baltimore, Maryland 21202

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

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MARYLAND 5/18

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MAY 8 1987

Emil Elinsky, Division Administrator
Federal Highway Administration
The Rotunda - Suite 220
711 West 40th Street
Baltimore, MD 21211

Re: MD Rt. 22 from Bel Air to I-95

Dear Mr. Elinsky,

In accordance with the National Environmental Policy Act (NEPA) and the responsibilities delegated under Section 309 of the Clean Air Act, EPA has reviewed the Draft Environmental Impact Statement (DEIS) for the above referenced facility. We have found the document itself to be effectively written, clearly describing the project and its impacts. However, there remain several issues that should be addressed more thoroughly in the final document. For this reason, we have rated the project EC-1 on EPA's reference scale, a copy of which is enclosed for your reference. Our comments regarding specific topics are outlined below.

Many of our concerns are dependent upon the ultimate selection of the preferred alternate. It is EPA's strong feeling that whenever possible, improvements to a highway network should utilize existing alignments in order to minimize environmental impacts. In light of the options presented in this study, EPA recommends the selection of one of the widening options to satisfy this goal. The five lane undivided alternative in this case is preferred by EPA over the four lane divided alignment, and certainly over Alternates A and B. The implementation of the five lane option will reduce impacts to farmlands, woodlands, wetlands as well as minimize the number of stream crossings required, especially in comparison to relocation Options A and B. With regard to the Connection Alternates, C-2 offers the fewest environmental impacts.

Wetlands:

EPA is concerned over the statement on page IV-18 that "wetland reconstruction in adjacent areas outside of the highway construction limits may be provided where practicable to replace the wetlands taken." No reference is made, however, to the availability of wetland replacement sites within the construction limits. It is EPA's firm policy that all such wetlands shall be replaced on at least a 1:1 basis. The Final Environmental Impact Statement (FEIS) must offer assurances that wetlands, potentially impacted, will be avoided where possible and replaced when avoidance is not possible. Replacement shall be closely coordinated with the proper resource agencies. It should be noted that the selection of the five lane undivided option, preferred by EPA, would eliminate most of this concern.

The text also states that wetland W-6, associated with Connection Alternate C, could be avoided, but that such avoidance would lower the design speed and 'probably' result in the displacement of two residences. The FEIS should clearly state how much the design speed would be reduced and more definitively state whether any residences would be affected. The selection of Connection Alternate C-2 would avoid these problems.

Rare and Endangered Species

The DEIS refers to the MD Darter in Deer Creek as being a rare and endangered species. EPA is perplexed over the negative determinations made by the resource agencies regarding the presence of rare and endangered species when the SHA acknowledges the MD Darter in the area. The document fails to present a convincing argument on the extent of the habitat of the Darter, nor does it thoroughly document that the portion of the watershed associated with Connection Alternates C and D are not inhabited by the Darter during part of its life cycle. We therefore question the assumption that sediment from the construction of structures across tributaries to Deer Creek (Cool Branch and Mill Creek) will not affect the MD Darter.

Consequently, we feel that a more detailed discussion of this species is in order. Avoidance of Connector C, and the construction of Connector C-2, would reduce the potential impacts. But the document does not consider any viable options to Connector Alternate D to reduce the sediment loading on the streams affecting the MD Darter. Further coordination on this matter should be conducted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, which both have greater expertise in dealing with issues of this nature. EPA will defer to their judgement and support their recommendations with regard to restrictions on construction activities.

Surface Water

The DEIS refers to the continued waste loading problems that are anticipated on the Bush River as a result of the Sod Run Sewage Treatment Plant (III-17), but does not substantiate the reasons for these difficulties. The FEIS should elaborate on the problem and discuss any history of non-compliance at the plant and any corrective measures that are being taken. No mention is made of any surface runnoff that may be contributing to the problem as well.

With regard to the short term effects of the project, (IV-14) the report identifies as a potential impact, the "changes in stream flow patterns resulting from impoundments and debris." The FEIS should identify the type and size of the impoundments as well as the construction materials to be used, the method of construction, expected length of time that they will be in place and the method of removal. Furthermore, if specific sedimentation and erosion control measures cannot be identified by the time that the FEIS is published, EPA requests to be advised of the measures to be incorportated when they become known.

Groundwater

Although the report does not anticipate any impacts to ground water quality in the vicinity of the project, it does not provide any information to substantiate the claim. The FEIS should identify the wells closest to the proposed alignment and specify their current usage and yield. By doing so, the reader will be better able to understand why impacts are considered to be minimal. Included in the FEIS should also be a plan which addresses the mitigation plans for any wells that could be impacted by the project.

Sedimentation and Erosion

The DEIS refers to the possibility of moderate to severe erosion on some of the steeper slopes adjacent to streams. These impacts must be minimized through sedimentation and erosion control measures. While we are confident that the SHA will develop a satisfactory plan, the DEIS does not provide the reader the same sense of confidence. For example, on page IV-14, the report refers to measures that 'may' be incorporated. More appropriate assurances, through more convincing statements, must be given in the final document.

Floodplains

As a general statement, EPA recommends the use of bridges, rather than culverts, whenever possible. In cases where bridges prove to be impractical, culverts should have provisions for low flow conditions and should be countersunk to provide a natural stream bottom for the benthic community.

Air Quality

Refer to EPA's comments on the Air Quality Analysis Report dated February 6, 1987.

Noise

It appears as though attenuation measures may be feasible at two of the locations, NSA 15 and 27. Respective costs per residence are $33,400 and $40,300, both of which are within (or close enough to) the State's limit of $40,000 per residence for the feasibility of noise barriers. The FEIS should outline measures that could be incorporated at these receptor sites.

Thank you for providing EPA with the opportunity to comment on this document and for including us in the previous scoping efforts for the project. We look forward to working with you in the development of this highway in an environmentally sensible fashion. If we can be of further assistance, feel free to contact me at 215/597-9302.

Sincerely,

Jeffrey M. Alper, Chief
NEPA Compliance Section

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION*

Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alterne tive or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably avail able to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referrel to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Figure 4-1

Dat 4-13-87

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Director
Maryland State Clearinghouse
for Intergovernmental Assistance
301 West Preston Street
Baltimore, MD 21201-2365

APR 20 11 04 AM '87
PROJECT DEVELOPMENT DIVISION

SUBJECT: REVIEW COMMENT AND RECOMMENDATION

State Application Identifier: MD870318-0187

Applicant: DOT - State Highway Admin.

Description: DEIS/Section 4(f) Evaluation - Md. Rte. ~~23~~ 22, Bel Air to I-95

Responses must be returned to the State Clearinghouse on or before April 23, 1987.

Based on a review of the notification information provided, we have determined that:

Check One:

_____ 1) It is consistent with our plans, programs, and objectives. For those agencies which are responsible for making determinations under the following federal consistency requirements, please check the appropriate response:

_____ It has been determined that the subject has "no effect" on any known archeological or historic resources and that the requirements of Section 106 of the National Historic Preservation Act and 36 CFR 800 have been met for the subject.

_____ It has been determined that the requirements of Maryland Coastal Zone Management Program have been met for the subject in accordance with 16 USC 1456, Section 307(c)(1) and (2).

XX 2) It is generally consistent with our plans, programs, and objectives, but the qualifying comment below is submitted for consideration.

_____ 3) It raises problems concerning compatibility with our plans, programs, or objectives, or it may duplicate existing program activities, as indicated in the comment below. If a meeting with the applicant is requested, please check here _____.

_____ 4) Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here _____.

_____ 5) It does not require our comments.

COMMENTS: Sidewalks should be provided, at least on one side of Churchville Road, between Shamrock Road and Brierhill Drive. Pedestrians are currently forced to walk in a drainage ditch. This is a particular safety hazard for local high school students at Bel Air
(Additional comments may be placed on the back or on separate sheets of paper)

RECEIVED
APR 20 1987
DIRECTOR, OFFICE OF
PLANNING & PRELIMINARY ENGINEERING

Signature: Carol L Deibel

Name: Carol L. Deibel, Director of Planning

Organization: Town of Bel Air

Address: 39 Hickory Avenue, Bel Air, MD

COMMENTS CONTINUED:

High School and John Carroll High School. We urge serious consideration of this addition to the highway construction proposal.

NOTE: The Town of Bel Air strongly supports the reconstruction of Maryland Route 22. Currently the road is operating at capacity during the peak traffic hours. With the proposed development along Maryland Route 543 and the connection of the Ring Factory Road bypass, this approach to Bel Air will most likely reach a point in the very near future where traffic will come to a standstill for several hours during the day. Aside from the inconvenience associated with the congestion, the traffic situation will have a negative impact on local economic development efforts.

United States Department of Agriculture

Soil Conservation Service

4321 Hartwick Road
Room 522
College Park, MD 20740-3291

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May 4, 1987

Mr. Louis H. Ege, Jr.
Deputy Director
Project Development Division
State Highway Administration
707 N. Calvert Street
Baltimore, Maryland

Dear Mr. Ege:

The Soil Conservation Service has reviewed the Draft Environmental Impact Statement, Section 4(f) Evaluation for Maryland Route 22, Bel Air to Interstate 95, in Harford County. We offer the following comments:

Section IV, Effects on Water Resources--

Page IV-15. Please note that sediment control plans should also be reviewed by the Harford Soil Conservation District, which is located in Bel Air.

Page IV-17. The report states that construction "may" cause a temporary increase in sedimentation. It is likely that increased sedimentation will occur in connection with replacement of bridges and culverts.

Thank you for the opportunity to comment on this Environmental Impact Statement.

Sincerely,

J C Rabeau

(for) PEARLIE S. REED
State Conservationist

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

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REPLY TO ATTENTION OF
Planning Division

29 April 1987

Mr. Louis H. Ege, Jr.
Deputy Director
Project Development Division (Room 310)
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Dear Mr. Ege:

Reference Neil J. Pedersen's letter of 12 March 1987, regarding the review and comment of the Draft Environmental Impact Statement (DEIS) for Maryland Route 22 from Shamrock Road to Interstate 95. The comments provided below address the Corps of Engineers areas of concern, including direct and indirect impacts on Corps of Engineers existing and/or proposed projects, flood control hazard potentials, and permit requirements under Section 404 of the Clean Water Act.

There are no existing or proposed Corps of Engineers projects that would be affected by the work described in the DEIS.

According to the DEIS, a portion of Route 22 is located in the 100-year flood plain of Bynum Run and other headwaters of various small streams. Since the proposed facilities will require construction within the flood plain, the Final Environmental Impact Statement should document the effects on the flood plain and compliance with Federal, state, and local flood plain management regulations, as appropriate.

Federal and federally assisted activities must comply with Executive Order 11988, Flood Plain Management, dated 24 May 1977. The objectives of the Order are to avoid the adverse effects of occupying and modifying the flood plain and to avoid direct and indirect support of development in the flood plain. The Order requires that activities not be located in the flood plain unless it is the only practicable alternative. Activities which must be located in the flood plain must incorporate measures to: (1) reduce the hazard and risk associated with floods; (2) minimize the adverse effects on human health, safety, and welfare; and (3) restore and preserve the natural and beneficial values of the flood plain.

Department of the Army permits are required prior to the discharge of any dredged or fill materials into waters of the United States pursuant to Section 404 of the Clean Water Act. Army permits would be required for the 4 lane or 5 lane upgrade alternatives of Segment 1 (Bel Air to Corns Drive). This office has no recommendation on this segment since neither alternative has less a degree of impact.

Department of the Army permits are required in Segment 2 (Corns Drive to Snake Lane) for the Churchville Southern Bypass Alternate A and B, and for the Maryland Route 155 Alternate Connection C and D. This office recommends the upgrade alternatives (4 and 5 lanes) of Maryland Route 22 with alternate C-2 improvements at the Route 155 and Route 22 intersection. This action would have no impacts on streams or wetlands and is consistent with Harford County land use plans.

The proposed upgrade alternatives of Segment 3 (Snake Lane to Interstate 95) would not require Department of the Army permits since the DEIS states that no streams or wetlands will be filled. If you have questions regarding Army permits, please contact Mr. Steve Harman in the Baltimore District Permits Section, at (301) 962-4253.

If you have any other questions on this matter, feel free to call me or my action officer, Mr. Larry Lower, at (301) 962-4710.

Sincerely,

Harold A. Nelson

James F. Johnson
Chief, Planning Division

MARYLAND
DEPARTMENT OF STATE PLANNING
301 W. PRESTON STREET
BALTIMORE, MARYLAND 21201-2365

WILLIAM DONALD SCHAEFER
GOVERNOR

CONSTANCE LIEDER
SECRETARY

195 Baltimore Co.

April 30, 1987

Mr. Neil Pedersen
Office of Plan. & Prel. Engr.
State Highway Administration
707 N. Calvert Street
Baltimore, Maryland 21202

SUBJECT: REVIEW AND RECOMMENDATION

State Application Identifier: MD870318-0187

Applicant: MDOT - State Highway Administration

Description: DEIS - Section 4(f) Evaluation - MD Rte 22, Bel Air to I-95

Location: Harford County

Approving Authority: Department of Transportation

Recommendation: Endorsement Subject to Comments

Dear Mr. Pedersen:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 16.02.03, the State Clearinghouse has coordinated the intergovernmental review of the referenced subject. As a result of the review, it has been determined that the subject is consistent with Maryland's plans, programs and objectives as of this date. The State process recommendation is endorsement subject to the following:

- A State permit for construction within waters of the State may be required; and
- Compliance with Section 106 review requirements; and
- Concern was expressed regarding the impact of MD Rte 155 Alternate C-2 on an elementary school site; and
- Sidewalks should be provided on one side of Churchville Road; and
- Strong support for the subject was noted especially Segment 1.

All directly affected State and local public officials were provided notice of the subject. Review comments were requested from the following local jurisdictions and regional and State agencies:

TELEPHONE: 301-225-4490
TTY for Deaf: 301-383-7555
OFFICE OF STATE CLEARINGHOUSE

Aberdeen, Bel Air, Havre deGrace, Harford County, Regional Planning Council, Department of Education, Department of Agriculture, Department of Budget and Fiscal Planning, Department of Economic and Community Development including the Maryland Historical Trust (SHPO), Office of Environmental Programs of the Department of Health and Mental Hygiene, Department of Natural Resources including the Coastal Zone Resources Division, Department of Public Safety and Correctional Services, and the Department of State Planning.

The following specific comments are provided for your consideration:

2 In accordance with 16 U.S.C. 1456, Section 307(c)(1) and (2), the Department of Natural Resources' Tidewater Administration has determined that the subject is located within the coastal zone and is not inconsistent with the Maryland Coastal Zone Management Program. The Department noted (copy attached) that at least a portion of the subject apprears to be located in the 100 year flood plain of Bynum Run. Therefore, a State permit for construction within waters of the State is required. The applicant is strongly urged to contact DNR for more specific design requirements. Also, the Department currently has contracts for definitive flood plain analyses for several of the watersheds listed in the draft statement.

Department of Education noted (copy attached) concern regarding the impact of MD Rte 155 Alternate C-2 on the Churchville Elementary School site.

The State Historic Preservation Officer has determined that the subject may affect archaeological or historic resources listed in, or possibly eligible for the National Register of Historic Places. Section 106 of the National Historic Preservation Act and the federal Advisory Council on Historic Preservation's regulations (36 CFR Part 800) require that the Advisory Council be given the opportunity to comment when a federal undertaking will affect resources listed in or eligible for the National Register. In accordance with a 1981 suspension of Section 800.4 of the Advisory Council regulations, the time in which a "determination of effect" is made can be decreased, if the federal agency or State agency or local government to which compliance responsibility is delegated prepare and submit the requisite documentation to the Keeper of the National Register for a formal "determination of eligibility" within one year from the date the State Historic Preservation Officer and the federal agency concurred that resources are eligible for listing. If the federal agency does not agree with the opinion of the State Historic Preservation Officer, a "determination of eligibility" must be requested from the National Register before proceeding. For more Information about the requirements of Section 106 and the Council's regulations, the State agency should contact the State Historic Preservation Officer.

The Trust noted that MHT is working with the State Highway Administration to complete the Section 106 review requirements.

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Regional Planning Council noted (copy attached) that Harford County strongly supports the reference subject and feels that Segment 1 of the subject be given the highest priority. The County has not developed a final position on the alternate alignments in Segment 2.

Town of Bel Air indicated (copy attached) that sidewalks should be provided, at least on one side of Churchville Road, between Shamrock Road and Brierhill Drive. This is a particular safety hazard for local high school students.

In response to the review request, this letter with attachments constitutes the State process recommendation. The applicant is required to include a copy of this letter with attachments and a statement of consideration given to the comments and recommendation with the application that is submitted to the federal approving authority. A copy of this statement should also be submitted to the State Clearinghouse. Additionally, you are required to place the State Application Identifier (SAI) Number on the application for financial assistance.

The State Clearinghouse must be informed if the recommendation cannot be accommodated by the federal approving authority. The Clearinghouse recommendation is valid for a period of three years from the date of this letter. If the approving authority has not made a decision regarding the subject within that time period, information should be submitted to the Clearinghouse requesting a review update.

We appreciate your attention to the intergovernmental review process and look forward to continued cooperation.

Sincerely,

Guy W. Hager
Director, Maryland State Clearinghouse
for Intergovernmental Assistance

GWH/SB/jap

Attachments

cc: Bruce Gilmore (DNR)
Clyde Pyers (MDOT)
Ed Wise (DECD)
Max Eisenberg (OEP)
Daryl Rawlings (RPC)
Scrib Sheafor (DSP)
Larry Klimovitz (DSP)

Director
Maryland State Clearinghouse
for Intergovernmental Assistance
301 West Preston Street
Baltimore, MD 21201-2365

Dat 4-13-87

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DEPT. OF STATE PLANNING
RECEIVED
APR 15 1987

SUBJECT: REVIEW COMMENT AND RECOMMENDATION

State Application Identifier: MD870318-0187

Applicant: DOT - State Highway Admin.

Description: DEIS/Section 4(f) Evaluation - Md. Rte. ~~25~~ 22, Bel Air to I-95

Responses must be returned to the State Clearinghouse on or before April 23, 1987.

Based on a review of the notification information provided, we have determined that:

Check One:

_____ 1) It is consistent with our plans, programs, and objectives. For those agencies which are responsible for making determinations under the following federal consistency requirements, please check the appropriate response:

_____ It has been determined that the subject has "no effect" on any known archeological or historic resources and that the requirements of Section 106 of the National Historic Preservation Act and 36 CFR 800 have been met for the subject.

_____ It has been determined that the requirements of Maryland Coastal Zone Management Program have been met for the subject in accordance with 16 USC 1456, Section 307(c)(1) and (2).

XX 2) It is generally consistent with our plans, programs, and objectives, but the qualifying comment below is submitted for consideration.

_____ 3) It raises problems concerning compatibility with our plans, programs, or objectives, or it may duplicate existing program activities, as indicated in the comment below. If a meeting with the applicant is requested, please check here _____.

_____ 4) Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here _____.

_____ 5) It does not require our comments.

COMMENTS: Sidewalks should be provided, at least on one side of Churchville Road, between Shamrock Road and Brierhill Drive. Pedestrians are currently forced to walk in a drainage ditch. This is a particular safety hazard for local high school students at Bel Air
(Additional comments may be placed on the back or on separate sheets of paper)

Signature: Carol L. Deibel

Name: Carol L. Deibel, Director of Planning

Organization: Town of Bel Air

Address: 39 Hickory Avenue, Bel Air, MD

COMMENTS CONTINUED:

High School and John Carroll High School. We urge serious consideration of this addition to the highway construction proposal.

NOTE: The Town of Bel Air strongly supports the reconstruction of Maryland Route 22. Currently the road is operating at capacity during the peak traffic hours. With the proposed development along Maryland Route 543 and the connection of the Ring Factory Road bypass, this approach to Bel Air will most likely reach a point in the very near future where traffic will come to a standstill for several hours during the day. Aside from the inconvenience associated with the congestion, the traffic situation will have a negative impact on local economic development efforts.

Regional Planning Council
2225 North Charles Street Baltimore, Maryland 21218-5767 (301) 554-5600
George F. Harrison, Jr., *Chairman* Alfred P. Gwynn, *Executive Director*

April 10, 1987

Mr. Guy W. Hager, Director
Maryland State Clearinghouse
for Intergovernmental Assistance
Department of State Planning
301 West Preston Street
Baltimore, Maryland 21202

Re: Metropolitan Clearinghouse Review and Referral Memorandum, Project: 0187-87040 DEIS/Sec. 4 (f) Evaluation - MD Rt. 22, Bel Air to I-95

State Clearinghouse #: 870318-0187

Dear Mr. Hager:

The attached review and referral memorandum is certification that the above referenced project has undergone review and comment by the Regional Planning Council and a recommended action has been determined based on the Council's findings.

Comments on this project were requested from: Harford County.

We appreciate your attention to Metropolitan Clearinghouse procedures. If you have any questions, please contact us at 554-5609.

Sincerely,

Daryl L. Rawlings, Coordinator
Metropolitan Clearinghouse

Attachment

REGIONAL PLANNING COUNCIL
2225 North Charles Street
Baltimore, Maryland 21218

RPC Meeting: 04/10/87

HARFORD COUNTY

Project: 0187-87040

DEIS/Sec. 4(f) Evaluation - MD Route 22, Bel Air to I-95. The Maryland Department of Transportation is preparing to evaluate MD Route 22 from Bel Air to I-95. Action to be taken consists of:

1. Roadway improvements to relieve traffic congestion;
2. Improving highway safety;
3. Reconstruction of existing road; and
4. Other related highway improvements.

Referral Source: Department of State Planning

COMMENTS

This project is consistent with regional plans, programs, and policies.

Harford County strongly supports this project and feels that Segment 1 of the project should be given the highest priority. The county has not developed a final position on the alternate alignments in Segment 2.

The Transportation Steering Committee will give their comments to the Council at the meeting.

Recommendation: Endorsement with comments.

I HEREBY CERTIFY that at its 267th meeting, which was held on April 10, 1987, the Regional Planning Council concurred in this Review and Referral Memorandum and incorporated it into the minutes of that meeting.

4/10/87
DATE

Alfred P. Gwynn
Executive Director

202

FROM: Mr. William Carroll, Director
Department of Planning
[redacted]oning
4[redacted] Main Street
B[redacted], Maryland 21014

DATE: March 20, 1987

RPC MEETING: April 10, 1987

☐ Joint RPC/CMHSA Review Cycle (up to 60 days)

RE: REFERRAL COORDINATOR REVIEW SUMMARY

Project: DEIS/Sec. 4(f) Evaluation - MD Rt. 22, Bel Air to I-95

R & R File Number: 0187-87040 (St. ID #: 870318-0187)

Comments should be return by: 3/31/87

This project has been forwarded to the following local departments or agencies (check appropriate blanks and attach comments from the reviewing agencies):

X Planning
___ Environmental Protection
___ Others (Specify) Dept. of Planning & Zoning

___ Public Works
___ Human Relations

JURISDICTION'S COMMENTS

Check One

___ This jurisdiction has no comments on this proposal.

___ This project is consistent with or contributes to the fulfillment of local comprehensive plans, goals, and objectives.

___ This project raises problems concerning compatibility with local plans, or intergovernmental, environmental, or civil rights issues, and a meeting with the applicant is requested.

___ This project raises problems concerning compatibility with local plans, or intergovernmental, environmental, or civil rights issues; however, a meeting with the applicant is not requested.

X This project is generally consistent with local plans, but qualifying comments are necessary (attach comments).

RETURN TO:

Coordinator, Metropolitan Clearinghouse
Regional Planning Council
2225 North Charles Street
Baltimore, Maryland 21218

Signature: [signature]

Title: Director

Agency: Dept. of Planning and Zoning
Harford County Government

Date: March 31, 1987

203

TO: Mr. William Carroll, Director
Department of Planning
and Zoning
45 South Main Street
Bel Air, Maryland 21014

Date: March 20, 1987

RE: PROJECT REVIEW FORM

Project: DEIS/Sec. 4(f) Evaluation -MD Rt. 22, Bel Air to I-95

R & R File Number: 0187-87040 (St. ID #: 870318-0187)

Comments should be returned by: 3/31/87

Check One

___This agency has no comments on this proposal.

___This project is consistent with or contributes to the fulfillment of local comprehensive plans, goals, and objectives.

___This project raises issues concerning compatibility with local plans or intergovernmental problems, and a meeting with the applicant is requested. (Explain below.)

___This project raises issues concerning compatibility with local plans or intergovernmental problems; however, a meeting with the applicant is not requested. (Explain below.)

✓ This project is generally consistent with local plans, but qualifying comments are necessary. (Explain below.)

Comments A formal position by the County on the preferred alternative has not been formulated at this time. It may be appropriate to mention that we are in general agreement with the alternatives presented, in particular, the section of Rt 22 from Bel Air to Churchville area. A formal statement from the County will be presented at the public hearing on April 22, 1987.

RETURN TO LOCAL REFERRAL COORDINATOR NAMED ABOVE

Signature [signature]

Title Transp. Planner

Agency PAZ

The County strongly supports this project and feels that Segment 1 of the project should be given the highest priority. The County has not developed a final position on the alternate alignments in Segment 2.

Memorandum

U.S. Department of Transportation
Federal Highway Administration

MARYLAND
5/27
D A
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MC&BS
ALL
ACTION

Subject: Maryland Draft EIS and Section 4(f)
Maryland Route 22 from BelAir to I-95
FHWA-MD-EIS-87-01-D

Date: May 26, 1987

From: Director, Office of Planning and Program Development
Baltimore, Maryland

Reply to Attn. of: HPP-03.3

To: Mr. Emil Elinsky
Division Administrator
Baltimore, Maryland

We have reviewed the subject draft and offer the following for your consideration in developing the final document.

The Purpose and Need section does not make a convincing case for this project. Paragraph 3 under Section II-B is an excellent observation and would strengthen the needs discussion. A discussion of Harford County's request (pI-3) to examine a southern bypass for Churchville should be included. A discussion on any planned growth for Aberdeen Proving Grounds (p III-1) could also strengthen the needs section.

The eastern terminus of this proposed project lies within the Maryland Coastal Zone Management Program Area of Focus for Harford County. The FEIS should include evidence of coordination with the appropriate Coastal Zone agency as well as a Coastal Zone consistency determination.

As indicated in the Technical Advisory T6640.8 (p.20), the archeological discussion on p.iv-13 should describe the resources and summarize the impacts that each alternative will have on those resources potentially eligible for the National Register. Without such a discussion in the FEIS, it can't be demonstrated that archeological issues were considered during the identification of a selected alternative.

The wetlands discussion in the FEIS should include information on the importance of these wetlands and the significance of the impact on the wetlands. Table IV-1 should be expanded to include the size of the existing wetlands.

As discussed in the draft EIS, all alternates to all proposed actions reasonably satisfy the need for the project. If an alternate alignment is chosen that takes Section 4(f) property, supporting documentation in the FEIS must demonstrate that those alternates not using Section 4(f) resources are not feasible and prudent. When different Section 4(f) properties are involved with different alternatives, a balancing test, including mitigation must be applied.

Attached are additional minor comments.

Robert E. Gatz

Attachment

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FHWA-MD-EIS-87-01-D

Minor Comments

Title Page	Eliminate the word "supplemental" in the abstract.
page S - 6	Remove the word "significant".
page S - 7	If an individual Section 404 permit is needed, the Corps of Engineers should be requested to be a cooperating agency.
page iv - 31	The discussion on noise mitigation should be expanded to reflect that mitigation measures must be considered when traffic noise levels approach or exceed the Federal Noise Abatement Criteria (see also pp iv-42 and iv-44). Also, mitigation for noise impacts during construction should indicate not what can be done, but what will be done.
p iv-47	The FEIS should support the conclusion that economically feasible noise mitigation would prove visually undesirable and restrictive.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Management Division
Habitat Conservation Branch
Oxford, Maryland 21654

208

April 30, 1987

Mr. Louis H. Ege, Jr.
Deputy Director
Project Development Division
State Highway Administration
707 North Calvert Street, Room 310
Baltimore, Maryland 21202

Dear Mr. Ege:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement addressing the proposed reconstruction and relocation of Maryland Route 22. We find that the proposed project will not adversely affect resources or habitats for which NMFS bears statutory authority.

Several of the streams that would be affected by the project have been documented as providing anadromous (e.g., Alosa spp.) and semi-anadromous (e.g., Perca flavescens) habitat.[1] Each of the streams, however, has numerous blockages which prevent migration upstream to the proposed crossings. Additionally, NMFS finds that the proposed stream and wetland alterations will not significantly degrade water quality or reduce inflows that could adversely affect downstream fishery resources and their habitats.

Please keep our agency informed of any revisions to this project proposal.

Sincerely,

Edward W. Christoffers

Edward W. Christoffers, Ph.D.
Asst. Branch Chief

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[1] O'Dell, J. 1975. Survey of Anadromous Fish Spawning Areas. Potomac River Drainage. Upper Chesapeake Bay Drainage. Completion Project AFC-8. 184 pp + appendices.

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U.S Department of Transportation
Federal Highway Administration

Memorandum

RECEIVED
MAY 11 1987

Subject: Draft Environmental Impact Statement
Section 4(f) Evaluation - Maryland Route 22
Harford County - FHWA-MD-EIS-87-01-D

Date: APR 21 1987

From: Chief, Environmental Operations Division
Washington, D.C. 20590

Reply to Attn of: HEV-11

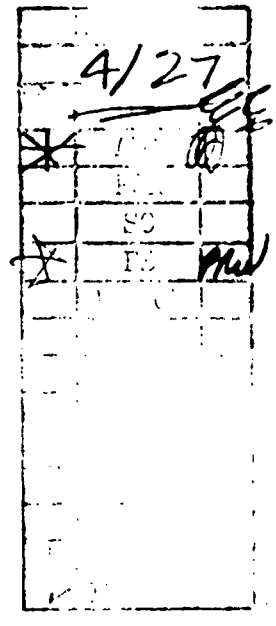
To: Mr. George R. Turner, Jr.
Regional Federal Highway Administrator (HRA-03)
Baltimore, Maryland

Attached is a copy of the comments on the subject draft environmental impact statement from the Secretary's Environmental Division (P-14). The comments are being sent directly to the Division Office and should be included in the final environmental impact statement.

For Eugene W. Cleckley

Attachment

cc: HDA-MD ✓



U.S. Department of Transportation
Office of the Secretary of Transportation

Memorandum

D10

MAY 11 1987

THE [illegible] CO.

BY

Subject: Draft Environmental Impact Statement
Section 4(f) Evaluation
MARYLAND - Hardford County, Route 22
FHWA-MD-EIS-87-01-D

Date: APR 14 1987

From: Donald Trilling
Deputy Director, Office of Transportation Regulatory Affairs

Reply to Attn. of:

To: Eugene W. Cleckley, Chief
Environmental Operations Division, HEV-11

We have reviewed the subject DEIS and have the following comment:

Truck turn-arounds are shown on Figure No. II-4A and Figure No. II-5A. The Final EIS should discuss the need for truck turn-arounds, and their effect on traffic flow and safety.

We appreciate the opportunity to review this DEIS.

TORREY C. BROWN, M.D.
SECRETARY

JOHN R. GRIFFIN
DEPUTY SECRETARY

JAMES W. PECK
DIRECTOR

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

April 28, 1987

Mr. Louis H. Ege, Jr.
Deputy Director
Project Development Division
Room 310
State Highway Administration
707 North Calvert Street
Baltimore, MD 21202

Re: WRA No. 86-PP-0254
SHA No. H-656-000-471
Draft Environmental Impact Statement/Section 4(f) Evaluation for MD 22 from Shamrock Road to I-95 (including Churchville Bypass)

Dear Mr. Ege:

The Draft Environmental Impact Statement for the above referenced project has received necessary review by the Water Resources Administration, and the Tidewater Administration's Fisheries and Coastal Resources Divisions. The Capital Programs Administration and the Forest, Park and Wildlife Service were also provided with a copy of the subject document for their review and comments.

The Water Resources Administration is offering the following comment:

1. In accordance with Natural Resources Article, §8-803 Annocated Code of Maryland and the Rules and Regulations Governing Construction in Non-Tidal Waters and Floodplains (08.05.03.01 - 08.05.03.13), Waterway Construction Permit(s) must be obtained for any changes that would occur to the course, current, or cross-section of any stream or its associated 100-year floodplain limits as a result of the proposed project. More specifically, the replacement of existing structures and/or installation of new culverts or other structures for the new stream crossings which will impact Bynum Run, James Run, Cool Branch Run, Mill Brook, Deer Creek tributaries and Carsins Run require Permits. For limited drainage areas, you may not require any Waterway Permits from this Administration in accordance with COMAR 08.05.03.

Telephone: (301) 974-2265
TTY FOR DEAF-BALTIMORE 269-2609 WASHINGTON METRO 565-0450

2. In accordance with Section 8-1105 and 8-11A-05 of the Natural Resources Article, Annotated Code of Maryland, the project will require approval relative to sediment and erosion control and stormwater management requirements.

3. The Administration recommends the least impacted alternative to be considered in the selection of the final alternate.

4. The Flood Management Division of this Administration currently has contracts for definitive floodplain analyses for several of the watersheds as listed on page III-13 of the subject DEIS. The models will be available to the State Highway Administration for baseline use. In particular, MD 22 at Bynum Run has been modeled by using the Corps of Engineers HEC-II Computer Model (cross-sections 517 and 518). The backwater 100-year water surface elevation is 266'± NGVD. Furthermore, a bath house and pool are located in the 100-year floodplain approximately 700' downstream of the crossing.

Enclosed please find a copy of comments on the referenced DEIS from the Fisheries and Coastal Resources Divisions of the Tidewater Administration.

Thank you for the opportunity to comment on your project.

Sincerely,

Stan Wong

Stan Wong
Chief, Waterway Permits Division

SW:MQT:das

Enclosures

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TORREY C. BROWN, M.D.
SECRETARY

JOHN R. GRIFFIN
DEPUTY SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
TIDEWATER ADMINISTRATION
TAWES STATE OFFICE BUILDING
ANNAPOLIS 21401

April 23, 1987

MEMORANDUM

TO: M.Q. Taherian
Waterway Permits Division, WRA

FROM: W.P. Jensen, Director
Fisheries Division

SUBJECT: DEIS for Maryland Route 22, Bel Air to Interstate 95.

We have reviewed the Draft Environmental Impact Statement supplied by State Highway Administration. It contains information for the upgrading of Maryland Rte. 22 between Bel Air and I-95, Harford County. The project area will affect wetlands and channels of several Class I, III and IV streams.

Our critique of this Draft EIS is contained within the body of the following narrative. If you have any questions concerning this review, please contact Mary Ellen Dore, Ext. 3061.

P. III - 8 b. Future Land Use

It is stated that the area between Bel Air and MD. Rte. 543 has been zoned for moderate to high density residential development. Existing congestion will be alleviated by the improved transit corridor. However, by improving the roads, increased residential and commercial growth will be encouraged, thereby congesting the transit corridor; encouraging the conversion of agricultural land and open space to impervious surfaces.

P. III - 17 Aquatic Ecology

In this segment the authors discuss the eutrophication problems within the estuarine sections of the Bush River watershed. The reference to problems within Romney Creek are immaterial to the discussion of aquatic ecology within the project area as Romney Creek is a tidal estuarine water body. The project area impacts the wetlands and headwater portions of several freshwater non-tidal streams. The improved widened roadway will increase:

1) impervious surfaces directly, therby contributing more runoff to adjacent wetlands and watercourses. Less unpaved surface will be available between the road and the wetlands/waterways through which runoff can percolate and/or filter pollutants.

2) or accelerated development within the MD Rte. 22 corridor. Other sections of this report state that zoning within Bel Air will permit moderate to high density development (p. III - 8). These developments, such as Tudor Manor, Fountain Glen, Southampton (to name a few) have contributed to the deforestation of acres of forested land within the Bynum Run watershed. Chemical pollutants from petrochemicals (oil, grease, etc.) and lawn chemicals (fertilizers, pesticides, herbicides, etc.) enter the waterways in runoff. Appendix I contains a more thorough discussion of the amounts and effects of these chemical pollutants on stream ecology.

There are a number of streams which will be affected directly by this project. Time of year restrictions will be imposed upon construction activities within streams and floodplains, depending upon the State classification of the stream.

P. IV - 18 Effects on Wetlands

Alternates B would have the least impacts on wetlands W - 3 and W - 4. Alternate C - 2 would avoid impacts to Cool Branch (W - 6).

There appears to be more to Mill Brook (W - 7) then indicated in the DEIS. The area affected includes two tributaries of Mill Brook and possibly the MD Rte. 155 crossing over Mill Brook. These wetlands need to be investigated further and included in the Final Environmental Impact Statement.

Segment 3 construction proposes to use Carsins Run as a storm water management area. This will affect the wetlands within the Carsins Run drainage. These wetlands need to be included in the overall total for wetlands impact, and impacts must be minimized.

cc: Y.G. Gopenko, WRA

WPJ/MED/cp

Maryland Department of Natural Resources

Tidewater Administration
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

William Donald Schaefer
Governor

Torrey C. Brown, M.D.
Secretary

215

April 24, 1987

MEMORANDUM:

TO: M. Q. Taharian, Water Resources Administration

VIA: Elder Ghigiarelli, Jr., Coastal Resources Division

FROM: Mike Slattery, Coastal Resources Division

SUBJECT: Draft Environmental Impact Statement/Section 4(f) Evaluation, Maryland Route 22, Shamrock Road to I-95.

This is in response to your memorandum dated March 24, 1987 requesting comments subsequent to our review of the Draft Environmental Impact Statement (DEIS). Having reviewed the document, the Coastal Resources Division has the following comments to offer:

1. Based on topographic contours and intermittent waterways indicated on U.S.G.S. Quad maps, we believe that the wetlands acreages provided in the document may be incorrect. We would appreciate documentation of field verification of wetland boundaries by the appropriate environmental review agencies.

2. Treatment of the ecology of the affected area is inadequate and misleading. Specifically, the statement is made on page III-18 that, "Streams in the project corridor are too small to support viable fisheries." There is no substantiation of this statement contained in the DEIS. Also, no consideration is given to the ecosystem maintenance values of the floral, faunal, and microfaunal communities associated with these headwater areas. The viable fisheries to which reference is made are extremely dependent upon such communities.

An attempt is made to treat aquatic ecology on page III-17. Much emphasis is placed on detrimental impacts that have already been sustained by the resource apparently in an effort to downplay projected impacts associated with MD Route 22. The conditions represented here do not justify further adverse impacts. Furthermore, statements such as, "Tidal marshes in the estuary show no evidence of decline in productvity at this time," and, "declines in benthic diversity and number have resulted from reductions in overall water quality" lack substantiation in the document.

We request that quantitative substantiation for ecological assertions be included in the Final Environmental Impact Statement (FEIS).

Telephone: (301) 974-2784
DNR TTY for Deaf: 301-974-3683

We request that the ecosystem maintenance functions of headwater area communities be examined and that this information be included in the FEIS as well. It may be necessary to bridge streams in areas of high ecosystem maintenance importance.

3. Certain statements made regarding water quality require revision or clarification.

On page IV-16 it is stated that, "stormwater management practices such as vegetated swales and retention and detention ponds will tend to filter out the pollutants and decrease their concentrations." This is misleading in that it cannotes a decrease in nutrient and pollutant loadings from existing levels. These stormwater management strategies only serve to minimize increases in loadings.

The statement is made on page IV-17 that"...no significant long term impacts on surface waters are anticipated." It is impossible to make such a determination without first assessing impacts to floral and faunal communities in headwater areas. Increases in light penetration and water temperature that might result from the proposed construction activity could alter the trophic structure of these areas drastically, thus causing long term, adverse impacts to surface waters and consequently, downstream aquatic resources. It is also stated that, "A temporary increase in the sediment content of Cool Branch or Mill Creek would settle out before reaching Deer Creek which is located approximtely three miles downstream. "Substantiation of this statement is particularly important to alleviate concerns related to the Maryland Darter.

4. With regard to rare and endangered species, it is stated that "no known population of threatened, rare, or endagnered species" were revealed "within the area of project influence" on page IV-19. (While the right of way of the chosen alignment may not cross Deer Creek, this waterway which is inhabited by the Maryland Darter, is by no means outside the area of project influence). It is important that information as to how the limits of the area of project influence were determined to be included in the FEIS.

5. Projects, such as the MD. Route 22 project, are evaluated only in terms of the immediate impacts with which they are associated. Cumulative impacts sustained by the natural environment extend beyond the construction limits of the project. There are also a number of development projects proximal to these watersheds which share similar impacts. A more comprehensive approach to assessing impacts associated with such work would more adequately address the concerns and efforts associated with the Chesapeake Bay Initiatives. More specifically, we are concerned about the downstream impacts to water quality and aquatic resources both on short term and long term scales.

EG/MS/dcw

cc: Johanthan McKnight, NHP/FPW

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

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FEB 11 2 49 PM '87

PROJECT DEVELOPMENT DIVISION

FEB 6 1987

Cynthia D. Simpson, Chief
Environmental Management
Project Development Division (Rm. 310)
MD State Highway Administration
707 North Calvert Street
Baltimore, MD. 21202

Re: MD Route 22, Shamrock Rd. to Interstate 95
Air Quality Analysis

Dear Ms. Simpson,

In accordance with the responsibilities delegated to EPA under Section 309 of the Clean Air Act and the National Environmental Policy Act, EPA Region III has reviewed the above referenced document. We are satisfied with the approach outlined for analyzing the air quality impacts of the project and offer no objections to completing this portion of the environmental study. Please note, however, that this analysis incorporated EPA's MOBILE 1 computer program for calculating emission factors, rather than MOBILE 3. We have cited this deficiency in numerous air quality analyses in the past and wish to be advised as to when the SHA intends to update their methodology.

Thank you for including EPA in the coordination process. Should you have any questions, or if we can be of additional assistance, please contact Jeffrey Alper at 215/597-7817.

Sincerely,

Barbara D'Angelo

Barbara D' Angelo, Acting Chief
NEPA Compliance Section

870305
1.5.0.1

218

State of Maryland

OFFICE OF ENVIRONMENTAL PROGRAMS
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • AREA CODE 301 • [redacted] 225-5275

TTY FOR DEAF: Balto. Area 383-7555
D.C. Metro 565-0451

Adele Wilzack, R.N., M.S., Secretary

William M. Eichbaum, Assistant Secretary

March 5, 1987

MAR 9 2 21 PM '87
PROJECT DEVELOPMENT DIVISION

Ms. Cynthia D. Simpson, Chief
Environmental Management
Project Development Division
707 North Calvert Street, Room 310
Baltimore, Maryland 21202

RE: Maryland Route 22
Shamrock Rd. to I95
Contract No. H 656-000-471

Dear Ms. Simpson:

I have reviewed the air impact analysis performed for the proposed improvements of Maryland Route 22 from Shamrock Road to Interstate Route 95, including the Churchville Bypass, and concur with its conclusions.

Given the expected increase in traffic predicted for the region, the Department believes that any build alternate will yield the best air quality for the area.

The proposed project is consistent with the transportation control portion of the State Implementation Plan for the Metropolitan Baltimore Intrastate Air Quality Control Region. Furthermore, adherence with the provisions of COMAR 10.18.06.03D will ensure that the impact from the construction phase of this project will be minimal.

Thank you for the opportunity to review this analysis.

Sincerely,

Mario Jorquera

Mario E. Jorquera
Division of Air Quality Planning
and Data Systems
Air Management Administration

MJ:dsd

The Maryland Historical Trust
Shaw House, 21 State Circle, Annapolis, Maryland 21401
301: 267-1212 or 301: 267-1438

29

November 14, 1975

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

Dear Mr. Camponeschi:

Thank you for your letter of November 6, 1975, concerning Contract No. H 656-000-471 (Md. Rt. 22 from Shamrock Rd. to Churchville By-pass). According to the Trust's historic survey records, there are three properties near the study area: Tudor Hall (#117), Hays-Heighe House (#152), and the Harlan-Baxter farmhouse (#365). Their locations are shown on the enclosed map. Two of these houses, Tudor Hall and the Hays-Heighe House, are listed on the National Register. I have enclosed descriptions of both.

If you need additional information, please contact me again.

Sincerely,

George J. Andreve

George J. Andreve
Architectural Historian

GJA:sh
Enclosures: 2 nomination forms
1 map
cc: Mrs. Frederick Viele, w/encl.
Mr. James Wollon, Jr., w/encl.

✓

2

2 ✓

Md.22

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The Maryland Historical Trust
Shaw House, 21 State Circle, Annapolis, Maryland 21401
301: 267-1212 or 301: 267-1438

November 28, 1975

Ms. Margaret Ballard
Environmental Evaluation
Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

RE: Maryland Route 22 from
Shamrock Road to
Churchville By-pass
H 656-000-471

Dear Ms. Ballard:

Thank you for informing me that the enclosures related to the project listed above were not included in my letter of November 14 to Mr. Camponeschi.

Since that time I have received additional information from Mr. James Wollon, Jr., Architect. In addition to the two National Register properties there is a two-room school opposite Tudor Hall. This has been converted into a dwelling. The Dibb House is two lots west of the school and is a nice example of the late nineteenth century Queen Anne style. In it is one of the few working Latrobe stoves. The Harlan-Baxter farmhouse (#365 in my previous letter) burned about five years ago.

Thank you for your consideration of these properties.

Sincerely,

George J. Andreve
Architectural Historian

GJA:sh
cc: Mrs. Frederick Viele, w/encls.
Mr. James Wollon, Jr., w/encls.

Maryland Historical Trust

October 28, 1981

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

106-104

Re: MD 22 - Tudor Hall
National Register Site Boundary

Dear Mr. Schneider:

Attached are a revised National Register nomination form and boundary map for the proposed boundary change of Tudor Hall, the National Register property near Maryland 22 between Bel Air and Churchville. Photographs and slides of the Tudor Hall area, including buildings in the areas proposed for removal from the site boundary, are also attached. This material should be forwarded to the Maryland Historical Trust with a letter requesting the boundary change.

As instructed by the interim National Register procedural guidelines, the proposed boundary change has been documented as a new National Register nomination, using the information from the previous National Register form with a few updates in format and information as necessary. The new regulations, when adopted, will require the notification of all property owners within the present site boundary. A list of property owners has been compiled and is available for the use of the Maryland Historical Trust, which is responsible for the notifications.

I suggest that SHA consider a full field survey of the area of the proposed improvements to MD 22 in order to identify any further sites not previously reported. One such site to be identified is the original log house owned by the Booth family prior to the construction of Tudor Hall. This house is near the corner of Prospect Mill Road and Churchville Road.

Yours truly,

Janet L. Davis

Janet L. Davis
Historic Sites Surveyor

JLD/mf
cc: Mr. George Andreve/Mr. Guy Hager
Mr. Richard S. Krolak/Mrs. Rita Suffness
Mr. Ronald Andrews
Attachments

Ken Evans (w/attach) 11/20/81

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

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Maryland Historical Trust

November 17, 1981

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Re: MD 22, East of Shamrock Road to 0.8 miles
west of Churchville
Contract No.: H 656-000-471

Dear Mr. Schneider:

At SHA's request, historic site boundaries for five sites in the Churchville By-Pass project area were drawn as shown on SHA's large-scale project maps. The sites are:

Homelands	(HA-139)
Churchville Presbyterian Church	(HA-441)
Asbury Methodist Episcopal Church	(HA-1267)
Coale's Store	(HA-1274)
Bodt-King House	(HA-1276)

All have been assessed as potentially eligible for the National Register.

Yours truly,

Janet L. Davis

Janet L. Davis
Historic Sites Surveyor

JLD/mf

cc: Mr. George J. Andreve
Mr. Louis Ege
Mrs. Rita Suffness
Mr. Guy Hager
KEN EVANS w 200 scale map 11/20/81

Attachment

Enclosure E

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Maryland Historical Trust

December 17, 1981

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

Re: MD 22, East of Shamrock Road to 0.8 miles west of Churchville, Keithley-Bodt House (Bodt-King House) - HA-1276
Contract No.: H656-000-471

Dear Mr. Schneider;

After further research and field observation, the Bodt-King House (HA-1276) has been reassessed as being of MHTI significance. The research has shown that a more correct name for the house, reflective of its original owner, is the Keithley-Bodt House. The additional information will be added to the inventory form and the site name changed as above.

Sincerely yours,

Janet L. Davis

Janet L. Davis
Historic Sites Surveyor

JLD/mf

cc: Mr. George J. Andreve
Mr. Louis Ege
Mr. Guy W. Hager
Ms. Rita Suffness

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

Harford Soil Conservation District
105 S. Hickory Avenue · Bel Air, Maryland 21014 · Telephone (301) 838-6181

September 21, 1982

Maryland State Highway Administration
Offices of Preliminary Engineering
707 N. Calvert Street
Baltimore, Maryland 21202

0100-104.50
100-104

Attention: Mr. Jim Helm
Project Engineer

Dear Mr. Helm:

The Harford County Department of Planning and Zoning has been kind enough to provide us with a copy of the draft environmental assessment prepared by Yule, Jordan Associates on MD Route 22. In reviewing the draft report, we find that a conclusion has been drawn which has no support. On Page 32, the report states, "The amount of farmland lost, and any reduction in farming operations which occur within the affected farms, will have an insignificant-long-term impact on both the farmland resource and agricultural economy of Harford County."

In our comments to the consultant regarding farmland impact, dated June 3, we did not draw a conclusion on this subject. The acreage of prime farmland, additional farmland of statewide importance, etc., do not necessarily have a direct relationship to farm productivity. Admittedly, prime farmland is potentially more productive, but does not in itself make a productive farm. We felt in June and still feel that the only way a legitimate conclusion can be reached on the effects of the various alternatives on farming enterprises, is to talk to the people whose properties will be affected. We strongly recommend that the farmers be contacted, either individually, or as a group, and requested to react to the various possibilities. The results of these contacts may then be used to justify any conclusions that are drawn.

We were not consulted regarding possible improvements to existing Route 22, west of Churchville. However, the plans for widening the road may very well impact the Prospect Mill, Walter G. Coale, Inc., and others. Are these businesses aware of the possibilities?

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Maryland Historical Trust

May 10, 1982

Mr. William F. Schneider, Jr.
Chief, Bureau of Project Planning
State Highway Administration
300 West Preston Street
Baltimore, Maryland 21201

RE: Md. Rt. 22 from Bel Air to I-95
Contract No. H656-000-471

Dear Mr. Schneider:

Thank you for your letter of April 15, 1982, regarding the project listed above. We agree that the Coale Store would not be eligible for the National Register and that the following would be eligible:

1. Homelands with the boundary drawn by Janet Davis (see attached map);

2. Churchville Presbyterian Church (boundary shown on attached map coincides with the wall); and,

3. Stier House (boundary described on separate page).

MAY 13 PM 1982

In addition, within the project's potential area of impact, we believe that Holy Trinity Episcopal Church would be eligible for the Register. Attached is our survey form for the Church and a map showing the proposed boundary. If you have questions, please call George Andreve at 269-2438.

Sincerely,

Mark R. Edwards

Mark R. Edwards
Deputy State Historic
Preservation Officer

MRK:GJA:mms
Enclosures
cc: Amy Schlagel
Audrey Delano
Ellen Coxe
James Wollon, Jr.
George Andreve

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

Harford Soil Conservation District
105 S. Hickory Avenue · Bel Air, Maryland 21014 · Telephone (301) 838-6181

In conclusion, we appreciate being requested to comment on the various alternatives. However, we do feel that the farmers must be given the opportunity to express their concerns.

Sincerely,

Eric V. Herman
District Conservationist

John L. Richardson
District Manager

cc: Bob Lynch
Planning & Zoning

Ken Evans, WTP
John Galbraith YJA

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1982 OCT 20 PM 2 26

STATE HIGHWAY ADMINISTRATION
PROJECT PLANNING

October 19, 1982

Mr. William E. Schneider, Jr.
Bureau of Project Planning
State Highway Administration
Maryland Department of Transportation
707 North Calvert Street
Baltimore, MD 21202

Re: Archeological Reconnaissance of Maryland Route 22 from Asbury Road to Bodt Corner, Harford County, Maryland. Dennis Curry.

Dear Mr. Schneider:

Thank you for sending for our review two copies of Dennis Curry's report on the project referred to above. Approximately 50% of the corridor was surveyed under varying survey conditions resulting in the location of a prehistoric and a historic site and three potential site areas. The report depicts the areas examined and the collecting conditions encountered. Before saying that additional survey is not needed, the report should evaluate the potential of sites in the areas not examined and in the areas with poor surface visibility. At the present time, the report fails to do this. Such assessment of site potential in areas not examined should be standard parts of any reconnaissance report.

I have discussed the reported resources of site 18 HA 150 and Area 1 with J. Rodney Little who concurs that, in his opinion, the site does not warrant placement on the National Register of Historic Places due to the dispersed nature of the remains and the marginal value of the remains to contribute to research issues in the state. The historic site 18 HA 149 and the potential historic site areas 2 and 3 may be eligible for nomination to the National Register, but insufficient data is provided to make such a determination. Therefore, when more specific route locations are designed, the effect of the project

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

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on these sites should be determined. If the sites will be affected, then additional work will be required as recommended in the Curry report, the nature of such work to be resolved through discussions with the Trust and the Division of Archeology.

I will be happy to answer any questions about this review that you have. We look forward to receiving the expanded information on site potential in the unsurveyed portions of the property.

Sincerely,

Wayne E. Clark

Wayne E. Clark
State Administrator
of Archeology

WEC/mls

cc: Mr. Tyler Bastian
Mr. Dennis Curry
Ms. Rita Suffness
Mr. Paul Cresthull
Mrs. Raymond Delano
Ms. Pam Caldwell

Maryland Historical Trust

February 8, 1983

Mr. Louis H. Ege, Jr., Chief
Environmental Management
State Highway Administration
P.O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

Re: Md. 22 from Bel Air to I-95
H-656-000-471
F.A.P. No. RF 902-1 (22)

Dear Mr. Ege:

Thank you for your letter of August 4, 1982, regarding historic properties within the area of impact of the project listed above. We believe that widening Rt. 22 on the north side will have no adverse effect on Tudor Hall since the boundary has been revised as shown on the attached map. There would also be no adverse effect on the Steier House or the Dibb House. We concur with your determination of no effect for the Hays-Deighe House since it is not within the impact area. In order to complete the Section 106 review for this segment, SHA must request determinations of eligibility for the Steier House and the Dibb House. The Advisory Council's comments must be requested regarding all determinations of no adverse effect.

In regard to the Churchville by-pass segment of this project, we believe the National Register boundary for Homelands should remain as drawn by Janet Davis. It includes the main house, the outbuildings and the surrounding pasture and is shown on the attached map. This boundary should be retained because:

1. Homelands has been the area's principal working farm since it was settled early in the nineteenth century. It remains a working farm, and the surrounding acreage was and is an integral part of the operation.

2. Situated on a knoll facing south, the house has historically had a visual link to Churchville which was built on a portion of the original tract. Churchville was known for a time as Herbert's Crossroads after Homelands' first owner, John Herbert.

3. The existing roads on the south, west and east sides, which Janet used for boundaries, visually and physically separate the historic farm from the surrounding areas.

Four alternates are being considered for the Churchville by-pass segment of the project. For them, we have made the following determinations of effect:

Alternate A-2

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Trinity Episcopal Church
No adverse effect on Asbury A.M.E. Church

Alternate C

Adverse effect on Homelands
No Adverse effect on Churchville Presbyterian Church
No Adverse effect on Trinty Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Alternate C-2

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Trinty Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Alternate C-3

No adverse effect on Homelands
No adverse effect on Churchville Presbyterian Church
No adverse effect on Holy Trinity Episcopal Church
Asbury A.M.E. Church lies outside of the impact area for this alternate.

Federal regulations require determinations of eligibility to be requested for each historic property within the area of impact of the selected alternate. When there are determinations of no adverse effect or adverse effect, the Advisory Council should be contacted as soon as possible. If you have any questions, please contact me or Ms. Kim Kimlin at 269-2438.

Sincerely,

George J. Andreve

George J. Andreve
Environmental Review
Administrator

GJA/KEK/bjs

Enclosure

cc: Mr. Ron Anzalone
Mr. Bruce MacDougal
Mrs. Raymond Delano
Ms. Pamela J. Caldwell
Ken Evans 5/13/83

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

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

FRED L. ESKEW
ASSISTANT SECRETARY
FOR CAPITAL PROGRAMS

June 6, 1985

Mr. LeRoy I. Pool
Environmental Services, Inc.
9 St. Mary's Road
Pylesville, MD 21132

Subject: Proposed Improvement of MD. Route 22,
from Bel Air to I-95

Dear Mr. Pool:

The Maryland Natural Heritage Program has no record of any rare species, unique habitat or other significant natural feature at, or in the vicinity of this project site. However, in the absence of a recent site review, we cannot show that such species or features are not present.

Please note that a parcel of state-owned parkland, Bynum Pond, sits along the south side of Route 22, just east of Bel Air. Potential impact to that site should be coordinated with the Forest, Park and Wildlife Service.

If you have further questions, please do not hesitate to contact me.

Sincerely,

Arnold W. Norden

Arnold W. Norden
Maryland Natural Heritage Program

AWN:mcs
cc: Sean McKewen, FP&WS

TELEPHONE: (301) 269-3656
TTY FOR DEAF - BALTIMORE 269-2609, WASHINGTON METRO 565-0450

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Department of Natural Resources
MARYLAND FOREST, PARK & WILDLIFE SERVICE
Tawes Office Building
Annapolis, Maryland 21401

TORREY C. BROWN, M.D.
SECRETARY

DONALD E. MacLAUCHLAN
DIRECTOR

June 14, 1985

Mr. Roy Pool
Environmental Services, Inc.
9 St. Mary's Road
Pylesville, Maryland 21132

RE: Md. Route 32 and
Calvert Road

Dear Mr. Pool:

Your request for any information we may have concerning threatened or endangered species was reviewed by Gary J. Taylor.

There are no known populations of threatened or endangered species within the area of project influence at Calvert Road from Route 1 to Kenilworth Avenue in College Park, Maryland; or Md. Route 22 from Bel Air to Interstate Route 95.

It would be helpful in the future if you would include project area maps for location purposes.

Sincerely,

James Burtis, Jr.
Assistant Director

JB:emp

cc: Brunori
Taylor

Telephone 269-3776
TTY FOR DEAF: STATEWIDE 1-800-492-5062; BALTIMORE 269-2609

United States Department of the Interior

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

June 10, 1985

Mr. LeRoy I. Pool
Environmental Services Inc.
9 St. Mary's Rd.
Pylesville, MD 21132

Dear Mr. Pool:

This responds to your May 24, 1985 request for information on the presence of Federally listed endangered or threatened species within the area to be affected by the proposed improvement of Maryland Route 22 from Belair to Interstate Route 95, in Harford County, Maryland. It is our understanding that this improvement will follow the existing alignment of Rt. 22 except near Churchville where it will cut to the south of Churchville.

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 Andy Moser of our Endangered Species staff at (301) 269-6324.

Sincerely yours,

E. A. Moser

for Glenn Kinser
Supervisor
Annapolis Field Office

United States Department of Agriculture

Soil Conservation Service

10 W. College Terrace
Room 230
Frederick, Maryland 21701

235

November 18, 1985

Mr. Kenneth L. Evans
The Wilson T. Ballard Co.
17 Gwynns Mill Court
Owings Mills, MD 21117

Re: Farmland Conversion Impact Rating Form (AD 1006) for: Contract No. H656-000-471, ES 843-000-471(N), MD-22, Shamrock Rd. to I-95, P.D.M.S. No. 123007, File: 100-10460

Dear Mr. Evans:

As requested in your letter dated 10/8/85, which transmitted the subject AD-1006's, Mr. Shockley correlated the alternate routes with the soil maps, and I completed the appropriate SCS parts of the form.

For clarification purposes:

1. Percent "Farmland as Defined in FPPA" was taken as percent of the total "Farmable Land in Gov't. Jurisdiction."

2. Part IV.C - percent of Prime and Statewide Important Farmlands to be converted is taken as percent of the total "Farmland Defined in FPPA" acreage figure.

3. Part IV.D - percent of farmland with same or higher relative value is taken as percent of the total "Farmland Defined in FPPA" acreage figure.

If I can be of further assistance, please contact me at 301-694-6822 in Frederick, Maryland.

Sincerely,

Carl E. Robinette

CARL E. ROBINETTE
Area Soil Scientist

Enclosures

cc:
Mr. Michael Shockley, District Conservationist, SCS, Bel Air, MD

SEGMENT 1

U.S. Department of Agriculture

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FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)	Date Of Land Evaluation Request: October 8, 1985
Name Of Project: MARYLAND ROUTE 22	Federal Agency Involved: FEDERAL HIGHWAY ADMINISTRATION
Proposed Land Use: HIGHWAY	County And State: HARFORD, MARYLAND
PART II (To be completed by SCS)	Date Request Received By SCS: 10/11/85

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply – do not complete additional parts of this form).	Yes ☒	No ☐	Acres Irrigated: None	Average Farm Size: 160

Major Crop(s): Corn, Small Grains, Soybeans, Hay	Farmable Land In Govt. Jurisdiction: Acres: 151,300 % 62.0	Amount Of Farmland As Defined in FPPA: Acres: 128,100 % 84.7
Name Of Land Evaluation System Used: Harford Co. Land Evaluation Sys.	Name Of Local Site Assessment System: Use FPPA Systems	Date Land Evaluation Returned By SCS: November 18, 1985

PART III (To be completed by Federal Agency)	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	9.65	7.74		
B. Total Acres To Be Converted Indirectly	N/A	N/A		
C. Total Acres In Site	817.87	817.87		
PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	4.2	3.6		
B. Total Acres Statewide And Local Important Farmland	1.9	1.9		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.005	0.004		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	68.5	68.5		
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	88	87		

PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	5	5		
2. Perimeter In Nonurban Use	10	2	2		
3. Percent Of Site Being Farmed	20	0	0		
4. Protection Provided By State And Local Government	20	0	0		
5. Distance From Urban Builtup Area	15	3	3		
6. Distance To Urban Support Services	15	5	5		
7. Size Of Present Farm Unit Compared To Average	10	3	3		
8. Creation Of Nonfarmable Farmland	10	0	0		
9. Availability Of Farm Support Services	5	5	5		
10. On-Farm Investments	20	20	20		
11. Effects Of Conversion On Farm Support Services	10	0	0		
12. Compatibility With Existing Agricultural Use	10	2	2		
TOTAL SITE ASSESSMENT POINTS	160	45	45		
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	88	87		
Total Site Assessment (From Part VI above or a local site assessment)	160	45	45		
TOTAL POINTS (Total of above 2 lines)	260	133	132		

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

SEGMENT 2 - Md. Rte. 22 and Southern Bypass Alternates

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

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PART I (To be completed by Federal Agency)	Date Of Land Evaluation Request: October 8, 1985
Name Of Project: MARYLAND ROUTE 22	Federal Agency Involved: FEDERAL HIGHWAY ADMINISTRATION
Proposed Land Use: HIGHWAY	County And State: HARFORD, MARYLAND
PART II (To be completed by SCS)	Date Request Received By SCS: 10/11/85

Does the site contain prime, unique, statewide or local important farmland? Yes ☒ No ☐
(If no, the FPPA does not apply – do not complete additional parts of this form).

Acres Irrigated	Average Farm Size
None	160

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined in FPPA
Corn, Small Grains, Soybeans, Hay	Acres: 151,300 % 62.0	Acres: 128,100 % 84.7

Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By SCS
Harford Co. Land Evaluation Sys.	Use FPPA System	November 18, 1985

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site 1	Site 2	Site A	Site B
A. Total Acres To Be Converted Directly	4.06	2.40	42.45	49.76
B. Total Acres To Be Converted Indirectly	N/A	N/A	58.11	60.92
C. Total Acres In Site	513.69	513.69	537.58	406.13
PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1.3	1.2	20.5	14.2
B. Total Acres Statewide And Local Important Farmland	0.9	0.4	7.9	15.8
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.002	0.001	0.022	0.023
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	68.5	46.0	46.0	70.8
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	87	90	90	85

PART VI (To be completed by Federal Agency) Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15	11	11	13	12
2. Perimeter In Nonurban Use	10	2	2	9	9
3. Percent Of Site Being Farmed	20	0	0	20	20
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Distance From Urban Builtup Area	15	3	3	5	5
6. Distance To Urban Support Services	15	10	10	10	10
7. Size Of Present Farm Unit Compared To Average	10	1	1	1	1
8. Creation Of Nonfarmable Farmland	10	0	0	10	10
9. Availability Of Farm Support Services	5	5	5	5	5
10. On-Farm Investments	20	20	20	18	15
11. Effects Of Conversion On Farm Support Services	10	0	0	1	1
12. Compatibility With Existing Agricultural Use	10	1	1	5	5
TOTAL SITE ASSESSMENT POINTS	160	53	53	97	93
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	87	90	90	85
Total Site Assessment (From Part VI above or a local site assessment)	160	53	53	97	93
TOTAL POINTS (Total of above 2 lines)	260	140	143	187	178

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

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PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request: October 8, 1985
Name Of Project: MARYLAND ROUTE 22		Federal Agency Involved: FEDERAL HIGHWAY ADMINISTRATION
Proposed Land Use: HIGHWAY		County And State: HARFORD, MARYLAND
PART II (To be completed by SCS)		Date Request Received By SCS: 10/11/85
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply – do not complete additional parts of this form).	Yes ☒ No ☐	Acres Irrigated: None / Average Farm Size: 160
Major Crop(s): Corn, Small Grains, Soybeans, Hay	Farmable Land In Govt. Jurisdiction: Acres: 151,300. % 62.0	Amount Of Farmland As Defined in FPPA: Acres: 128,100 % 84.7
Name Of Land Evaluation System Used: Harford Co. Land Evaluation Sys.	Name Of Local Site Assessment System: Use FPPA System	Date Land Evaluation Returned By SCS: November 18, 1985

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site C-2	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	1.50		13.66	18.81
B. Total Acres To Be Converted Indirectly			3.69	44.16
C. Total Acres In Site	218.81		422.73	252.26
PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1.6		11.1	6.5
B. Total Acres Statewide And Local Important Farmland	0		1.5	2.3
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.001		0.010	0.007
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	1.7		38.7	46.0
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	96		93	91

PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15	11		11	13
2. Perimeter In Nonurban Use	10	3		9	10
3. Percent Of Site Being Farmed	20	6		20	20
4. Protection Provided By State And Local Government	20	0		0	0
5. Distance From Urban Builtup Area	15	0		1	5
6. Distance To Urban Support Services	15	10		10	10
7. Size Of Present Farm Unit Compared To Average	10	10		9	6
8. Creation Of Nonfarmable Farmland	10	0		1	10
9. Availability Of Farm Support Services	5	5		5	5
10. On-Farm Investments	20	20		20	7
11. Effects Of Conversion On Farm Support Services	10	0		0	0
12. Compatibility With Existing Agricultural Use	10	0		1	5
TOTAL SITE ASSESSMENT POINTS	160	65		87	91
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	96		93	91
Total Site Assessment (From Part VI above or a local site assessment)	160	65		87	91
TOTAL POINTS (Total of above 2 lines)	260	161		180	182

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

SEGMENT 3

U.S. Department of Agriculture

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FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)	Date Of Land Evaluation Request: October 8, 1985
Name Of Project: MARYLAND ROUTE 22	Federal Agency Involved: FEDERAL HIGHWAY ADMINISTRATION
Proposed Land Use: HIGHWAY	County And State: HARFORD, MARYLAND
PART II (To be completed by SCS)	Date Request Received By SCS: 10/11/85

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply – do not complete additional parts of this form).	Yes ☒	No ☐	Acres Irrigated: None	Average Farm Size: 160

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined In FPPA
Corn, Small Grains, Soybeans, Hay	Acres: 151,300 % 62.0	Acres: 128,100 % 84.7

Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By SCS
Harford Co. Land Evaluation Sys.	Use FPPA System	November 18, 1985

PART III (To be completed by Federal Agency)	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	4.09	2.65		
B. Total Acres To Be Converted Indirectly	N/A	N/A		
C. Total Acres In Site	519.78	519.78		
PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.7	0.7		
B. Total Acres Statewide And Local Important Farmland	2.2	2.1		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.002	0.002		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	74.3	74.3		
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	77	78		

PART VI (To be completed by Federal Agency) Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	12	12		
2. Perimeter In Nonurban Use	10	2	2		
3. Percent Of Site Being Farmed	20	0	0		
4. Protection Provided By State And Local Government	20	0	0		
5. Distance From Urban Builtup Area	15	10	10		
6. Distance To Urban Support Services	15	10	10		
7. Size Of Present Farm Unit Compared To Average	10	2	2		
8. Creation Of Nonfarmable Farmland	10	0	0		
9. Availability Of Farm Support Services	5	5	5		
10. On-Farm Investments	20	10	10		
11. Effects Of Conversion On Farm Support Services	10	0	0		
12. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL SITE ASSESSMENT POINTS	160	51	51		
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	77	78		
Total Site Assessment (From Part VI above or a local site assessment)	160	51	51		
TOTAL POINTS (Total of above 2 lines)	260	128	129		

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

2410

TORREY C. BROWN, M.D.
SECRETARY

JOHN R. GRIFFIN
DEPUTY SECRETARY

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

KENNETH N. WEAVER
DIRECTOR
MARYLAND GEOLOGICAL SURVEY
EMERITT CLEAVE
DEPUTY DIRECTOR

Division of Archeology
338-7236

3 January 1986

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

RE: Maryland Route 22, Shamrock Road to I95 (including Churchville By-Pass) Contract No. H656-000-471

Dear Mr. Ege:

As requested, I recently conducted a Phase I archeological reconnaissance of those alternates currently being considered for the Churchville By-Pass which had not previously been covered in other surveys by Mr. Dennis Curry (File Report numbers 80, 88, and 123). Areas reconnoitered included four alternates (A, B, C, and D) and ancillary roads as designated within the project's boundaries. The work consisted of background research and field reconnaissance. The background research included examining historic maps, site reports, and site files. Early structures were noted using the historic maps as a reference. Site reports were utilized to indicate portions of the project which had been surveyed previously. Site files provided information regarding known sites which had been recorded in the project area.

Virtually all of the area along the proposed alternates was surveyed on foot. Fifteen areas which showed site potential based on predictive models for the area and prior field experience were surface collected when feasible; otherwise, in areas with poor ground visibility or in wooded areas, shovel test pits were placed at 10-20 meter intervals within the right-of-way. The following is a summary, by alternates, of what was accomplished:

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1) Alternate A, from Maryland Route 136 to Maryland Route 22:
Results Six test loci were designated along this alternate. Four sites were located: 3 prehistoric and 1 historic. Two of these sites, both prehistoric, are recommended for additional work. Both sites were well exposed in plowed field and both yielded a large amount of archeological material and are considered significant. Site 18HA155 was centered in the right-of-way and contained 2 large bifaces, 1 projectile point, 6 tools, and 8 utilized flakes as well as a battered cobble and a large amount of lithic debris, all quartzite. Site 18HA157 located immediately adjacent to the right-of-way also yielded a large amount of prehistoric cultural material which consisted of quartzite debitage and included 3 projectile points, 1 broken cobble, and 8 utilized flakes. In addition to the material collected during this survey, the property owner and several local residents possess collections of projectile points and tools from this site.

Recommendations Site 18HA155 which lies directly in the right-of-way is recommended for Phase II testing, if avoidance is impossible, to determine its eligibility to the National Register of Historic Places. Although site 18HA157 is contiguous to the right-of-way, it would be threatened from construction-related activities. Cultural material was found scattered over a 4 acre area; thus, it is probable that this is a multicomponent site which may include a village component based on the types of artifacts found and the size of the site. Because it may be National Register eligible, avoidance is preferred. If impossible, Phase II archeological testing is recommended.

2) Alternate B, between the points where it deviates from Alternate A:
Results Four test loci were designated from which four prehistoric sites were located. Site 18HA159 consisted of a prehistoric lithic concentration found in shovel test pits placed in a wooded area within the right-of-way. Cultural material found consisted of retouched flakes of quartz, quartzite, jasper, and rhyolite as well as other lithic debitage.
Recommendations Because of the variety of lithic material and its concentration within a small area, this site should be avoided; otherwise, Phase II archeological testing is recommended to determine extent and site use.

3) Alternate C, from Glenville Road to Route 22
Results Four test loci were designated from which one site was located. Site 18HA161 yielded one quartzite tool and several flakes in a field with only 1% visibility for surface collecting.
Recommendations No further work is recommended on this alignment because of the small amount of material found.

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4) Alternate D, from Route 22 to Route 155
Results One test locus was designated that yielded no prehistoric or historic sites.

5) Previous survey done by Curry, (Field Report 123:1982) on termini of Alternates A and B.
Results The easternmost termini of alternates A and B at Bodt Corner which was surveyed by Curry yielded an historic site (18HA149) within the right-of-way. At the westernmost termini at Route 22 and Asbury Road Curry also reports a prehistoric site within the right-of-way.
Recommendations Because the termini of the currently proposed alternates are the same as those survsyed by Curry, his recommendations are still valid. No further work is required on the prehistoric site. However, additional work is recommended on the historic site 18HA149 at Bodt Corner to determine site extent, age, and integrity.

In conclusion, a total of 11 sites (Map 1) were examined as a result of this current survey and Curry's previous survey, 4 of which are recommended for further testing to determine National Register eligibility (Map 2). The sites not recommended for additional work should still be considered sensitive areas, however.

A detail report discussing the above survey is forthcoming. In the meantime, if there are any questions regarding this matter or if I may be of further assistance, please do not hesitate to contact me.

Sincerely,

Hettie Boyce

Hettie Boyce
Archeologist

HB:lw

cc: Rita Suffness
Dennis C. Curry

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Maryland Historical Trust

October 14, 1986

OCT 16 10 08 AM '86
PROJECT DEVELOPMENT DIVISION

Ms. Cynthia Simpson
Environmental Management
Maryland Dept. of Transportation
State Highway Administration
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Contract No. H 656-000-471
Maryland Route 22 from
Bel Air to Interstate Route 95
F.A.P. No. RF 902-1 (22)

Dear Ms. Cynthia Simpson:

Thank you for your letter of September 23, 1986 concerning the above-referenced project.

Our office concurs with 79 of the 80 determinations of effect made by SHA for this project (see attached table). The exception concerns Maryland Route 155 alternate connection C. As we stated in our letter of February 8, 1983, we consider this alternate to have an adverse effect on the NR-eligible site Homelands (HA-139).

As always, your cooperation is appreciated. If you have any questions feel free to contact Al Luckenbach at 757-9000.

Sincerely,

Mark R. Edwards for
J. Rodney Little
Director State Historic
Preservation Officer

JRL/AHL/mmc
Enclosure
CC: Ms. Rita Suffness
Mr. Tim Dugan
Mr. Charles Keenan

	SEGMENT 1					SEGMENT 2				
						MD 155 Connection			MD 22/MD 136 Intersection	
	Four Lane	Five Lane	Southern Bypass Route A	Route B	Conn. C	C 2 Opt.1	C 2 Opt.2	Conn. D	Option 1	Option 2
Dibbs House	n.a.e.	n.a.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
Tudor Hall	n.e.	n.e.	"	"	"	"	"	"	"	"
Stier House	n.a.e.	n.a.e.	"	"	"	"	"	"	"	"
Hays-Heighe	n.e.	n.e.	"	"	"	"	"	"	"	"
Asbury M.E. Church	"	"	"	"	"	"	"	"	"	"
Churchville P. Church	"	"	"	"	n.a.e.	"	"	"	n.a.e.	n.a.e.
Homelands	"	"	"	"	c.n.a.e.	"	n.a.e.	"	n.e.	n.a.e.
Holy Trinity E. Church	"	"	"	n.e.	n.a.e.	n.a.e.	n.a.e.	"	n.e.	n.e.

ADVERSE EFFECT AS PER LETTER OF 2/8/83

n.e. - no effect

n.a.e. - no adverse effect

c.n.a.e. - conditional no adverse effect

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Maryland Historical Trust

November 25, 1986

Mr. Louis H. Ege, Jr.
Deputy Director
Project Development Division
State Highway Administration
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Contract No. H 656-000-461
F.A.P. No. ELIG-1X
MD Route 22
Shamrock Road to I-95 (including Churchville Bypass)
PDMS No. 123007
Harford County, Maryland

Dear Mr. Ege:

Thank you for sending us a copy of the report on the archeological reconnaissance of the above-referenced project conducted by the Maryland Geological Survey. The report provided detailed and sufficient information necessary to make an informed evaluation of the sites' potential significance, the project's effects to archeological resources, and appropriate recommendations for additional work.

Based upon the material provided in the report, we concur that the following four sites may be potentially eligible for inclusion on the National Register of Historic Places: 18 HA 149 - Bodt Corner site, 18 HA 157 - Buffalo site, 18 HA 155 - Gorrell site, and 18 HA 159 - Tranquil Bench site. We recommend that Phase II archeological investigations of these sites be conducted to conclusively determine their National Register eligibility, if Alternates A or B are chosen which will impact these sites. In addition, the Phase I investigations of Test Loci 4 and 14, where permission was denied, should be completed if Alternates A or B are selected. Based upon the results of the completed Phase I and the Phase II investigations, we will be able to determine whether or not the proposed project will affect National Register eligible archeological resources and make appropriate recommendations concerning mitigation measures, if necessary.

Shaw House, 21 State Circle, Annapolis, Maryland 21401 (301) 269-2212, 269-2438, 269-2850
Department of Economic and Community Development Admin. S & P TPS

The remaining six sites do not appear to meet the criteria for eligibility on the National Register of Historic Places, due to the sites' natures and paucity of artifacts: 18 HA 150 - Worthington Farm, 18 HA 154 - Green, 18 HA 158 - Gentle Slope, 18 HA 160 - Calvery Road, 18 HA 161 - Harlan, and 18 HA 162 - Cole. Therefore, no additional archeological testing is recommended for these sites.

Please notify this office once the Alternate is selected for this project. If you have any questions or require additional information, please contact Ms. Beth Brown of our staff at (301) 974-4450.

Thank you for your cooperation and assistance.

Sincerely,

Richard B. Hughes

Richard B. Hughes
State Administrator of Archeology

RBH/BCB/mmc
cc: Ms. Rita Suffness
Mr. Tyler Bastian
Ms. Hettie Boyce
Mrs. Jane M. Foard
Mr. Charles Keenan

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State of Maryland

OFFICE OF ENVIRONMENTAL PROGRAMS
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

201 WEST PRESTON STREET • BALTIMORE, MARYLAND 21201 • AREA CODE 301 • ~~XXX~~ 225-5275

TTY FOR DEAF: Balto. Area 383-7555
D.C. Metro 565-0451

Adele Wilzack, R.N., M.S., Secretary

William M. Eichbaum, Assistant Secretary

March 5, 1987

Ms. Cynthia D. Simpson, Chief
Environmental Management
Project Development Division
707 North Calvert Street, Room 310
Baltimore, Maryland 21202

RE: Maryland Route 22
Shamrock Rd. to I95
Contract No. H 656-000-471

Dear Ms. Simpson:

I have reviewed the air impact analysis performed for the proposed improvements of Maryland Route 22 from Shamrock Road to Interstate Route 95, including the Churchville Bypass, and concur with its conclusions.

Given the expected increase in traffic predicted for the region, the Department believes that any build alternate will yield the best air quality for the area.

The proposed project is consistent with the transportation control portion of the State Implementation Plan for the Metropolitan Baltimore Intrastate Air Quality Control Region. Furthermore, adherence with the provisions of COMAR 10.18.06.03D will ensure that the impact from the construction phase of this project will be minimal.

Thank you for the opportunity to review this analysis.

Sincerely,

Mario Jorquera

Mario E. Jorquera
Division of Air Quality Planning
and Data Systems
Air Management Administration

MJ:dsd

2V8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

FEB 6 1987

FEB 11 2 49 PM '87
PROJECT DEVELOPMENT DIVISION

Cynthia D. Simpson, Chief
Environmental Management
Project Development Division (Rm. 310)
MD State Highway Administration
707 North Calvert Street
Baltimore, MD. 21202

Re: MD Route 22, Shamrock Rd. to Interstate 95
Air Quality Analysis

Dear Ms. Simpson,

In accordance with the responsibilities delegated to EPA under Section 309 of the Clean Air Act and the National Environmental Policy Act, EPA Region III has reviewed the above referenced document. We are satisfied with the approach outlined for analyzing the air quality impacts of the project and offer no objections to completing this portion of the environmental study. Please note, however, that this analysis incorporated EPA's MOBILE 1 computer program for calculating emission factors, rather than MOBILE 3. We have cited this deficiency in numerous air quality analyses in the past and wish to be advised as to when the SHA intends to update their methodology.

Thank you for including EPA in the coordination process. Should you have any questions, or if we can be of additional assistance, please contact Jeffrey Alper at 215/597-7817.

Sincerely,

Barbara D'Angelo

Barbara D' Angelo, Acting Chief
NEPA Compliance Section

IX. APPENDICES

APPENDIX A

Attachment for Environmental
Impact Documents
Revised: November 29, 1985
Bureau of Relocation Assistance

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

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

The provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments that are provided include replacement housing payments and/or moving costs. The maximum limits of the replacement housing payments are $15,000 for owner-occupants and $4,000 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and/or incidental expenses, provided that the total of all housing benefits does not exceed the above mentioned limits. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to the replacement housing payments described above, there are also moving cost payments to persons, businesses, farms and non-profit organizations. Actual moving costs for residences include actual moving costs up to 50 miles or a schedule moving cost payment, including a dislocation allowance, up to $500.

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

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Generally, payments for the actual reasonable expenses are limited to a 50 mile radius. The expenses claimed for actual cost commercial moves must be supported by 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, not to exceed the lowest acceptable bid obtained. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business' own vehicles or equipment, wages paid to persons who physically 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 is to be reestablished, and the personal property is not moved but is replaced at the new location, the payment would be the lesser of the replacement cost minus the net proceeds of sale (or trade-in value) or the estimated cost of moving the item. If the business is being discontinued or the item is not to be replaced in the reestablished business, the payment will be the lesser of the difference between the value of the item for continued use in place and the net proceeds of the sale or the estimated cost of moving the item. When personal property is abandoned without an effort by the owner to dispose of the property for sale, unless permitted by the State, the owner will not be entitled to moving expenses, or losses for the item involved.

The owner of a displaced business may be reimbursed for the actual reasonable expenses in searching for a replacement business up to $1,000. All expenses must be supported by receipted bills. Time spent in the actual search may be reimbursed on an hourly basis, within the maximum limit.

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

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

In order to determine the amount of the "in lieu of" moving expenses payment, the average annual net earnings of the business is considered to be one-half of the net earnings, before taxes, during the two taxable years immediately preceding the taxable year in which the business is relocated. If the two taxable years are not representative, the State may use another two-year period that would be more representative. Average annual net earnings include any compensation paid by the business to the owner, his spouse, or his dependents during the period. Should a business be in operation less than two years, 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, for the tax years in question.

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

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

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or that available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies must be completed by the State Highway Administration before "housing as a last resort" can be utilized.

The "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" requires that the State Highway Administration shall not proceed with any phase of any project which will cause the relocation of any 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.

APPENDIX B

GLOSSARY OF TERMS

Auxiliary Lane	- The portion of roadway adjoining the traveled way for parking, speed change, or for other purposes supplementary to the thru-traffic movement.
Average Daily Traffic	- The total volume of auto and truck traffic passing a given point in both directions during a given time period (greater than one day and less than one year) in whole days, divided by the number of days in that time period.
Benthic	- The bottom of an acquatic habitat, including the rocks, sand and other materials.
Benthic Algae	- Algae living on the bottom of a stream or other acquatic habitat.
Biota	- The total set of all organisms, both plant and animal, microscopic to macroscopic.
Community	- The collection of plants and/or animals which exist in a particular location or habitat.
Design Hour Volume	- The percent of average daily traffic (ADT) generally accepted as the criterion used in the geometric design of rural and urban highways. Ideally the 30th highest hourly volume during a year, the DHV is commonly found to vary from 8% to 12% of the ADT.
Design Speed	- A speed selection for purposes of design and correlation of those geometric features of a highway such as curvature and sight distance, upon which safe operations is dependent.
Diverse	- Refers to a varied collection of different plant and animal species or a varied collection of habitat types in a particular area.
Endangered	- An organism of very limited numbers which may be subject to extinction, and is protected by law under the Endangered Species Act.
Endemic	- An organism whose distribution is restricted only to a given region.
Fauna	- The animal life of an area.

Flora - The plant life of an area.

Grade Separation - Bridge structure such as an underpass or overpass that vertically separates two or more intersecting roadways, thus permitting traffic to cross without interference.

Habitat - The physical, chemcial and biological factors which comprise the area where a plant or animal lives.

Herbaceous - A non-woody plant.

Housing of Last Resort - A program to rehouse people who are displaced by right of way acquisition for highway projects when the cost to do so exceeds the limits of the Uniform Relocation Act.

Invertebrate - Refers to animals without internal, hard skeletal systems.

Level of Service - Measure of the conditions under which a roadway or intersection operates as it accommodates various traffic volumes. Influencing factors include speed, travel time, traffic interruptions, maneuvering freedom, safety, driving comfort, economy, and of course, the volume of traffic.

- Levels of Service at intersection are ranked from A to F (best to worst) as follows:

- Level A - free traffic flow, low volumes, no congestion

- Level B - stable traffic flow, slight congestion; approximately 65% of the intersection's capacity is utilized.

- Level C - stable flow; moderate congestion; approximately 75% of the intersection's capacity is utilized.

- Level D - approaching unstable flow, heavy congestion; approximately 85% of the intersection's capacity is utilized.

- Level E - low speeds, high traffic volumes approaching roadway capacity; approximately 95% of the intersection's capacity is utilized.

	- Level F - forced traffic flow at low speeds; low volumes and high densities; frequent delays.
Median	- That portion of a divided highway separating the travelled ways for traffic in opposite directions.
Old Field	- A shrubby thicket community of grasses and saplings which is succeeded from pasture and toward woodland.
Right of Way (R/W)	- The outer limits inside which the State or County owns and maintains for a highway facility.
Section 4(f)	- Section 4(f) of the Department of Transportation Act requires that publicly-owned land from a park, recreation area, wildlife and/or waterfowl refuge, or historic site of national, state or local significance can be used for Federal-Aid Highway projects only if there is no feasible and prudent alternative to its use, and if the project includes all possible planning to minimize harm to "4(f) lands".
Shoulder	- That portion of a highway adjacent and parallel to the travelled roadway for the accommodations of stopped vehicles for emergency use and for laterial support. May or may not be fully paved.
Stream Bed	- The physical limit of a stream, its channel and associated substrate.
Unique	- An organism or community of an unusual nature and whose existence is dependent on a narrow range of specific needs, and is intolerable of environments which don't meet those needs.
Wetlands	- Areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances, does or would support a prevalence of vegatative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marches, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats and natural ponds.

APPENDIX C

BIBLIOGRAPHY

1. American Associations of State Highways and Transportation Officials (1984) A Policy on Geometric Design of Highways and Streets

2. Broome, C. R. et al, (1979) Rare and Endangered Vascular Plant Species in Maryland. US Fish and Wildlife Service, Newton Corner, MA

3. Brush et al (1977) The Natural Forests of Maryland: An Explanation of the Vegetation Map of Maryland. JHU, Baltimore, MD

4. Burtis, J. (1985) Personal communication

5. California Department of Transportation, Office of Transportation Laboratory (1979) CALINE 3 - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, Report No. FHWA/CA/TL-79/23

6. Clark, D. R. (1979) Lead Concentrations: Bats vs. Terrestrial Small Mammals Collected Near a Major Highway. Env., Sci. and Tech.

7. Dietemann (1976) Proposed List of Endangered and Threatened Fishes in Maryland (unpublished).

8. Field et al (1974) Water Pollution and Associated Effects from Street Salting. Transportation Research Record 506. Highway Wildlife Relationships, v.2, FHA, Washington, DC

9. Giles et al (1973) Evidence for the accumulation of atmospheric lead by insects in areas of high traffic density. Env. Ent. Highway Wildlife Relationships, v.2, FHA, Washington, DC

10. Gish and Christiansen, (1973) Cadmium, nickel, lead, and zinc in earth worms from roadside soil. Highway Wildlife Relationships, v.2, FHA, Washington, DC

11. Hanes et at (1970) Effects of de-icing salts on water quality and biota. NCHRP Report No. 91. Highway Research Board, Washington, DC

12. Harford County, MD, Department of Planning and Zoning DATA Book, Demographic, Economic and Land Use Trends, April 1985

13. House et al (1968) Assessment of ecological effects of extensive or repeated use of herbicides. Advanced Research Projects Agency. U.S. Department of Defense. Highway Wildlife Relationships, v.2, FHA, Washington, DC

14. Hughes et al (1980) survey and inventory of natural trout waters. DNR, Annapolis, MD

15. Jahn, L. R. (1959) Highway mortality as an index of deer population change. Highway Wildlife Relationships v.2, FHA, Washington, DC

16. Maryland Department of Health and Mental Hydiene (1982) Maryland Air Quality Data Report, 1981, Baltimore, MD

17. Maryland Department of Health and Mental Hygiene (1977), Regulations Governing the Control of Air Pollution in the State of Maryland, 10.03.35.04C.

18. Memphis State University, (1971) Effects of noise on wildlife and other animals. EPA Office of Noise Abatement Control, Washington.

19. Metzger, R. (1973) Wetlands in Maryland. Department of State Planning, Baltimore, MD

20. Michael, E. D. (1976) Effects of highway on wildlife. West Virginia Department of Highways Research Project 42.

21. Norden, A. (1985) Personal communication

22. Norden et al (1984) Threatened and Endangered Plants and Animals of Maryland. DNR, Annapolis, MD.

23. Oxley et al (1974) The effects of roads on populations of small mammals. Highway Wildlife Relationships, v.2, FHA, Washington.

24. Paradiso, J. L. (1969) Mammals of Maryland. N. Amer. Fauna 66. USDI Bureau of Sport Fisheries and Wildlife

25. Price et al (1974) Lead in terrestrial arthropods: evidence of biological concentration. Highway Wildlife Relationships, v.2, FHA, Washington.

26. Robbins, C. S. (1973) Rare of endangered breeding birds of Maryland. USDI Bureau of Sport Fisheries and Wildlife

27. Sartor and Boyd (1972) Water pollution aspects of street surface contaminant. Highway Wildlife Relationships, v.2, FHA, Washington

28. Shaheen, D. G. (1975) Contributions of urban roadway useage to water pollution. Highway Wildlife Relationships, v.2, FHA, Washington

29. Stine, C. (1985) Personal communication

30. Thomas et al (1974) Forest Vegetation in Maryland. Department of State Planning, Baltimore, MD

31. Trainer and Karstad (1960) Salt poisoning in Wisconsin wildlife. Highway Wildlife Relationships, v.2, FHA, Washington

32. U.S. Department of Agriculture, Soil Conservation Service (1975) Soil Survey of Harford County Area, Maryland

33. U.S. Department of Agriculture, Soil Conservation Service (1979) Important Farmlands: Harford County, Maryland

34. U.S. Department of Interior, Fish and Wildlife Service National Wetlands Inventory, March 1982

35. U.S. Environmental Protection Agency (1984) Report No. EPA-460/3-84-002: User's Guide to MOBILE 3: Mobile Source Emissions Model

36. U.S. Department of Transportation, Federal Highway Administration (1973) Report No. FHWA-HHI-HEV-73-7976-1: Fundamentals and Abatement of Highway Traffic Noise

37. U.S. Department of Transportation (1976) FHPM Volume 7, Chapter 7, Section 3, Procedures for Abatement of Highway Traffic Noise and Construction Noise (Revised July 1976, October 1978, January 1979 and August 1982)

38. U.S. Department of Transportation (1982) Report No. FHWA-DP-58-1: Noise Barrier Cost Reduction Procedure, STAMINA 2.0/OPTIMA