

**LOCAL AREA TRANSPORTATION REVIEW  
POTOMAC ELEMENTARY SCHOOL  
MONTGOMERY COUNTY, MARYLAND**

**Prepared For:**  
**Montgomery County Public Schools**

**April 21, 2017**  
**Project Manager:** **David A. Nelson, P.E., P.T.O.E.**  
**Mike Nalepa - Street Traffic Studies, Ltd.**

**STS Job No.: 6523**

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## INTRODUCTION

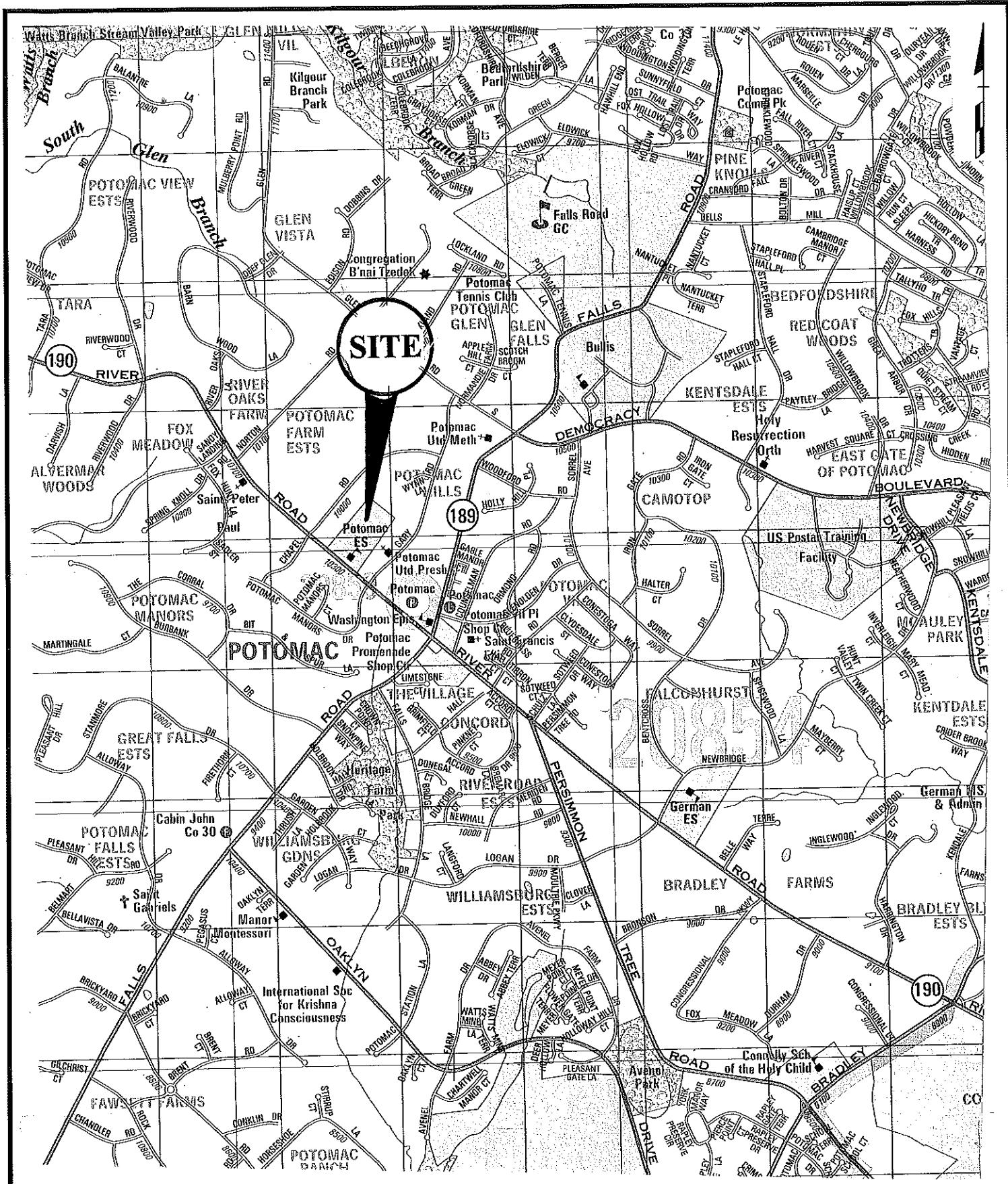
Montgomery County Public Schools (MCPS) is proposing to revitalize and expand the existing Potomac Elementary School located at 10311 River Road. The proposed school will have a core capacity of 740 students. The site is located along the north side of River Road in the Potomac Policy Area as shown on Exhibit 1. The Potomac Elementary School has a current enrollment of 445 students therefore the additional 295 students were analyzed as part of this study.

Street Traffic Studies, Ltd. has been retained to undertake the required traffic study under the provisions of the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* for a site that is already generating more than 30 peak hour trips.

The purpose of the traffic study is to evaluate the adequacy of the transportation facilities that are available to serve the site in accordance with the procedures outlined in the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* as adopted by the Planning Board and currently being revised by staff. Current traffic data were acquired for three (3) intersections of public streets in the vicinity of the site. For purposes of this analysis, data collected at the existing Potomac Elementary School was used to determine the trip generation characteristics for this school. The analysis described in the following pages demonstrates that the critical intersections are projected to operate within the Congestion Standard for the Potomac Policy Area of 1450 critical movements during the peak hours of the school.

The Traffic Study Scope of Work Agreement, correspondence with staff and a Concept Plan are contained in Appendix A.

Since this project is being built solely as a public facility by the Montgomery County government it is not required to pay a transportation impact tax.



SCALE: 1" = 2000'

## **EXISTING CONDITIONS**

### **Roadway System Elements**

The Potomac Elementary School is located at 10311 River Road. The site is served with a single full movement access on River Road. The proposed plan will result in an additional access point on River Road to provide a separate bus loop while maintaining the existing access for passenger vehicles.

The approach lanes and traffic controls at the intersections analyzed as the basis for this study are shown in Exhibit 2.

**River Road** is an east-west major roadway. It is a two (2) lane undivided roadway with exclusive left turn lanes at most intersections within the study area and has a posted speed limit of 30 MPH in front of the school. A continuous asphalt/concrete shared use path exists along the north side of MD 190 between Piney Meetinghouse Road and MD 189 and across the frontage of the school. An asphalt/concrete shared use path also exists along the south side of MD 190 from Norton Road to MD 189.

The MD 190/MD 189 intersection is a four legged intersection controlled with signalization. Marked crosswalks with pedestrian signals are provided across all legs of this intersection. Exclusive/permissive left turn phases are provided on both approaches of MD 189 and the phasing is split on MD 190.

The MD 190/Piney Meetinghouse Road-Marwood Hill Road intersection is a four legged intersection controlled with signalization. There are no pedestrian facilities at this intersection. A simple two (2) phase operation is in place at this intersection.

The MD 190/School Driveway intersection is a "T" type intersection controlled with a Stop sign on the School Driveway approach. There are no marked crosswalks across MD 190 at this intersection, but there is a marked crosswalk across the School Driveway.

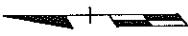
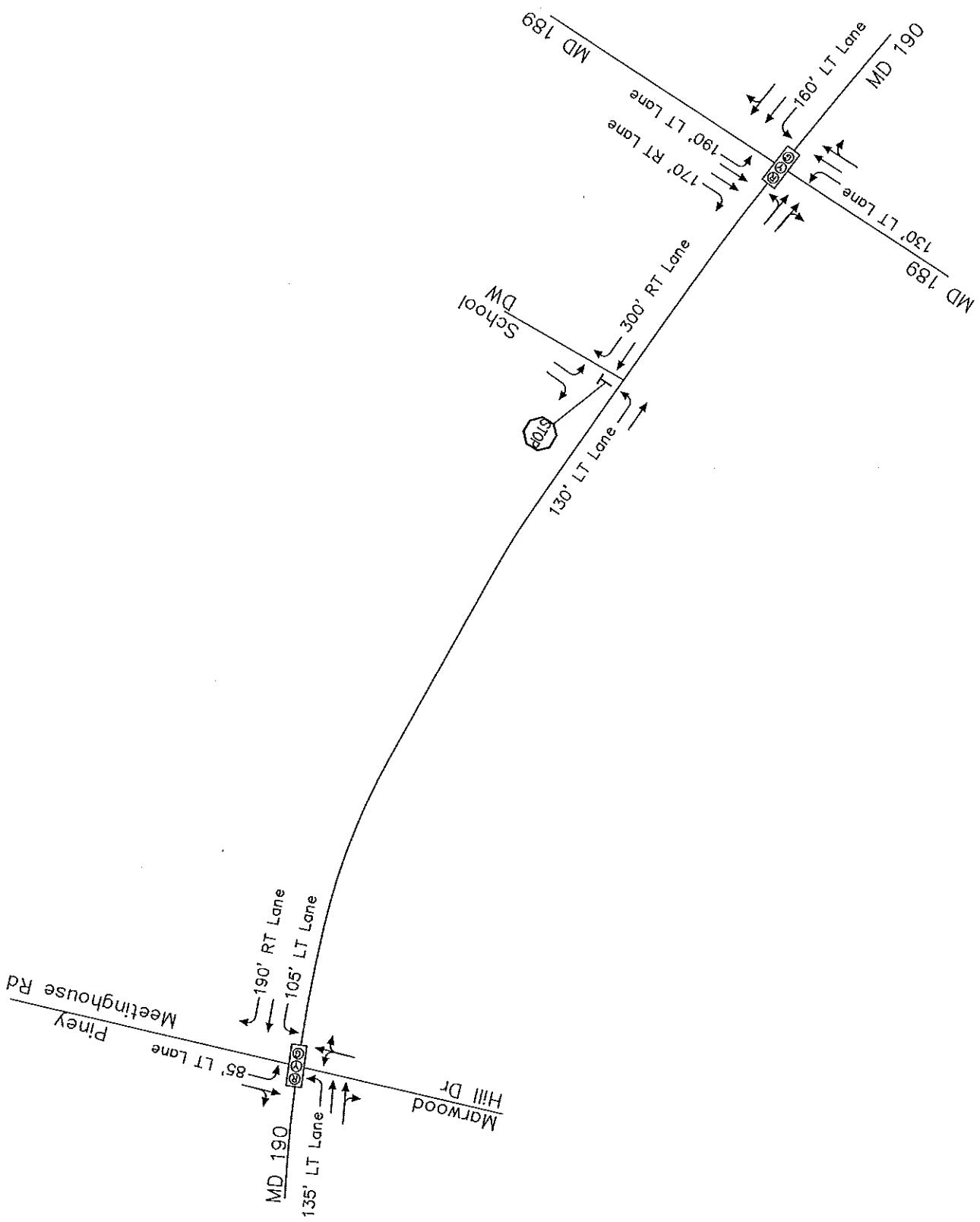


EXHIBIT 2  
EXISTING LANE USE

NO SCALE



## Existing Traffic Volumes

Manual turning movement traffic counts were conducted by Street Traffic Studies, Ltd. in February 2017 at the intersections that were agreed upon with staff. The counts were conducted between 6:30 AM and 9:30 AM in the morning and between 3:00 PM and 7:00 PM in the evening, while schools were in session and the weather was clear. The summarized data for these intersections are included in Appendix B.

Based on the counts conducted at the existing Potomac Elementary School the peak hour for the school in the morning was between 8:30 and 9:30 AM; the afternoon peak hour for the school was between 3:30 and 4:30 PM. Therefore the peak one hour traffic flows at the study intersections during these hours are shown in Exhibit 3.

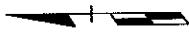
The peak hour traffic volumes shown in Exhibit 3 were subjected to a capacity analysis procedure using the critical lane technique described in M-NCPPC's *LATR/TPAR Guidelines*. The results of the analysis are set forth in Table I and the worksheets from which they are derived are in Appendix C.

**TABLE 1**  
**CAPACITY ANALYSES RESULTS**  
**(EXISTING PEAK HOUR VOLUMES)**

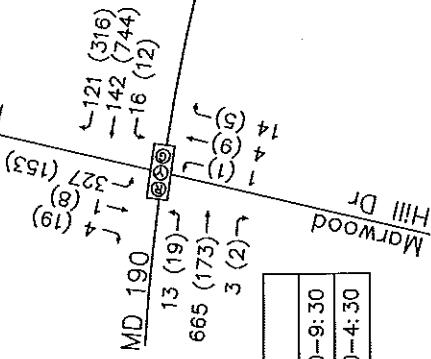
<u>INTERSECTION</u>	<u>MORNING PEAK HOUR</u>	<u>EVENING PEAK HOUR</u>	<u>CONGESTION STANDARD</u>
MD 190 @ MD 189	( 990)	(1221)	(1450)
MD 190 @ Piney Meetinghouse Rd	( 716)	( 931)	(1450)
MD 190 @ School Driveway	(1033)	( 985)	(1450)

X(0000) - Level of Service(Critical Lane Volume)

As shown in Table I, all of the intersections that were required to be analyzed per M-NCPPC guidelines meet the current Congestion Standard of 1450 critical lane movements for the Potomac Policy Area.



Piney  
Meetinghouse Rd



We 2/15/17	
AM PEAK	8:30-9:30
PM PEAK	3:30-4:30

6

0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

Th 2/16/17	
AM PEAK	8:30-9:30
PM PEAK	3:30-4:30

We 2/22/17	
AM PEAK	8:30-9:30
PM PEAK	3:30-4:30

NO SCALE

EXHIBIT 3  
EXISTING TRAFFIC VOLUMES

### **School Traffic Circulation and Queuing**

Typical of most schools the access point was congested during both the morning and evening peak periods for the school. It was noted that during the dismissal peak, the queue of passenger vehicles blocked the access and a school bus entered the site via the outbound lanes. The proposed separate bus loop would resolve this issue and provide a smoother more efficient operation for both school buses and passenger vehicles.

## **BACKGROUND TRAFFIC ANALYSIS**

As indicated in the correspondence between the consultant and the staff at M-NCPPC included in Appendix D, there were two (2) background developments in the general vicinity of the site that needed to be analyzed as a part of this study. The details regarding each of these developments are discussed below.

### **Planned Developments**

In accordance with procedures established by the LATR guidelines, the analysis of the traffic impact of proposed development must include traffic projections for other planned developments in the "vicinity" of the site. The listing of planned developments are shown in Table 2.

**TABLE 2**  
**BACKGROUND DEVELOPMENT**

<b><u>DEVELOPMENT</u></b>	<b><u>LAND USE</u></b>	<b><u>DENSITY</u></b>
1. Kentsdale Estates	Single Family	11 DU's
2. Bullis School Expansion	Private School	900 Students <sup>1</sup>

### **Trip Generation**

To determine the traffic associated with each of the background developments, trip generation rates for the single family residential use and the morning peak hour for the private school were provided by M-NCPPC. The trip rate for the evening peak hour of the private school was taken from the ITE Trip Generation publication, 9<sup>th</sup> Edition. The M-NPPC guidelines also provide that 35% of the trips generated by a private K-12 school are passby trips. This adjustment was made to the trips generated by the Bullis School. The trip generation rates and trips generated are shown in Table 3.

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<sup>1</sup> The school expansion would provide for a maximum of 900 students. At the time the counts for this study were conducted the enrollment at the Bullis School was 835 students. Therefore the traffic impacts associated with the remaining 65 students were analyzed.

**TABLE 3**  
**BACKGROUND TRIP GENERATION**

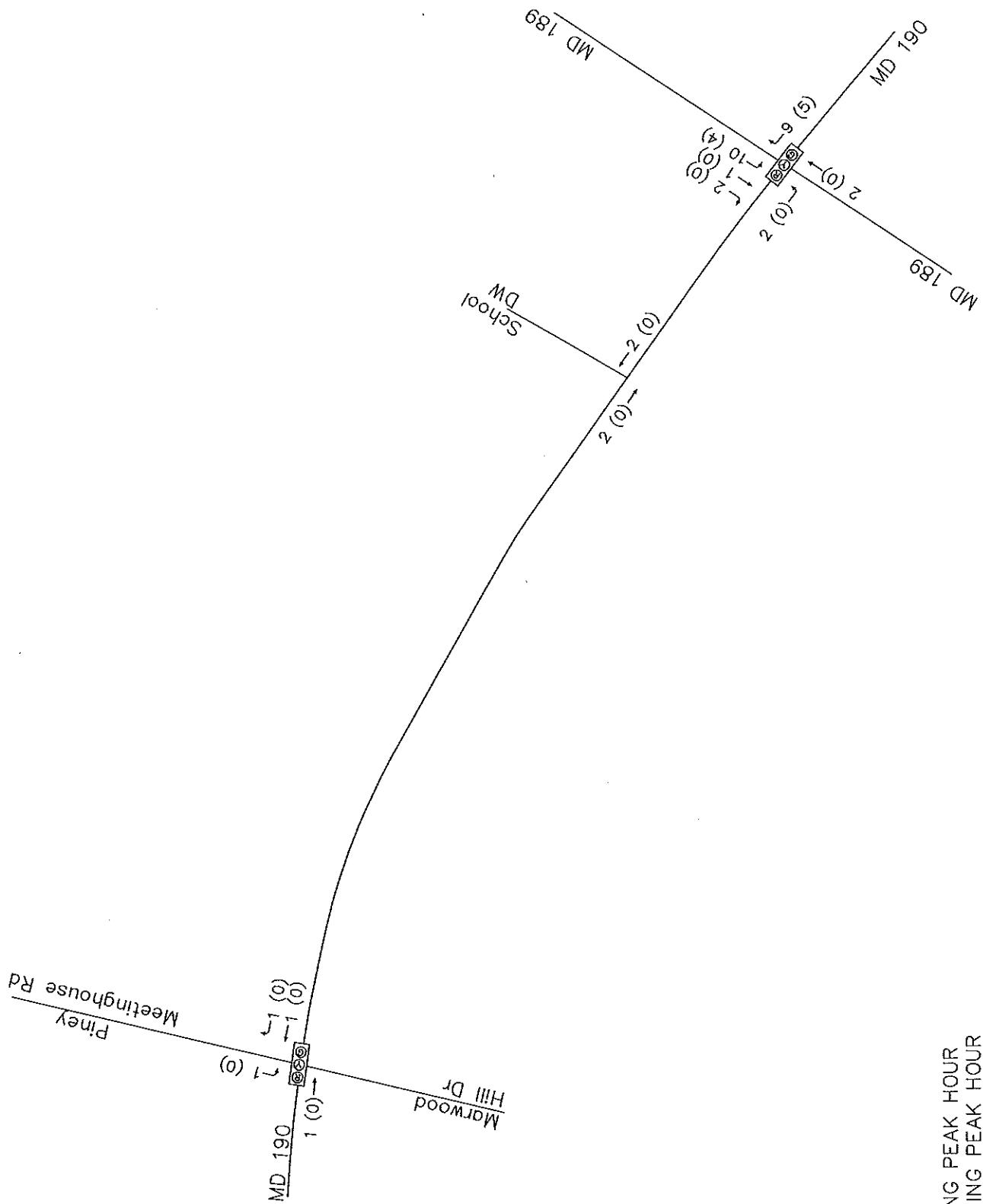
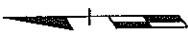
<b><u>DEVELOPMENT</u></b>	<b><u>MORNING PEAK HOUR</u></b>			<b><u>EVENING PEAK HOUR</u></b>		
	<b><u>IN</u></b>	<b><u>OUT</u></b>	<b><u>TOTAL</u></b>	<b><u>IN</u></b>	<b><u>OUT</u></b>	<b><u>TOTAL</u></b>
Single Family	T = 0.95(X)			T = 1.11(X)		
Kentsdale Estates Trips/11 SFDU's	2	8	10	8	4	12
Private School	T = Nx0.78			0.07	0.10	0.17 <sup>2</sup>
Bullis School Trips/65 Students New Trips (65%)	30 19	21 14	51 33	5 3	6 4	11 7

#### **Trip Distribution**

The trip distribution for the planned projects was derived through information provided by the M-NCPPC for the Potomac/Darnestown/Travilah super district. The total trips generated by the planned developments are shown in Exhibit 4. The individual trip assignment sheets for each development are contained in Appendix D. Adding these trips to the Existing Traffic Volumes yield the Background Traffic Volumes as shown in Exhibit 5.

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<sup>2</sup> ITE trip rate.



0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

NO SCALE

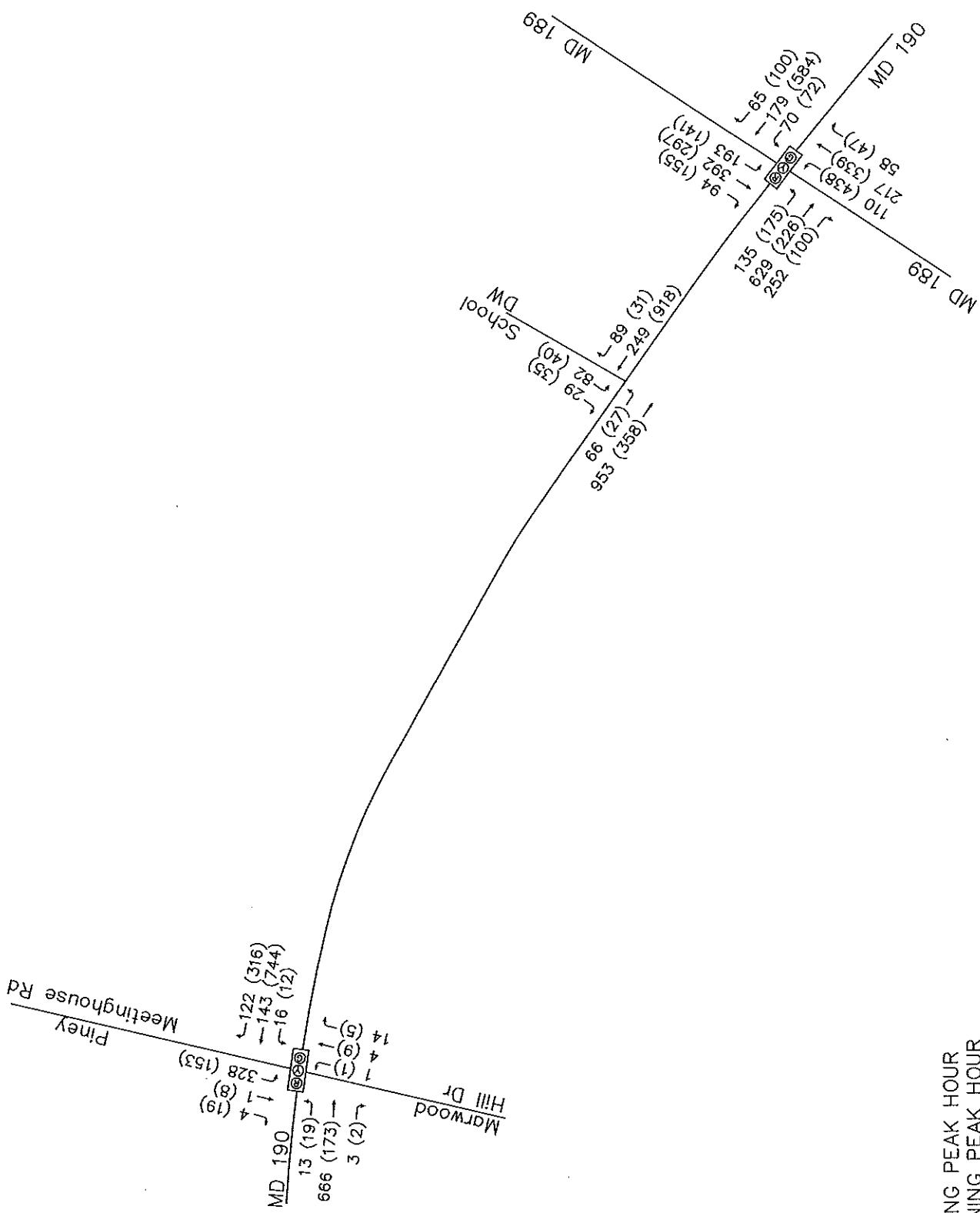
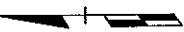
EXHIBIT 4  
TRIPS GENERATED BY PLANNED DEVELOPMENTS

The peak hour traffic volumes shown in Exhibit 5 were subjected to the same capacity analysis procedures as applied to the existing conditions traffic flows. The results of the analysis are set forth in Table 4 and the worksheets from which they are derived are in Appendix E. As shown by the data in Table 4, none of the intersections that are part of the LATR analyses are projected to exceed the Congestion Standard for the policy area when background trips are added.

**TABLE 4**  
**CAPACITY ANALYSES RESULTS**  
**(BACKGROUND PEAK HOUR VOLUMES)**

<u>INTERSECTION</u>	<u>MORNING PEAK HOUR</u>	<u>EVENING PEAK HOUR</u>	<u>CONGESTION STANDARD</u>
MD 190 @ MD 189	(1006)	(1224)	(1450)
MD 190 @ Piney Meetinghouse Rd	( 718)	( 931)	(1450)
MD 190 @ School DW	(1035)	( 985)	(1450)

X(0000) - Level of Service(Critical Lane Volume)



0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

NO SCALE

EXHIBIT 5  
BACKGROUND TRAFFIC VOLUMES

## **SITE TRAFFIC ANALYSIS**

The existing Potomac Elementary School is located at 10311 River Road and has a student enrollment of 445 students. The revitalized/expanded school will replace the existing school and have a capacity of 740 students.

Access to the site will be provided via the existing full movement access and a separate bus loop. The school is served by 10 school buses which share an access with passenger vehicles. As a result of this project a separate bus loop will be provided with on-site storage for 10 school buses. This will be adequate as the number of school buses serving the school is not projected to change.

The proposed revitalization/expansion will provide a state of the art facility that will replace a building that is not compliant with current standards. The modernization will not immediately result in any program changes at the school however it will improve circulation and provide amenities that will accommodate the educational program requirements. The existing school has a staff of approximately 61 and this is not expected to change significantly in the immediate future.

The existing school hours are 9:25 AM to 3:50 PM and this will not change as a result of the proposed revitalization/expansion.

Currently the site provides approximately 60 parking spaces on site and this will be expanded to 80 parking spaces.

### **Trip Generation Analysis**

Turning movement counts were conducted at the existing school driveway and were used to develop trip generation rates for the expanded school. The trip generation rates along with the additional trips generated are shown in Table 5.

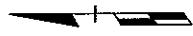
**TABLE 5**  
**TRIP GENERATION**  
**EXISTING POTOMAC ELEMENTARY SCHOOL**

<b><u>LAND USE</u></b>	<b>MORNING PEAK HOUR</b>			<b>EVENING PEAK HOUR</b>		
	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>
Existing School Trips						
Trips/445 Students	155	111	266	58	75	133
Trips/Student	0.35	0.25	0.60	0.13	0.17	0.30
Trips/295 Students	103	74	177	38	50	88

The above trips were generated during the peak hours analyzed for this use, 8:30 to 9:30 AM and 3:30 to 4:30 PM. Since the trip generation was based on counts conducted at the existing school, a trip generation adjustment factor was not applied to the trips.

#### **Distribution and Assignment of Generated Trips**

The trips projected to be generated by the proposed expansion of the school were assigned to the road network. Since this school will maintain the existing boundaries, the trips were assigned based on those boundaries. Prior to assigning the new trips to the road network, the bus trips were assigned to the proposed bus loop and the Adjusted Volumes are shown in Exhibit 6. The New Site Generated Trips are shown on Exhibit 7 and were combined with the Adjusted Volumes and the Background Traffic Volumes resulting in the Total Traffic Volumes as shown in Exhibit 8. The total traffic volumes were then evaluated using the same methodology as for the previous step. The results of the analyses are shown in Table 6.



Piney  
Meetinghouse Rd

MD 190

Hill Dr  
Marwood

+10 (+4)  
+10 (+4)  
+10 (+4)

-2 (+4)  
-2 (+7)

School DW

MD 189

MD 190

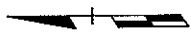
MD 189

6

NO SCALE

EXHIBIT 6  
ADJUSTED VOLUMES

0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR



NOTE: 30% OF THE NEW SITE GENERATED TRIPS WOULD ORIGINATE BETWEEN THE SCHOOL ACCESS AND PINEY MEETINGHOUSE ROAD.

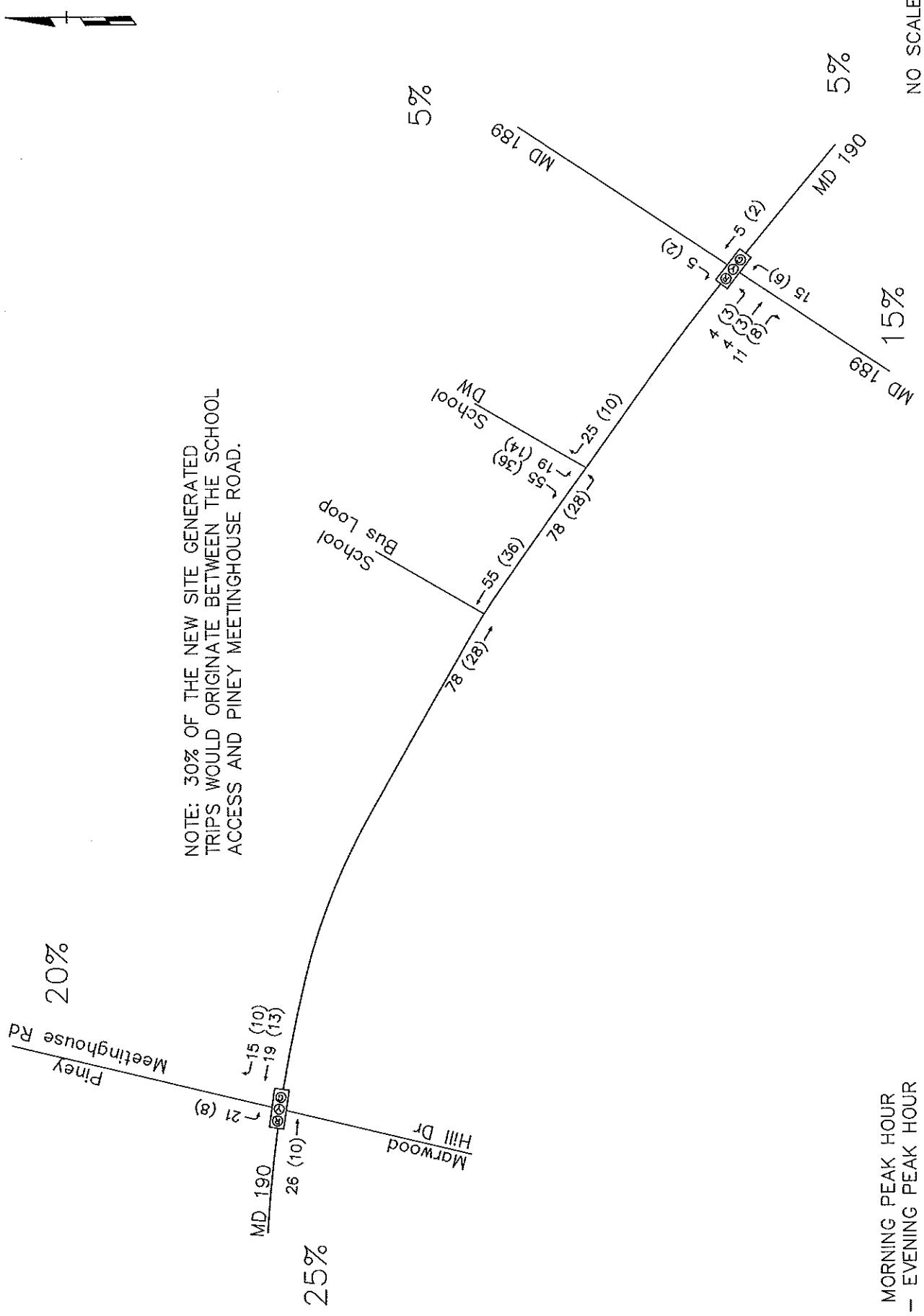


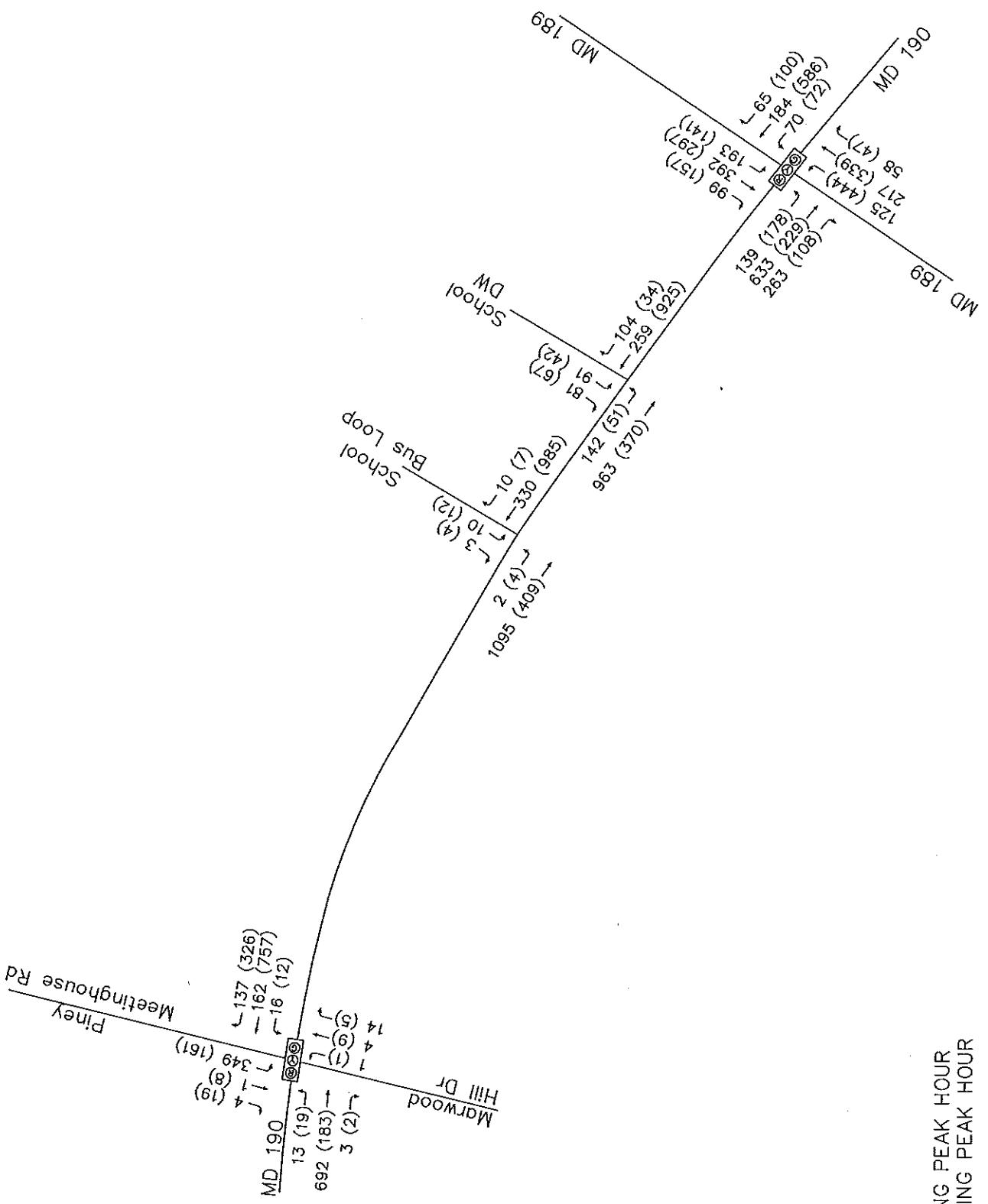
EXHIBIT 7  
NEW SITE GENERATED TRIPS

NO SCALE

0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

EXHIBIT 8  
TOTAL TRAFFIC VOLUMES

NO SCALE



0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

**TABLE 6**  
**CAPACITY ANALYSES RESULTS**  
**(TOTAL PEAK HOUR VOLUMES)**

<b><u>INTERSECTION</u></b>	<b><u>MORNING PEAK HOUR</u></b>	<b><u>EVENING PEAK HOUR</u></b>	<b><u>CONGESTION STANDARD</u></b>
MD 190 @ MD 189	(1020)	(1238)	(1450)
MD 190 @ Piney Meetinghouse Rd	( 752)	( 952)	(1450)
MD 190 @ School DW	(1054)	(1018)	(1450)
MD 190 @ Bus Loop	(1108)	(1005)	(1450)

X(0000) - Level of Service(Critical Lane Volume)

The capacity worksheets are contained in Appendix F.

As shown in Table 6, all of the LATR intersections are projected to meet the current Congestion Standard of 1450 critical lane movements for the Potomac Policy Area. In addition none of the intersections exceed 1350 critical lane movements and an expanded analyses is not required.

## **PEDESTRIAN AND BICYCLIST IMPACT STATEMENT**

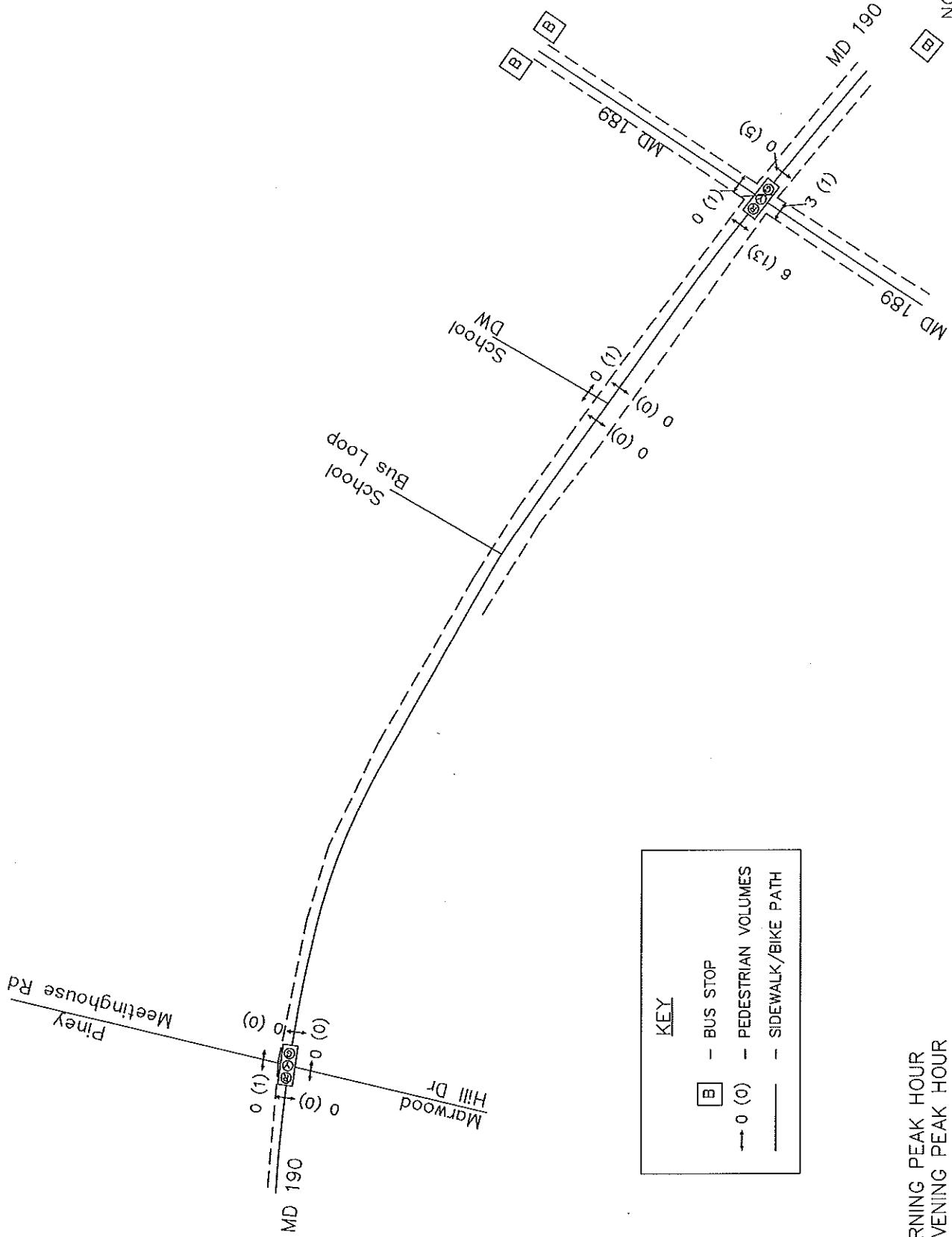
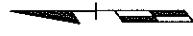
In accordance with the *Local Area Transportation Review Guidelines* the results of the pedestrian counts that were gathered as a part of the base data collection process are included in Appendix B. These counts show low pedestrian volumes at all of the study intersections. Exhibit 9 shows the peak hour pedestrian volumes recorded at the critical intersections as well as the existing bus stops. Only one (1) bicyclist was recorded at the critical intersections during the peak hours.

Aside from the pedestrian facilities on site, all of the existing pedestrian facilities within a 500 foot radius of the site are currently ADA compliant. The on-site pedestrian facilities will be fully ADA compliant upon completion of this project.

A continuous asphalt/concrete shared use path exists along the north side of MD 190 between Piney Meetinghouse Road and MD 189. An asphalt/concrete shared use path exists along the south side of MD 190 between Norton Road and MD 189.

There are no pedestrian facilities at the MD 190/Piney Meetinghouse Road intersection; however the MD 190/MD 189 intersection has a full compliment of pedestrian features including marked crosswalks, pedestrian signal with push buttons and count-down heads and ADA ramps.

It is not expected that this use will generate significant pedestrian volumes. Table 4 below shows the results of the pedestrian crossing timing analysis.



0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

EXHIBIT 9  
PEDESTRIAN / TRANSIT FEATURES

**TABLE 4**  
**PEDESTRIAN CROSSING TIMING EVALUATION**

<u>INTERSECTION</u>	<u>WIDTH</u>	<u>AVAILABLE TIME</u>	<u>DESIRED TIME</u>
MD 190 @ MD 189			
N leg of MD 189	65 feet	22.5	18.6
S leg of MD 189	75 feet	22.5	21.4
E leg of MD 190	74 feet	23.5	22.1
W leg of MD 190	58 feet	23.5	16.6

MD 190 @ Piney Meetinghouse Rd - there are no pedestrian facilities at this intersection.

The pedestrian crossing timing analyses shows that the available signal timings are adequate.

WMATA Bus service (Route T2) is provided along MD 190 and MD 189 in this general area; however the route does not continue along MD 190 at the school. The T2 route provides weekday peak period service with approximately 30 minute headways.

## **QUANTITATIVE TRANSIT/PEDESTRIAN/BICYCLE ANALYSES**

The peak number of new trips generated by this proposal is 177 trips during the morning peak hour.

Transit Analysis - The number of transit trips ( $177 \times 2.1\% / 74.8\% = 5$ ) is less than the threshold of 50 so that a quantitative transit analysis is not required.

Pedestrian/Bicycle Analysis - The number of non-motorized trips ( $177 \times 3.7\% / 74.8\% = 9$ ) plus the number of transit trips (5 from above) totals 14 or less than the threshold of 50 so that quantitative pedestrian or bicycle analyses are not required.

## **CONCLUSIONS**

A traffic impact study was prepared in accordance with the guidelines published by the M-NCPPC for Mandatory Referrals, for projects undertaken by public agencies. The proposed revitalization/expansion of the Potomac Elementary School falls within the parameters of these guidelines.

After collecting current traffic count data at three (3) intersections, it was determined that all of the intersections that were analyzed as part of the LATR study met the Congestion Standard for the Potomac Policy Area of 1450 critical lane movements during the peak hours of school traffic.

As required by the *LATR/TPAR Guidelines*, pedestrian facilities in the area were also evaluated. The area in which the school is located is along MD 190 which has paved bikepaths along both sides of MD 190 in the vicinity of the school; however existing pedestrian volumes are low and this proposal is not expected to change this.

**APPENDIX A**  
**TRAFFIC STUDY SCOPE/CONCEPT PLAN**

**Local Area Transportation Review / Transportation Policy Area Review**  
**TRAFFIC STUDY SCOPE OF WORK AGREEMENT**

<b>Contact Information</b>				
Transportation Consultant (company, contact, email, and phone number)	Mike Nalepa Street Traffic Studies <a href="mailto:malepa@streettrafficstudies.com">malepa@streettrafficstudies.com</a> 410 590 5500			
Name of Applicant / Developer	Montgomery County Public Schools			
<b>Project Information</b>				
<i>Include Tables/Graphics, As Needed</i>				
Project Name (Include plan no. if known)	Potomac Elementary School			
Project Location (Include address if known)	10311 River Road			
Policy Area(s) (subdivision staging policy map)	Potomac	Master Plan / Sector Plan Area(s)		
Application Type(s)	<input type="checkbox"/> Preliminary Plan	<input checked="" type="checkbox"/> Site Plan	<input type="checkbox"/> Sketch Plan	<input type="checkbox"/> Amendment
	<input type="checkbox"/> Conditional Use (formerly special exception)	<input type="checkbox"/> Local Map Amendment	<input type="checkbox"/> Other: _____	
Project Description & Previous Approvals  (proposed land uses, zoning, no. of units, square footage, construction phasing, prior approvals and proposals, existing uses, site operations, year built, status of APF, other relevant info)	<p>This proposal will revitalize and expand the existing Potomac Elementary School located at 10311 River Road. Enrollment for the 2015-16 school year was 474 students. This proposal would increase the core capacity of the school to 740 students, a 266 student increase!</p> <p>Currently the school is served by a single full movement access onto River Road. This proposal would provide a second full movement access point onto River Road and would provide a separate bus loop.</p>			
Site Access  (proposed access location(s), existing/adjacent/opposite curb cuts, interparcel connections, access configurations and restrictions, internal circulation, private roads, parking/loading areas, other relevant info)	<p>The existing school is served by a single full movement access onto River Road which serves both passenger vehicles and school buses. This proposal would create a second full movement access onto River Road and provide a school bus loop to separate school buses from passenger vehicles.</p>			

<b>Transportation Analysis Requirement</b>  (refer to pages 4 and 6 in the Jan. 2013 LATR Guidelines; staff can provide additional guidance and support)	<input checked="" type="checkbox"/> Traffic Study  Generates <u>30 or more</u> total weekday peak hour trips (no reductions other than a credit for existing developments over 12 years old) <u>AND</u> outside of White Flint Policy Area. Fill out remainder of this form, sign last page, and include in traffic study appendix.		<input type="checkbox"/> Traffic Study Exemption Statement  Generates <u>29 or fewer</u> total weekday peak hour trips (no reductions other than a credit for existing developments over 12 years old) <u>OR</u> within White Flint Policy Area. Fill out PAR and trip generation sections below, sign last page, and include with statement.												
<b>Policy Area Review (PAR)</b>  (refer to pages 27 - 31 of the Jan. 2013 LATR Guidelines)	<input checked="" type="checkbox"/> TPAR (1/1/13 - Present) 0, 25, 50%; _NA_____	<input type="checkbox"/> PAMR (11/15/07 - 12/31/12) 0-50%: _____	<input type="checkbox"/> Exempt (no SF Increase or fewer than 3 new trips) <input type="checkbox"/> No PAR (7/1/03 – 11/14/07) <input type="checkbox"/> PATR (before 6/30/03)												
<b>Transportation Mitigation Agreement (TMAg) Required?</b>	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (25+ Employees and in TMD)	<input type="checkbox"/> Amend Existing TMAg												
<b>Transportation Management District (TMD)?</b>	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes TMD Name: _____													
<b>Traffic Impact Study Assumptions</b> <i>Include Tables/Graphics, As Needed</i>															
<b>Study Years / Phases</b>	Existing Year: 2017	Phases / Build-out Year(s): 2020													
<b>Study Periods</b>	<input checked="" type="checkbox"/> AM <input checked="" type="checkbox"/> PM <input type="checkbox"/> Mid-day <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday <input type="checkbox"/> Other: _____														
<b>Study Intersections &amp; CLV Thresholds</b>  (list all signalized & significant unsignalized intersections, and site driveways with corresponding CLV thresholds; traffic counts must be collected within 12-months of completed DARC application)	# of tiers of intersections to study (refer to page 7 of Jan. 2013 LATR): _____ <i>For the purpose of determining the number of tiers of study intersections, trip calculation for the subject site should also include nearby unbuilt properties in common ownership. No trip reductions should be taken in this calculation other than a credit for existing developments over 12 years old.</i> <table border="1"> <tr><td>1) River Rd @ Piney Meetinghouse Rd</td><td>7)</td></tr> <tr><td>2) River Rd @ Site Access</td><td>8)</td></tr> <tr><td>3) River Rd @ Potomac SC - Post Office DW</td><td>9)</td></tr> <tr><td>4)</td><td>10)</td></tr> <tr><td>5)</td><td>11)</td></tr> <tr><td>6)</td><td>add more rows if necessary</td></tr> </table>			1) River Rd @ Piney Meetinghouse Rd	7)	2) River Rd @ Site Access	8)	3) River Rd @ Potomac SC - Post Office DW	9)	4)	10)	5)	11)	6)	add more rows if necessary
1) River Rd @ Piney Meetinghouse Rd	7)														
2) River Rd @ Site Access	8)														
3) River Rd @ Potomac SC - Post Office DW	9)														
4)	10)														
5)	11)														
6)	add more rows if necessary														
<b>Trip Generation</b>  (clearly cite sources and methodology, include trip gen for existing site, current approvals, proposed uses, and net changes)	Will be developed using the existing volumes generated by the school and adjusted to reflect the volumes generated by the additional 266 students.														

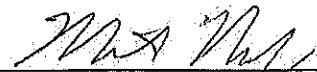
<b>Reductions / Mode Split</b> (Include justification and supporting documentation for internal capture, pass-by, diverted, transit; TDM)	None
<b>Trip Distribution %</b> (show percentage distribution throughout study area, refer to Appendix 4 of the Jan. 2013 LATR Guidelines for additional information on distributions)	Based on the attached service area for the Potomac Elementary School, we propose the following trip distributions: 25% to the NW beyond Piney Meetinghouse Rd 20% to the N along Piney Meetinghouse Rd 25% to the SE along River Rd beyond the Potomac SC DW 30% internal between the school access and Piney Meetinghouse Rd
<b>Pipeline Developments to be considered as background traffic</b>  (Include name, plan #, land uses, and sizes for approved but unbuilt developments or concurrently pending applications; Info can be obtained from the M-NCPPC Pipeline website; background growth rate, if applicable)	None
<b>Pipeline Transportation Projects to be considered as background condition</b>  (funded County CIP, State CTP, developer projects, etc.)	None
<b>Additional Analysis or Software Required</b>	<input type="checkbox"/> Queuing Analysis <input type="checkbox"/> Accident Analysis <input type="checkbox"/> VISSIM <input type="checkbox"/> Signal Warrant Analysis <input type="checkbox"/> Synchro <input type="checkbox"/> CORSIM <input type="checkbox"/> Weaving/Merge Analysis <input type="checkbox"/> SIDRA <input type="checkbox"/> Other
<b>M-NCPPC Clarifications</b>	

- Traffic study will comply with all other requirements of the LATR & TPAR Guidelines not listed on this form.
- If physical improvements are proposed as mitigation, the traffic study will demonstrate feasibility with regards to right-of-way and utility relocation (at a minimum).
- In the event that the development proposal significantly changes after this traffic study scope has been agreed to, the Applicant will work with M-NCPPC staff to amend the scope to accurately reflect the new proposal.
- A receipt from MCDOT showing that the traffic study review fee has been paid will be provided to M-NCPPC DARC at the time the development application is submitted.
- A PDF copy of the traffic study and appendices will be provided.

#### **Additional Assumptions / Special Circumstances for Discussion**

*Traffic study scope agreement is not final until signed by M-NCPPC staff.*

AGREED



**APPLICANT OR TRAFFIC CONSULTANT SIGNATURE**  
(Must be PE, PTOE, PTP, or AICP unless exempt from traffic study)



DATE

Mike Nalepa  
PRINT NAME

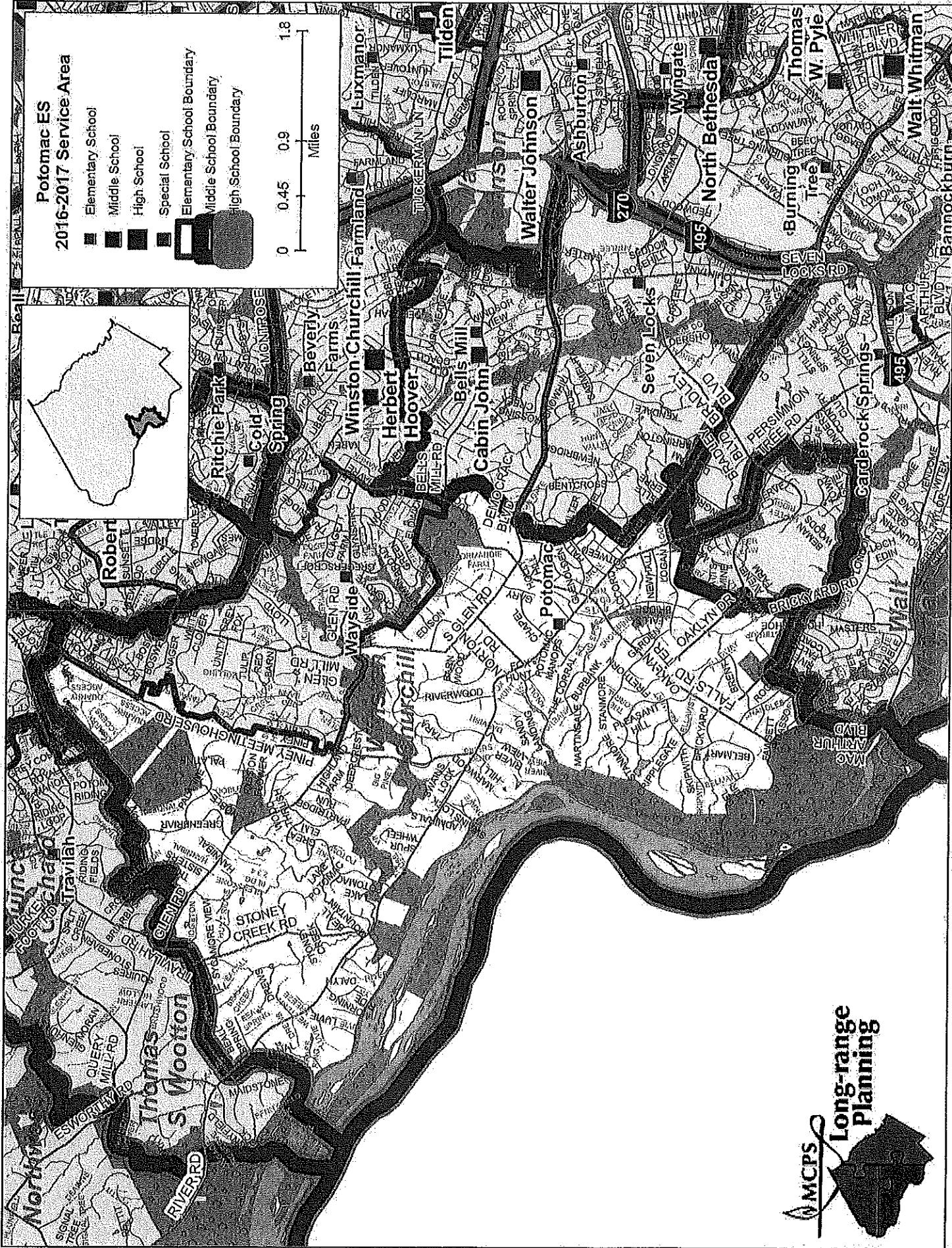
Street Traffic Studies  
COMPANY

M-NCPPC STAFF SIGNATURE

DATE

**PRINT NAME**

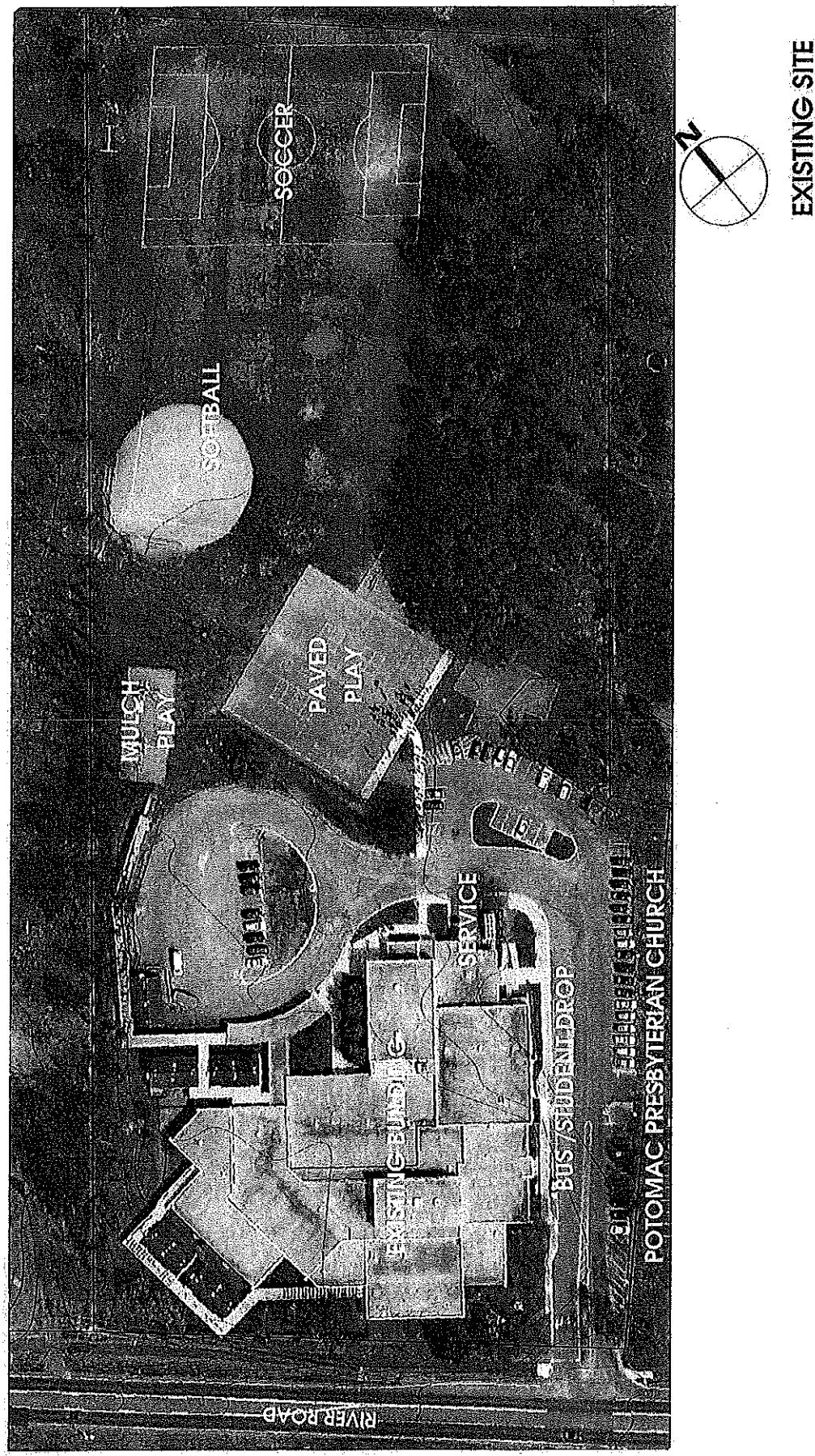
*Please include a signed copy of this document and accompanying graphics with submitted traffic study or statement.*



Potomac Elementary School Revitalization / Expansion Feasibility Study

## IV. EXISTING CONDITIONS (CONTINUED)

### SITE PLAN



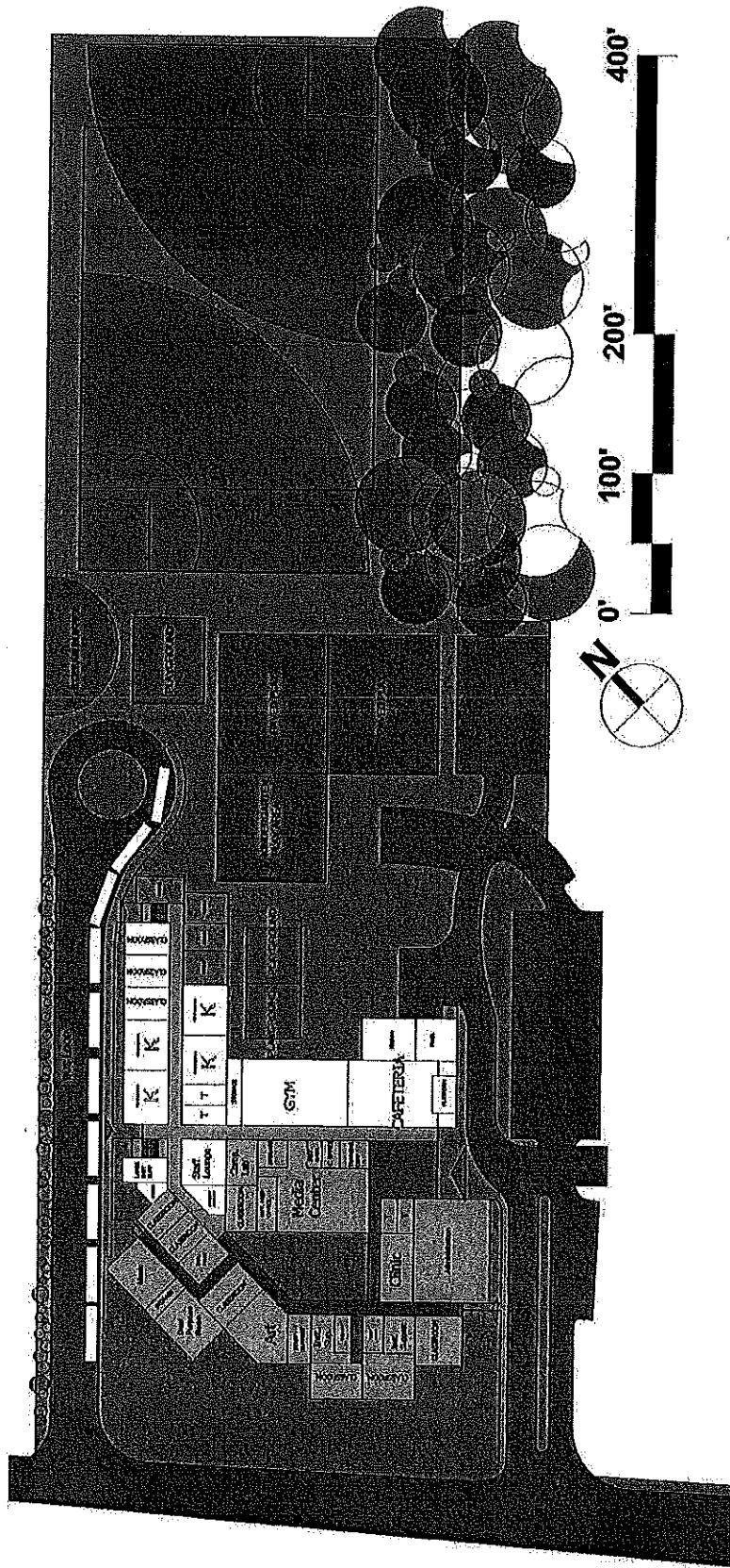
## Potomac Elementary School Revitalization / Expansion Feasibility Study

### II. EXECUTIVE SUMMARY (CONTINUED)

#### OPTION THREE

Option Three achieves revitalization / expansion with the reuse of portions of the existing building and construction of a new educational wing. The reuse of the existing elements will be limited to reusing structural elements and some existing walls. All new infrastructure and systems will be designed to meet MCPS standards. These include the HVAC, life safety, fire protection, electrical, lighting, data and communication systems. The modernized facility will comply with accessibility codes.

**Total Cost = \$29,370,000**



## Mike Nalepa

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**From:** Hodgson, Laura <laura.hodgson@montgomeryplanning.org>  
**Sent:** Friday, February 17, 2017 5:31 PM  
**To:** Autrey, Thomas; Mike Nalepa  
**Cc:** Axler, Ed; Pereira, Sandra; Weaver, Richard  
**Subject:** RE: Potomac Elementary School study scope request

Mike,

Thank you for your patience as I clarified which traffic scoping form was needed for the traffic study scope request you submitted for the revitalization/expansion of the Potomac Elementary School given our new Subdivision Staging Policy (SSP) and ongoing Local Area Transportation Review (LATR) Guidelines rewrite. After checking with my team, you will be able to use the old scoping form that you submitted since our new scoping form is not yet complete.

After reviewing the scoping form you submitted, there were several items that we would request that you edit in the traffic scoping form. There are also a few additional items that we would request to see in the traffic study when you complete it (items towards the bottom of the list).

- 1) Traffic counts need to also include the intersection of Falls Road at River Road because that is the next major intersection to the east, the latest CLV is over 1,350 (the threshold under the new SSP when an HCM analysis is required), and the PM CLV is approaching the policy area CLV threshold (2016 counts show PM Peal CLV = 1441).
- 2) Please show a trip distribution map. The three references to Piney Meetinghouse Road are confusing.
- 3) Revise trip distribution to include the following additional directional distributions.
  - a. Southbound on Falls Road
  - b. Westbound on River Road
  - c. Northbound on Falls Road
- 4) Please add the following approved but unbuilt background developments to the study parameters:
  - a. Bullis School expansion (Plan Number: 120080030) – 96,480 sf of unbuilt gross floor area
  - b. Kentland Estates (Plan Number: 120060200) – 11 unbuilt dwelling units
- 5) Because our new SSP has a larger focus on examining all modes, please provide more details on how the extra 266 students are expected to arrive and depart from school in the “Reductions/Mode Split” area. This information is important because the new SSP triggers mitigation based on trip counts by mode and we will need to know if the increase in student trips hits any of these trip thresholds.
- 6) In the traffic study, please provide a statement of operations for the school, such as typical hours of the school day, afterschool activities and their hours, if afterschool childcare is provided and the approximate number of students who use that service, etc. Please also provide how many additional staff and parking spaces are being added with this project, as well as total number of future parking spaces.
- 7) Please also provide in the traffic study the length of the new bus queuing area, the number of buses that will serve the school on an average day, the length of the new parent drop-off/pick-up area, how many cars can be accommodated in the new parent pick-up/drop-off area, and if will there be someone out in the drop-off area helping to manage traffic flow and queuing.
- 8) Also submit a pedestrian circulation exhibit with your traffic study.

Please note that although you are submitting this traffic scoping form under the old SSP, the new 2016-2020 SSP and forthcoming LATR Guidelines update will govern what analysis and mitigation is expected. In the absence of the updated LATR Guidelines which are under development, please review the new SSP regulation that can be found here: [http://www.montgomerycountymd.gov/COUNCIL/Resources/Files/res/2016/20161115\\_18-671.pdf](http://www.montgomerycountymd.gov/COUNCIL/Resources/Files/res/2016/20161115_18-671.pdf). I have outlined below what is important for you to know at this scoping stage with regards to the new SSP.

- 1) For all intersections in the Potomac Policy Area with a CLV over 1,350, the Highway Capacity Manual delay-based level of service standard applies and an HCM analysis is needed for those intersection. (Intersections under 1,350 CLV will continue to be analyzed based on the CLV LOS standards.) Mitigation will be required if the HCM delay exceeds those noted in the new SSP (see link above, Table 1 on page 17) for HCM-analyzed intersections.
- 2) If the project generates more than 50 person pedestrian, bicycle, or public transit trips, additional mitigation requirements will be triggered.

Please modify the traffic study scope with the above requested edits and return at your earliest convenience. If you have any questions or want to discuss any of the items above, please feel free to call me at 301-495-4541. (Please note that our office will be closed on Monday, February 20<sup>th</sup> for President's Day.)

Thank you, and have a great weekend!

Laura Hodgson

**Laura Hodgson, LEED AP | Planner Coordinator**  
Montgomery County Planning Department | Planning Area 3  
8787 Georgia Avenue | Silver Spring, MD 20910  
301.495.4541 | [laura.hodgson@montgomeryplanning.org](mailto:laura.hodgson@montgomeryplanning.org)

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**From:** Autrey, Thomas  
**Sent:** Tuesday, February 14, 2017 10:02 AM  
**To:** Mike Nalepa <[mnalepa@streettrafficstudies.com](mailto:mnalepa@streettrafficstudies.com)>  
**Cc:** Hodgson, Laura <[laura.hodgson@montgomeryplanning.org](mailto:laura.hodgson@montgomeryplanning.org)>  
**Subject:** FW: Potomac Elementary School study scope request

Hi Mike – I have copied Laura Hodgson of our Area 3 team. Laura is our Transportation Planner for Area 3.

Thanks.

Tom

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**From:** Mike Nalepa [<mailto:mnalepa@streettrafficstudies.com>]  
**Sent:** Tuesday, February 14, 2017 9:48 AM  
**To:** Autrey, Thomas <[thomas.autrey@montgomeryplanning.org](mailto:thomas.autrey@montgomeryplanning.org)>  
**Subject:** Potomac Elementary School study scope request

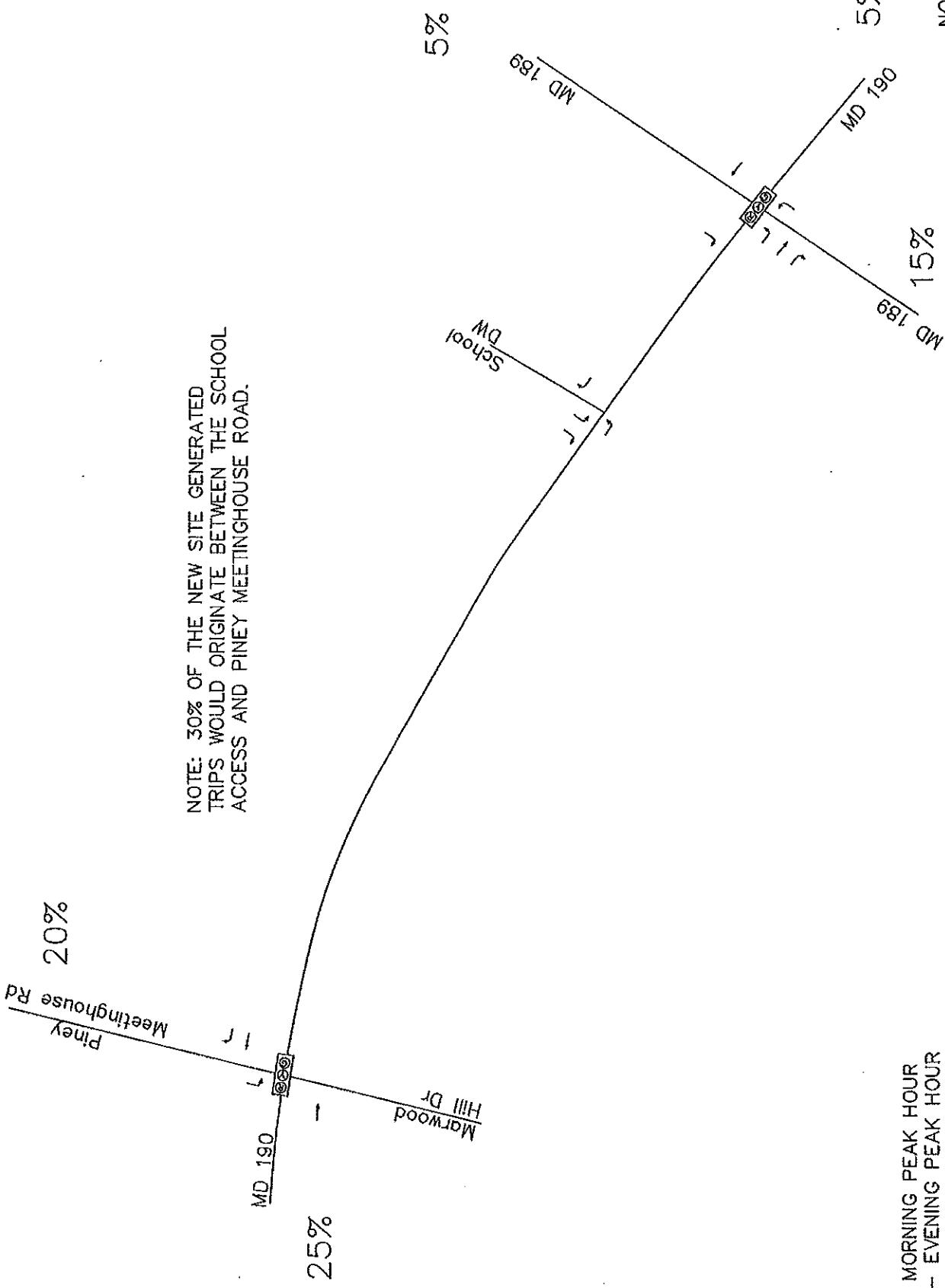
Tom,

Attached is a traffic study scope request for the proposed revitalization/expansion of the Potomac Elementary School in the Potomac Policy area. I'm not sure who the staff contact is for that area so I am sending the request to you and hope that you will forward the request to the appropriate staff member.

Thanks,

Mike

1/2



0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

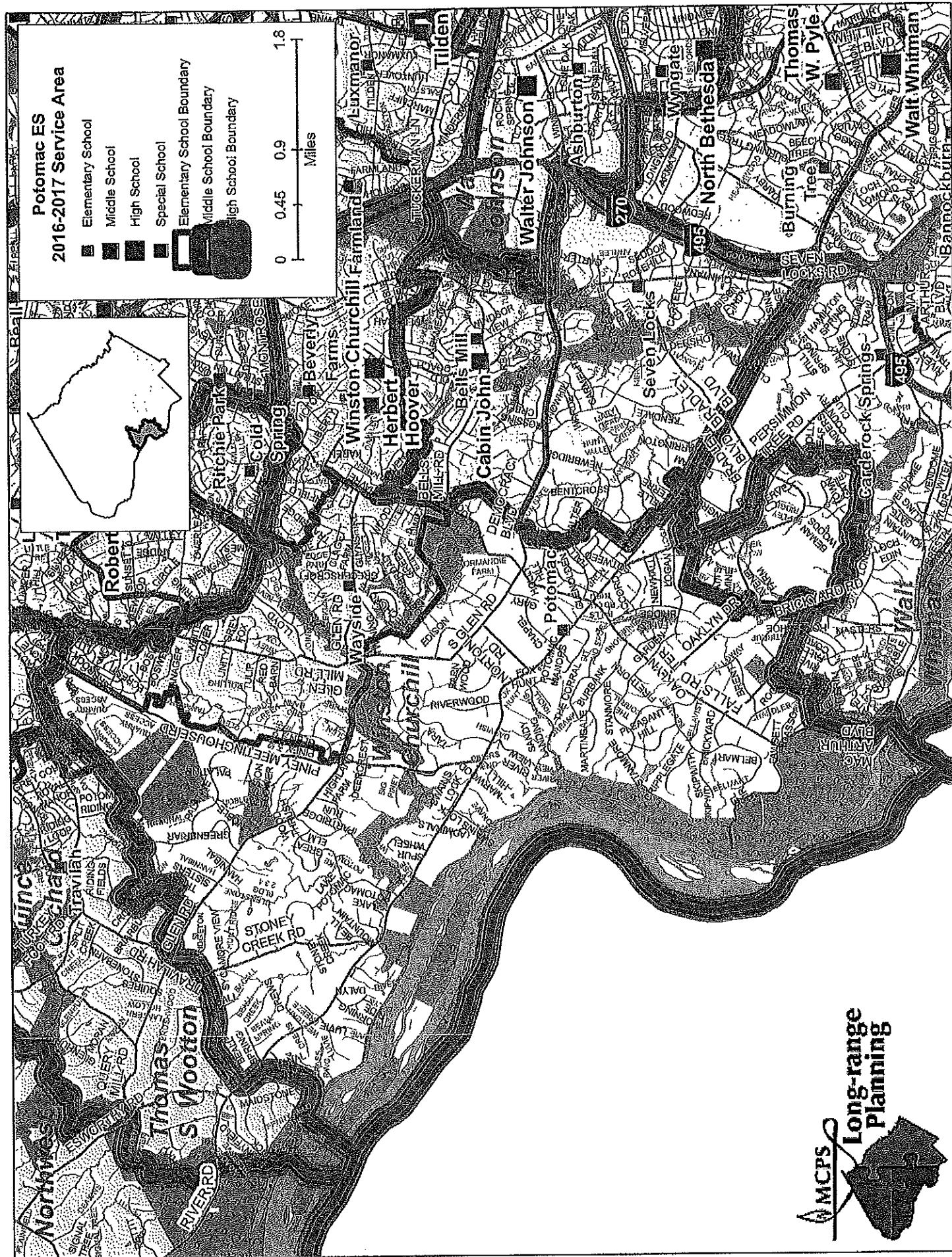
NO SCALE

EXHIBIT 6  
NEW SITE GENERATED TRIPS

**Potomac ES**  
2016/2017 Service Area

- Elementary School
- Middle School
- High School
- Special School
- Elementary School Boundary
- Middle School Boundary
- High School Boundary

0     0.45     0.9     1.8  
Miles



## **Mike Nalepa**

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**From:** Hodgson, Laura <laura.hodgson@montgomeryplanning.org>  
**Sent:** Thursday, February 23, 2017 6:01 PM  
**To:** Mike Nalepa  
**Cc:** Axler, Ed; Pereira, Sandra; Weaver, Richard  
**Subject:** RE: Potomac Elementary School study scope request  
**Attachments:** Bullis School\_120080030\_orig 120041070\_Prelim Plan of Subdivision Staff Report.pdf

Mike,

Thank you for revising the trip assignment sketch. I think the revised trip assignment is much clearer and more reasonable. For reference, where do you imagine most of the staff coming from and what percentage of trips do you estimate them taking?

My apologies for not getting back to you earlier today (I was out of the office for a meeting), but it seems that you have found additional information on the Bullis School with regards to trips, which I believe answers some of your questions about the school and trip generation. However, I will try to track down some information for you as well to help in your analysis (I'll be looking for the traffic study which described trip generation for the proposed increase in students). Please note that while I am finding that the possible student increase proposed is similar to what you found below from the school, I am finding that the overall cap of students is higher (our records – attached – show an increase in the enrollment cap from 604 to 900 students). So I will need to clarify with our team and records what we should be using as a cap and whether what the school relayed to you will work for the traffic analysis.

If you could please let me know specifically what you are still looking for still in terms of information, that will help in my search of information tomorrow.

Thank you,  
Laura

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**From:** Mike Nalepa [mailto:[mnalepa@streettrafficstudies.com](mailto:mnalepa@streettrafficstudies.com)]  
**Sent:** Thursday, February 23, 2017 3:39 PM  
**To:** Hodgson, Laura <laura.hodgson@montgomeryplanning.org>; Autrey, Thomas <thomas.autrey@montgomeryplanning.org>  
**Cc:** Axler, Ed <ed.axler@montgomeryplanning.org>; Pereira, Sandra <sandra.pereira@montgomeryplanning.org>; Weaver, Richard <richard.weaver@montgomeryplanning.org>  
**Subject:** RE: Potomac Elementary School study scope request

Laura,

Attached is the trip assignment sketch you requested. I have not looked at the driveway counts from the school yet to develop trip generation numbers, but based on what the school told us, their current enrollment is 445 students. The core capacity for the proposed school is 740 students so we will be analyzing the impacts associated with an additional 295 students.

Thanks,

Mike

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**From:** Hodgson, Laura [mailto:[laura.hodgson@montgomeryplanning.org](mailto:laura.hodgson@montgomeryplanning.org)]  
**Sent:** Friday, February 17, 2017 5:31 PM

**APPENDIX B**  
**VEHICLE TURNING MOVEMENT COUNTS**

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD  
VEHICLE TURNING MOVEMENT COUNT - SUMMARY  
Intersection of: MD 190  
and: MD 189  
Counted by: MK/KZ

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD  
Location : Montgomery County  
Date : 02/22/17  
Weather : Clear  
Entered by MN

STSLTD STSLTD STSLTD STSLTD STSLTD  
STREET  
TRAFFIC  
STUDIES  
LTD  
Day: Wednesday

TIME	TRAFFIC FROM NORTH on: MD 189				TRAFFIC FROM SOUTH on: MD 189				TRAFFIC FROM WEST on: MD 190				TRAFFIC FROM EAST on: MD 190				TOTAL	
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	N + S	E + W
AM																		
06:30-45	10	21	23	54	5	17	2	24	47	164	18	229	0	24	5	29	336	
45-00	5	35	51	91	7	15	7	29	51	212	17	280	7	28	6	41	441	
07:00-15	6	76	49	131	11	25	10	46	55	228	20	303	2	28	6	36	516	
15-30	18	79	49	146	8	62	12	82	91	210	45	346	5	35	9	49	623	
30-45	14	92	49	155	16	86	16	118	76	188	45	309	8	31	17	56	638	
45-00	13	108	45	166	33	89	15	137	101	192	50	343	16	39	22	77	723	
08:00-15	27	122	51	200	20	60	4	84	103	194	42	339	24	53	13	90	713	
15-30	25	124	61	210	23	58	16	97	92	153	30	275	22	51	11	84	666	
30-45	26	96	50	172	23	55	13	91	85	178	48	311	14	46	12	72	646	
45-00	22	116	52	190	32	47	19	98	62	168	34	264	18	47	15	80	632	
09:00-15	21	90	41	152	29	52	12	93	47	131	18	196	20	41	18	79	520	
15-30	23	89	40	152	26	61	14	101	58	152	33	243	18	45	11	74	570	
AM																		
3 HOUR																		
TOTALS	210	1048	561	1819	233	627	140	1000	868	2170	400	3438	154	468	145	767	7024	
1 HOUR																		
TOTALS																		
630-730	39	211	172	422	31	119	31	181	244	814	100	1158	14	115	26	155	1916	
645-745	43	282	198	523	42	188	45	275	273	838	127	1238	22	122	38	182	2218	
07-08	51	355	192	598	68	262	53	383	323	818	160	1301	31	133	54	218	2500	
715-815	72	401	194	667	77	297	47	421	371	784	182	1337	53	158	61	272	2697	
730-830	79	446	206	731	92	293	51	436	372	727	167	1266	70	174	63	307	2740	
745-845	91	450	207	748	99	262	48	409	381	717	170	1268	76	189	58	323	2748	
08-09	100	458	214	772	98	220	52	370	342	693	154	1189	78	197	51	326	2657	
815-915	94	426	204	724	107	212	60	379	286	630	130	1046	74	185	56	315	2464	
830-930	92	391	183	666	110	215	58	383	252	629	133	1014	70	179	56	305	2368	
PEAK HOUR																		
745-845	91	450	207	748	99	262	48	409	381	717	170	1268	76	189	58	323	2748	
PM																		
03:00-15	23	57	37	117	63	81	20	164	28	58	33	119	16	91	9	116	516	
15-30	37	81	52	170	80	76	17	173	20	83	47	150	24	112	19	155	648	
30-45	34	68	46	148	97	76	18	191	18	40	42	100	19	122	18	159	598	
45-00	55	81	35	171	115	93	5	213	17	61	34	112	20	144	22	186	682	
04:00-15	37	73	20	130	98	77	16	191	24	65	56	145	18	168	22	208	674	
15-30	29	75	36	140	128	93	8	229	41	60	43	144	15	150	33	198	711	
30-45	25	83	32	140	151	100	12	263	25	43	37	105	19	147	12	178	686	
45-00	40	88	34	162	162	102	6	270	33	48	41	122	12	147	18	177	731	
05:00-15	34	91	34	159	140	94	4	238	62	56	24	142	23	136	21	180	719	
15-30	29	93	38	160	157	155	7	319	37	34	23	94	9	171	19	199	772	
30-45	42	93	38	173	167	147	9	323	37	46	46	129	14	174	24	212	837	
45-00	37	82	35	154	153	122	11	286	49	31	33	113	12	171	14	197	750	
06:00-15	30	79	31	140	130	113	8	251	29	61	51	141	11	165	16	192	724	
15-30	21	84	27	132	163	120	4	287	36	57	39	132	12	168	19	199	750	
30-45	27	92	21	140	145	86	4	235	27	75	20	122	12	153	17	182	679	
45-00	21	56	32	109	116	74	6	196	7	69	30	106	9	103	26	138	549	
PM																		
4 HOUR																		
TOTALS	521	1276	548	2345	2065	1609	155	3829	490	887	599	1976	245	2322	309	2876	11026	
1 HOUR																		
TOTALS																		
03-04	149	287	170	606	355	326	60	741	83	242	156	481	79	469	68	616	2444	
315-415	163	303	153	619	390	322	56	768	79	249	179	507	81	546	81	708	2602	
330-430	155	297	137	589	438	339	47	824	100	226	175	501	72	584	95	751	2665	
345-445	146	312	123	581	492	363	41	896	107	229	170	506	72	609	89	770	2753	
04-05	131	319	122	572	539	372	42	953	123	216	177	516	64	612	85	761	2802	
415-515	128	337	136	601	581	389	30	1000	161	207	145	513	69	580	84	733	2847	
430-530	128	365	138	621	610	451	29	1090	157	181	125	463	63	601	70	734	2908	
445-545	145	365	144	654	626	498	26	1150	169	184	134	487	58	628	82	768	3059	
05-06	142	359	145	646	617	518	31	1166	185	167	126	478	58	652	78	788	3078	
515-615	138	347	142	627	607	537	35	1179	152	172	153	477	46	681	73	800	3083	
530-630	130	338	131	599	613	502	32	1147	151	195	169	515	49	678	73	800	3061	
545-645	115	337	114	566	591	441	27	1059	141	224	143	508	47	657	66	770	2903	
06-07	99	311	111	521	554	393	22	969	99	262	140	501	44	589	78	711	2702	
PEAK HOUR																		
515-615	138	347	142	627	607	537	35	1179	152	172	153	477	46	681	73	800	3083	

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of:  
and:  
Counted by:MD 190  
MD 189  
MK/KZ

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

Location : Montgomery County

Date : 02/22/17

Weather : Clear

Bikes Only

Entered by MN

STSLTD STSLTD STSLTD STSLTD STSLTD

STREET

TRAFFIC

STUDIES

LTD

Day: Wednesday

TIME	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH				TRAFFIC FROM WEST				TRAFFIC FROM EAST				TOTAL	
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	N + S	+ E + W
AM																		
06:30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00-15	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM																		
3 HOUR																		
TOTALS	0	0	0	0	1	0	0	1	0	1	0	1	0	0	1	1	3	
1 HOUR																		
TOTALS	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	
630-730	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
645-745	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07-08	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
715-815	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
730-830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
745-845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08-09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
815-915	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
830-930	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HOUR																		
715-815	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2	
PM																		
03:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:00-15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM																		
4 HOUR																		
TOTALS	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	4	5
1 HOUR																		
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
03-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
315-415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330-430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
345-445	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
415-515	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
430-530	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
445-545	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05-06	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
515-615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
530-630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
545-645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
06-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
PEAK HOUR																		
430-530	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2

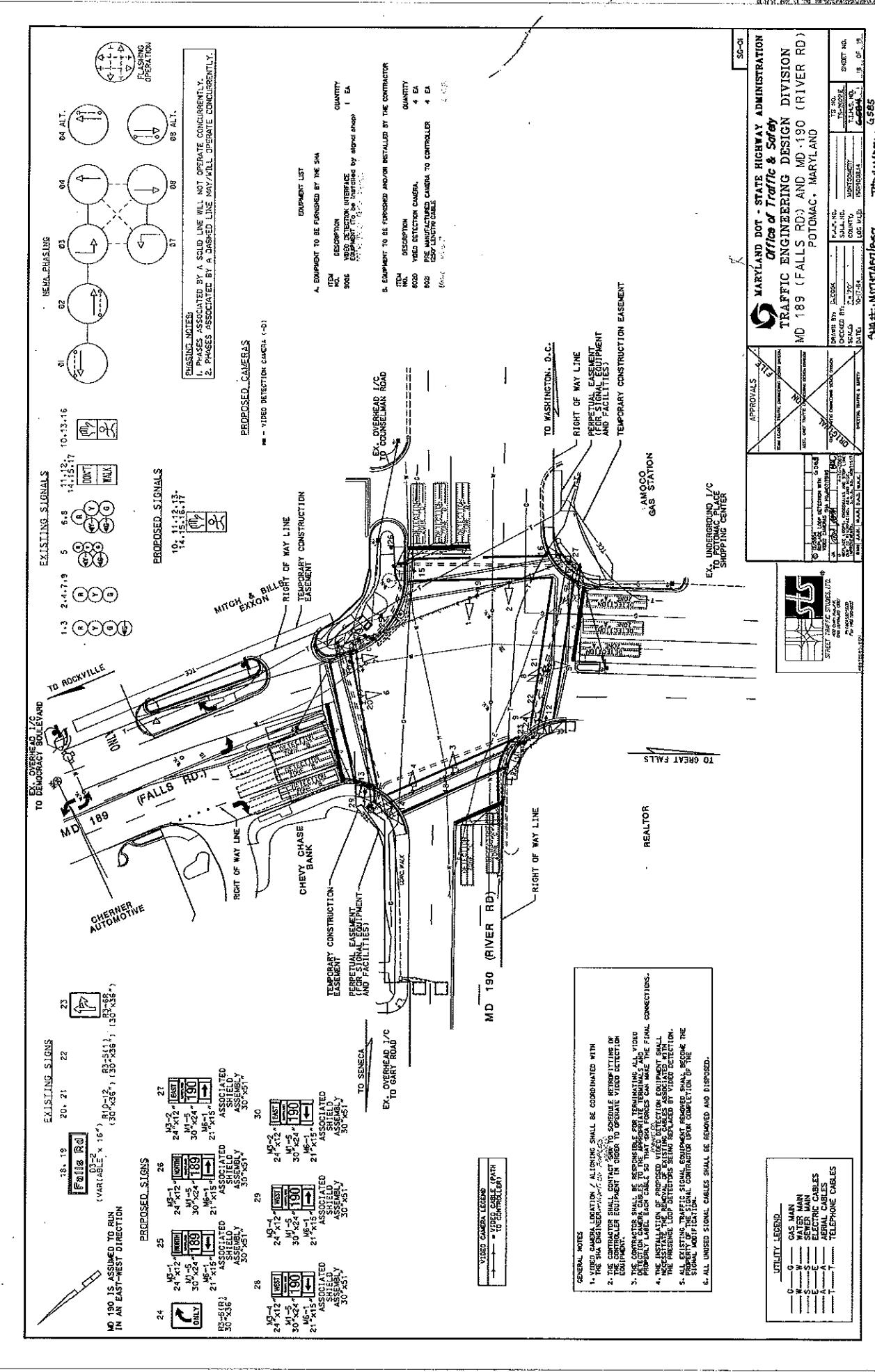
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Company Name Street Traffic Studies  
Location MD 190 @ MD 189  
Date 22-Feb-17

Crosswalk	MD 189 North Leg	MD 189 South Leg	MD 190 East Leg	MD 190 West Leg
Hour				
06:30	0	0	1	0
06:45	0	0	0	1
07:00	0	0	0	0
07:15	1	1	0	0
07:30	0	0	0	0
07:45	0	0	0	0
08:00	0	0	0	0
08:15	0	0	0	0
08:30	0	0	0	0
08:45	0	0	0	1
09:00	0	1	0	1
09:15	0	2	0	4
14:00				
14:15				
14:30				
14:45				
15:00	1	0	0	0
15:15	0	0	0	1
15:30	1	0	2	6
15:45	1	1	1	3
16:00	0	0	0	1
16:15	0	0	2	3
16:30	1	2	0	1
16:45	2	0	1	1
17:00	0	0	0	0
17:15	0	0	0	0
17:30	0	0	0	0
17:45	0	0	4	0
18:00	2	1	2	0
18:15	1	0	0	0
18:30	0	0	0	0
18:45	0	0	0	0
<b>TOTAL</b>	<b>10</b>	<b>8</b>	<b>13</b>	<b>23</b>
<b>AM Peak Vol</b>				
<b>PM Peak Vol</b>				



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VEHICLE TURNING MOVEMENT COUNT - SUMMARYSTSLTD STSLTD STSLTD STSLTD STSLTD STSLTD  
Location : Montgomery County  
Date : 02/16/17  
Weather : Clear  
Entered by MNSTSLTD STSLTD STSLTD STSLTD STSLTD  
STREET TRAFFIC STUDIES LTDIntersection of: MD 190  
and: Potomac Elementary School  
Counted by: MK

Day: Thursday

TIME	TRAFFIC FROM NORTH on: Potomac ES DW				TRAFFIC FROM SOUTH on:				TRAFFIC FROM WEST on: MD 190				TRAFFIC FROM EAST on: MD 190				TOTAL N + S + E + W	
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL		
	AM																	
06:30-45	0	0	0	0	0	0	0	0	0	217	0	217	0	29	1	30	247	
45-00	0	0	0	0	0	0	0	0	0	273	1	274	0	40	0	40	314	
07:00-15	2	0	2	4	0	0	0	0	0	336	1	337	0	20	2	22	363	
15-30	0	0	0	0	0	0	0	0	0	364	2	366	0	40	3	43	409	
30-45	0	0	4	4	0	0	0	0	0	330	1	331	0	56	3	59	394	
45-00	2	0	4	6	0	0	0	0	0	349	8	357	0	64	8	72	435	
08:00-15	6	0	12	18	0	0	0	0	0	305	8	313	0	73	17	90	421	
15-30	10	0	8	18	0	0	0	0	0	315	10	325	0	66	9	75	418	
30-45	0	0	9	9	0	0	0	0	0	283	8	291	0	77	13	90	390	
45-00	2	0	7	9	0	0	0	0	0	279	6	285	0	64	14	78	372	
09:00-15	6	0	20	26	0	0	0	0	0	203	22	225	0	43	27	70	321	
15-30	21	0	46	67	0	0	0	0	0	186	30	216	0	63	35	98	381	
AM																		
3 HOUR TOTALS	49	0	112	161	0	0	0	0	0	3440	97	3537	0	635	132	767	4465	
1 HOUR TOTALS																		
630-730	2	0	2	4	0	0	0	0	0	1190	4	1194	0	129	6	135	1333	
645-745	2	0	6	8	0	0	0	0	0	1303	5	1308	0	156	8	164	1480	
07-08	4	0	10	14	0	0	0	0	0	1379	12	1391	0	180	16	196	1601	
715-815	8	0	20	28	0	0	0	0	0	1348	19	1367	0	233	31	264	1659	
730-830	18	0	28	46	0	0	0	0	0	1299	27	1326	0	259	37	296	1668	
745-845	18	0	33	51	0	0	0	0	0	1252	34	1286	0	280	47	327	1664	
08-09	18	0	36	54	0	0	0	0	0	1182	32	1214	0	280	53	333	1601	
815-915	18	0	44	62	0	0	0	0	0	1080	46	1126	0	250	63	313	1501	
830-930	29	0	82	111	0	0	0	0	0	951	66	1017	0	247	89	336	1464	
PEAK HOUR																		
730-830	18	0	28	46	0	0	0	0	0	1299	27	1326	0	259	37	296	1668	
PM																		
03:00-15	0	0	0	0	0	0	0	0	0	93	1	94	0	139	3	142	238	
15-30	0	0	3	3	0	0	0	0	0	102	3	105	0	161	5	166	274	
30-45	1	0	2	3	0	0	0	0	0	74	8	82	0	209	6	215	300	
45-00	7	0	6	13	0	0	0	0	0	91	13	104	0	216	14	230	347	
04:00-15	23	0	24	47	0	0	0	0	0	88	6	94	0	244	11	255	396	
15-30	4	0	8	12	0	0	0	0	0	105	0	105	0	249	0	249	366	
30-45	5	0	1	6	0	0	0	0	0	103	0	103	0	306	4	310	419	
45-00	1	0	2	3	0	0	0	0	0	123	1	124	0	294	7	301	428	
05:00-15	1	0	9	10	0	0	0	0	0	92	0	92	0	345	1	346	448	
15-30	2	0	3	5	0	0	0	0	0	129	1	130	0	307	1	308	443	
30-45	2	0	1	3	0	0	0	0	0	119	4	123	0	333	3	336	462	
45-00	2	0	5	7	0	0	0	0	0	146	7	153	0	294	8	302	462	
06:00-15	12	0	11	23	0	0	0	0	0	107	6	113	0	339	7	346	482	
15-30	3	0	2	5	0	0	0	0	0	115	2	117	0	323	0	323	445	
30-45	2	0	0	2	0	0	0	0	0	93	1	94	0	264	1	265	361	
45-00	1	0	1	2	0	0	0	0	0	73	5	78	0	224	4	228	308	
PM																		
4 HOUR TOTALS	66	0	78	144	0	0	0	0	0	1653	58	1711	0	4247	75	4322	6177	
1 HOUR TOTALS																		
03-04	8	0	11	19	0	0	0	0	0	360	25	385	0	725	28	753	1157	
315-415	31	0	35	66	0	0	0	0	0	355	30	385	0	830	36	866	1317	
330-430	35	0	40	75	0	0	0	0	0	358	27	385	0	918	31	949	1409	
345-445	39	0	39	78	0	0	0	0	0	387	19	406	0	1015	29	1044	1528	
04-05	33	0	35	68	0	0	0	0	0	419	7	426	0	1093	22	1115	1609	
415-515	11	0	20	31	0	0	0	0	0	423	1	424	0	1194	12	1206	1661	
430-530	9	0	15	24	0	0	0	0	0	447	2	449	0	1252	13	1265	1738	
445-545	6	0	15	21	0	0	0	0	0	463	6	469	0	1279	12	1291	1781	
05-06	7	0	18	25	0	0	0	0	0	486	12	498	0	1279	13	1292	1815	
515-615	18	0	20	38	0	0	0	0	0	501	18	519	0	1273	19	1292	1849	
530-630	19	0	19	38	0	0	0	0	0	487	19	506	0	1289	18	1307	1851	
545-645	19	0	18	37	0	0	0	0	0	461	16	477	0	1220	16	1236	1750	
06-07	18	0	14	32	0	0	0	0	0	388	14	402	0	1150	12	1162	1596	
PEAK HOUR																		
530-630	19	0	19	38	0	0	0	0	0	487	19	506	0	1289	18	1307	1851	

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

 Intersection of: MD 190  
 and: Potomac Elementary School  
 Counted by: MK

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

Location : Montgomery County

Date : 02/16/17

Weather : Clear

Entered by MN

STSLTD STSLTD STSLTD STSLTD STSLTD

STREET

TRAFFIC

STUDIES

LTD

Day: Thursday

Bikes Only

	TRAFFIC FROM NORTH on: Potomac ES DW				TRAFFIC FROM SOUTH on:				TRAFFIC FROM WEST on: MD 190				TRAFFIC FROM EAST on: MD 190				TOTAL N + S + E + W	
TIME	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	0	0
AM																	0	0
06:30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM																	0	0
3 HOUR																	1	1
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
1 HOUR																	0	0
TOTALS																	0	0
630-730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645-745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715-815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
730-830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
745-845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08-09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
815-915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
830-930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
PEAK HOUR																	1	1
745-845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
PM																	0	0
03:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
PM																	0	0
4 HOUR																	0	1
TOTALS	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
1 HOUR																	0	0
TOTALS																	0	0
03-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
315-415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330-430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
345-445	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
415-515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430-530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
445-545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
515-615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
530-630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
545-645	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
06-07	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
PEAK HOUR																	0	1
545-645	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1

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Company Name Street Traffic Studies  
 Location MD 190 @ Potomac ES  
 Date 16-Feb-17

Crosswalk	Potomac ES	MD 190		
Hour	North Leg	South Leg	East Leg	West Leg
06:30	0	0	0	0
06:45	0	0	0	0
07:00	1	0	0	0
07:15	0	0	0	0
07:30	0	0	0	0
07:45	0	0	0	0
08:00	0	0	0	0
08:15	0	0	0	0
08:30	0	0	0	0
08:45	0	0	0	0
09:00	0	0	0	0
09:15	0	0	0	0
14:00				
14:15				
14:30				
14:45				
15:00	0	0	0	0
15:15	2	0	0	0
15:30	0	0	0	0
15:45	0	0	0	0
16:00	0	0	0	0
16:15	1	0	0	0
16:30	0	0	0	0
16:45	0	0	0	0
17:00	0	0	0	0
17:15	0	0	0	0
17:30	0	0	0	0
17:45	0	0	0	0
18:00	0	0	0	0
18:15	0	0	0	0
18:30	0	0	0	0
18:45	0	0	0	0
<b>TOTAL</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
AM Peak Vol				
PM Peak Vol				

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD				STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD				STSLTD STSLTD STSLTD STSLTD STSLTD												
VEHICLE TURNING MOVEMENT COUNT - SUMMARY				Location : Montgomery County				STREET												
Intersection of: and: Counted by:	MD 190 Potomac Elementary School MK	School Buses Only			Date : 02/16/17 Weather : Clear Entered by MN				TRAFFIC STUDIES	STUDIES										
TIME				TRAFFIC FROM NORTH on: Potomac ES DW				TRAFFIC FROM SOUTH on:												
TIME				RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	TOTAL N+S + E+W
AM																				
06:30-45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
07:00-15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	1	0	1	2	0	0	0	0	0	0	1	1	0	0	0	1	1	1	4	
30-45	1	0	1	2	0	0	0	0	0	0	1	1	0	0	0	1	1	1	4	
45-00	0	0	3	3	0	0	0	0	0	0	1	1	0	0	0	3	3	7		
09:00-15	1	0	6	7	0	0	0	0	0	0	0	0	0	0	0	6	6	13		
15-30	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
AM																				
3 HOUR																				
TOTALS	4	0	12	16	0	0	0	0	0	0	4	4	0	0	12	12	32			
1 HOUR																				
TOTALS																				
630-730	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	1	1	3		
645-745	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2		
07-08	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
715-815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
730-830	1	0	1	2	0	0	0	0	0	0	1	1	0	0	1	1	4			
745-845	2	0	2	4	0	0	0	0	0	0	2	2	0	0	2	2	8			
08-09	2	0	5	7	0	0	0	0	0	0	3	3	0	0	5	5	15			
815-915	3	0	11	14	0	0	0	0	0	0	3	3	0	0	11	11	28			
830-930	3	0	10	13	0	0	0	0	0	0	2	2	0	0	10	10	25			
PEAK HOUR																				
815-915	3	0	11	14	0	0	0	0	0	0	3	3	0	0	11	11	28			
PM																				
03:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1		
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4		
30-45	0	0	1	1	0	0	0	0	0	0	2	2	0	0	5	5	8			
45-00	2	0	6	8	0	0	0	0	0	0	1	1	0	0	1	1	10			
04:00-15	2	0	5	7	0	0	0	0	0	0	1	1	0	0	1	1	9			
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
05:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
06:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM																				
4 HOUR																				
TOTALS	4	0	12	16	0	0	0	0	0	0	4	4	0	0	12	12	32			
1 HOUR																				
TOTALS																				
03-04	2	0	7	9	0	0	0	0	0	0	3	3	0	0	11	11	23			
315-415	4	0	12	16	0	0	0	0	0	0	4	4	0	0	11	11	31			
330-430	4	0	12	16	0	0	0	0	0	0	4	4	0	0	7	7	27			
345-445	4	0	11	15	0	0	0	0	0	0	2	2	0	0	2	2	19			
04-05	2	0	5	7	0	0	0	0	0	0	1	1	0	0	1	1	9			
415-515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
430-530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
445-545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
05-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
515-615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
530-630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
545-645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
06-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PEAK HOUR																				
315-415	4	0	12	16	0	0	0	0	0	0	4	4	0	0	11	11	31			

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 VEHICLE TURNING MOVEMENT COUNT - SUMMARY  
 Intersection of: MD 190  
 and: Potomac Elementary School  
 Counted by: MK

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD  
 Location : Montgomery County  
 Date : 02/16/17  
 Weather : Clear  
 Entered by MN

STSLTD STSLTD STSLTD STSLTD STSLTD  
 STREET  
 TRAFFIC  
 STUDIES  
 LTD

TRAFFIC FROM NORTH on: Potomac ES DW				TRAFFIC FROM SOUTH on:				TRAFFIC FROM WEST on: MD 190				TRAFFIC FROM EAST on: MD 190				TOTAL N + S + E + W		
TIME	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL		
AM																		
06:30-45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
45-00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	7
07:00-15	2	0	2	4	0	0	0	0	0	2	2	0	0	0	0	3	3	5
15-30	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	3	8
30-45	0	0	4	4	0	0	0	0	0	8	8	0	0	0	0	8	8	22
45-00	2	0	4	6	0	0	0	0	0	8	8	0	0	0	0	17	17	43
08:00-15	6	0	12	18	0	0	0	0	0	10	10	0	0	0	0	9	9	37
15-30	10	0	8	18	0	0	0	0	0	8	8	0	0	0	0	13	13	30
30-45	0	0	9	9	0	0	0	0	0	6	6	0	0	0	0	14	14	29
45-00	2	0	7	9	0	0	0	0	0	22	22	0	0	0	0	27	27	75
09:00-15	6	0	20	26	0	0	0	0	0	30	30	0	0	0	0	35	35	132
15-30	21	0	46	67	0	0	0	0	0	0	0	0	0	0	0	132	132	390
AM																		
3 HOUR TOTALS	49	0	112	161	0	0	0	0	0	97	97	0	0	0	0	132	132	390
1 HOUR TOTALS																6	6	14
630-730	2	0	2	4	0	0	0	0	0	4	4	0	0	0	0	8	8	21
645-745	2	0	6	8	0	0	0	0	0	12	12	0	0	0	0	16	16	42
07-08	4	0	10	14	0	0	0	0	0	19	19	0	0	0	0	31	31	78
715-815	8	0	20	28	0	0	0	0	0	27	27	0	0	0	0	37	37	110
730-830	18	0	28	46	0	0	0	0	0	34	34	0	0	0	0	47	47	132
745-845	18	0	33	51	0	0	0	0	0	32	32	0	0	0	0	53	53	139
08-09	18	0	36	54	0	0	0	0	0	46	46	0	0	0	0	63	63	171
815-915	18	0	44	62	0	0	0	0	0	66	66	0	0	0	0	89	89	286
830-930	29	0	82	111	0	0	0	0	0	66	66	0	0	0	0	89	89	286
PEAK HOUR																		
830-930	29	0	82	111	0	0	0	0	0	66	66	0	0	0	0	89	89	286
PM																3	3	4
03:00-15	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	5	5	11
15-30	0	0	3	3	0	0	0	0	0	8	8	0	0	0	0	6	6	17
30-45	1	0	2	3	0	0	0	0	0	13	13	0	0	0	0	14	14	40
45-00	7	0	6	13	0	0	0	0	0	6	6	0	0	0	0	11	11	64
04:00-15	23	0	24	47	0	0	0	0	0	0	0	0	0	0	0	0	0	12
15-30	4	0	8	12	0	0	0	0	0	0	0	0	0	0	0	4	4	10
30-45	5	0	1	6	0	0	0	0	0	1	1	0	0	0	0	7	7	11
45-00	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:00-15	1	0	9	10	0	0	0	0	0	1	1	0	0	0	0	1	1	7
15-30	2	0	3	5	0	0	0	0	0	4	4	0	0	0	0	3	3	10
30-45	2	0	1	3	0	0	0	0	0	7	7	0	0	0	0	8	8	22
45-00	2	0	5	7	0	0	0	0	0	6	6	0	0	0	0	7	7	36
06:00-15	12	0	11	23	0	0	0	0	0	2	2	0	0	0	0	1	1	4
15-30	3	0	2	5	0	0	0	0	0	5	5	0	0	0	0	4	4	11
30-45	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-00	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM																		
4 HOUR TOTALS	66	0	78	144	0	0	0	0	0	58	58	0	0	0	0	75	75	277
1 HOUR TOTALS																28	28	72
03-04	8	0	11	19	0	0	0	0	0	25	25	0	0	0	0	36	36	132
315-415	31	0	35	66	0	0	0	0	0	30	30	0	0	0	0	31	31	133
330-430	35	0	40	75	0	0	0	0	0	27	27	0	0	0	0	29	29	126
345-445	39	0	39	78	0	0	0	0	0	19	19	0	0	0	0	22	22	97
04-05	33	0	35	68	0	0	0	0	0	7	7	0	0	0	0	12	12	44
415-515	11	0	20	31	0	0	0	0	0	1	1	0	0	0	0	13	13	39
430-530	9	0	15	24	0	0	0	0	0	2	2	0	0	0	0	12	12	39
445-545	6	0	15	21	0	0	0	0	0	6	6	0	0	0	0	13	13	50
05-06	7	0	18	25	0	0	0	0	0	12	12	0	0	0	0	19	19	75
515-615	18	0	20	38	0	0	0	0	0	18	18	0	0	0	0	18	18	75
530-630	19	0	19	38	0	0	0	0	0	16	16	0	0	0	0	16	16	69
545-645	19	0	18	37	0	0	0	0	0	14	14	0	0	0	0	12	12	58
06-07	18	0	14	32	0	0	0	0	0	27	27	0	0	0	0	31	31	133
PEAK HOUR																		
330-430	35	0	40	75	0	0	0	0	0	0	0	0	0	0	0			

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## VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 190  
and: Piney Meetinghouse Rd-Marwood Hill Dr  
Counted by: MK

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

Location : Montgomery County

Date : 02/15/17

Weather : Cloudy

Entered by MN

STSLTD STSLTD STSLTD STSLTD STSLTD

STREET

TRAFFIC

STUDIES

LTD

TIME	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH				TRAFFIC FROM WEST				TRAFFIC FROM EAST				TOTAL	
	on: Piney Meetinghouse Rd				on: Marwood Hill Dr				on: MD 190				on: MD 190				N + S	E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL		
AM																		
06:30-45	2	0	46	48	0	0	1	1	0	175	0	175	0	17	11	28	252	
45-00	5	1	64	70	1	0	0	1	0	228	2	230	3	21	14	38	339	
07:00-15	1	0	88	89	0	3	4	7	0	222	3	225	0	26	15	41	362	
15-30	2	0	102	104	0	1	8	9	0	239	4	243	0	15	14	29	385	
30-45	5	0	94	99	0	0	3	3	0	221	5	226	0	33	22	55	383	
45-00	2	1	78	81	0	0	6	6	0	256	4	260	3	30	24	57	404	
08:00-15	0	0	84	84	0	2	5	7	0	188	3	191	2	32	27	61	343	
15-30	1	0	89	90	0	1	7	8	0	221	3	224	4	41	27	72	394	
30-45	0	0	94	94	0	2	3	5	0	158	4	162	5	42	36	83	344	
45-00	1	0	72	73	0	1	3	4	3	168	3	174	3	27	36	66	317	
09:00-15	1	0	85	86	0	1	3	4	0	176	1	177	5	35	21	61	328	
15-30	2	1	76	79	1	0	5	6	0	163	5	168	3	38	28	69	322	
AM																		
3 HOUR TOTALS	22	3	972	997	2	11	48	61	3	2415	37	2455	28	357	275	660	4173	
1 HOUR TOTALS																		
630-730	10	1	300	311	1	4	13	18	0	864	9	873	3	79	54	136	1338	
645-745	13	1	348	362	1	4	15	20	0	910	14	924	3	95	65	163	1469	
07-08	10	1	362	373	0	4	21	25	0	938	16	954	3	104	75	182	1534	
715-815	9	1	358	368	0	3	22	25	0	904	16	920	5	110	87	202	1515	
730-830	8	1	345	354	0	3	21	24	0	886	15	901	9	136	100	245	1524	
745-845	3	1	345	349	0	5	21	26	0	823	14	837	14	145	114	273	1485	
08-09	2	0	339	341	0	6	18	24	3	735	13	751	14	142	126	282	1398	
815-915	3	0	340	343	0	5	16	21	3	723	11	737	17	145	120	282	1383	
830-930	4	1	327	332	1	4	14	19	3	665	13	681	16	142	121	279	1311	
PEAK HOUR																		
07-08	10	1	362	373	0	4	21	25	0	938	16	954	3	104	75	182	1534	
PM																		
03:00-15	5	2	27	34	0	1	2	3	5	38	6	49	1	101	47	149	235	
15-30	3	0	42	45	1	0	4	5	0	48	5	53	6	115	41	162	265	
30-45	2	0	36	38	0	0	3	3	1	38	4	43	3	150	67	220	304	
45-00	5	0	46	51	0	3	0	3	0	56	2	58	4	181	77	262	374	
04:00-15	3	2	38	43	0	3	2	5	1	36	4	41	4	194	95	293	382	
15-30	9	6	33	48	1	3	0	4	0	43	9	52	1	219	77	297	401	
30-45	2	0	46	48	0	0	2	2	1	37	6	44	2	207	100	309	403	
45-00	1	1	73	75	0	1	4	5	0	53	4	57	0	248	117	365	502	
05:00-15	5	1	57	63	0	1	1	2	0	40	5	45	3	264	102	369	479	
15-30	3	2	64	69	0	1	0	1	2	35	3	40	2	263	84	349	459	
30-45	11	1	83	95	0	0	1	1	0	30	3	33	2	246	105	353	482	
45-00	2	0	58	60	0	2	1	3	0	56	1	57	12	243	119	374	494	
06:00-15	4	1	76	81	0	1	1	2	0	53	0	53	4	246	114	364	500	
15-30	5	4	58	67	0	1	0	1	0	50	4	54	5	197	106	308	430	
30-45	3	0	35	38	0	1	1	2	0	41	3	44	6	186	102	294	378	
45-00	1	2	27	30	1	0	3	4	0	29	2	31	4	144	84	232	297	
PM																		
4 HOUR TOTALS	64	22	799	885	3	18	25	46	10	683	61	754	59	3204	1437	4700	6385	
1 HOUR TOTALS																		
03-04	15	2	151	168	1	4	9	14	6	180	17	203	14	547	232	793	1178	
315-415	13	2	162	177	1	6	9	16	2	178	15	195	17	640	280	937	1325	
330-430	19	8	153	180	1	9	5	15	2	173	19	194	12	744	316	1072	1461	
345-445	19	8	163	190	1	9	4	14	2	172	21	195	11	801	349	1161	1560	
04-05	15	9	190	214	1	7	8	16	2	169	23	194	7	868	389	1264	1688	
415-515	17	8	209	234	1	5	7	13	1	173	24	198	6	938	396	1340	1785	
430-530	11	4	240	255	0	3	7	10	3	165	18	186	7	982	403	1392	1843	
445-545	20	5	277	302	0	3	6	9	2	158	15	175	7	1021	408	1436	1922	
05-06	21	4	262	287	0	4	3	7	2	161	12	175	19	1016	410	1445	1914	
515-615	20	4	281	305	0	4	3	7	2	174	7	183	20	998	422	1440	1935	
530-630	22	6	275	303	0	4	3	7	0	189	8	197	23	932	444	1399	1906	
545-645	14	5	227	246	0	5	3	8	0	200	8	208	27	872	441	1340	1802	
06-07	13	7	196	216	1	3	5	9	0	173	9	182	19	773	406	1198	1605	
PEAK HOUR																		
515-615	20	4	281	305	0	4	3	7	2	174	7	183	20	998	422	1440	1935	

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY					Location : Montgomery County					Day: Wednesday					STREET TRAFFIC STUDIES LTD		
Intersection of: MD 190 and: Piney Meetinghouse Rd-Marwood Hill Dr Counted by: MK					Bikes					Date : 02/15/17 Weather : Cloudy Entered by MN							
TIME	TRAFFIC FROM NORTH on: Piney Meetinghouse Rd				TRAFFIC FROM SOUTH on: Marwood Hill Dr				TRAFFIC FROM WEST on: MD 190				TRAFFIC FROM EAST on: MD 190				TOTAL N+S + E+W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
08:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
09:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM																	
3 HOUR TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
1 HOUR TOTALS																	
630-730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
645-745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
715-815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
730-830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
745-845	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
08-09	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
815-915	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
830-930	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
PEAK HOUR																	
745-845	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
PM																	
03:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:00-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM																	
4 HOUR TOTALS	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	
1 HOUR TOTALS																	
03-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
315-415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
330-430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
345-445	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
415-515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
430-530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
445-545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
515-615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
530-630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
545-645	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	
06-07	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	
PEAK HOUR																	
545-645	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	

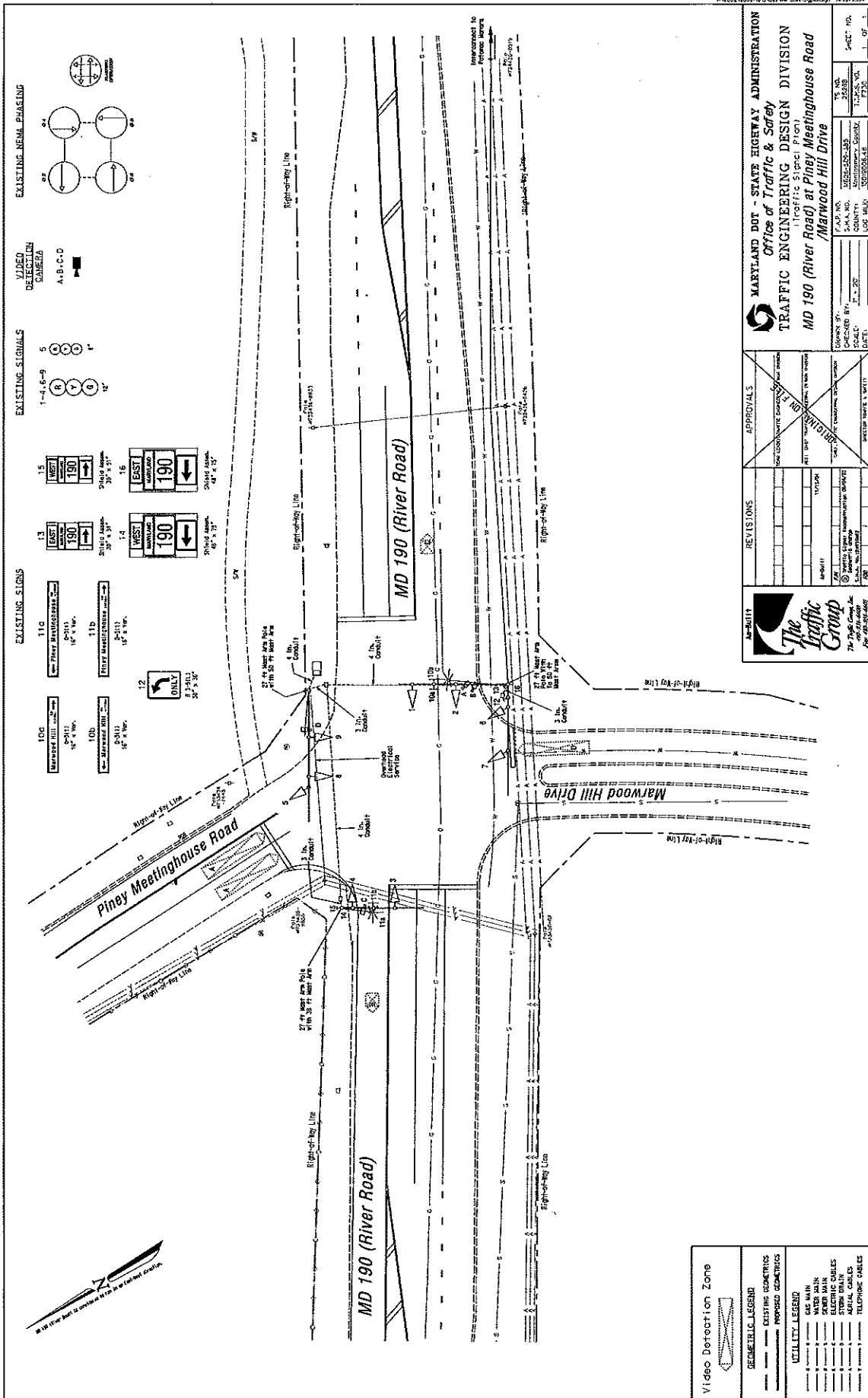
STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

STSLTD STSLTD STSLTD STSLTD STSLTD STSLTD

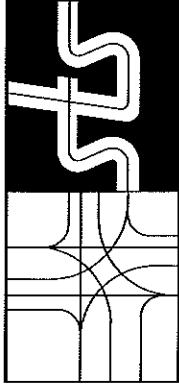
STSLTD STSLTD STSLTD STSLTD STSLTD

Company Name Street Traffic Studies  
 Location MD 190 @ Piney Meetinghouse Rd  
 Date 15-Feb-17

Crosswalk	Piney Meet. North Leg	Marwood Hill South Leg	MD 190 East Leg	MD 190 West Leg
Hour				
06:30	1	0	0	0
06:45	0	0	0	0
07:00	0	0	0	0
07:15	0	0	0	0
07:30	0	0	0	0
07:45	0	0	0	0
08:00	0	0	0	0
08:15	1	0	0	0
08:30	0	0	0	0
08:45	0	0	0	0
09:00	0	0	0	0
09:15	0	0	0	0
14:00				
14:15				
14:30				
14:45				
15:00	0	0	0	0
15:15	0	0	0	0
15:30	0	0	0	0
15:45	1	0	0	0
16:00	0	0	0	0
16:15	0	0	0	0
16:30	1	0	0	0
16:45	0	0	0	0
17:00	0	0	0	0
17:15	0	0	0	0
17:30	0	0	0	0
17:45	0	0	0	0
18:00	0	0	0	0
18:15	0	0	0	0
18:30	0	0	0	0
18:45	0	0	0	0
<b>TOTAL</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
AM Peak Vol				
PM Peak Vol				



**APPENDIX C**  
**CAPACITY WORKSHEETS - EXISTING CONDITIONS**



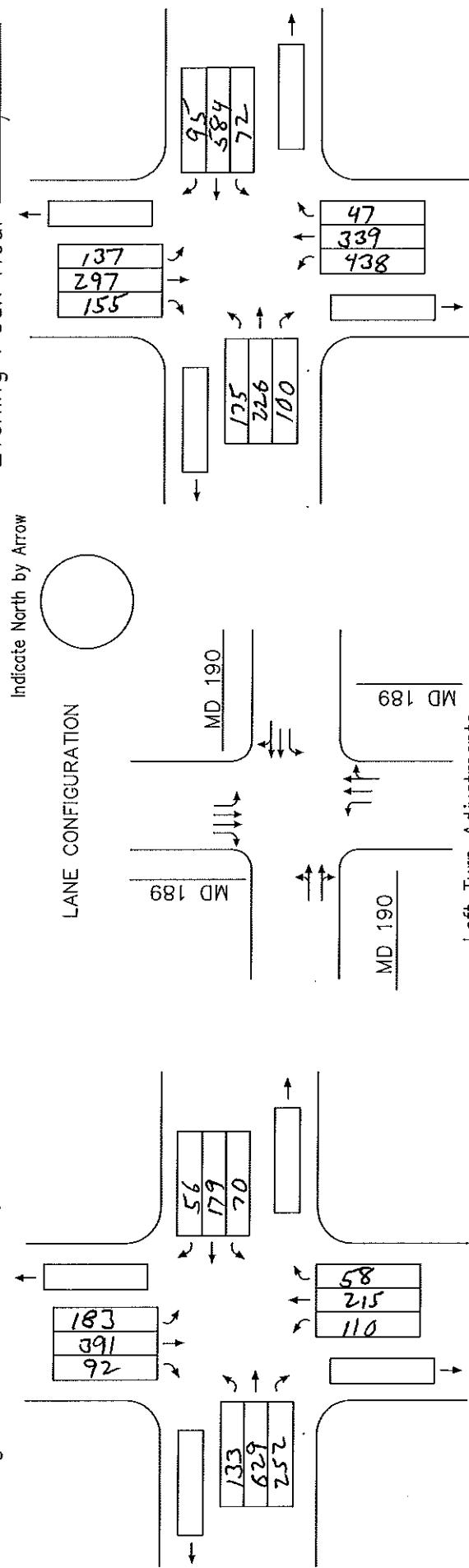
### TURNING MOVEMENT SUMMARY AND LEVEL OF SERVICE

Count Date: W/C 2/12/17  
Conditions/  
Design Year:  
Computed By: MN

Morning Peak Hour 8:30/9:30 AM

Evening Peak Hour 3:30/4:30 PM

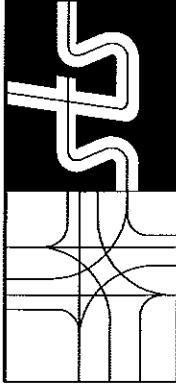
Location: MD 190 @ MD 189  
Existing Traffic Volumes  
Date: \_\_\_\_\_



### Left Turn Adjustments

Phasing	Key	Opposing Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
	1	0 to 199	1.1	1	= 1.00	A = 1000 or Less	
	2	200 to 599	2.0	2	= .55	B = 1000 to 1150	
	3	600 to 799	3.0	3	= .37	C = 1150 to 1300	
	4	800 to 999	4.0	4	= .29	D = 1300 to 1450	
	5	1000+	5.0			E = 1450 to 1600	
						F = Greater than 1600	

♂ Movement	Volume(1)	Lane Use Factor(2)	Lane Volume(1)x(2)	Opposing Lefts	Critical Lane Volume	* ♂ Movement	Lane Use Factor(1)	Volume(1) Factor(2)	Lane Use Volume(1)x(2)	Critical Lane Volume*		
NB	215+58	0.53	145	183	328	✓			339+47	205	137	342
SB	391	0.53	207	110	317	✓	SB	297	0.53	157	438	
EB	133+164+54	0.53	537	-	537	✓	EB	175+216+100	0.53	266	-	
WB	119+56	0.53	125	-	125	✓	WB	56+495	0.53	360	-	
Remarks:		* critical volume TOTAL <u>990</u> v/c Remarks:		* critical volume TOTAL <u>1221</u> v/c		LEVEL OF SERVICE		LEVEL OF SERVICE		LEVEL OF SERVICE		



### TURNING MOVEMENT SUMMARY

AND

LEVEL OF SERVICE

Count Date: 4/2/15/17

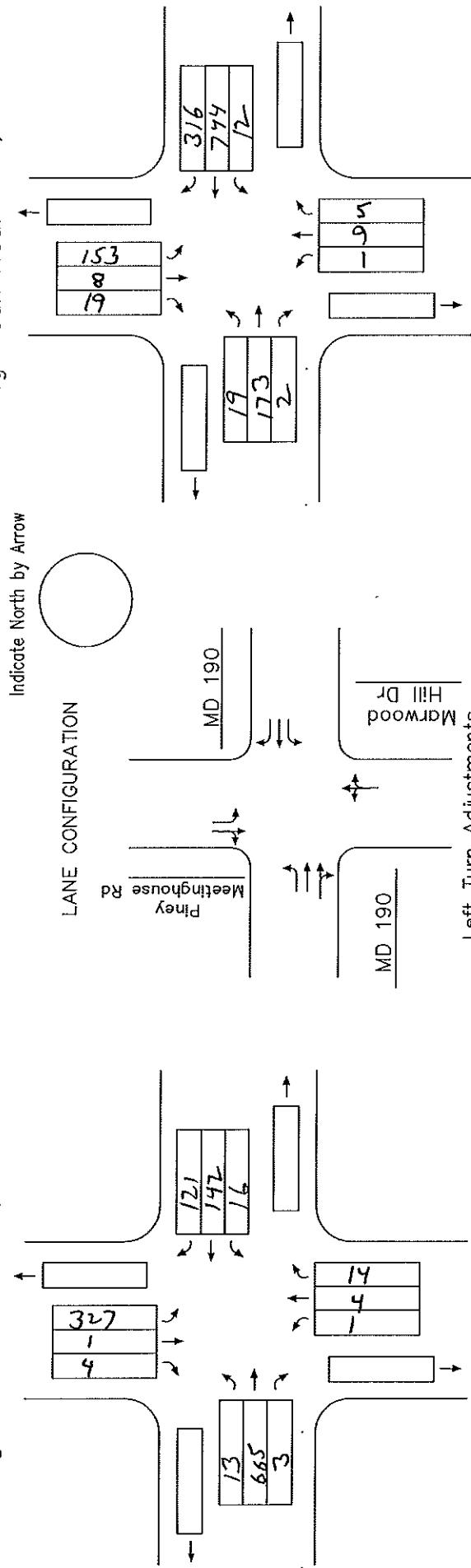
Conditions/  
Design Year:

Existing Traffic Volumes  
Computed By: MN

Date: \_\_\_\_\_

Morning Peak Hour 8:30/9:30 AM

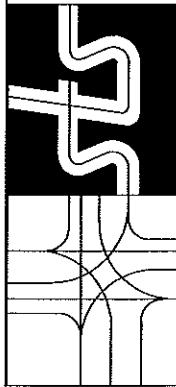
Evening Peak Hour 3:30/4:30 PM



### Left Turn Adjustments

Phasing	Key	Opposing Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
	1	0 to 199	1.1	1	1.00	A = 1000 or Less	
	2	200 to 599	2.0	2	.53	B = 1000 to 1150	
	3	600 to 799	3.0	3	.37	C = 1150 to 1300	
	4	800 to 999	4.0	4	.29	D = 1300 to 1450	
	5	1000+	5.0			E = 1450 to 1600	
						F = Greater than 1600	

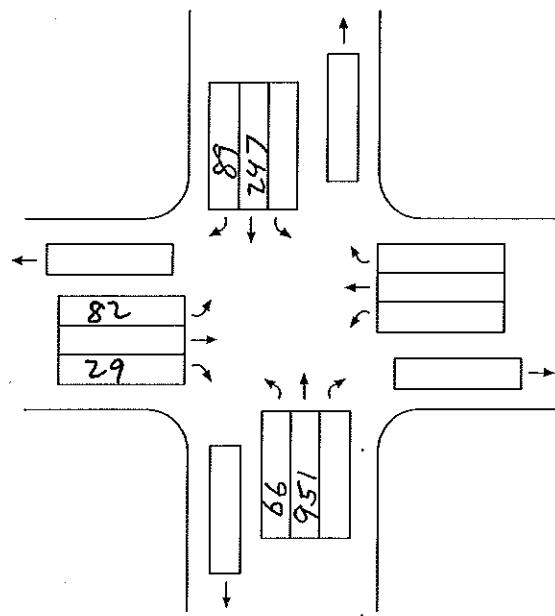
♂	Movement	Volume(1)	Lane Use Factor(2)	Opposing Lane Volume (1)(x2)	Critical Lane Lefts	* Critical Volume	Movement	Volume(1)	Lane Use Factor(2)	Opposing Lane Volume (1)(x2)	Critical Lane Lefts	* Critical Volume		
	NB	144+14	1.0	19	327	346	✓	NB	179+5	1.0	153	168	✓	
	SB	1+4	1.0	5	1	6		SB	8+19	1.0	27	1	28	
	EB	665+3	0.53	354	16	370	✓	EB	173+2	0.53	93	12	105	
	WB	142	1.0	142	13	155		WB	744	1.0	744	19	763	✓
Remarks:			* critical volume			TOTAL <u>716</u> v/c			* critical volume			TOTAL <u>931</u> v/c		
			LEVEL OF SERVICE			LEVEL OF SERVICE								



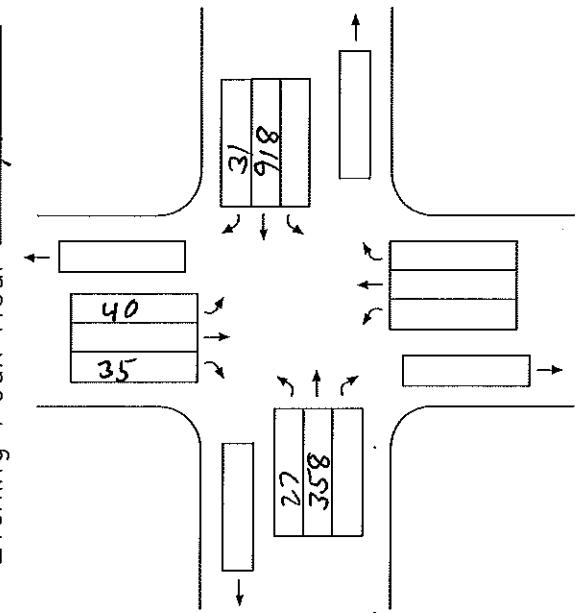
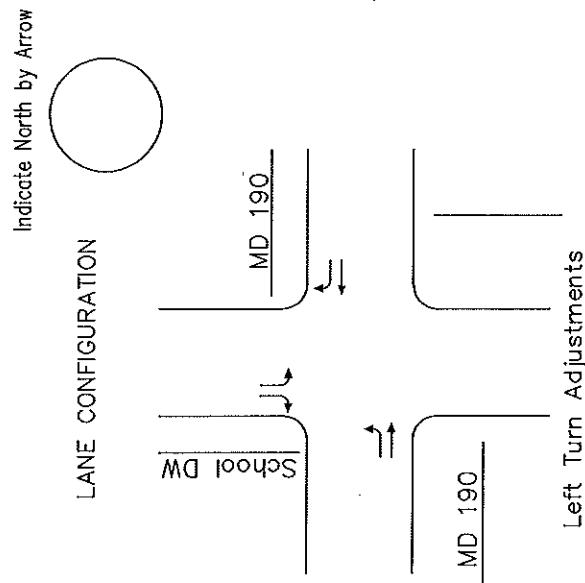
**TURNING MOVEMENT SUMMARY  
AND  
LEVEL OF SERVICE**

Count Date: Th 2/16/17  
Conditions/  
Design Year: Existing Traffic Volumes  
Computed By: MN Date:

Morning Peak Hour 8:30/9:30 AM



Evening Peak Hour 3:30/4:30 PM



**Left Turn Adjustments**

Phasing	Opposing Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
	0 to 199	1.1	1	1.00	A	1000 or Less
	200 to 599	2.0	2	.53	B	1000 to 1150
	600 to 799	3.0	3	.37	C	1150 to 1300
	800 to 999	4.0	4	.29	D	1300 to 1450
	1000+	5.0			E	1450 to 1600
					F	Greater than 1600

♂ Movement	Volume(1)	Lane Use Factor(2)	Opposing Lefts	* Critical Lane Volume	♂ Movement	Volume(1)	Lane Use Factor(2)	Lane Use Factor(1)(2)	Lane Use Factor(1)(2)	Lane Use Factor(1)(2)	Critical Lane * Volume
SB	82	1.0	82	—	SB	40	1.0	40	—	40	✓
EB	951	1.0	951	✓	EB	358	1.0	358	—	358	
WB	247	1.0	247	66	WB	918	1.0	918	27	945	✓

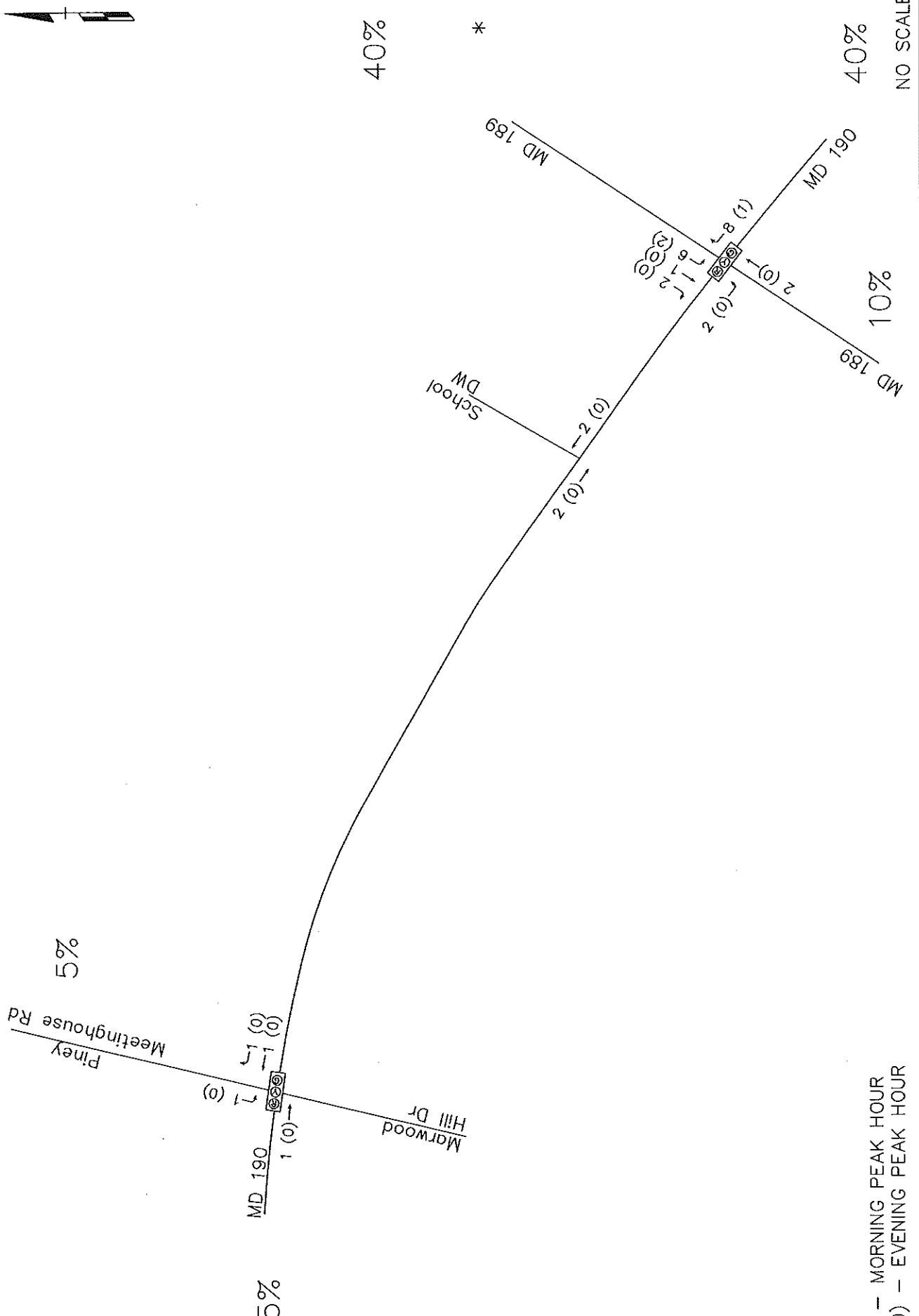
\* critical volume TOTAL 1033 V/C Remarks:

LEVEL OF SERVICE	LEVEL OF SERVICE	TOTAL	V/C

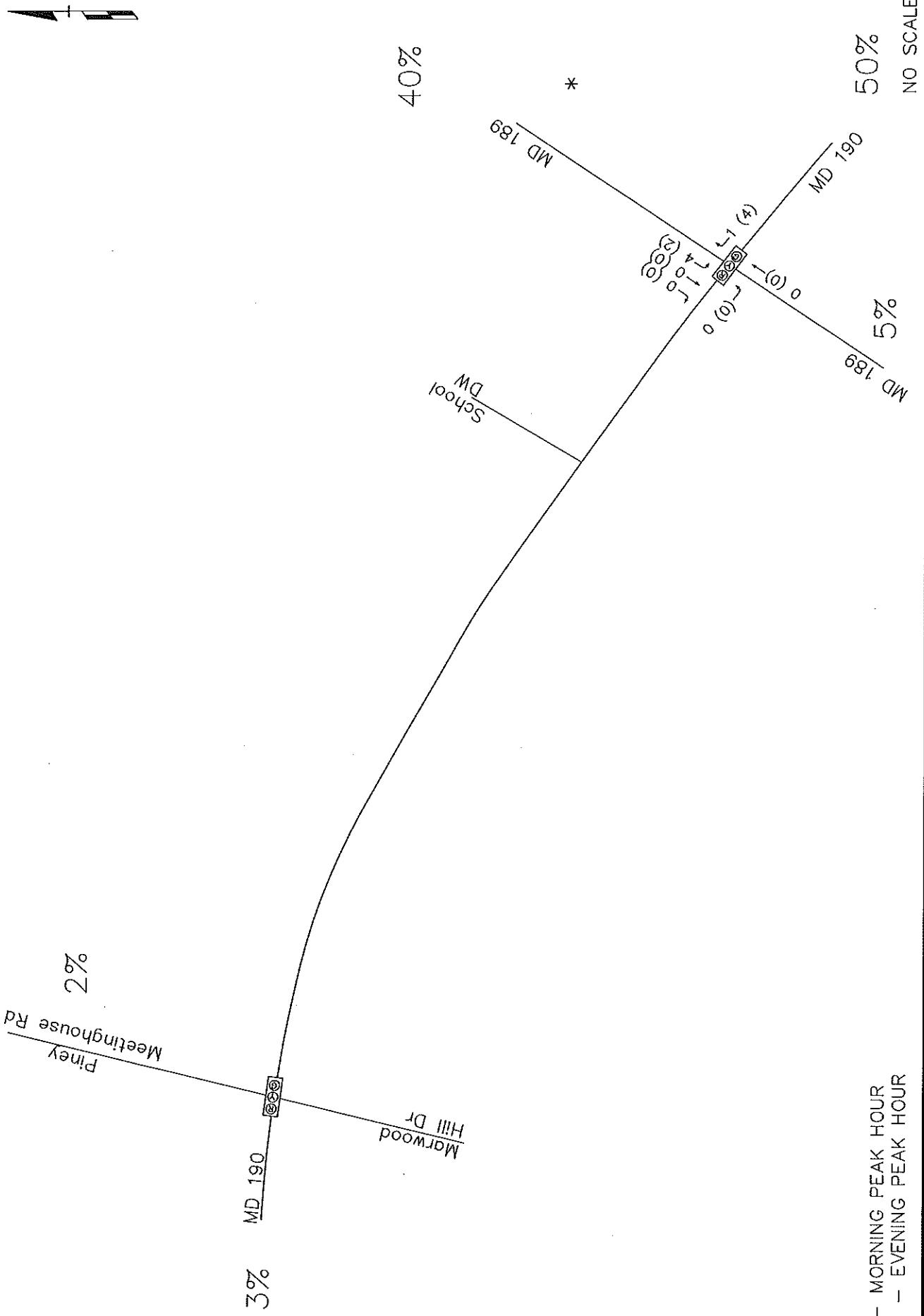
Remarks:

LEVEL OF SERVICE	LEVEL OF SERVICE	TOTAL	V/C

**APPENDIX D**  
**TRIP ASSIGNMENT SHEETS**



Trips Generated by the Bullis School

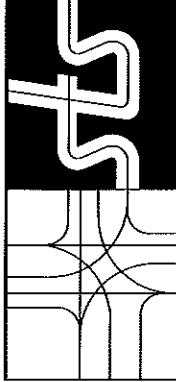


0000 - MORNING PEAK HOUR  
(0000) - EVENING PEAK HOUR

Trips Generated by Kentsdale Estates

NO SCALE

**APPENDIX E**  
**CAPACITY CALCULATIONS - BACKGROUND CONDITIONS**



### TURNING MOVEMENT SUMMARY AND LEVEL OF SERVICE

Count Date: NA

Conditions/  
Design Year:

Background Traffic Volumes

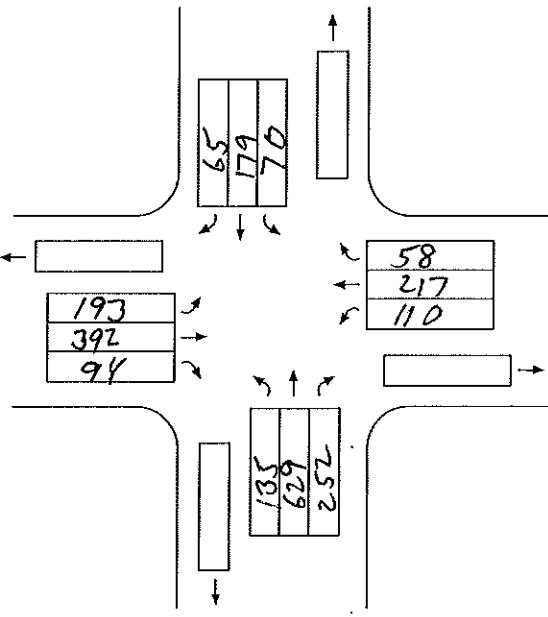
MN

Computed By: MN

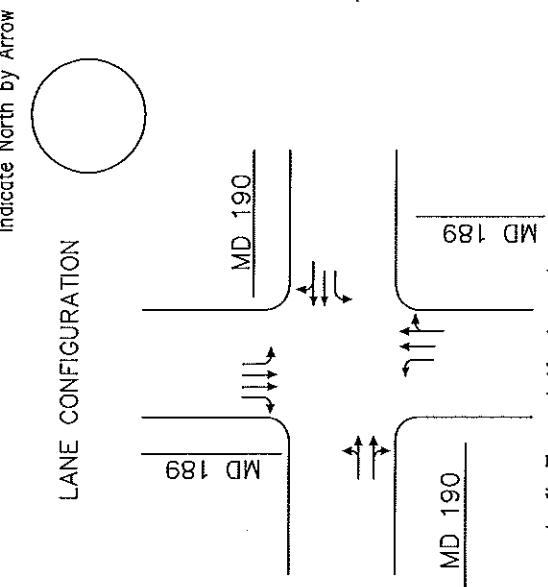
Date: \_\_\_\_\_

Location: MD 190 @ MD 189

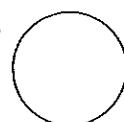
Morning Peak Hour



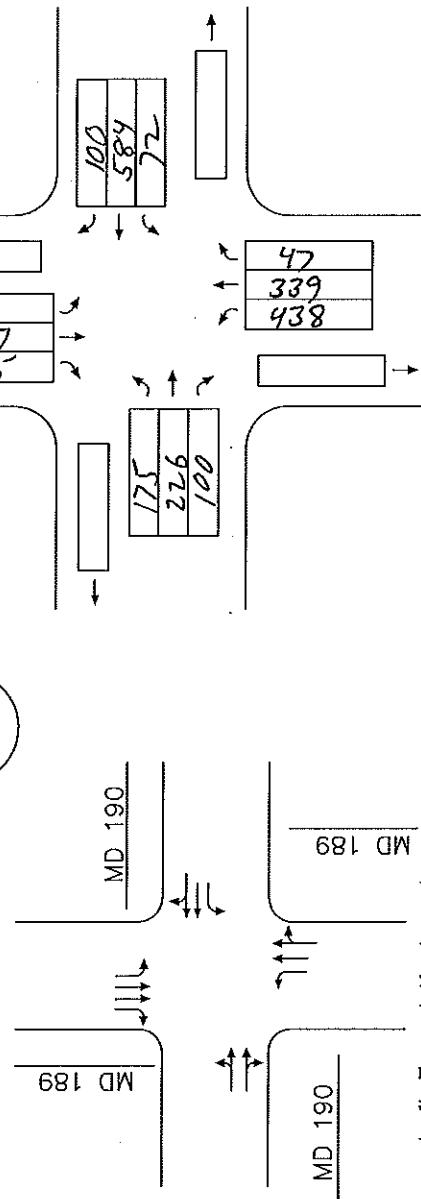
Evening Peak Hour



Indicate North by Arrow



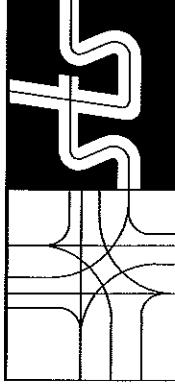
LANE CONFIGURATION



Left Turn Adjustments

Opposing Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor(1)	Lane Use Factor(2)	Service Level	Critical Lane Vol. Tot.
0 to 199	1.1	1	1.00		A = 1000 or Less	
200 to 599	2.0	2			B = 1000 to 1150	
600 to 799	3.0	3			C = 1150 to 1300	
800 to 999	4.0	4			D = 1300 to 1450	
1000+	5.0				E = 1450 to 1600	

* Critical Volume	Total Volume	V/C	Remarks:	* Critical Volume	Total	V/C
LEVEL OF SERVICE	LEVEL OF SERVICE	C	LEVEL OF SERVICE	C	LEVEL OF SERVICE	C



### TURNING MOVEMENT SUMMARY

AND

LEVEL OF SERVICE

Count Date: NA

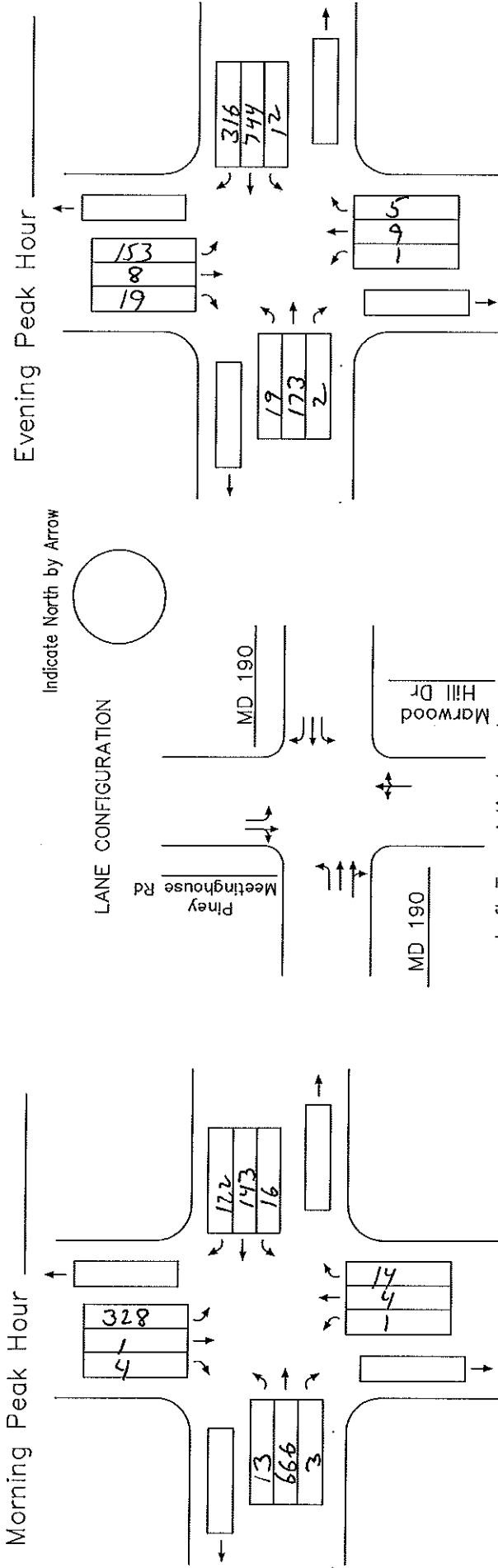
Conditions/ Background Traffic Volumes  
Design Year:

Computed By: MN

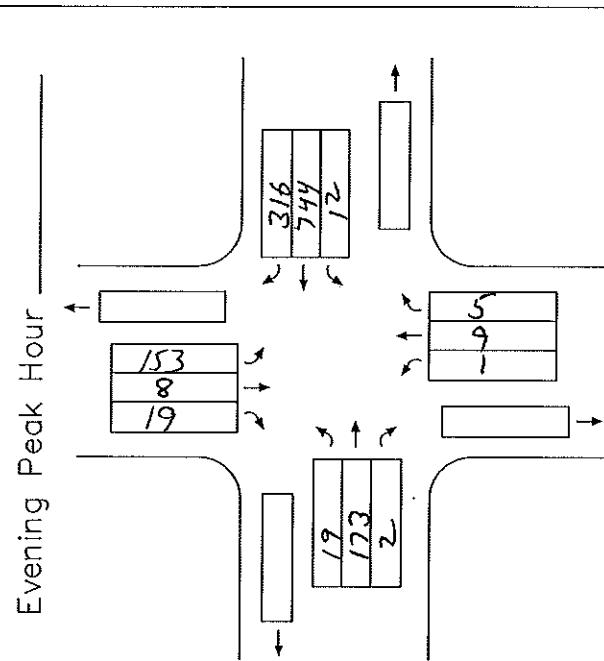
Date: \_\_\_\_\_

Location: MD 190 @  
Piney Meetinghouse Rd

Morning Peak Hour \_\_\_\_\_



Evening Peak Hour \_\_\_\_\_

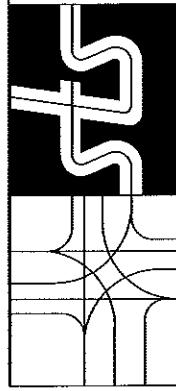


### Left Turn Adjustments

Key	Opposing Through and Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level		Critical Lane Vol. Tot.
					0 to 199	1,1	
1	200 to 599	2.0	1	1.00			B = 1000 to 1150
2	600 to 799	3.0	2	.53			C = 1150 to 1300
3	800 to 999	4.0	3	.37			D = 1300 to 1450
4	1000+	5.0	4	.29			E = 1450 to 1600
							F = Greater than 1600

Phasing ☑

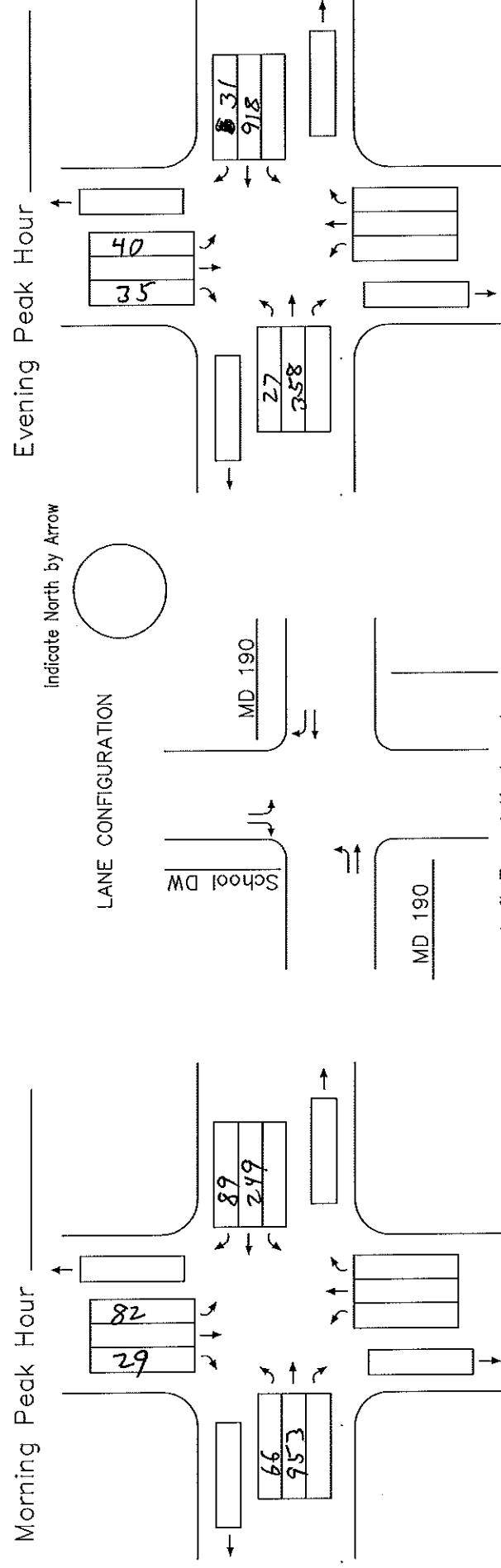
Movement ☑	Lane Use Volume(1) Factor(2)	Opposing Lefts Volume(1) Factor(2)	Critical Lane Volume	Movement *	Lane Use Volume(1) Factor(2)		Opposing Lefts Lane Volume(1) Factor(2)	Critical Lane Volume *
					NB	SB		
NB	14414	1.0	19	328	347		14915	153
SB	174	1.0	5	1	6		27	28
EB	666+3	0.53	355	16	371	EB	173+2	12
WB	143	1.0	143	13	156	WB	144	19
Remarks:	* critical volume	TOTAL	718	V/C	Remarks:	* critical volume	TOTAL	931
	LEVEL OF SERVICE	A					LEVEL OF SERVICE	V/C



**TURNING MOVEMENT SUMMARY  
AND  
LEVEL OF SERVICE**

Count Date: \_\_\_\_\_  
Conditions/ Background Traffic Volumes  
Design Year: \_\_\_\_\_  
Computed By: MN Date: \_\_\_\_\_

Location: MD 190 @ School DW  
\_\_\_\_\_



Left Turn Adjustments

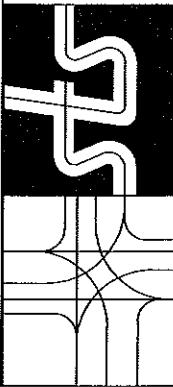
Key	Opposing Through and Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level		Critical Lane Vol. Tot.	
					0 to 199	1.1	A = 1000 or Less	B = 1000 to 1150
1	200 to 599	2.0	1	1.00	C = 1150 to 1300			
2	600 to 799	3.0	2	.53	D = 1300 to 1450			
3	800 to 999	4.0	3	.37	E = 1450 to 1600			
4	1000+	5.0	4	.29	F = Greater than 1600			

Phasing Q

Q	Movement	Volume(1)	Lane Use Factor(2)	Opposing Lane Volume Lefts	Critical Lane Volume	Movement	Volume(1)	Lane Use Factor(2)	Lane Volume (1)x(2)		Opposing Lane Lefts	Critical Lane Volume * Volume
									Opposing Lane Volume Lefts	Critical Lane Volume		
	SB	82	1.0	82	~	SB	40	1.0	40	~	40	V
	EB	953	1.0	953	~	EB	358	1.0	358	~	358	
	WB	249	1.0	249	66	WB	918	1.0	918	27	945	V
Remarks:		* critical volume TOTAL 1035 v/c Remarks:		TOTAL 985 v/c Remarks:		LEVEL OF SERVICE B		LEVEL OF SERVICE A		V/C		

**APPENDIX F**

**CAPACITY CALCULATIONS - TOTAL CONDITIONS**



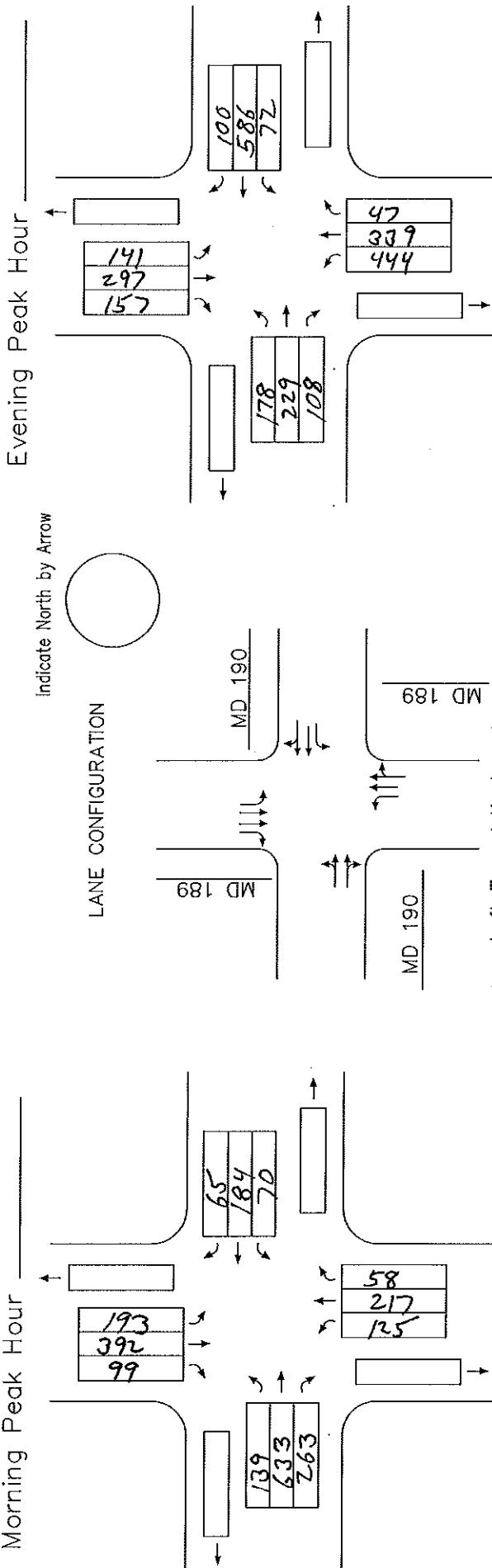
**TURNING MOVEMENT SUMMARY  
AND  
LEVEL OF SERVICE**

Count Date: NA  
Conditions/  
Design Year:  
Computed By: MN

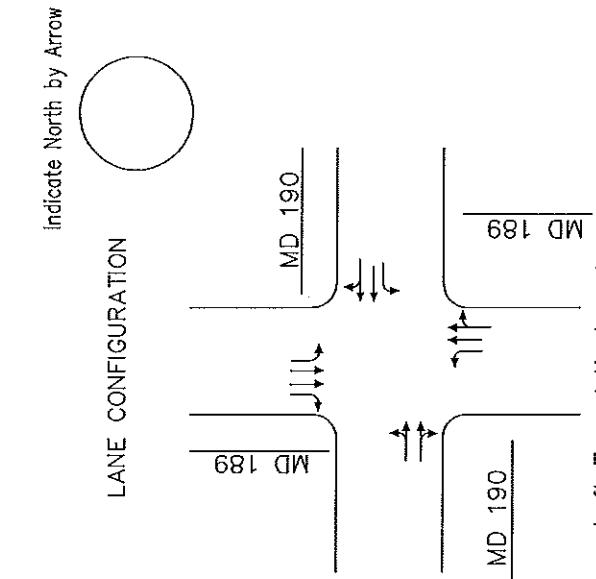
Total Traffic Volumes  
Date: \_\_\_\_\_

Location: MD 190 @ MD 189

Morning Peak Hour \_\_\_\_\_



Evening Peak Hour \_\_\_\_\_



**Left Turn Adjustments**

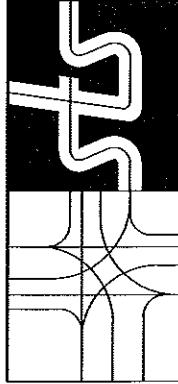
Key	Opposing Through and Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	
					A = 1000 or Less	B = 1000 to 1150
1	0 to 199	1.1	1	1.00	C = 1150 to 1300	D = 1300 to 1450
2	200 to 599	2.0	2	.53	E = 1450 to 1600	F = Greater than 1600
3	600 to 799	3.0	3	.37		
4	800 to 999	4.0	4	.29		
5	1000+	5.0				

**Phasing @ Split & on MD 190**

Opposing Lefts	Critical Lane Volume	Opposing Lefts	Movement	Volume(1) Factor(2)	Lane Use Factor(2)	
					No. of Lanes	Lane Volume (1)x(2)
NB	217+58	0.53	146	193	339	339+47
SB	392	0.53	208	125	333	297
EB	139+633+243	0.53	549	—	549	178+229+108
WB	184+65	0.53	132	—	132	108+4100

Opposing Lefts	Movement	Lane Use Factor(2)	Lane Volume (1)x(2)	Opposing Lefts	Lane Use Factor(2)	Lane Volume (1)x(2)	Opposing Lefts	Lane Use Factor(2)	Lane Volume (1)x(2)	Opposing Lefts	Lane Use Factor(2)	Lane Volume (1)x(2)	
NB	217+58	0.53	146	193	339	339+47	0.53	205	141	346	0.53	205	
SB	392	0.53	208	125	333	297	0.53	157	444	601	0.53	157	
EB	139+633+243	0.53	549	—	549	178+229+108	0.53	273	—	273	0.53	273	
WB	184+65	0.53	132	—	132	108+4100	0.53	364	—	364	0.53	364	
* critical volume				* critical volume				* critical volume				TOTAL <u>1228</u> v/c	
LEVEL OF SERVICE <u>R</u>				LEVEL OF SERVICE <u>C</u>				LEVEL OF SERVICE <u>C</u>				v/c	

Remarks:

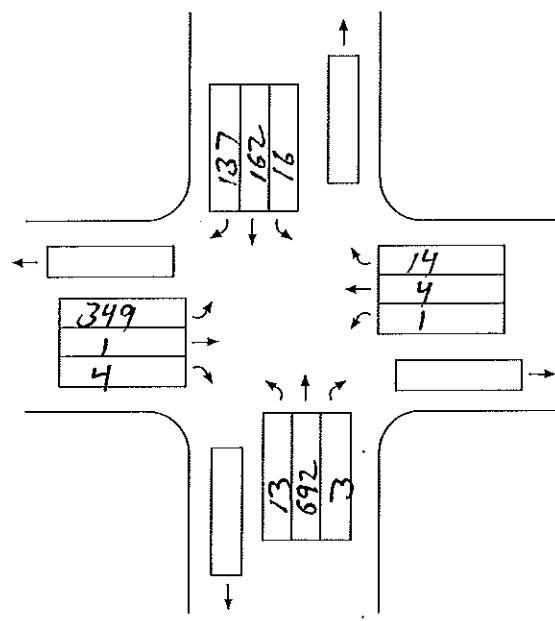


TURNING MOVEMENT SUMMARY  
AND  
LEVEL OF SERVICE

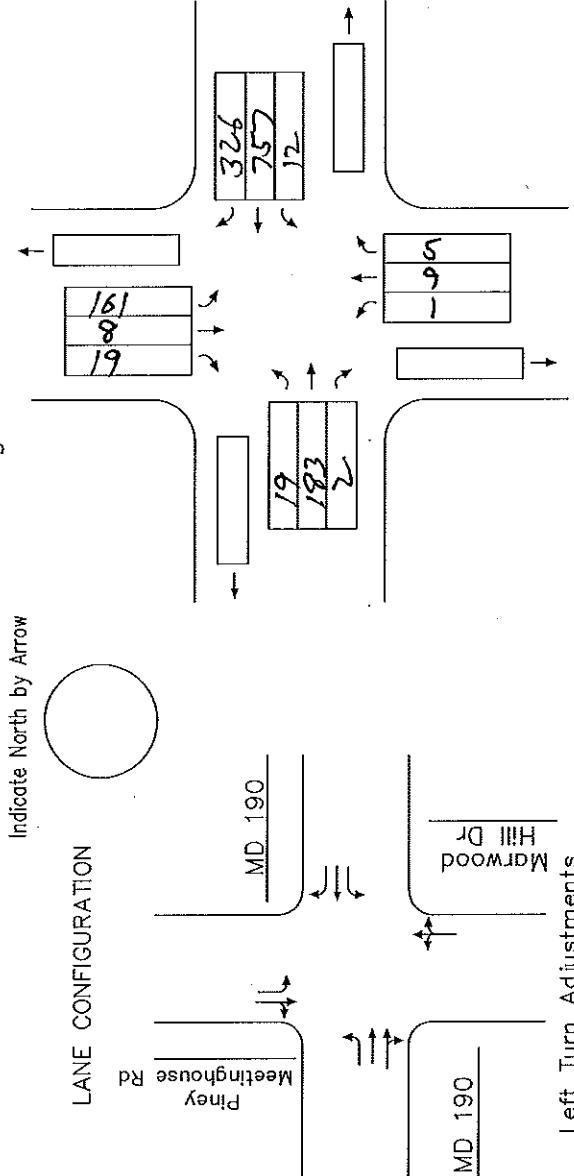
Count Date: \_\_\_\_\_  
Conditions/ Total Traffic Volumes  
Design Year: \_\_\_\_\_  
Computed By: MN Date: \_\_\_\_\_

Location: MD 190 @  
Piney Meetinghouse Rd

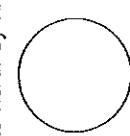
Morning Peak Hour \_\_\_\_\_



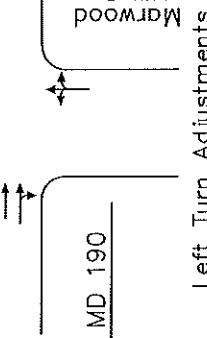
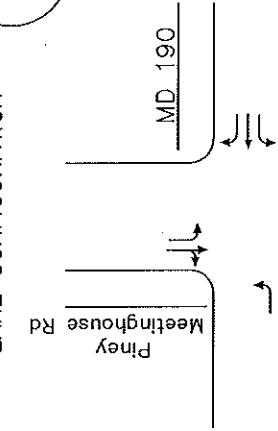
Evening Peak Hour \_\_\_\_\_



Indicate North by Arrow



LANE CONFIGURATION



Left Turn Adjustments

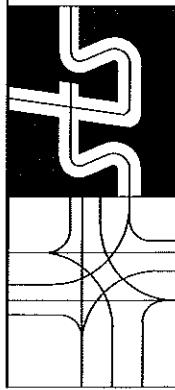
Key	Opposing Through and Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
1	0 to 199	1.1	1	= 1.00	A = 1000 or Less	
2	200 to 599	2.0	2	= .53	B = 1000 to 1150	
3	600 to 799	3.0	3	= .37	C = 1150 to 1300	
4	800 to 999	4.0	3	= .29	D = 1300 to 1450	
5	1000+	5.0	4	= .29	E = 1450 to 1600	
					F = Greater than 1600	

Phasing Q

♂ Movement	Lane Use Volume(1)	Lane Use Factor(2)	Opposing Lefts Volume(1)x(2)	* Critical Lane Volume	♂ Movement	Volume(1)	Lane Use Factor(2)	Lane Use Volume(1)x(2)	Lane Opposing Lefts Volume(1)x(2)	Critical Lane Volume
NB	14+14	1.0	14	14	NB	49+5	1.0	15	15	176 ✓
SB	14	1.0	5	1	SB	8+19	1.0	27	1	28
EB	692+3	0.53	368	16	EB	183+2	0.53	98	12	110
WB	162	1.0	162	13	WB	757	1.0	757	19	776 ✓

\* critical volume TOTAL 752 Remarks:  
LEVEL OF SERVICE A

TOTAL 952 v/c  
LEVEL OF SERVICE A

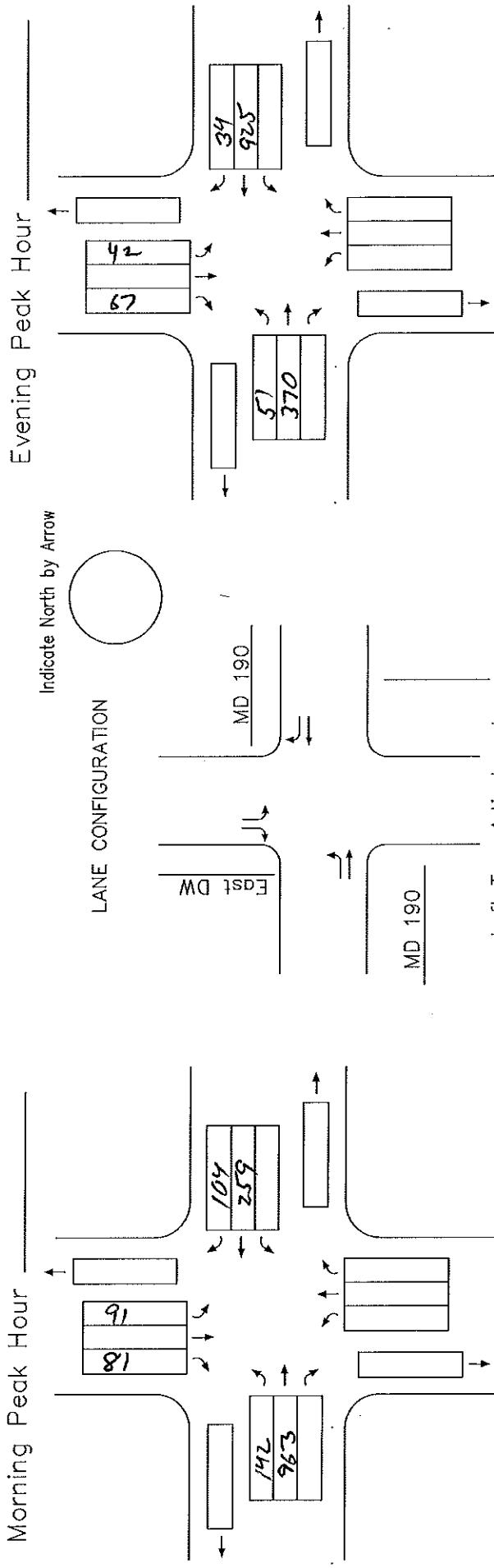


TURNING MOVEMENT SUMMARY  
AND  
LEVEL OF SERVICE

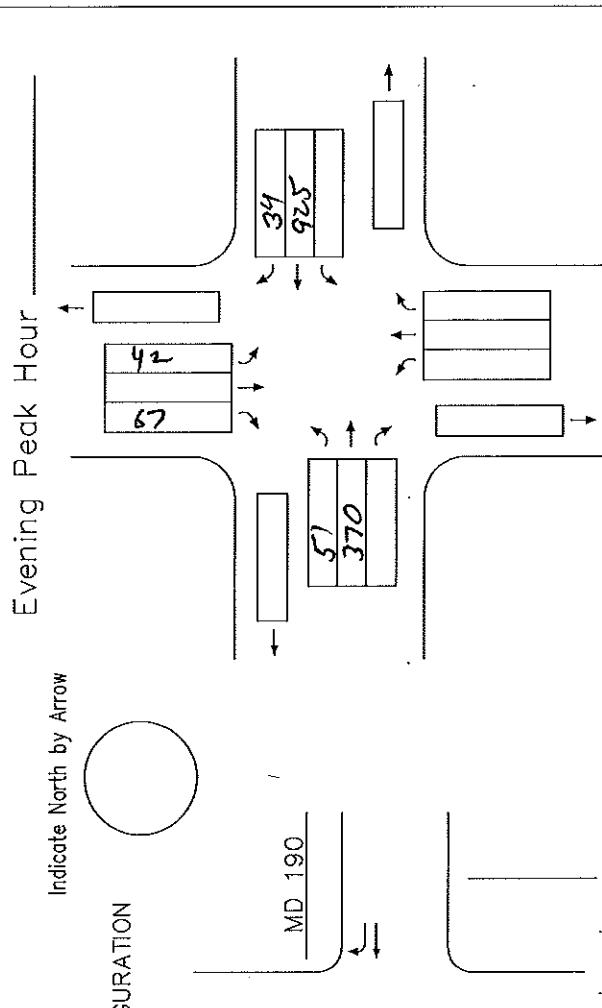
Count Date: \_\_\_\_\_  
Conditions/ Total Traffic Volumes  
Design Year: \_\_\_\_\_  
Computed By: MN \_\_\_\_\_ Date: \_\_\_\_\_

Location: MD 190 @ East DW

Morning Peak Hour



Evening Peak Hour



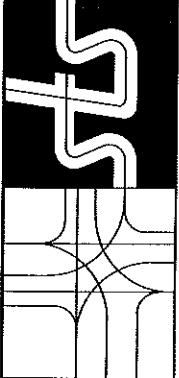
Left Turn Adjustments

Phasing [Q]	Key	Opposing Through and Right-Turn Volume	Passenger Car Equivalent	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
	1	0 to 199	1.1	1	= 1.00	A = 1000 or Less	
	2	200 to 599	2.0	2	= .53	B = 1000 to 1150	
	3	600 to 799	3.0	3	= .37	C = 1150 to 1300	
	4	800 to 999	4.0	4	= .29	D = 1300 to 1450	
	5	1000+	5.0			E = 1450 to 1600	
						F = Greater than 1600	

♂ Movement	Lane Use Factor(2)	Opposing Lefts Volume(1)	* Critical Lane Volume	♂ Movement	Volume(1)	Lane Use Factor(2)	Lane Volume(1)x(2)	Opposing Lefts Volume(1)x(2)	Critical Lane Volume *
SB	91	1.0	91	SB	42	1.0	42	-	42 ✓
EB	963	1.0	963	EB	370	1.0	370	-	370
WB	259	1.0	259	WB	925	1.0	925	51	976 ✓

Remarks: \* critical volume TOTAL 1054 V/C Remarks:

LEVEL OF SERVICE	B	V/C	TOTAL 1018	V/C
			LEVEL OF SERVICE	



### TURNING MOVEMENT SUMMARY

AND

LEVEL OF SERVICE

NA

Count Date:

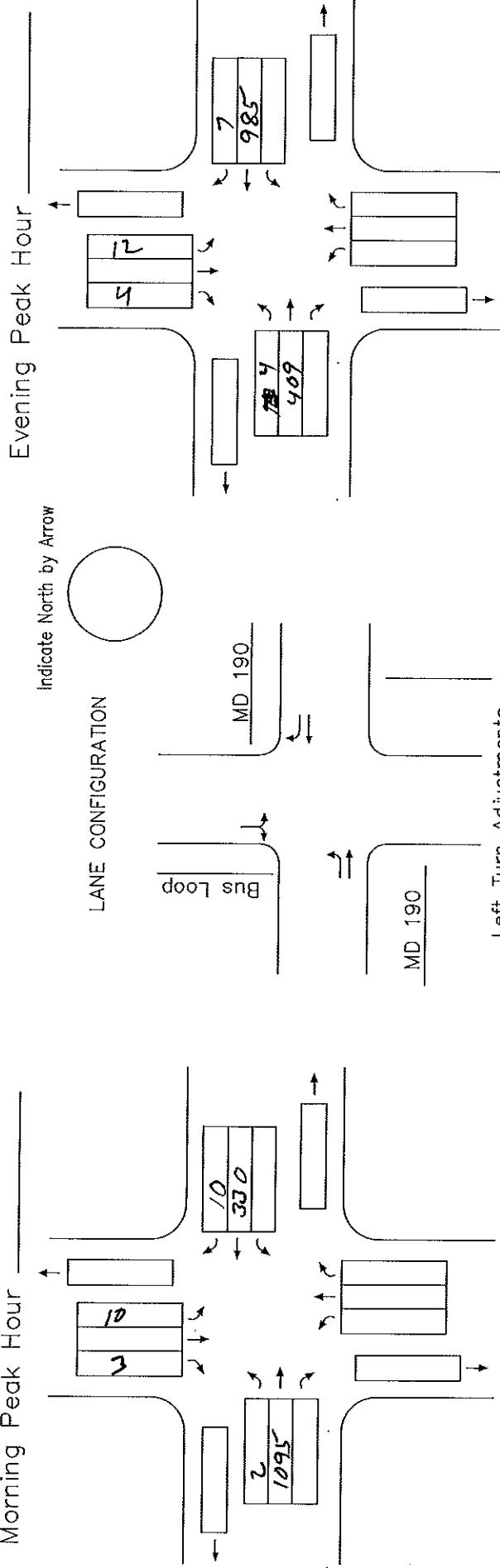
Conditions/ Design Year:

Total Traffic Volumes

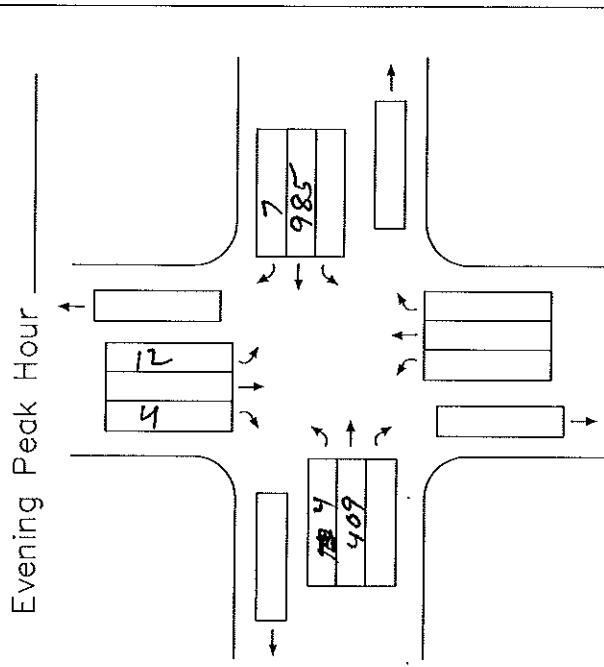
Computed By: MN

Date:

Morning Peak Hour



Evening Peak Hour



### Left Turn Adjustments

Key	Opposing Through and Right-Turn Volume		Passenger Car Equivalent 1.1 2.0 3.0 4.0 5.0	No. of Lanes	Lane Use Factor	Service Level	Critical Lane Vol. Tot.
	0 to 199	200 to 599					
1	1	1	1.00	1	1.00	A = 1000 or Less	
2	2	2	.53	2	.53	B = 1000 to 1150	
3	3	3	.37	3	.37	C = 1150 to 1300	
4	4	4	.29	4	.29	D = 1300 to 1450	
5	5	5	.24	5	.24	E = 1450 to 1600	

Phasing	Opposing Lefts	Opposing Left Volume	Lane Use Factor(1)(1)x(2)	Lane Use Factor(2)(1)x(2)	Lane Use Factor(1) * Opposing Lefts		Lane Use Factor(2) * Opposing Lefts	Opposing Lefts	Opposing Left Volume	Lane Use Factor(1)x(2)
					0	1				
SB	10+3	1.0	13	-	13	✓	SB	12+4	1.0	16
EB	1095	1.0	1095	-	1095	✓	EB	409	1.0	409
WB	330	1.0	330	2	332		WB	985	1.0	985

Movement	Volume(1)	Lane Use Factor(2)	Lane Use Factor(1)(1)x(2)	Opposing Lefts	Opposing Left Volume	Lane Use Factor(1) * Opposing Lefts	Lane Use Factor(2) * Opposing Lefts	Opposing Lefts	Opposing Left Volume	Lane Use Factor(1)x(2)
SB	10+3	1.0	13	-	13	✓	SB	12+4	1.0	16
EB	1095	1.0	1095	-	1095	✓	EB	409	1.0	409
WB	330	1.0	330	2	332		WB	985	1.0	985

Remarks:  
\* critical volume TOTAL 1108 V/C Remarks:

TOTAL 1005 V/C

LEVEL OF SERVICE **B**