

Project Report

US 301
From US 50 to South of MD 197

PDMS #

FMIS PROJECT #

Federal Contract # NH

State Highway Administration

April 1997

Regional and Intermodal
Planning Division

I PROJECT LOCATION

The project is located along US 301 (Robert Crain Highway), from US 50 (John Hansen Highway) to south of MD 197, and along MD 197 (Collington Road), from US 301 to west of Mitchellville Road, and is located in the Prince George's County Subregion III planning area.

II BACKGROUND

In 1993, the Maryland Department of Transportation (MDOT) with the support of a 75 member task force initiated a project to address the growing traffic congestion issues along the US 301 corridor, from US 50 in Prince George's County to the Potomac River in Charles County. This task force, reviewed the transportation, land use, growth management and environmental resource issues and developed comprehensive recommendations to address future transportation needs. The final recommendations were adopted in July 1996 and the final report was issued in November 1996 and submitted to the Governor and MDOT Secretary. The current project is the first break-out project resulting from the US 301 Transportation Corridor Project. This project is included in Development and Evaluation portion of the our FY 1997-FY 2002 Consolidated Transportation Program.

III PURPOSE

The purpose of this study is to evaluate the existing and projected traffic volumes and develop feasible options to improve the existing and projected traffic operations along this segment of US 301. This study will also examine access to existing and future developments in this area and investigate the need and feasibility of enhancing vehicular access to these developments.

IV NEED

• Development Growth

The primary need for this study is due to an increase in projected traffic volumes along this segment of US 301 by the year 2020. One of the driving forces behind the traffic increase is the significant growth in developments in this area of Prince George's County.

Developments has occurred in this area of Prince George's County at a rapid pace in the past few years and is projected to continue as developments that are approved or are in the pipeline are constructed. This additional development will generate significant traffic volumes during the peak periods and will result in traffic congestion along US 301 and other major arterials in this area (Tables providing a summary of pipeline development projects in study area are included in the appendix). More than 13,000 acres have been identified by the City of Bowie as development sites for pipeline projects. This represents approximately 12,000 additional residential units and 17 million square feet of commercial, retail and office building space. These projects are either under construction or are anticipated to be constructed in the next few years. These tables reflect only the development projects that have been filed officially for subdivision or zoning applications. The growth in development is not likely to end here as the strategic location of this area will likely attract further development.

A total of 230,000 acres along the US 301 Corridor in both Prince George's and Charles counties are projected to be developed by the year 2020. Forty percent of the State's population growth by 2020 is projected to take place in Anne Arundel, Calvert, Charles, Prince George's and St. Mary's counties. US 301 is the major north-south transportation corridor in this area, and consequently the projected growth in this area translates into traffic congestion along the US 301 corridor.

- **Existing and Proposed Land Use**

US 301, from US 50 to south of MD 197, is surrounded by commercial developments. A major shopping center known as Bowie Gateway Center is located along southbound US 301, between US 50 and MD 197. This commercial center has two access points on southbound US 301 and one access point on westbound MD 197. The commercial center includes Target, Kohl's, Borders, Sports Authority, Lowe's, Staples and a Comfort Inn Hotel. Several office buildings (approximately 200,000 square feet), fast food restaurants and banks are also located in this shopping center. While this shopping center currently generates significant traffic volumes it is not fully developed. The area west of the shopping center is residential and accesses US 301 via MD 197.

Excalibur Road provides access to additional commercial developments including a Walmart, Collington Plaza and restaurants.

Stadium Drive, Governor Bridge Road and an access to Rips Restaurant and motel are located along northbound US 301 within the project area. Rips Restaurant and motel access is directly across from MD 197. Stadium Drive provides access to Prince George's Stadium. The stadium has the capacity to seat 8,000-12,000 spectators.

Governor Bridge Road connects US 301 to Bowie Saturn car dealership, Roger's Chevrolet, Governor's Green, a proposed mixed-use development facility and Long Leaf which is a major residential development currently under construction. Construction of the Long Leaf single family housing community began recently and none of units are occupied at this time. There are 50 acres of commercially zoned located adjacent to Rip's Restaurant that have an approved preliminary subdivision plan for five lots.

Major residential communities are also being developed along Mitchellville Road. Mitchellville Road is a county facility that parallels US 301 to the west, intersecting with MD 197 and extending south to tie into US 301 approximately 0.75 mile south of Mount Oak Road. Mitchellville Road has been widened to four and six lanes between MD 197 and Northview Drive by developers of new residential units adjacent to this roadway. Other segments of Mitchellville Road will be widened as development continues. These developments are expected to generate significant traffic volumes.

- **Access**

Four signalized intersections along US 301 (Harbour Way/Governor Bridge Road, Heritage Boulevard/Stadium Drive, Excalibur Road/Mill Branch Road and MD 197) are located within the project area. The US 50 ramps are located just north of the Harbour Way/Governor Bridge Road intersection. These intersections are less than 1500 feet

apart and provide access to existing and future planned development in this area. Safe and efficient access to these areas will be examined as part of this project

• Traffic

Traffic operations have been analyzed for the existing conditions in the vicinity of the US 301/MD 197 intersection as well as for the year 2020. Existing Average Daily Traffic (ADT) along US 301 in this area ranges from 45,650 vehicles per day (vpd) to 52,600 vpd. ADT along MD 197 ranges from 17,800 vpd to 21,625 vpd in the study area. See appendix for more detailed information.

Due to recent expansion of US 301 for current development, especially the Prince George's Stadium, traffic operates at an acceptable Level-of-Service (LOS) during the peak periods. "Rush hour" in this area lasts for two hours in the morning and at least two hours in the evening. There is also congestion on Saturday afternoons due to the large amount of commercial development recently built in the area.

As a direct result of the large increase in development expected in the immediate area, as well as an increase in through travel, traffic volumes are expected to almost double by the year 2020. Volumes along US 301 are anticipated to range from 84,150 vpd to 98,650 vpd. Volumes along MD 197 will range from 35,500 vpd to 42,000 vpd by the year 2020. This increase in traffic will result in severe congestion in the area. All five signalized intersections in the area will be at LOS "F" or LOS "E" during both peak periods. See appendix for more detailed information.

The following table shows the volumes and LOS of the five signalized intersections in the study area.

TRAFFIC CONDITIONS						
LOCATION	Existing Condition 1997			Proposed Condition 2020		
	ADT	AM	PM	ADT	AM	PM
	vpd	LOS	LOS	vpd	LOS	LOS
US 301 @ Harbor Way/ Governor Bridge Road	50,600	C	C	97,600	F	F
US 301 @ Heritage Blvd./Stadium Entrance	47,150	B	A	88,400	F	E
US 301 @ MD 197/ Rip's Entrance	45,650	B	B	84,150	F	F
US 301 @ Excalibur Road/Mill Branch Road	52,600	C	D	98,650	F	F
MD 197 @ Mitchellville Road	17,800	A	B	35,500	D	F

• As the above chart shows, there will be heavy growth in vehicular trips in this area fueled by new development and an increase in through travel. Resulting in severe congestion in

the area during the peak periods. This will result in the peak period substantially lengthening.

- **Safety**

Accident rates have been reviewed for US 301 within the project area for the previous four years (1993 to 1996). The accident rate for a particular roadway is a function of the length of the segment, ADT, the number of accidents, and the project period. Accident rates are based on accidents per 100 million vehicle miles (100 mvvm) of travel. The accident rates are then compared to a statewide average for similar state facilities.

A total of 102 accidents (between US 50 and MD 197) and 97 accidents (along the segment from MD 197 to Mount Oak Road) occurred in the past four years. This resulted in the total accident rate of 202 accident per 100 mvvm and 138 accident per 100 mvvm which are both statistically significantly higher than the statewide average of 110 accident per 100 mvvm. The Rear End, Angle and Sideswipe accident rates are also statistically significantly higher than the statewide average for similar highways (See appendix). These types of accident are usually caused by traffic congestion. Our accident history further indicates that the Rear End and total number of accidents have increased substantially from 1993 to 1996. It should be noted that 63 percent of accidents occurred at intersections.

The four year (1993 to 1996) accident history for MD 197, from US 301 to US 50, indicates that a total 85 accidents occurred during this period. This resulted in an accident rate of 223 acc per 100 mvvm which is lower than the statewide average of 248 acc per 100 mvvm for similar highways (See appendix).

As discussed previously, growth in development will increase traffic volumes significantly in the near future. With no improvements, significant growth in traffic volumes, and anticipated traffic congestion, safety concerns will increase in the future.

- **System Linkage/Road Function**

US 301 is a major north-south arterial which links the Commonwealth of Virginia, Southern Maryland, the Eastern Shore and the State of Delaware. This facility is included on the National Highway System and connects the City of Bowie, Annapolis, Upper Marlboro, Waldorf and La Plata in the State of Maryland. US 301 is a high volume highway serving as a major commuting route and a vital link for delivery and distribution of goods to and from the major industrial centers in this area of Prince George's County. US 301, from US 50 to MD 197, is functionally classified as a Rural-Other Principal Arterial on the Federal Functional Classification System. It is also included on the State Primary System.

US 301 connects to US 50 via an interchange in the study area. US 50 is a major eastwest freeway/expressway and links to Annapolis, Washington DC and Eastern Shore of Maryland. This facility is included on the National Highway System and is functionally classified as a Freeway/Expressway on the Federal Functional Classification System. It is also included on the State Primary System.

Currently there is one park and ride facility servicing the immediate area. It is located in the southeast quadrant of US 50/MD 197 and can accommodate 650 vehicles. Transit services to this park and ride facility include bus routes C-28 and B-24 of the Washington Metropolitan Area Transit Authority (WMATA). Currently there are no state or county buses serving this facility.

- **County Comprehensive Plan**

Upgrading US 301/MD 3, from the Anne Arundel County line to Leeland Road (which is located south MD 214) is recommended in the Prince George's County Bowie, Collington Mitchellville and Vicinity Master Plan, 1991. The Master Plan proposes widening US 301 to a six to eight lane facility within a maximum of 450 foot right-of-way with an interchange at MD 197. The Plan recognizes the need to upgrade US 301 from US 50 south to freeway/expressway standards with a continuous arterial parallel facility on the west side and a discontinuous two-lane undivided service road on the east side of US 301.

- **Local Concerns**

The US 301 Task Force conducted a three year project to address the growing congestion along the US 301 Corridor from US 50 to the Potomac River. The City of Bowie formally endorsed the task force recommendations in this area.

Improvements to US 301 and a planning project for implementing transportation solutions identified by the task force as part of the US 301 Transportation study is included in the Prince George's County Transportation Priority List. The State and County elected officials of Prince George's County have identified US 301 Transportation Study improvements as a priority to provide enhanced safety, promote growth and relieve future traffic congestion along this vital transportation corridor.

V ENVIRONMENTAL CONSIDERATION

A preliminary environmental assessment of the project area has been completed to identify the socio-economic and natural environmental resources. The project is consistent with the 1991 Bowie, Collington, Mitchellville, and Vicinity Master Plan. Existing land use is residential and commercial.

The proposed project may require additional right-of-way. Residential and business relocations may be required.

The MD 197 project crosses four streams: Green Branch and its tributary Mill Branch and its tributary. In-stream restriction occurs from March 1 to June, 15 inclusive.

The wetland corridor study indicated the presence of palustrine-emergent and riverine wetlands along the project corridor.

A historic sites inventory and archeological assessment are currently underway to determine the presence of cultural resources within the project area.

The Prince George's County Stadium is located within the project area. Impacts to this public facility will be determined during the next stage of project development.

Previous coordination with the US Fish and Wildlife Service and the Department of Natural Resources was completed for the US 301 Southern Corridor Transportation Study in 1995 indicated that there were no federal or state listed threatened or endangered species or unique habitat within this area of study. However, additional coordination is currently underway with these agencies.

VI CONCLUSION

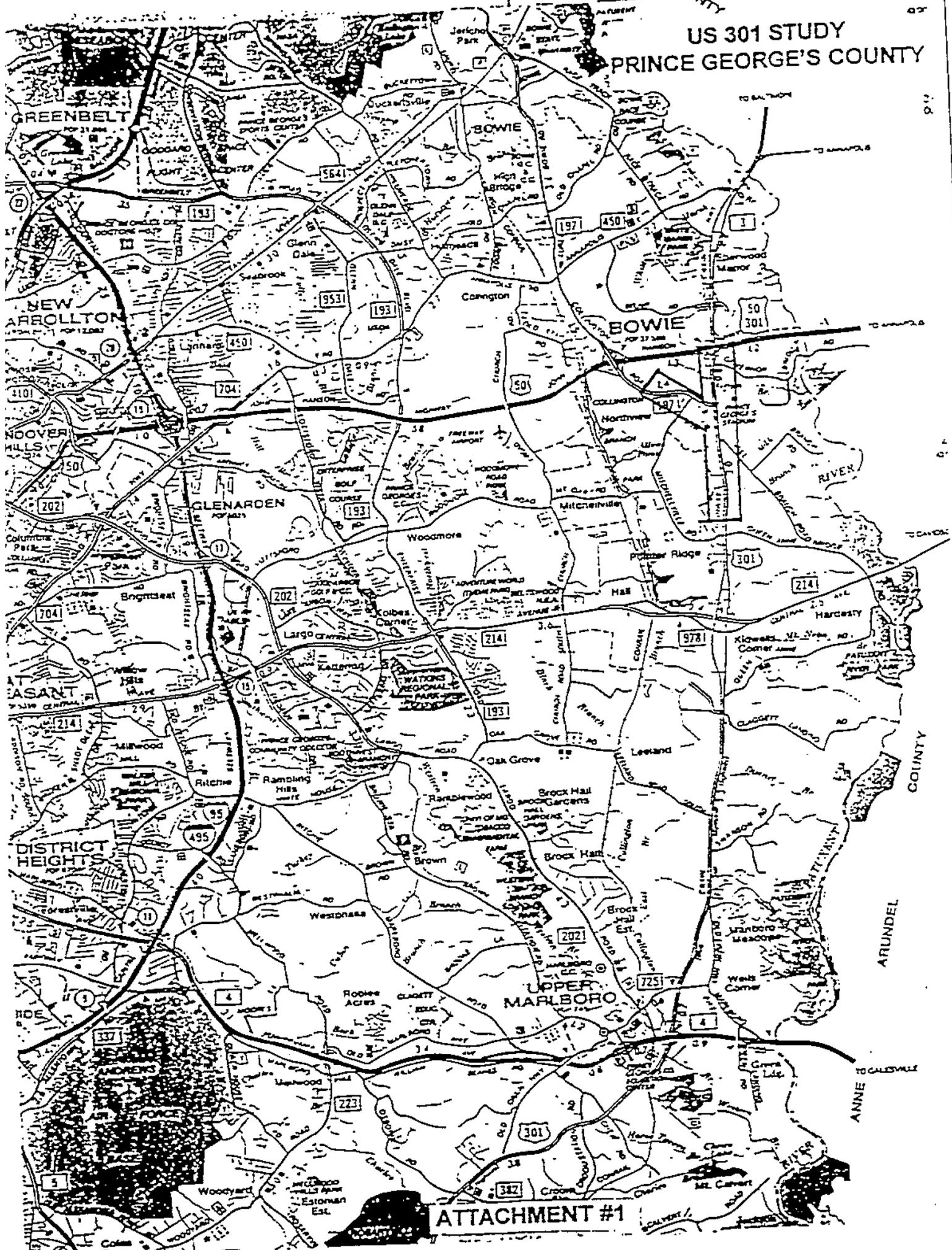
This area of Prince George's County is developing quickly. This trend will continue as numerous projects are in the development pipeline. While current traffic operations are satisfactory, future traffic projections are significantly higher. With no improvements a failing LOS and severe traffic congestion are anticipated along this segment of US 301. Traffic safety is already an issue, it is expected to deteriorate as traffic congestion increases. Considering the short distance between the intersections along US 301 within the project area, safe and efficient access to growing business and residential communities areas is another major issue. Improving traffic operations along this vital regional transportation corridor is a necessity. This facility is included on the National Highway System and is the primary north-south arterial for delivery of goods and people linking southern Maryland to Washington DC and the Eastern Shore of Maryland via US 50.

Prince George's County has identified the need for improving this segment of US 301 in their master plans. The three year project conducted by the US 301 Task Force also recognized the need for improving the US 301 corridor.

In consideration of these factors, a project planning study is needed to evaluate alternatives for addressing the projected traffic congestion and accommodating safe and efficient access to commercial areas and residential communities along this major arterial highway in this area.

APPENDIX

US 301 STUDY
PRINCE GEORGE'S COUNTY



ATTACHMENT #1

**US 301 Area
Pipeline Development**

PROJECT	LAND USE	STATUS	SIZE
Northpeak (P-1)	168 townhouse 11 single-family detached units 15,000 sq. ft. commercial center	Comprehensive Design Plan (CDP) and Preliminary Subdivision Plan approved	70 acres 52 acres
Paluxent Riding (P-2)	78 single-family detached units	28 units completed and 4 units under construction	470 acres
Saddlebrook (P-3)	520 single-family detached units	13 units completed and 3 units under construction	14 acres
Old Chapel Estates (P-4)	24 single-family detached units	19 units completed and 3 units under construction	468 acres
University of Maryland Science & Technology Center (P-5)	Mixed employment/office uses (up to 6.4 million sq. ft.)	117,000 sq. ft. Supercomputing Research Center completed and 130,000 sq. ft. US Census Bureau Computing Facility under construction	22 acres
Rogers/SIM (P-6)	2 commercial lots/1 commercial outlet	One lot occupied by existing automobile dealership, DSP for new 18,000 sq. ft automobile dealership approved	200 acres 30 acres
Longleaf (P-7)	240 single-family detached units Commercial/Residential	2 units completed	50 acres
Rite 301 Associates Property (P-8)	Commercial recreational attraction/Misc. commercial	Preliminary Subdivision Plan for five commercial parcels approved	108 acres
3608 Crain Property/Rip's Ballfield (P-9)	Up to 10 1 million sq. ft. of mixed commercial/retail/office use	Completed: Omni 95,400 sq. ft., Applebee's Restaurant 5,400 sq. ft., Lowe's Home Center 144,403 sq. ft., Bob Evans Farms 8,700 sq. ft., Bank of Bowle 27,000 sq. ft., State Farm Insurance 12,621 sq. ft., Target 117,00 sq. ft., The Sports Authority 42,954 sq. ft., Staples 23,912 sq. ft., Borders 25,125 sq. ft., McDonald's 2,200 sq. ft., and gas station/shop/car wash 1,910 sq. ft. Under construction: Kohl's 93,000 sq. ft., Wendy's 3,285 sq. ft., PetSmart 25,000 sq. ft. and Washington Savings Bank 54,990 sq. ft.	

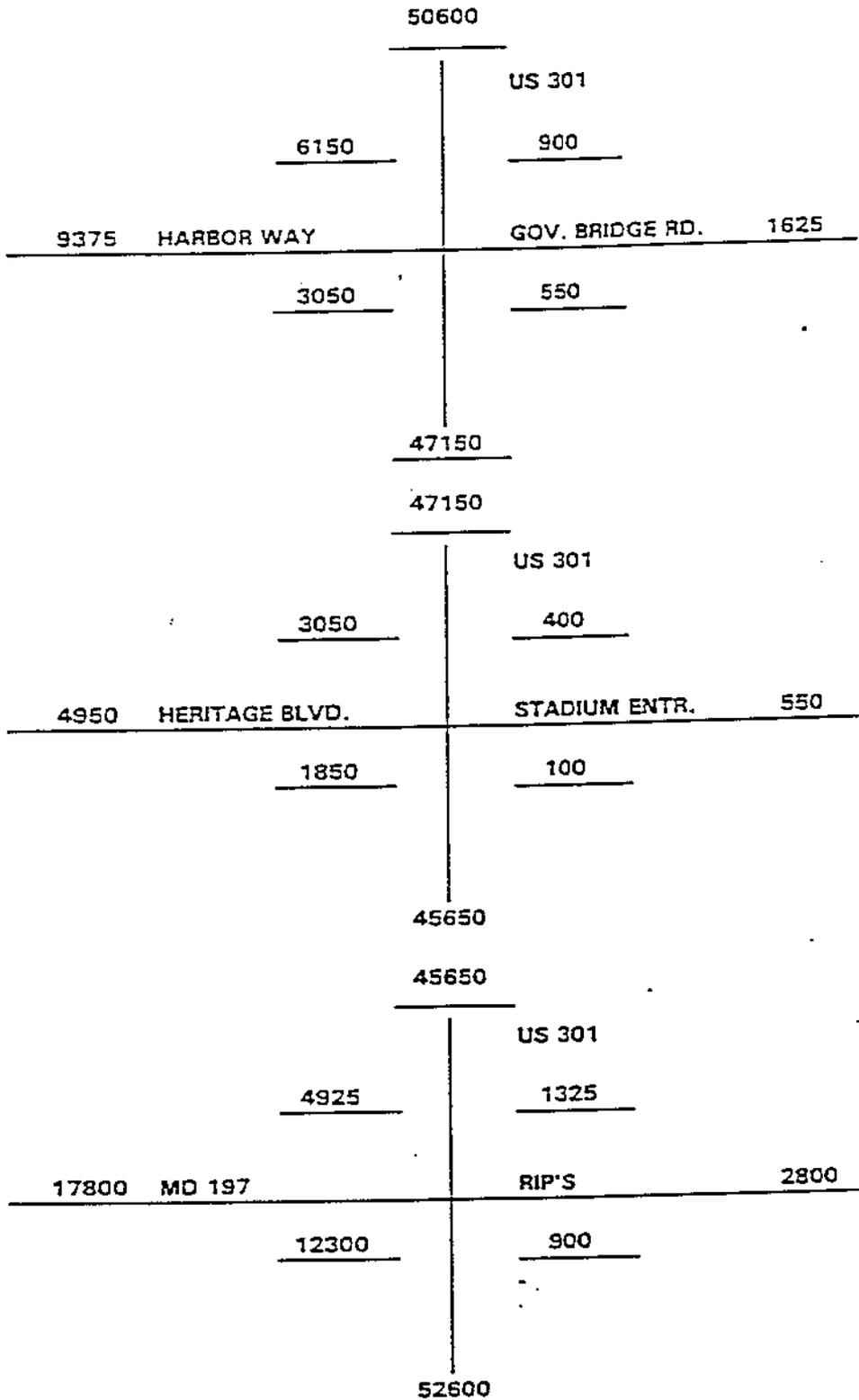
Bowie Health Center Complex (P-11)	Limited health care facility		64 acres
Bowie New Town Center BNTC/West (P-12)	Commercial office		63 acres
Bowie New Town Center (P-13)	1.2 million sq. ft. of retail, 719,500 sq. ft. of office and 1,365 multi-family and townhouse units	110,000 sq. ft. of office space, 40,000 sq. ft. office condominiums, 404 multi-family units, 481 townhouse units and hiker/biker trail completed. 282 residential condominiums under construction	274 acres
Pin Oak Village (P-14)	220 Senior housing units, 20,000 sq. ft. commercial center, 978 residential units	110 unit senior apartment building, 58 four-plex condos and 15 townhouses completed. 8 four-plex condos and 5 townhouses under construction.	116 acres
Mill Branch Center (P-15)	148,000 sq. ft. department store, two restaurants, & a gas station	Completed: 116,000 sq. ft. department store & one restaurant. 2nd restaurant approved	20 acres
Jenkins Property (P-16)	374 residential units	Completed: 55 single-family detached and 48 townhouse units. Under Construction: 13 single-family detached and 2 townhouse units	111 acres
Glen Allon (P-17)	398 single-family detached units	Completed: 239 units Under Construction: 7 units	320 acres
Amber Meadows II (P-18)	33 single-family detached units	Completed	18 acres
MC Jess' Oasis (P-19)	7,500 sq. ft. restaurant/carry-out/convenience store	Completed	.75 acres
Mitchellville Meadows (P-20)	20 single-family detached units	Infrastructure Completed	81 acres
Federal Hill Farm (P-21)	33 single-family detached units	11 units completed and one unit under construction	88 acres
Amber Ridge Shopping Center (P-22)	180,000 sq. ft. commercial shopping center	Revisions made to wellands plan & 2 directional entrances on Rio. 301 constructed	19 acres
Temberly/National Research Home Park (P-23)	114 townhouse & 35 single-family detached units	Completed	51 acres
Collington Center/Foreign Trade Zone (P-24)	Offices, research laboratories, specialty manufacturing, retail & wholesalers	Comprehensive design plan complete & approximately 2 million sq. ft. of office/light industrial space complete	1,282 acres
Green of Dumbarton (P-25)	958 single-family detached units, 138 townhouses, 40,000 sq. ft. retail/office center, church and day care facility		919 acres
Cameron Grove (P-26)	585 single-family detached units		301 acres

Collington Manor (P-27)	69 single-family detached units	23 units completed & 3 under construction	136 acres
Collington Station (P-28)	528 single-family detached units	349 units completed & 18 under construction	205 acres
Hall Road Village Activity Center (P-29)	Commercial	41 units completed and 17 under construction	14 acres
Devonshire Estates (P-30)	186 single-family detached units	38 units completed & 4 under construction	105 acres
Grovehurst II (P-31)	66 single-family detached units	59 units completed	38 acres
Grovehurst (P-32)	72 single-family detached units	101 units completed	52 acres
Twelve Oaks (P-33)	137 single-family detached units	Completed	97 acres
Tall Oaks Crossing (P-34)	306 single-family detached units	Completed	203 acres
Ashleigh (P-35)	129 single-family detached units		97 acres
Hopkins Pride (P-36)	119 single-family detached units		108 acres
Selon Bell (P-37)	319 single-detached & 330 attached units		515 acres
South Woodmore (P-38)	36 single-family detached units		40 acres
Woodmore (South) (P-39)	204 single-family detached units	146 single-family detached and 45 single-family attached units completed. 13 single-family detached and 6 single-family attached units under construction.	308 acres
Woodmore (North) (P-40)	138 single-family detached & 259 townhouse units	226 units completed & 5 under construction	799 acres
Tall Oaks Estates (P-41)	132 single-family detached units		258 acres
Woodmore Highlands (P-42)	125 single-family detached units	61 units completed and 7 under construction	182 acres
Marleigh (P-43)	185 single-family detached & 46 townhouse units		184 acres
Fairwood Turf Farm (P-44)	Residential/Commercial/Employment		1,057 acres
Westwood (P-45)	229 single-family detached units		254 acres
Stewart's Landing (P-46)	78 single-family detached units	36 units completed and 1 under construction	48 acres
Old Stage Knolls (P-47)	23 single-family detached units		12 acres

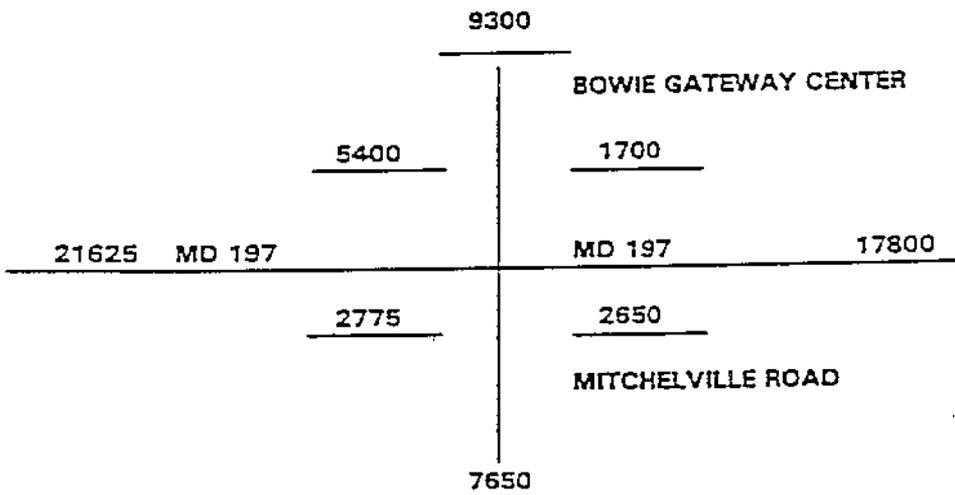
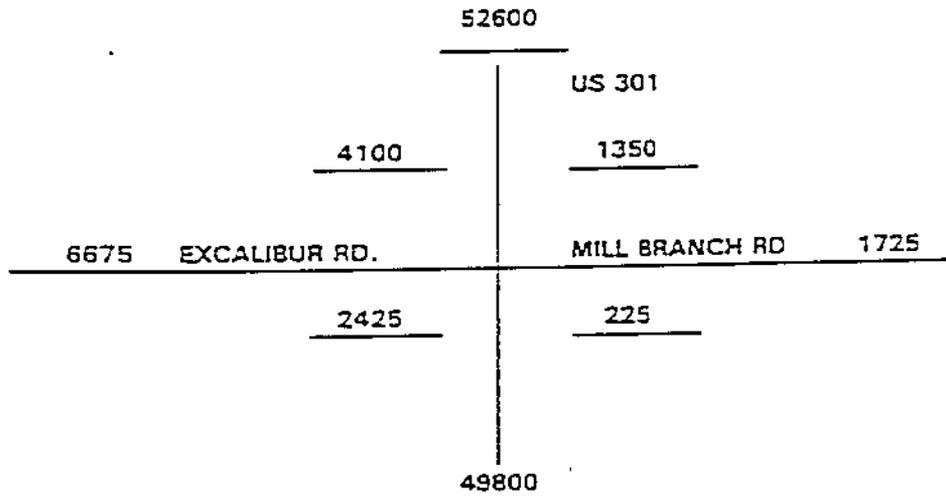
Bowie Business Park (P-48)	Under Study	Physical & environmental survey of property completed	9.5 acres
Highbridge Park (P-49)	60,000 sq. ft. commercial center, 204 townhouse units and 171 single-family detached units	159 single-family detached and 188 single-family attached units completed and 6 single-family attached units under construction	136 acres
Horsepen (P-50)	5 single-family detached units	Completed	6 acres
Nazario Woods (P-51)	43 single-family residential lots	Completed	26 acres
Northridge (P-52)	551 single-family detached & 304 townhouse units	467 single-family detached and 304 single-family attached units completed, 12 single-family detached units under construction.	263 acres
Severn Crossing (P-53)	423 single-family detached units	Completed	225 acres
Adnell (P-54)	150 single-family detached units	Completed	89 acres
Beck Property (P-55)	74 single-family detached units	Completed	41 acres
Hollman Property (P-56)	35 single-family detached units	15 units completed and 3 under construction	36 acres
Jeault Property (G-1)	Residential		500 acres
Nash Property (G-2)	Mixed residential/commercial		110 acres
Pointer Ridge Office Building (G-3)	Commercial office		1 acres
Willowbrook (G-4)	3.9-5 million sq. ft. of research and development, retail, office, warehousing and light manufacturing		453 acres

- (P) Pipeline development refers to projects which an official subdivision or zoning application has been filed, is under review or a decision is pending
- (Q) General interest projects are properties which have been recognized or considered for development due to their location, scale, proposed use(s) and are constantly monitored by the city due to potential impacts

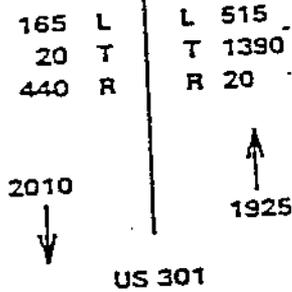
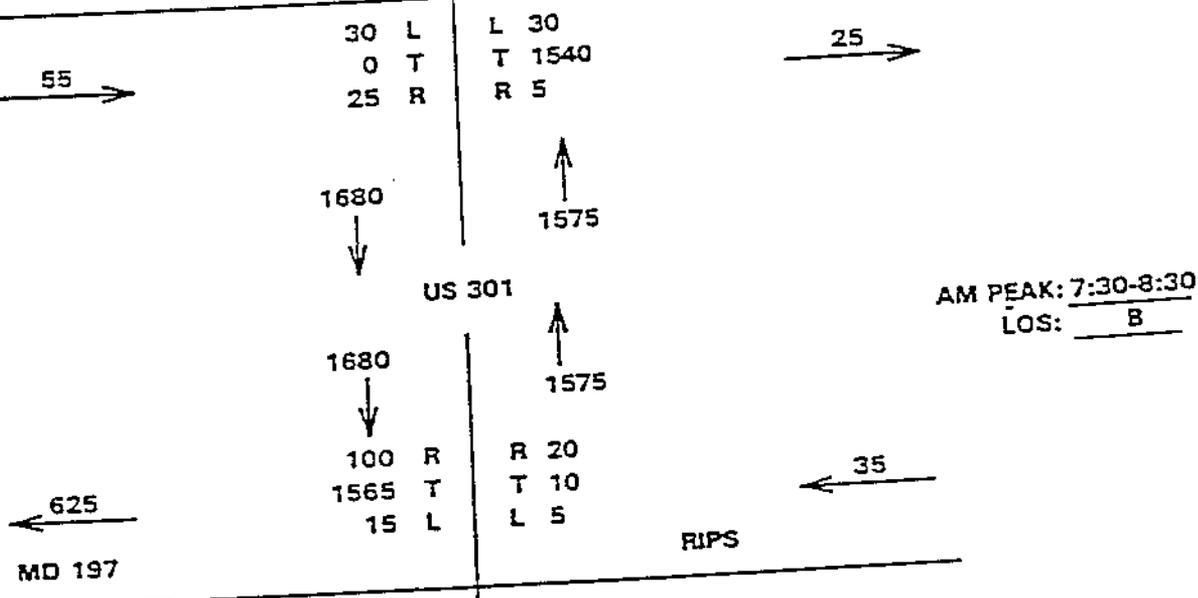
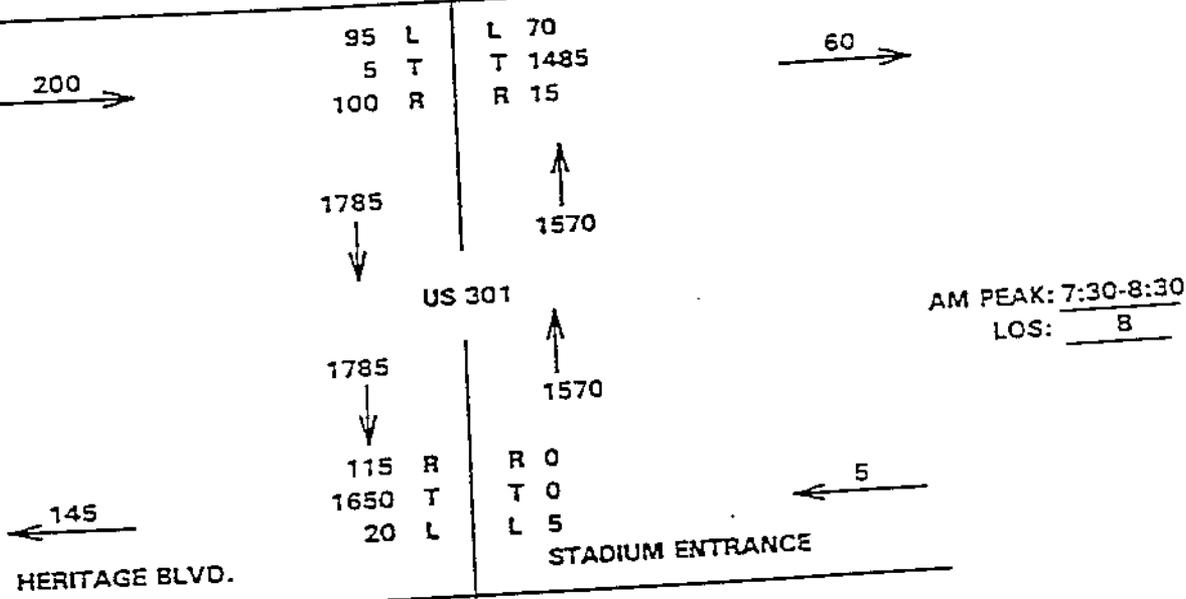
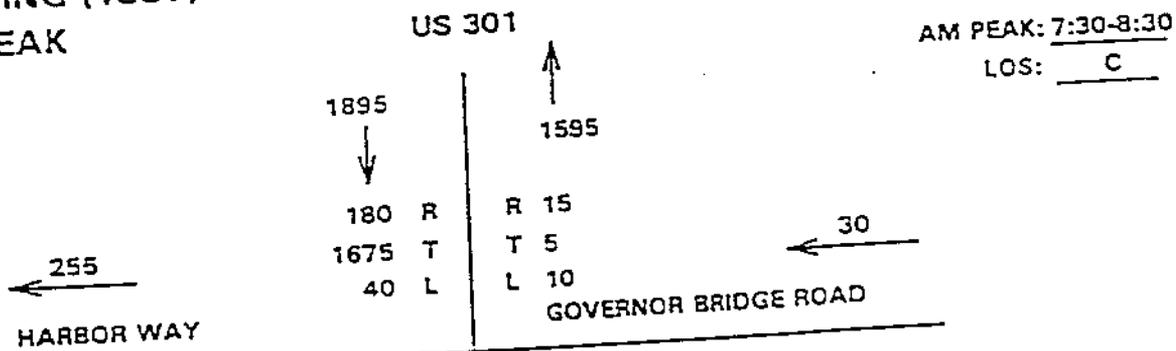
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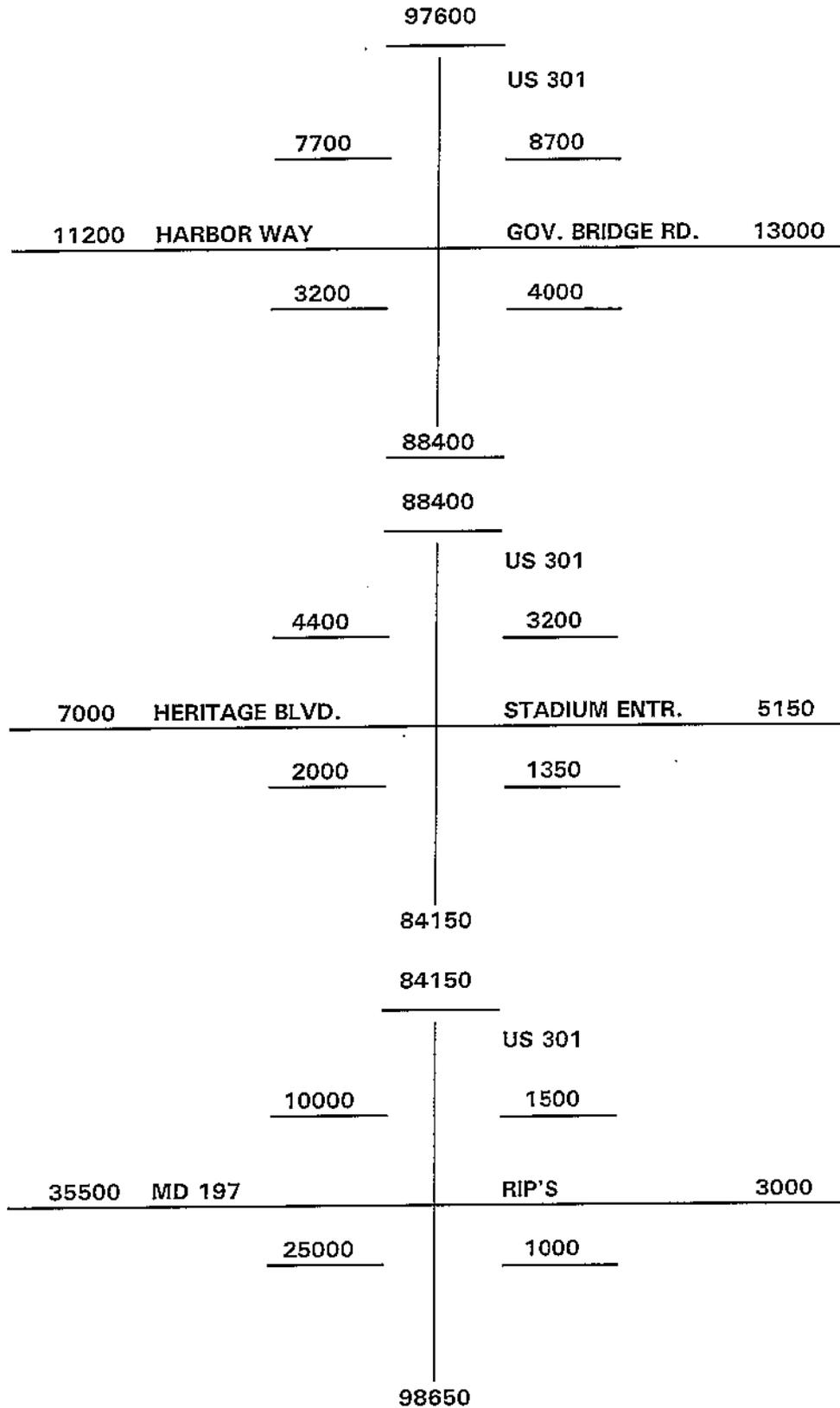
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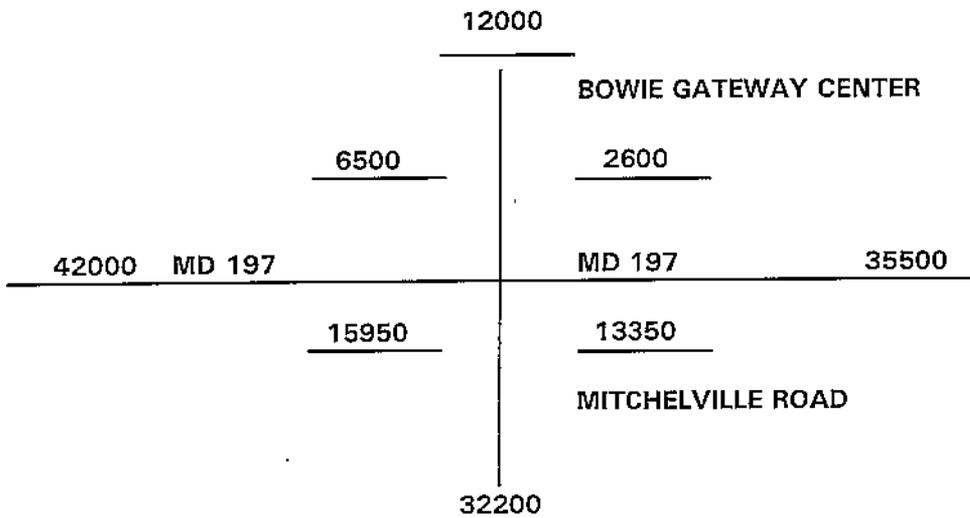
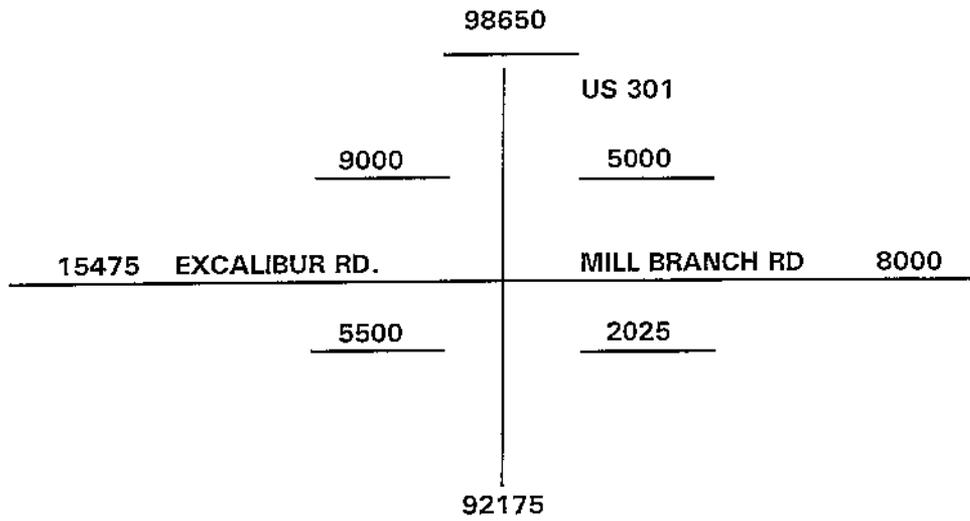
EXISTING (1997)
AM PEAK



FUTURE NO-BUILD ADT (2020)



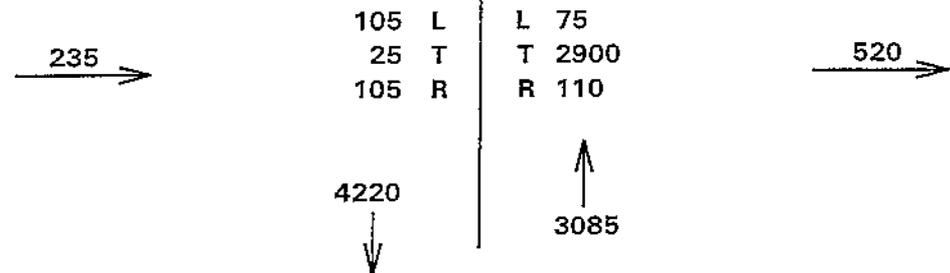
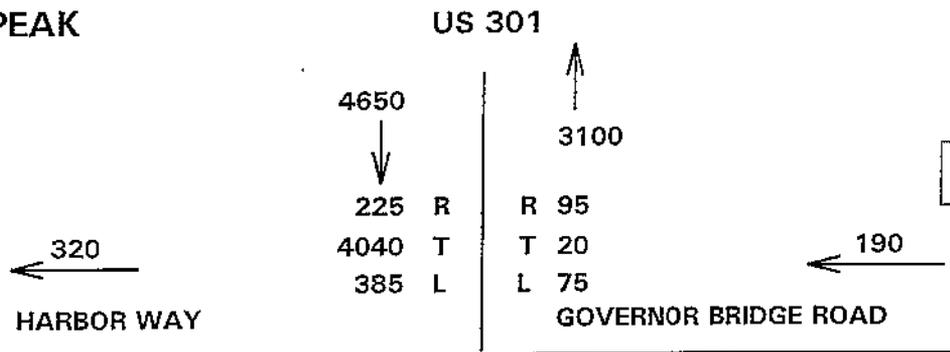
FUTURE NO-BUILD ADT (2020)



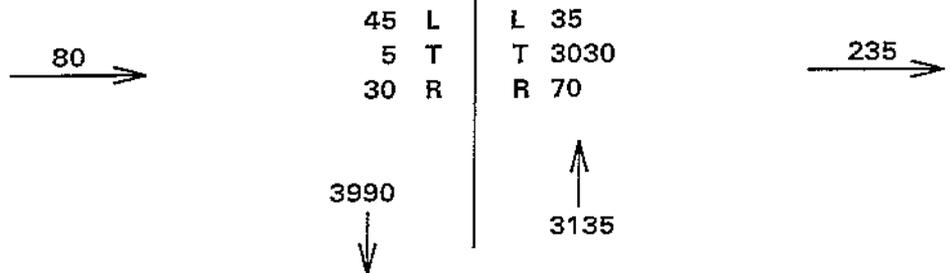
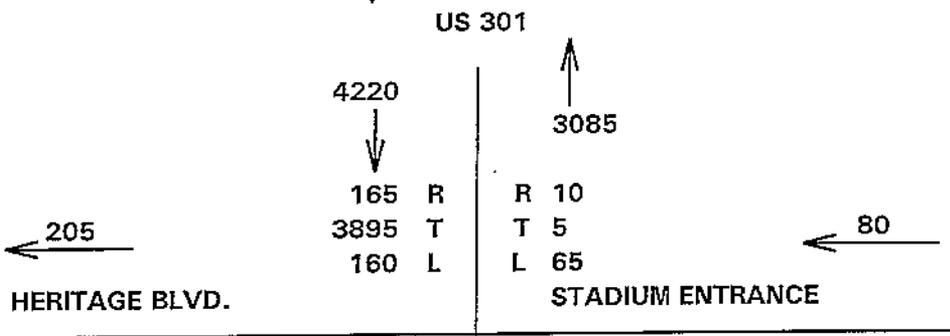
2020 NO-BUILD
AM PEAK

2020 NO-BUILD
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LOS: F - v/c1.5

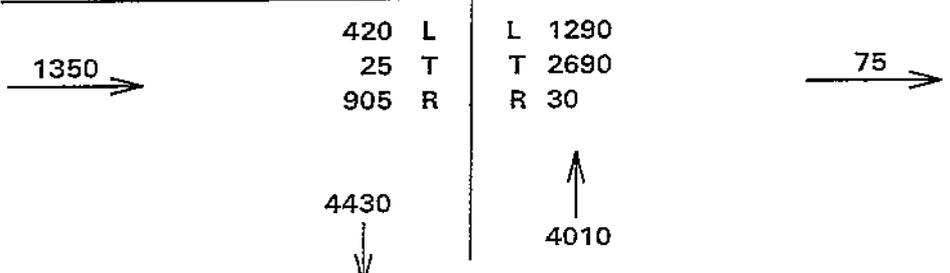
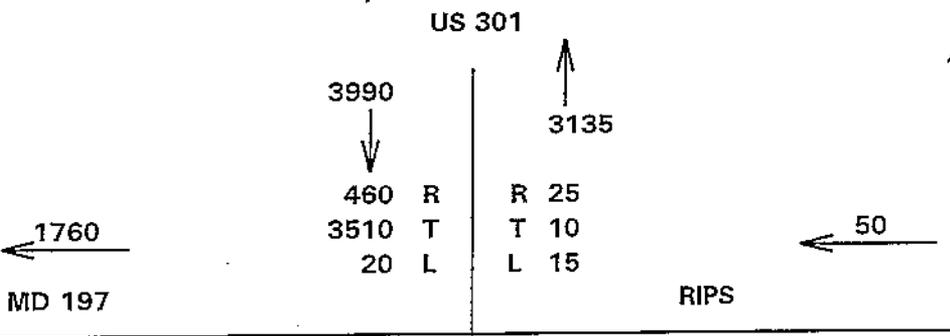
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AM PEAK: 7:30-8:30
LOS: F - v/c 1.4



AM PEAK: 7:30-8:30
LOS: F - v/c 1.5

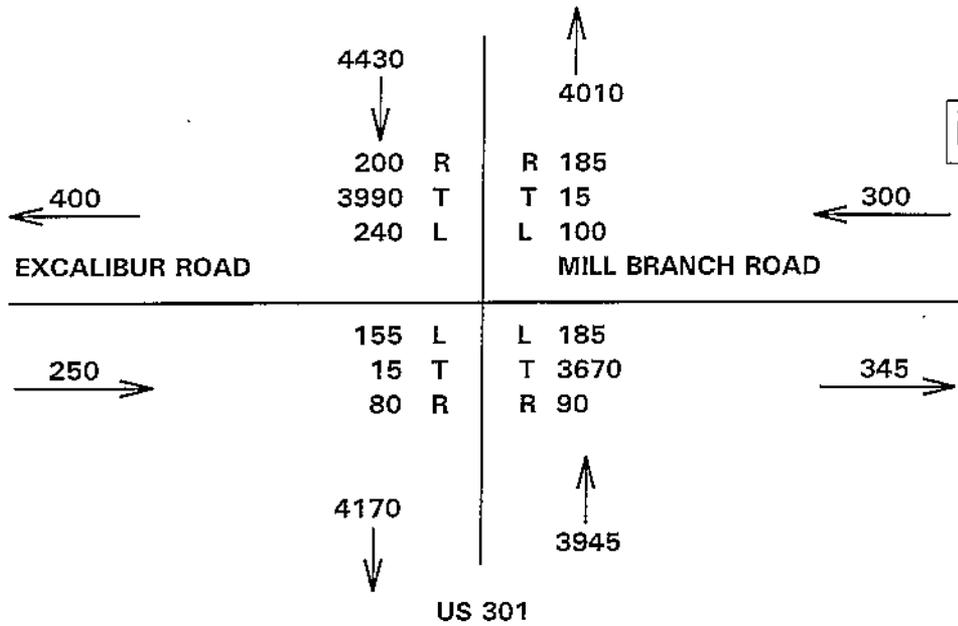


US 301

US 301

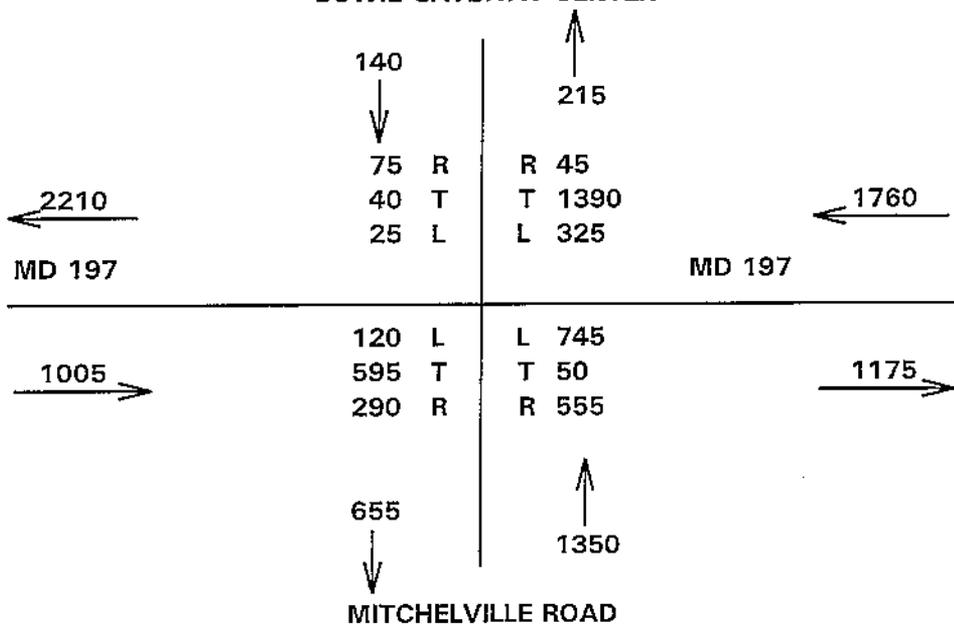
2020 NO-BUILD
AM PEAK: 7:30-8:30
LOS: F - v/c 1.6

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BOWIE GATEWAY CENTER

AM PEAK: 7:30-8:30
LOS: D - v/c .86



2020 NO-BUILD
PM PEAK

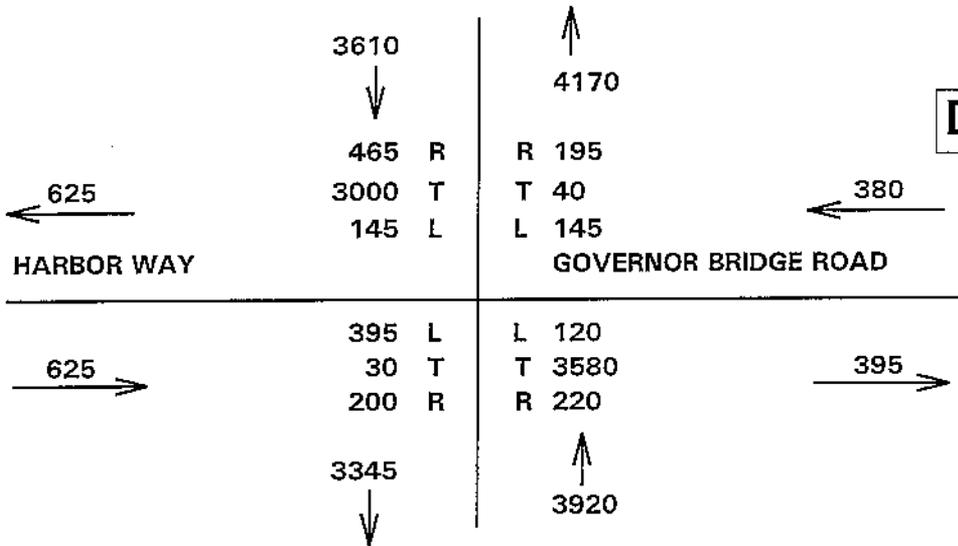
US 301

2020 NO-BUILD

PM PEAK: 5-6

LOS: F - v/c 1.6

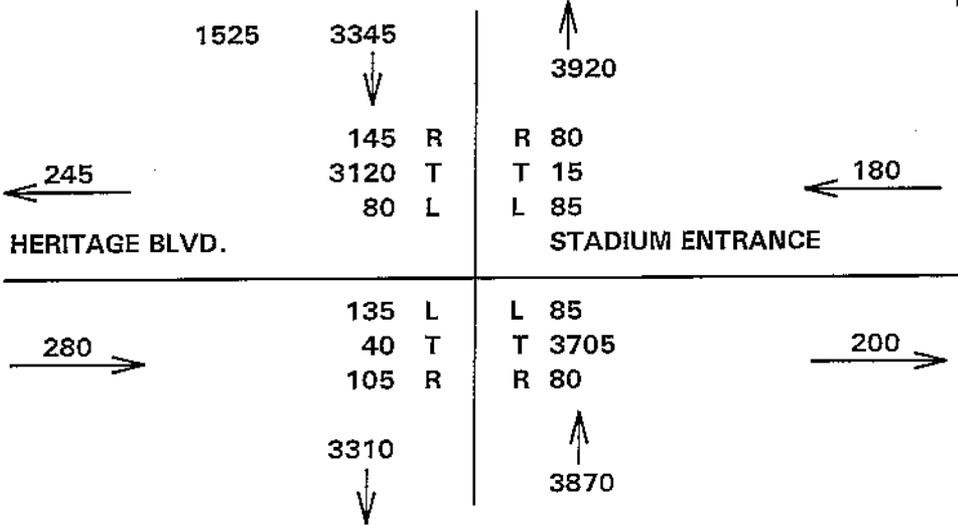
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US 301

PM PEAK: 5-6

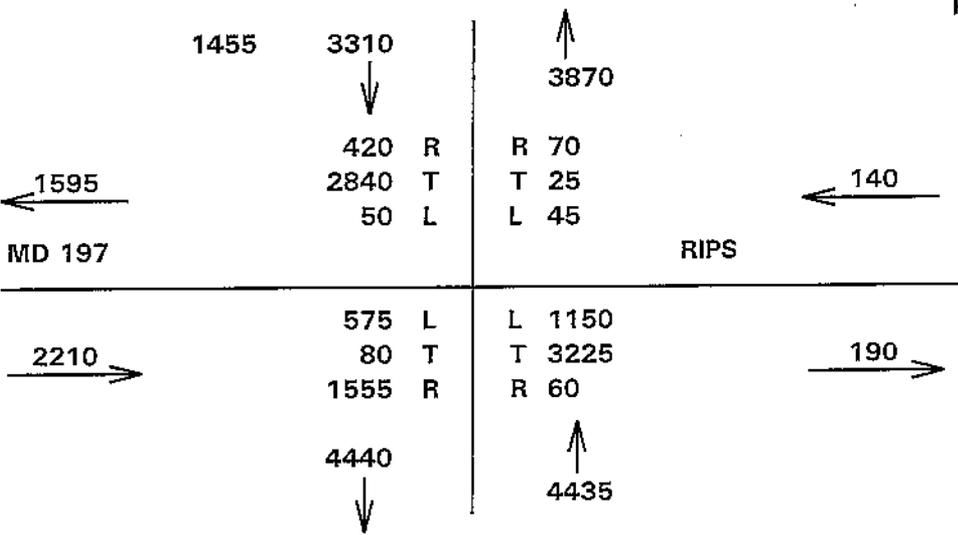
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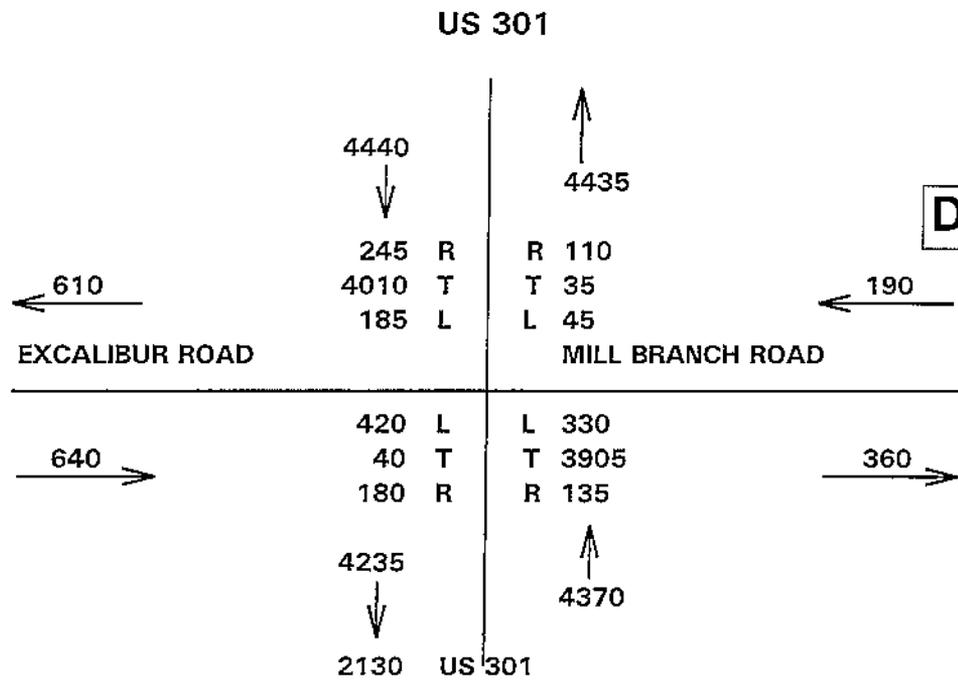
US 301

PM PEAK: 5-6

LOS: F - v/c 1.4

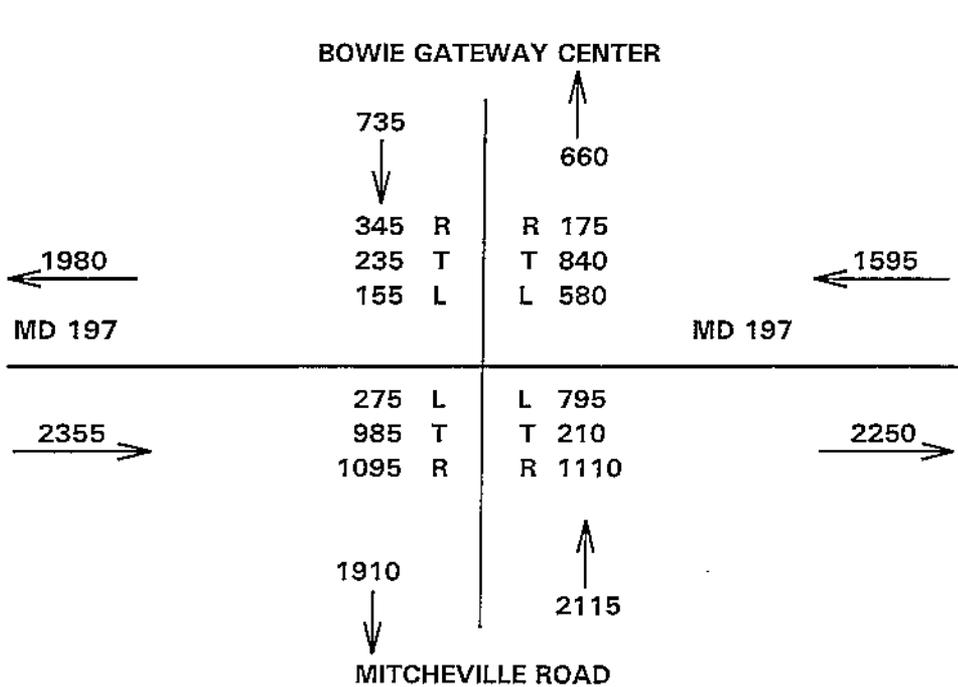


US 301



2020 NO-BUILD
PM PEAK: 5-6
LOS: F - v/c 1.9

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PM PEAK: 5-6
LOS: F - v/c 1.0