The Traffic Group

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GAITHERSBURG, MD

Traffic Impact Analysis

for

CROWN FARM

Gaithersburg, Maryland

Prepared for

North Gaithersburg Investment, LLC

PENGAD-Bayonne, N. J.
EXHIBIT
#57
X-181
12/10/04

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December 8, 2004

Attachment "I"

Traffic Impact Analysis

for

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Maryland

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Prepared By: Glenn Cook
Shulin Li, P.E., P.T.O.E.

GEC/clg
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INTRODUCTION and SUMMARY OF FINDINGS

STUDY PURPOSE

The primary purpose of this Traffic Impact Analysis was to determine what impact the proposed development of the Crown Farm Property would have on the adjacent road network in Gaithersburg, Maryland. The Crown Farm Site is located along the west side of Sam Eig Highway, just south of its intersection with Fields Road. This property is planned to be developed with 80 townhouse units.

STUDY CRITERIA/METHODOLOGY

This Traffic Impact Analysis was conducted in accordance with a Scoping Meeting held with the City of Gaithersburg Staff. Intersection Capacity Analyses were conducted using the Critical Lane Volume (CLV) Methodology utilized by the City of Gaithersburg and the Maryland State Highway Administration. The trip generation determination for this site utilized the Institute of Transportation Engineers (ITE) Trip Generation Report (7th Edition).

SCOPE OF SERVICES

The principal scope of services undertaken as part of this study was as follows:

- *Field investigation to collect physical information concerning the nearby road system to include condition diagrams and a photo survey.*
- *Conduct intersection turning movement counts from 6:30 to 9:30 AM and 4 to 7 PM at each of the study area intersections.*
- *Obtain information from the City of Gaithersburg relative to other approved developments planned in the vicinity of the subject site.*
- *Conduct Trip Generation and Trip Distribution Analyses for the nearby developments.*
- *Conduct Trip Generation and Trip Distribution Analyses for the proposed development of the Crown Farm.*

- *Conduct Intersection Capacity Analyses to determine existing and projected levels of service at the key intersections.*

SUMMARY OF FINDINGS and RECOMMENDATIONS

This Traffic Impact Analysis was prepared to determine what impact the proposed development of the Crown Farm would have on the adjacent road network in Gaithersburg, Maryland. Intersection Capacity Analyses were conducted using the CLV Methodology.

The results of our analysis indicate that based on the existing traffic conditions in this area, two intersections are presently operating at unsatisfactory levels of service during the peak periods. These intersections are as follows:

- MD 119/Sam Eig Highway
- MD 119 and Muddy Branch Road

With the approved developments in this area, the study area intersections are projected to continue to operate at satisfactory levels of service with the exception of the two intersections which are currently operating at unsatisfactory levels of service. It should be pointed out that with the development of the approved developments, several roadway improvements are being made. These improvements are either in place or currently under construction. With these improvements, the intersection of MD 119 and Sam Eig Highway is projected to operate at a satisfactory level of service during both the morning and evening peak periods. The intersection of MD 119 and Muddy Branch Road however, is projected to continue to operate at Level of Service "F" conditions during both the morning and evening peak period.

The results of the analysis for the total traffic conditions indicate that all of the study area intersections are projected to continue to operate at satisfactory levels of service with the exception of the MD 119 and Muddy Branch Road intersection. This intersection is projected to operate at an unsatisfactory Level of Service "F" during both the morning and evening peak hour even when considering the improvements required of the approved background developments. It should be pointed out that the traffic projected to be generated by the Crown Farm Property has very little impact on the MD 119 and Muddy Branch Road intersection. During the morning peak period, the CLV at this intersection will not change as a result of the Crown Farm. During the evening peak hour, an increase of one (1) CLV will be experienced as a result of the development of the Crown Farm. Therefore, this project will have a negligible impact on the MD 119 and Muddy Branch Road intersection.

Based on the data contained in this report, it is our opinion that the proposed development of the Crown Farm will not have a noticeable impact at the MD 117 and Muddy Branch Road

intersection and all of the other intersections in the study area will operate at satisfactory levels of service.

The data and methodology used to undertake this study is detailed in the sections that follow.

EXISTING TRAFFIC CONDITIONS

SITE INFORMATION

The Crown Farm is located along the west side of Sam Eig Highway, south of its intersection with Fields Road as shown on Exhibit 1. Exhibits 1A and 1B show the site layout. Access to this property is planned at one location along Story Drive and one location along Bickerstaff Way.

STUDY AREA

Based on a Scoping Meeting held with the City of Gaithersburg Staff, the following intersections were identified to be included in this Traffic Impact Analysis:

- *Sam Eig Highway and Fields Road*
- *Sam Eig Highway and Diamondback Drive*
- *MD 119 and Sam Eig Highway*
- *MD 119 and Muddy Branch Road*
- *Muddy Branch Road and Diamondback Drive*
- *Diamondback Drive and Story Drive/Bickerstaff Way*

Sam Eig Highway is a six lane divided roadway in the vicinity of the subject site. Auxiliary turn lanes are provided at the major intersections. The intersections along Sam Eig Highway at MD 119, Diamondback Drive, and Fields Road are presently signalized. The posted speed limit along Sam Eig Highway varies between 50 and 55 MPH through the study area.

MD 119 is a four lane east/west roadway in the vicinity of the subject site. Auxiliary turn lanes are provided at the major intersections.

Muddy Branch Road is a four lane north/south roadway in the vicinity of the subject site. Auxiliary turn lanes are provided at the intersection along Muddy Branch Road.

Diamondback Drive is a four lane east/west roadway which intersects with Muddy Branch Road to the west and Sam Eig Highway to the east. The intersections of Diamondback Drive with Muddy Branch Road, Story Drive/Bickerstaff Way, and Sam Eig Highway are all presently signalized.

Story Drive and Bickerstaff Way are two lane north/south roadways in the vicinity of their intersection with Diamondback Drive.

Fields Road is a two lane east/west roadway which intersects Sam Eig Highway on the east side. The intersection of Sam Eig Highway and Fields Road is presently signalized.

Exhibit 2 has been prepared to show the existing lane use at each of the study area intersections.

TRAFFIC VOLUMES

Intersection turning movement counts were conducted from 6:30 to 9:30 AM and 4 to 7 PM at each of the study area intersections. The total vehicles observed during these counts are shown on the summary sheets contained in Appendix A. The existing peak hour volumes are shown on Exhibit 3.

ANALYSIS OF EXISTING TRAFFIC CONDITIONS

Intersection Capacity Analyses were conducted for the each of the study area intersections using the CLV Methodology and the results are shown on Exhibit 11. A review of Exhibit 11 indicates that two intersections are presently operating at a Level of Service "F" during the peak periods. The intersection of MD 119 and Sam Eig Highway is currently operating at a Level of Service "F" during the evening peak period. The intersection of MD 119 and Muddy Branch Road is currently operating at an unsatisfactory Level of Service "F" during both the morning and evening peak periods.

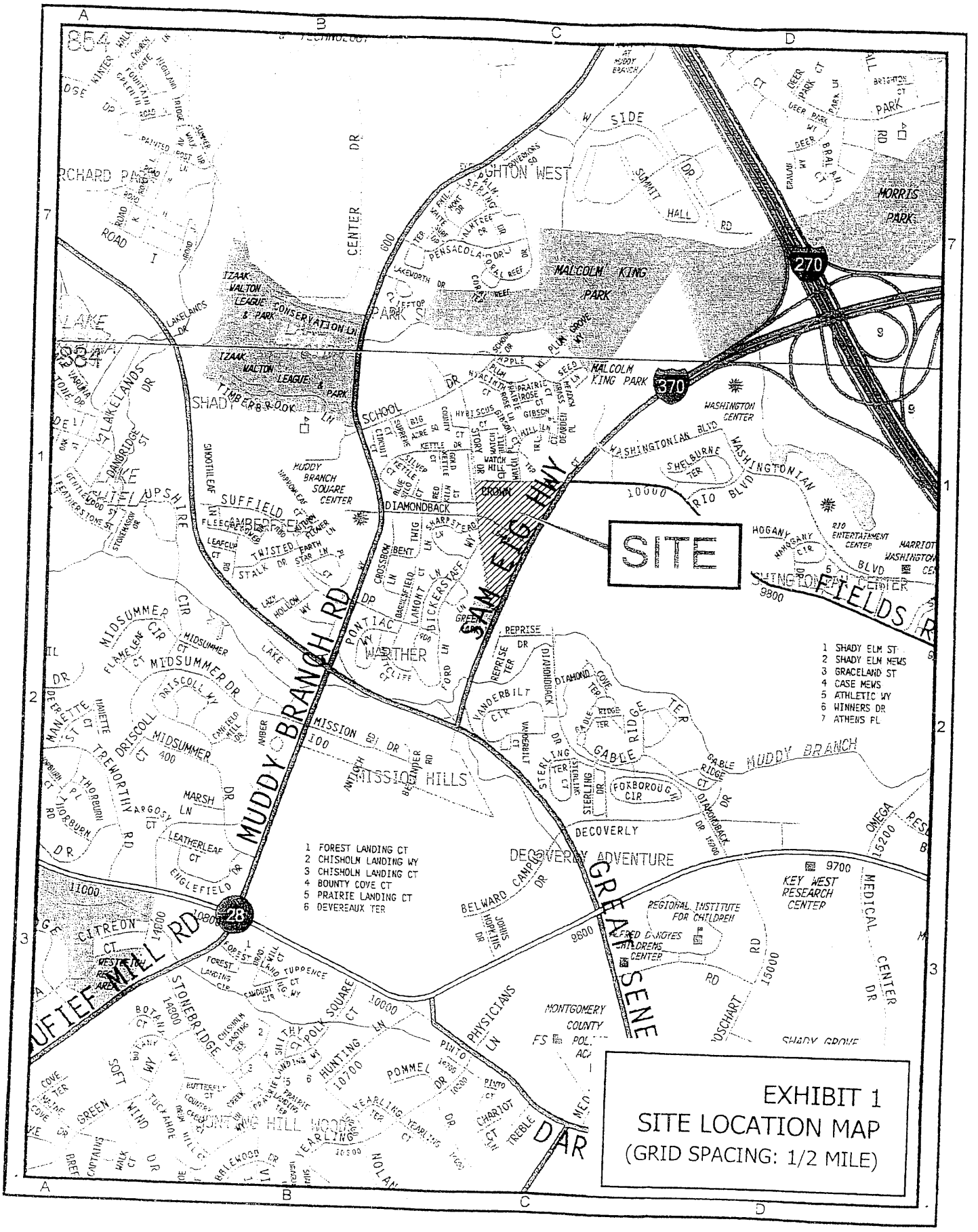
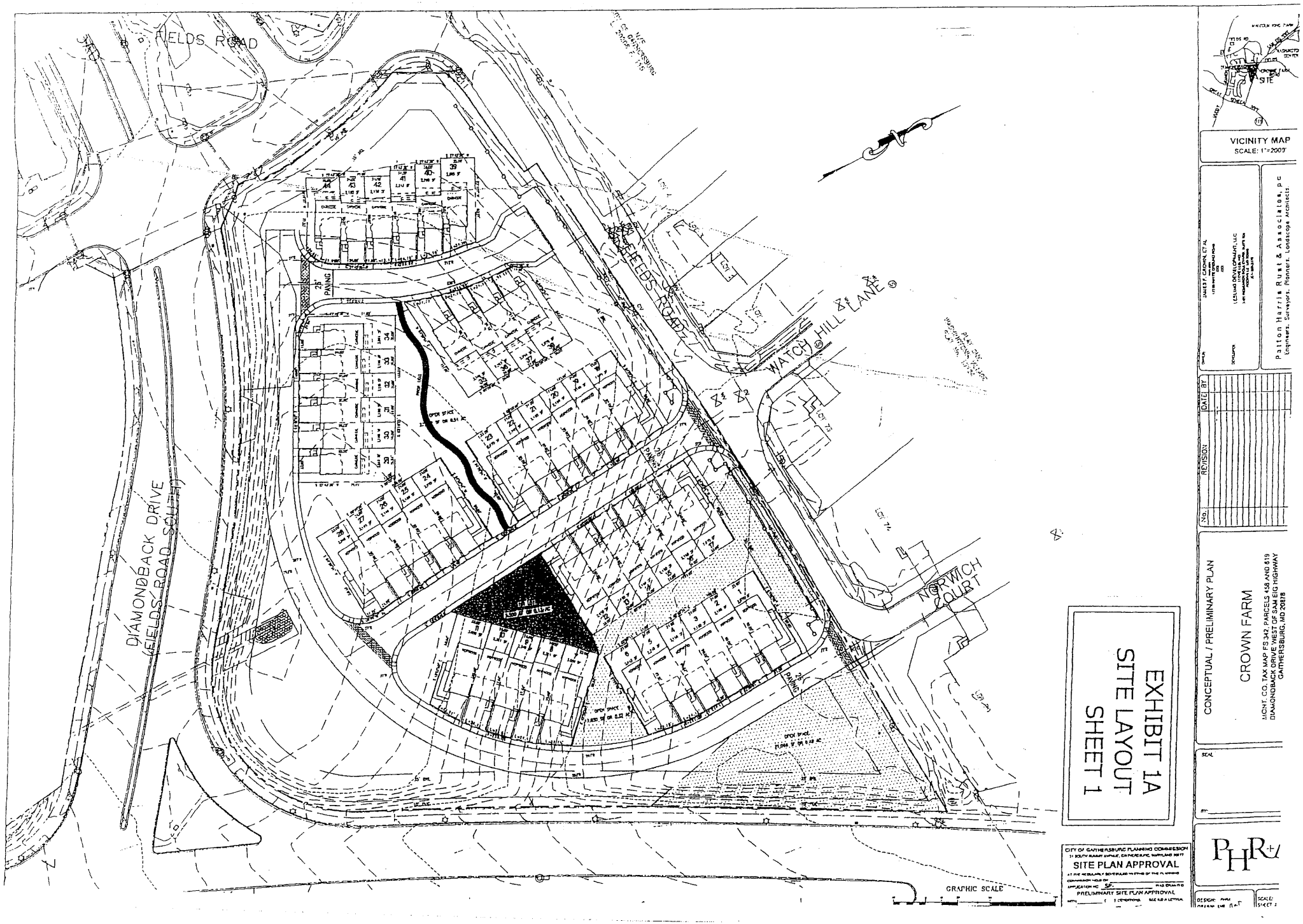


EXHIBIT 1
SITE LOCATION MAP
(GRID SPACING: 1/2 MILE)


FIELDS ROAD
DIAMONDBACK DRIVE
(FIELDS ROAD SOUTH)
FIELDS ROAD
WATCH HILL LANE
NORWICH COURT
PARKING
GRAPHIC SCALE
EXHIBIT 1A
SITE LAYOUT
SHEET 1
CITY OF GAITHERSBURG PLANNING COMMISSION
SITE PLAN APPROVAL
PRELIMINARY SITE PLAN APPROVAL
VICINITY MAP
SCALE: 1"=2000'
SITE
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects
CONCEPTUAL / PRELIMINARY PLAN
CROWN FARM
DIAMONDBACK DRIVE, WEST OF SAM ELG HIGHWAY
GAITHERSBURG, MD 20878
REVISION
DATE
BY
SEAL
PHR+A

GENERAL NOTES

1. OWNER: [illegible]
2. DEVELOPER: Ledino Development, LLC
c/o Dave Ledino 301-222-2179
1400 Research Blvd, Suite 222
Rockville, MD 20850
3. ARCHITECT: ARCHITECT
4. ENGINEER: Patton Harris Rust + Associates, pc
c/o Patrick Hennessy 301-921-0330
12850 Middlebrook Road, Suite 200
Germantown, MD 20876
5. This site is currently being processed in the corporate limits of the City of Gaithersburg.
6. This site is not located within any historic district, nor is it listed on the City of Gaithersburg's historic inventory or within the Olde Towne District.
7. Boundary and topographic information provided by Patton Harris Rust + Associates, pc.
8. Existing zone: R-200 / CRN 3 (Since part of the City of Gaithersburg, it will become RD-1)
9. Gross tract area: 13.18 acres
10. Density: 5 units / acre maximum (6.57 units / acre proposed)
11. There are no existing structures located on the property.
12. Open Space: 30% of 13.18 acres minimum (5 acres or 218)
17,000 SF / unit or 85,000 of the common open space (121,341 SF provided as shown on plan)
13. Parking: 2 spaces / dwelling unit (4 total spaces provided / dwelling unit (2 garage / 2 driveway))
14. Building Coverage
15. Building Height: 35' maximum (35' proposed)

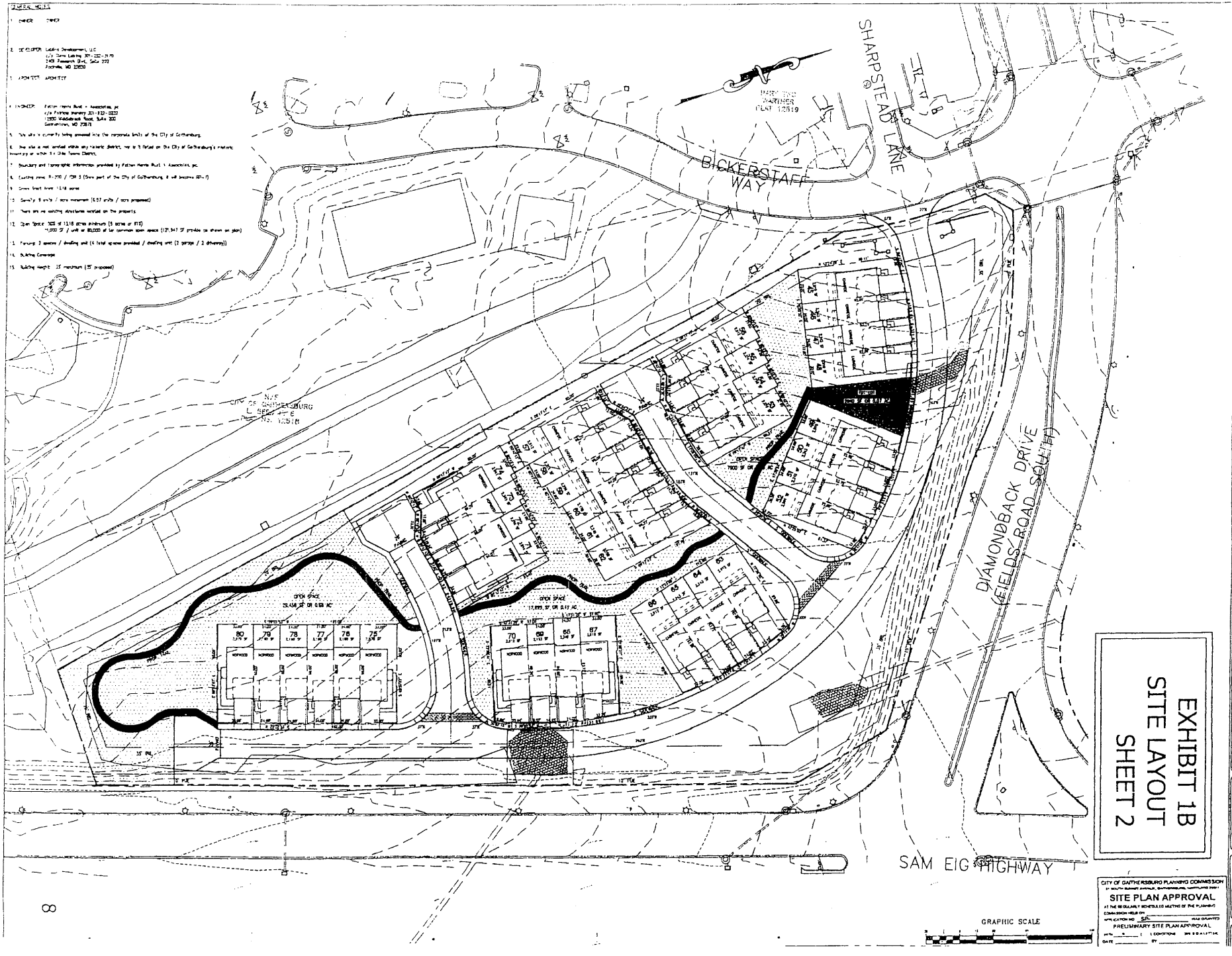
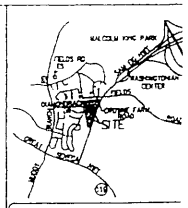


EXHIBIT 1B
SITE LAYOUT
SHEET 2

CITY OF GAITHERSBURG PLANNING COMMISSION
SITE PLAN APPROVAL
PRELIMINARY SITE PLAN APPROVAL



VICINITY MAP
SCALE: 1"=2000'

OWNER: JAMES F. CROWN ET AL
DEVELOPER: LEDINO DEVELOPMENT, LLC

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects
12850 Middlebrook Road, Suite 200 Germantown, MD 20876
T 301-528-4300 F 301-528-0418

NO.	REVISION	DATE	BY

CONCEPTUAL / PRELIMINARY PLAN

CROWN FARM

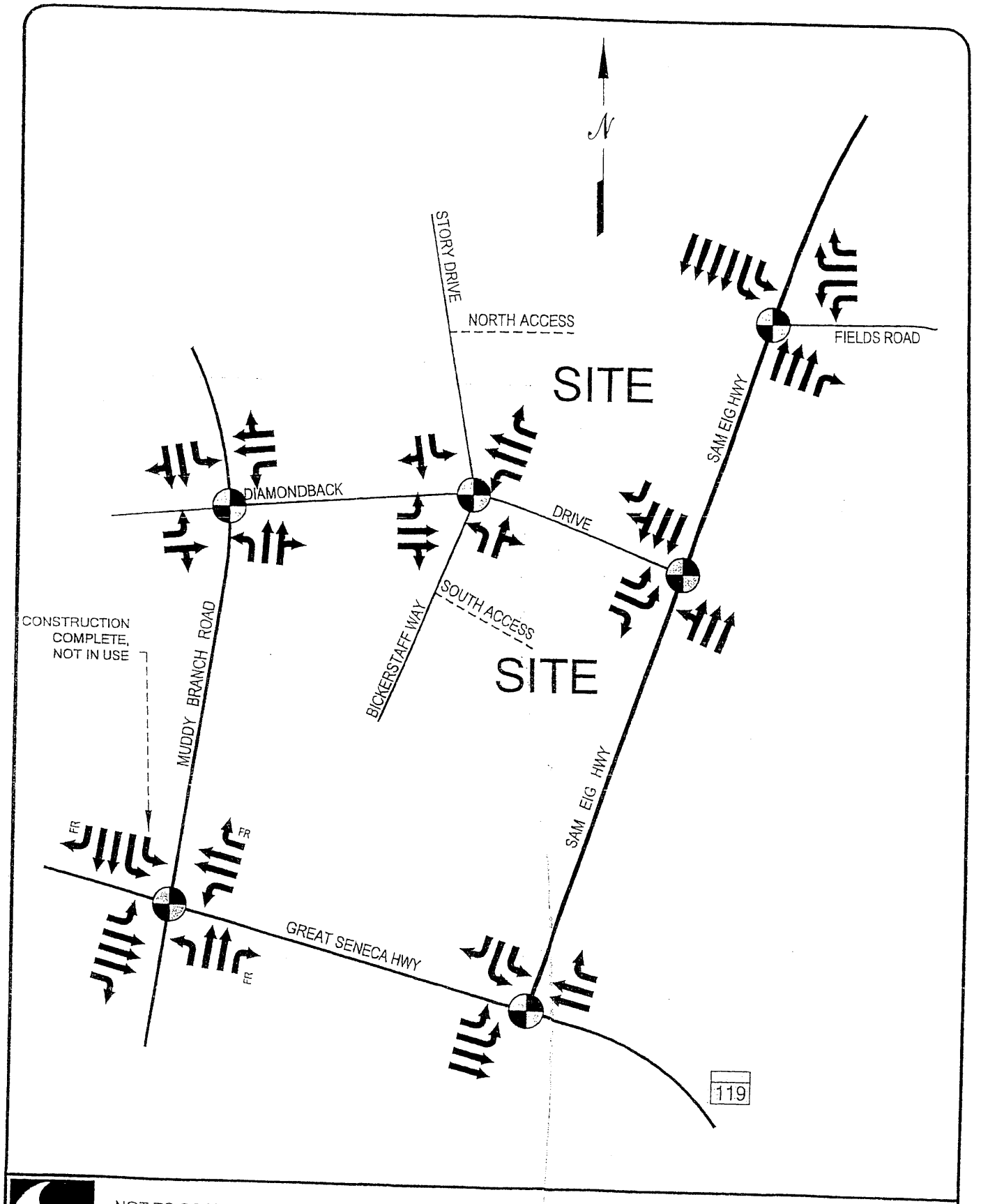
MONT. CO. TAX MAP FS 342, PARCELS 458 AND 619
DIAMONDBACK DRIVE WEST OF SAM EIG HIGHWAY
GAITHERSBURG, MD 20878
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

SEAL

BY:

PHR+A

DESIGN: PHRA
DRAWN: CAB
SCALE: 1"=30'
SHEET 2 OF 1



NOT TO SCALE

SIGNALIZED INTERSECTION

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EXHIBIT 2
EXISTING LANE USE

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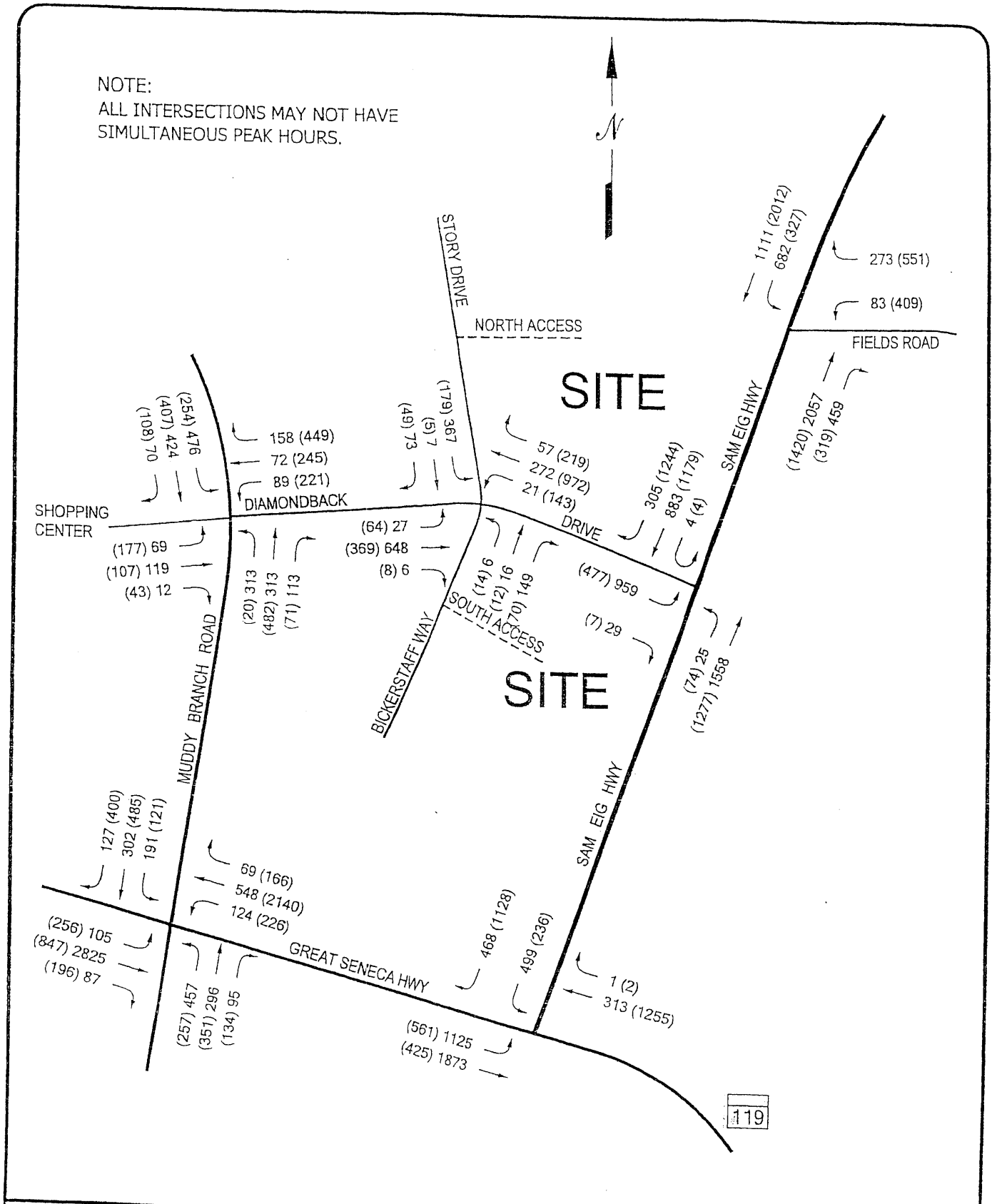

NOT TO SCALE

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

EXHIBIT 3
EXISTING PEAK HOUR
TRAFFIC VOLUMES

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BACKGROUND TRAFFIC CONDITIONS

OTHER APPROVED DEVELOPMENTS

In order to establish the background traffic conditions for this Traffic Impact Analysis, information was obtained from the City of Gaithersburg relative to other approved developments planned in the vicinity of the subject site. Based on this information, three developments were identified to be included in this analysis. They were as follows:

- Washintonian South – 350,000 square feet of office space
- Washintonian North – 850,000 square feet of office space
- Rio Waterfront – 87,815 square feet of office space – 18,080 square feet of retail space

Exhibit 4 shows the location of each of these developments.

TRIP GENERATION/DISTRIBUTION

In order to determine the impact of the other nearby developments on the adjacent road system, a Traffic Study previously prepared for the Washingtonian Center was obtained and copies of the appropriate pages are contained in Appendix C to this report. The trip generation for these developments was based on trip generation rates obtained from the ITE Trip Generation Publication.

Exhibit 5 has been prepared to show the trip generation rates and the peak hour trips projected to be generated by each of the nearby developments. These trips were then distributed and assigned to the road system based on information obtained from the Washintonian Center Traffic Impact Analysis and existing traffic patterns in this area. The peak hour trips projected to be generated by each of the nearby developments were assigned to the nearby road system as shown on the exhibits contained in Appendix C of this report. The combined peak hour trips to be generated by all of the approved developments are shown on Exhibit 6.

Combining the peak hour trips to be generated by the nearby developments with the existing peak hour volumes results in the background peak hour volumes shown on Exhibit 7.

It should be noted that several roadway improvements are either in place or under construction. These improvements include the following:

- Construction of second southbound left turn lane along Muddy Branch Road at MD 119.

- Construction of a second southbound right turn lane along Sam Eig Highway at

Analysis of Background Traffic Conditions

Intersection Capacity Analyses were conducted for the background peak hour volumes discussed above assuming the improvements that are presently under construction. The results of these analyses are shown on Exhibit 11. Copies of the capacity worksheets are contained in Appendix B of this report.

A review of Exhibit 11 indicates that based on the background peak hour volumes, all of the study area intersections are projected to operate at a satisfactory level of service during the morning and evening peak period with the exception of the MD 119 and Muddy Branch Road intersection. However, the proposed development has a negligible impact on this intersection.

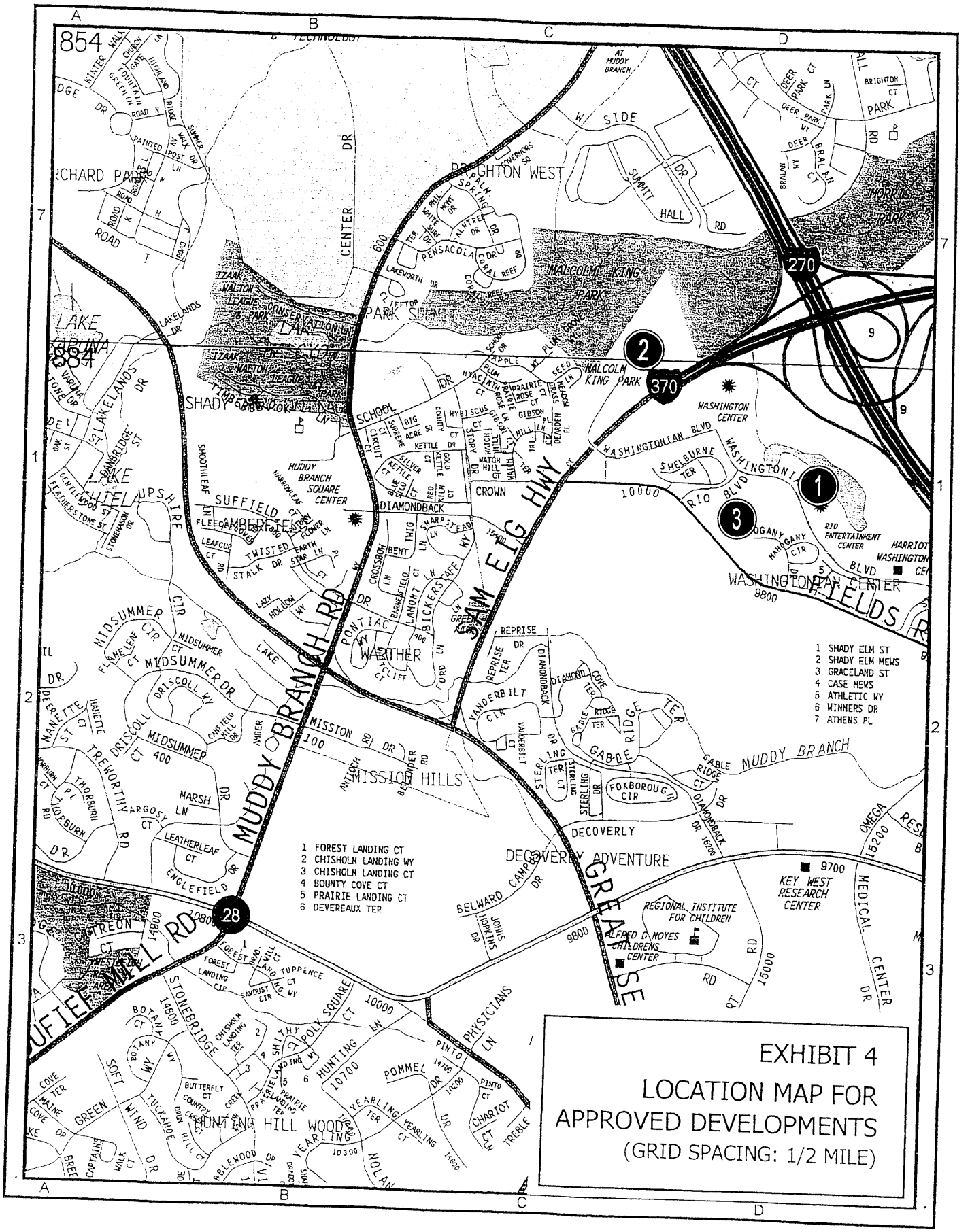

EXHIBIT 4
LOCATION MAP FOR
APPROVED DEVELOPMENTS
(GRID SPACING: 1/2 MILE)

TRIP GENERATION FOR BACKGROUND DEVELOPMENTS

TRIP RATES / FORMULAE	IN/OUT
General Office (ksf, ITE-710)	
Ln(Morning Trips) = 0.80 x Ln(ksf) + 1.55	88/12
Evening Trips = 1.12 x (ksf) + 78.81	17/83
Shopping Center (ksf, ITE-820)	
Morning Trips = 1.03 x ksf	61/39
Evening Trips = 3.75 x ksf	48/52

TRIP TOTALS

	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
1. Washingtonia South						
General Office (ksf, ITE-710)						
350,000 sq.ft.	450	61	511	80	391	471
2. Washingtonia North						
General Office (ksf, ITE-710)						
850,000 sq.ft.	914	125	1039	175	856	1031
3. Rio Waterfront						
General Office (ksf, ITE-710)						
87,815 sq.ft.	149	20	169	30	147	177
Shopping Center (ksf, ITE-820)						
18,080 sq.ft.	12	7	19	33	35	68
Pass-by Trips	-6	-4	-10	-20	-21	-41
New Trips	**6**	**3**	**9**	**13**	**14**	**27**

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EXHIBIT 5
TRIP GENERATION FOR
BACKGROUND DEVELOPMENTS

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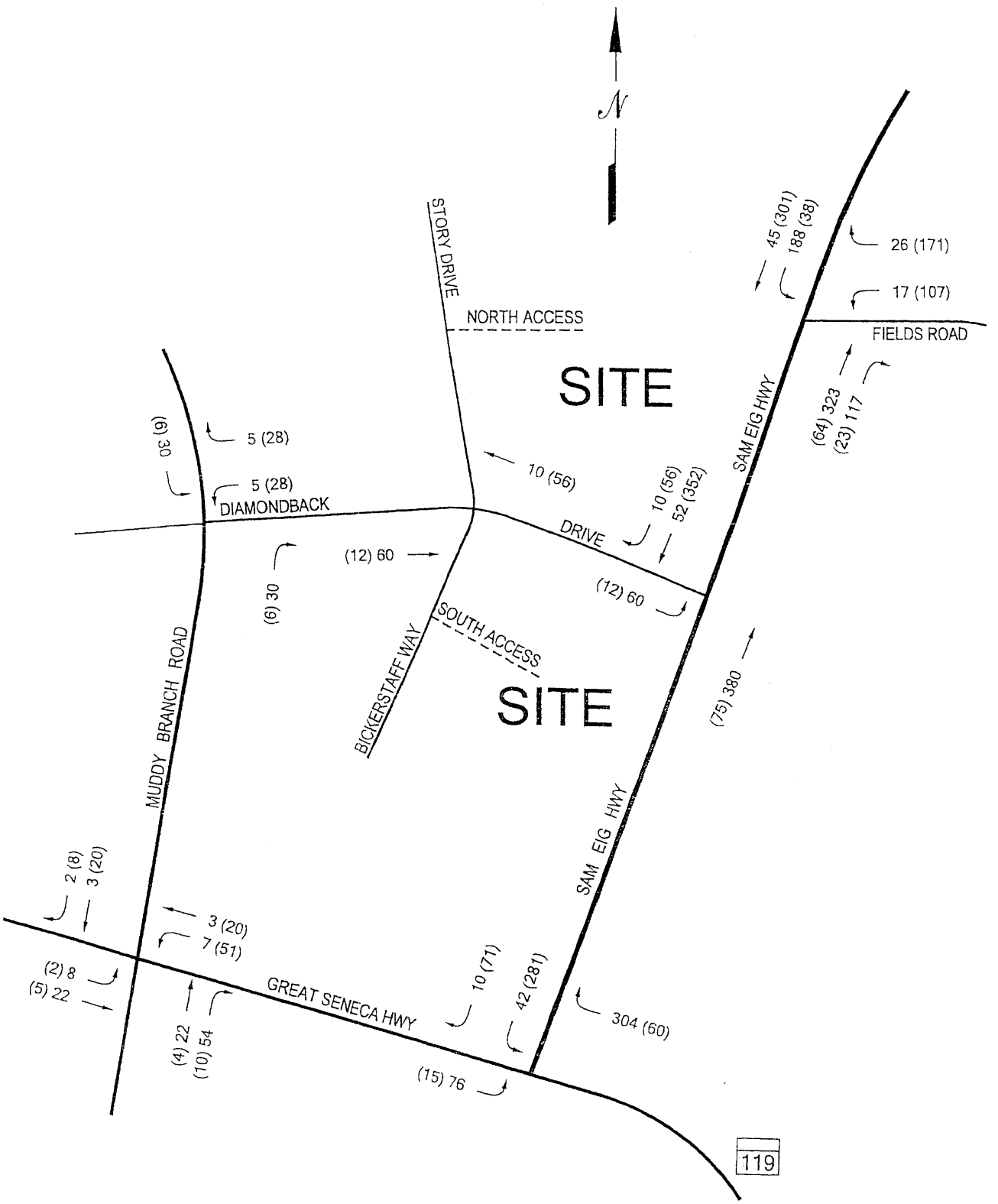

NOT TO SCALE

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

EXHIBIT 6
COMBINED TRIPS GENERATED
BY APPROVED DEVELOPMENTS

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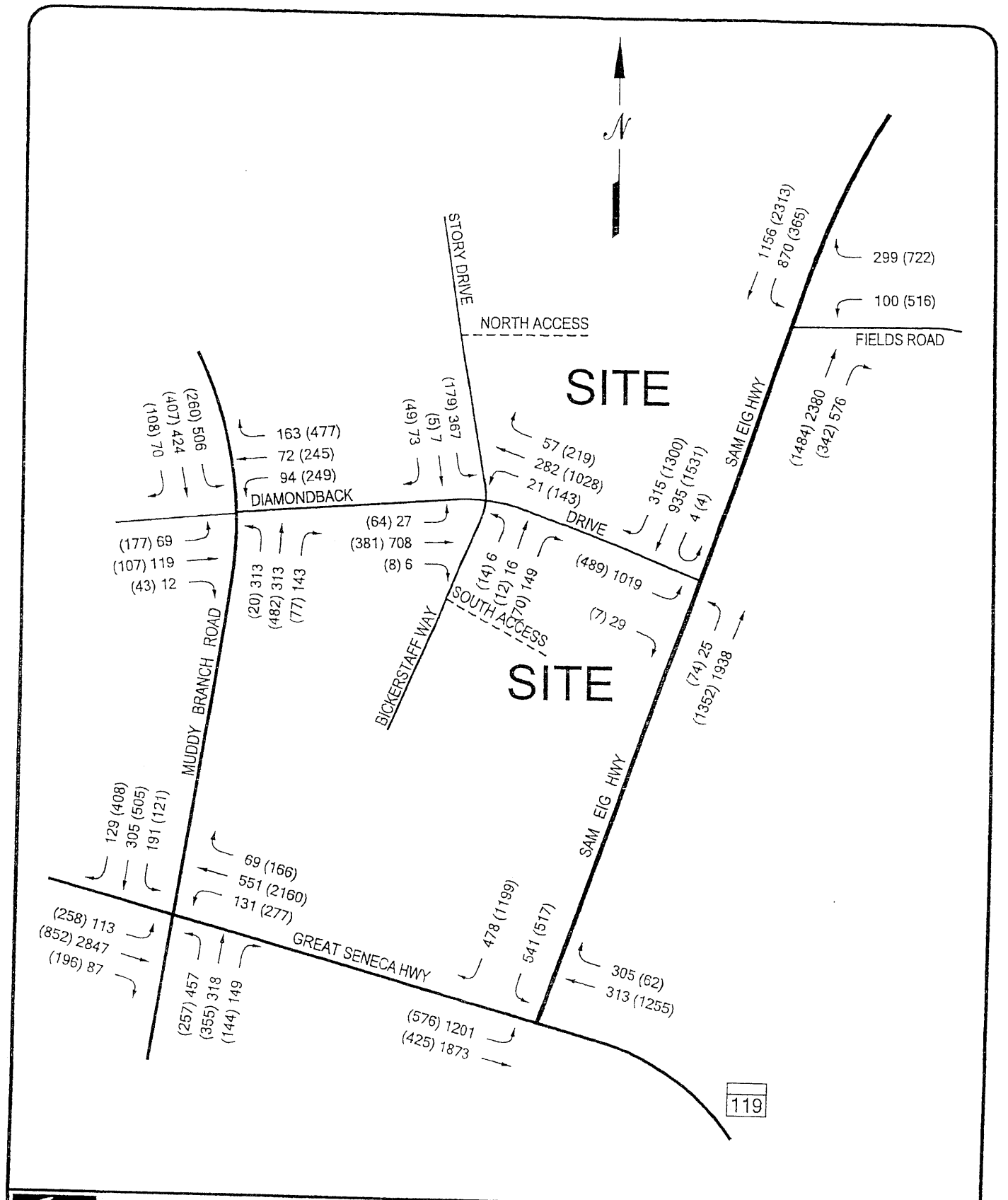

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00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

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EXHIBIT 7
BACKGROUND PEAK
HOUR TRAFFIC VOLUMES

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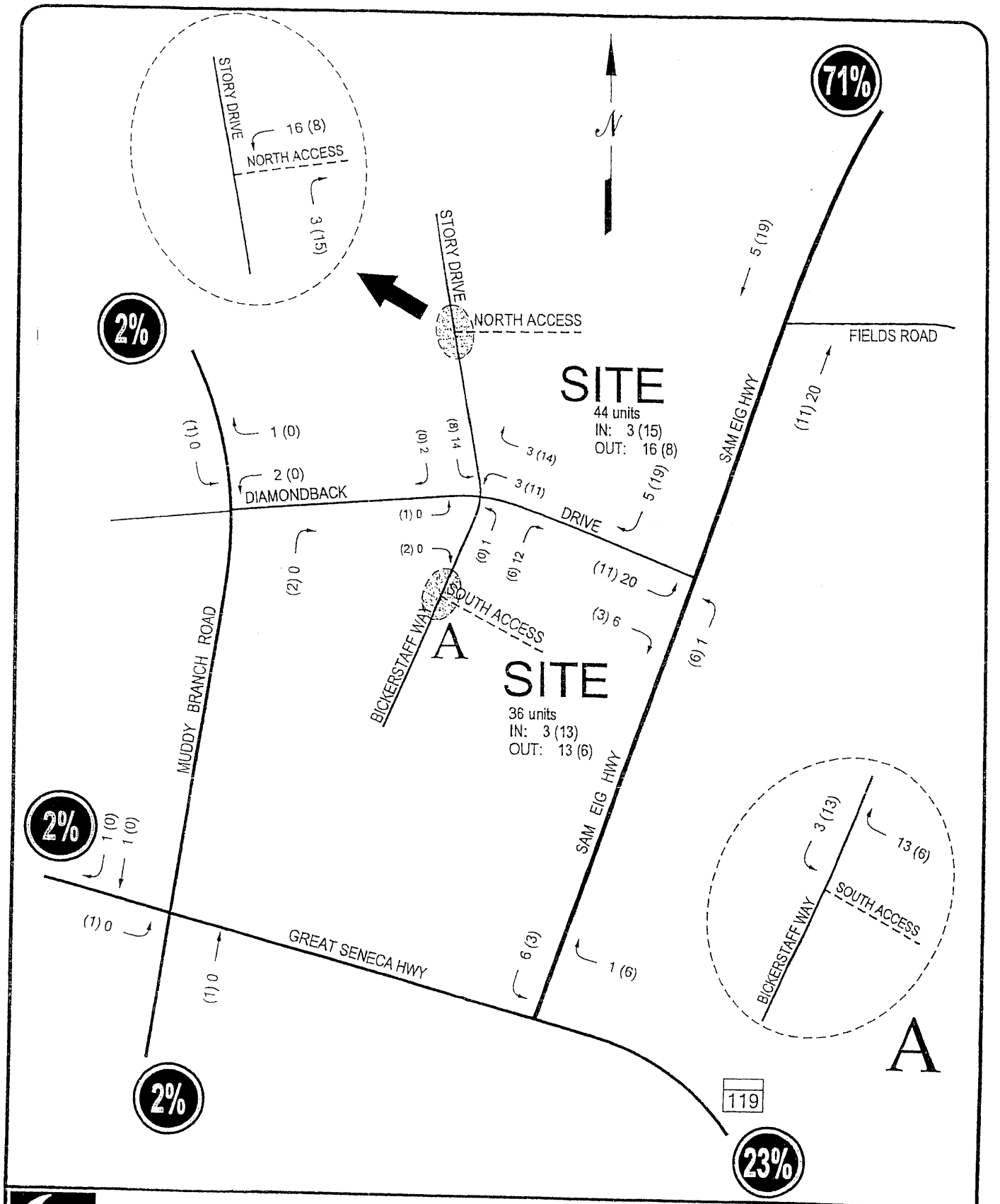

The Traffic Group

NOT TO SCALE

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

EXHIBIT 9
TRIP ASSIGNMENT FOR
CROWN FARM PROJECT

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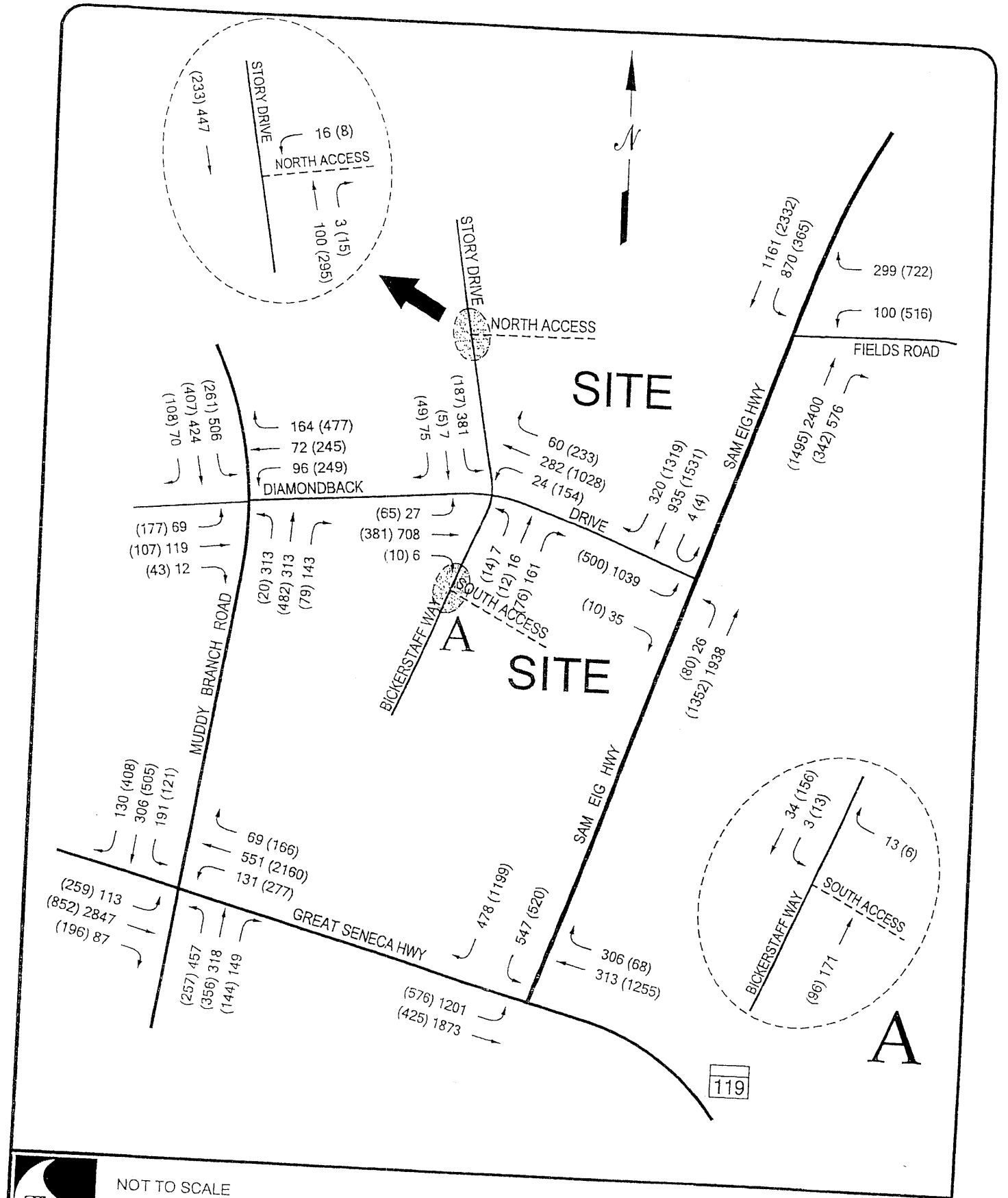

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The Traffic Group

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

EXHIBIT 10
TOTAL PEAK HOUR
TRAFFIC VOLUMES

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RESULTS, RECOMMENDATIONS and CONCLUSIONS

STUDY PURPOSE

The primary purpose of this Traffic Impact Analysis was to determine what impact the proposed development of the Crown Farm Property would have on the adjacent road network in Gaithersburg, Maryland. The Crown Farm Site is located along the west side of Sam Eig Highway, just south of its intersection with Fields Road. This property is planned to be developed with 80 townhouse units.

STUDY CRITERIA/METHODOLOGY

This Traffic Impact Analysis was conducted in accordance with a Scoping Meeting held with the City of Gaithersburg Staff. Intersection Capacity Analyses were conducted using the CLV Methodology utilized by the City of Gaithersburg and the Maryland State Highway Administration. The trip generation determination for this site utilized the ITE Trip Generation Report (7th Edition).

SUMMARY OF FINDINGS and RECOMMENDATIONS

This Traffic Impact Analysis was prepared to determine what impact the proposed development of the Crown Farm would have on the adjacent road network in Gaithersburg, Maryland. Intersection Capacity Analyses were conducted using the CLV Methodology.

The results of our analysis indicate that based on the existing traffic conditions in this area, two intersections are presently operating at unsatisfactory levels of service during the peak periods. These intersections are as follows:

- MD 119/Sam Eig Highway
- MD 119 and Muddy Branch Road

With the approved developments in this area, the study area intersections are projected to continue to operate at satisfactory levels of service with the exception of the two intersections. It should be pointed out that with the development of the approved developments, several roadway improvements are being made. These improvements are either in place or currently under construction. With these improvements, the intersection of MD 119 and Sam Eig Highway is projected to operate at a satisfactory level of service during both the morning and evening peak periods. The intersection of MD 119 and Muddy Branch Road however, is projected to continue to operate at unsatisfactory Level of Service "F".

The results of the analysis for the total traffic conditions indicate that all of the study area intersections are projected to continue to operate at satisfactory levels of service with the exception of the MD 119 and Muddy Branch Road intersection. It should be pointed out that the traffic projected to be generated by the Crown Farm Property has very little impact on the MD 119 and Muddy Branch Road intersection. During the morning peak period, the CLV at this intersection will not change as a result of the Crown Farm. During the evening peak hour, an increase of one (1) CLV will be experienced as a result of the development of the Crown Farm. Therefore, this project will have almost no impact on the MD 119 and Muddy Branch Road intersection.

Therefore, based on the data contained in this report, it is our opinion that the proposed development of the Crown Farm will not have a noticeable impact at the MD 117 and Muddy Branch Road intersection and all of the other intersections in the study area will operate at satisfactory levels of service.

Please be aware the road improvements that are detailed above have not been designed. Our recommendation for these road improvements are conceptual in nature and are based upon the mathematical computations/capacity analyses that are provided in this report. It is unlikely, at this point in the process, that The Traffic Group, Inc. has undertaken sufficient field work/design to determine the impact of the recommended road improvements on either above ground or below ground utilities, drainage conditions, or right-of-way conditions that would impact the feasibility or cost of making the improvements that we have recommended. The feasibility and cost of making these improvements will be undertaken in the next phase of our studies.

RESULTS OF INTERSECTION CAPACITY ANALYSIS

MORNING PEAK HOUR TRAFFIC	EXISTING	BACKGR'D	TOTAL
1. MD 119 & Sam Eig Hwy	C/1294	D/1317	D/1320
w/ planned improvement	----	***D/1317***	***D/1320***
2. Sam Eig Hwy & Diamondback Dr	B/1094	C/1266	C/1278
3. Sam Eig Hwy & Fields Rd	C/1166	D/1395	D/1402
4. MD 119 & Muddy Branch Rd	F/1786	F/1803	F/1803
w/ planned improvement	----	***F/1803***	***F/1803***
5. Muddy Branch Rd & Diamondback Dr	A/922	A/973	A/975
6. Diamondabck Dr & Story Dr	A/900	A/931	A/960
7. Bickerstaff Way & South site access	----	----	A/187
8. Story Drive & North site access	----	----	A/463

EVENING PEAK HOUR TRAFFIC	EXISTING	BACKGR'D	TOTAL
1. MD 119 & Sam Eig Hwy	F/1793	F/1864	F/1864
w/ planned improvement	----	***C/1300***	***C/1300***
2. Sam Eig Hwy & Diamondback Dr	D/1322	D/1382	D/1401
3. Sam Eig Hwy & Fields Rd	A/915	B/1015	B/1019
4. MD 119 & Muddy Branch Rd	F/1904	F/1928	F/1929
w/ planned improvement	----	***F/1928***	***F/1929***
5. Muddy Branch Rd & Diamondback Dr	B/1092	B/1116	B/1118
6. Diamondabck Dr & Story Dr	A/840	A/870	A/885
7. Bickerstaff Way & South site access	----	----	A/175
8. Story Drive & North site access	----	----	A/318

NOTE:
1. Background Traffic is derived from combining Existing Traffic and traffic to be generated by approved developments.
2. Total Traffic is derived from combining Background Traffic and traffic to be generated by site.

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EXHIBIT 11
RESULTS OF INTERSECTION
CAPACITY ANALYSIS

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APPENDIX A

- *Intersection Turning Movement Counts, Condition Diagrams and Photos*
- *Preliminary Traffic Analysis Information*

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Md. 119
and: Sam Eig Hwy.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 4, 2004
Weather: Fair, Cold
Entered by: TT

Day: Thursday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Sam Eig Hwy.					TRAFFIC FROM SOUTH on:					TRAFFIC FROM EAST on: Md. 119					TRAFFIC FROM WEST on: Md. 119					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45	76		50	1	127					0	0	29		0	29	0	330	258		588	744
45-00	76		70	0	146					0	0	35		0	35	0	290	381		671	852
07:0-15	83		85	5	173					0	0	52		0	52	0	304	385		689	914
15-30	69		90	1	160					0	2	33		0	35	2	309	439		750	945
30-45	75		93	1	169					0	0	42		0	42	0	311	456		767	978
45-00	80		114	1	195					0	0	56		0	56	0	304	470		774	1025
08:0-15	66		114	0	180					0	0	57		0	57	0	268	483		751	988
15-30	129		125	1	255					0	0	92		0	92	0	294	500		794	1141
30-45	124		120	2	246					0	1	68		0	69	1	244	492		737	1052
45-00	102		125	0	227					0	0	76		0	76	0	309	453		762	1065
09:0-15	113		126	0	239					0	0	77		0	77	0	277	428		705	1021
15-30	117		131	0	248					0	0	69		0	69	0	257	390		647	964
3 Hr Totals	1110	0	1243	12	2365	0	0	0	0	0	3	686	0	0	689	3	3497	5135	0	8635	9704
1 Hr Totals																					
630-730	304	0	295	7	606	0	0	0	0	0	2	149	0	0	151	2	1233	1463	0	2698	3455
645-745	303	0	338	7	648	0	0	0	0	0	2	162	0	0	164	2	1214	1661	0	2877	3689
07-08	307	0	382	8	697	0	0	0	0	0	2	183	0	0	185	2	1228	1750	0	2980	3862
715-815	290	0	411	3	704	0	0	0	0	0	2	188	0	0	190	2	1192	1848	0	3042	3936
730-830	350	0	446	3	799	0	0	0	0	0	0	247	0	0	247	0	1177	1909	0	3086	4132
745-845	399	0	473	4	876	0	0	0	0	0	1	273	0	0	274	1	1110	1945	0	3056	4206
08-09	421	0	484	3	908	0	0	0	0	0	1	293	0	0	294	1	1115	1928	0	3044	4246
815-915	468	0	496	3	967	0	0	0	0	0	1	313	0	0	314	1	1124	1873	0	2998	4279
830-930	456	0	502	2	960	0	0	0	0	0	1	290	0	0	291	1	1087	1763	0	2851	4102
PEAK HOUR																					
815-915	468	0	496	3	967	0	0	0	0	0	1	313	0	0	314	1	1124	1873	0	2998	4279
PM																					
04:0-15	205		28	3	236					0	0	222		0	222	2	104	73		179	637
15-30	212		28	2	242					0	0	273		0	273	1	143	105		249	764
30-45	250		42	0	292					0	0	293		0	293	0	138	104		242	827
45-00	253		40	1	294					0	0	326		0	326	0	112	95		207	827
05:0-15	226		40	0	266					0	0	304		0	304	0	138	77		215	785
15-30	247		39	2	288					0	0	341		0	341	0	141	112		253	882
30-45	266		43	0	309					0	1	321		0	322	0	141	100		241	872
45-00	278		54	3	335					0	1	337		0	338	0	160	110		270	943
06:0-15	290		69	1	360					0	0	291		0	291	0	138	111		249	900
15-30	294		64	2	360					0	0	306		0	306	0	122	104		226	892
30-45	271		69	1	341					0	1	258		0	259	0	139	99		238	838
45-00	260		55	3	318					0	0	205		0	205	0	149	73		222	745
3 Hr Totals	3052	0	571	18	3641	0	0	0	0	0	3	3477	0	0	3480	3	1625	1163	0	2791	9912
1 Hr Totals																					
04-05	920	0	138	6	1064	0	0	0	0	0	0	1114	0	0	1114	3	497	377	0	877	3055
415-515	941	0	150	3	1094	0	0	0	0	0	0	1196	0	0	1196	1	531	381	0	913	3203
430-530	976	0	161	3	1140	0	0	0	0	0	0	1264	0	0	1264	0	529	388	0	917	3321
445-545	992	0	162	3	1157	0	0	0	0	0	1	1292	0	0	1293	0	532	384	0	916	3366
05-06	1017	0	176	5	1198	0	0	0	0	0	2	1303	0	0	1305	0	580	399	0	979	3482
515-615	1081	0	205	6	1292	0	0	0	0	0	2	1290	0	0	1292	0	580	433	0	1013	3597
530-630	1128	0	230	6	1364	0	0	0	0	0	2	1255	0	0	1257	0	561	425	0	986	3607
545-645	1133	0	256	7	1396	0	0	0	0	0	2	1192	0	0	1194	0	559	424	0	983	3573
06-07	1115	0	257	7	1379	0	0	0	0	0	1	1060	0	0	1061	0	548	387	0	935	3375
PEAK HOUR																					
530-630	1128	0	230	6	1364	0	0	0	0	0	2	1255	0	0	1257	0	561	425	0	986	3607

PEDESTRIAN OBSERVATIONS

Intersection of: Md. 119
and: Sam Eig Hwy.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 4, 2004
Weather: Fair, Cold
Entered by: TT

Day: Thursday

The Traffic Group

TIME	Sam Eig Hwy. NORTH LEG				SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0				
45-00	0	0	0	0				
07:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
08:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
09:0-15	0	0	0	0				
15-30	0	0	0	0				
TOTALS	0	0	0	0	0	0	0	0
PM								
04:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
05:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
06:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
TOTALS	0	0	0	0	0	0	0	0

TIME	Md. 119 EAST LEG				Md. 119 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Sam Eig Hwy.
and: Diamondback Dr.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 3, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Sam Eig Hwy.					TRAFFIC FROM SOUTH on: Sam Eig Hwy.					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: Diamondback Dr.					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45	29	119		0	148	0	1	330		331					0	0	215		1	216	695
45-00	41	115		0	156	0	3	384		387					0	0	183		3	186	729
07:0-15	51	130		1	182	0	2	395		397					0	0	225		1	226	805
15-30	50	156		0	206	2	7	403		412					0	2	216		1	219	837
30-45	54	156		2	212	0	2	470		472					0	0	239		0	239	923
45-00	81	183		0	264	0	5	379		384					0	1	252		6	259	907
08:0-15	65	234		1	300	1	4	402		407					0	0	228		9	237	944
15-30	91	232		0	323	0	11	403		414					0	0	224		10	234	971
30-45	68	234		3	305	0	4	374		378					0	0	254		4	258	941
45-00	76	249		1	326	0	5	369		374					0	0	179		9	188	888
09:0-15	65	237		0	302	0	5	320		325					0	0	138		9	147	774
15-30	65	223		0	288	0	5	279		284					0	0	97		1	98	670
3 Hr Totals	736	2268	0	8	3012	3	54	4508	0	4565	0	0	0	0	0	3	2450	0	54	2507	8640
1 Hr Totals																					
630-730	171	520	0	1	692	2	13	1512	0	1527	0	0	0	0	0	2	839	0	6	847	3066
645-745	196	557	0	3	756	2	14	1652	0	1668	0	0	0	0	0	2	863	0	5	870	3294
07-08	236	625	0	3	864	2	16	1647	0	1665	0	0	0	0	0	3	932	0	8	943	3472
715-815	250	729	0	3	982	3	18	1654	0	1675	0	0	0	0	0	3	935	0	16	954	3611
730-830	291	805	0	3	1099	1	22	1654	0	1677	0	0	0	0	0	1	943	0	25	969	3745
745-845	305	883	0	4	1192	1	24	1558	0	1583	0	0	0	0	0	1	958	0	29	988	3763
08-09	300	949	0	5	1254	1	24	1548	0	1573	0	0	0	0	0	0	885	0	32	917	3744
815-915	300	952	0	4	1256	0	25	1466	0	1491	0	0	0	0	0	0	795	0	32	827	3574
830-930	274	943	0	4	1221	0	19	1342	0	1361	0	0	0	0	0	0	668	0	23	691	3273
PEAK HOUR																					
745-845	305	883	0	4	1192	1	24	1558	0	1583	0	0	0	0	0	1	958	0	29	988	3763
PM																					
04:0-15	182	251		2	435	0	21	246		267					0	0	75		12	87	789
15-30	204	258		0	462	1	11	276		288					0	0	81		3	84	834
30-45	210	288		1	499	0	10	272		282					0	0	94		2	96	877
45-00	248	325		0	573	0	20	273		293					0	0	94		6	100	966
05:0-15	279	346		0	625	0	19	270		289					0	0	113		4	117	1031
15-30	307	298		1	606	2	26	349		377					0	0	99		0	99	1082
30-45	327	283		0	610	1	21	308		330					0	1	138		1	140	1080
45-00	294	279		3	576	0	13	362		375					0	0	100		3	103	1054
06:0-15	316	319		0	635	1	10	258		269					0	0	139		3	142	1046
15-30	317	293		1	611	0	11	333		344					0	0	116		4	120	1075
30-45	246	358		0	604	0	17	277		294					0	1	117		3	121	1019
45-00	259	319		1	579	0	10	275		285					0	0	142		3	145	1009
3 Hr Totals	3189	3617	0	9	6815	5	189	3499	0	3693	0	0	0	0	0	2	1308	0	44	1354	11862
1 Hr Totals																					
04-05	844	1122	0	3	1969	1	62	1067	0	1130	0	0	0	0	0	0	344	0	23	367	3466
415-515	941	1217	0	1	2159	1	60	1091	0	1152	0	0	0	0	0	0	382	0	15	397	3708
430-530	1044	1257	0	2	2303	2	75	1164	0	1241	0	0	0	0	0	0	400	0	12	412	3956
445-545	1161	1252	0	1	2414	3	86	1200	0	1289	0	0	0	0	0	1	444	0	11	456	4159
05-06	1207	1206	0	4	2417	3	79	1289	0	1371	0	0	0	0	0	1	450	0	8	459	4247
515-615	1244	1179	0	4	2427	4	70	1277	0	1351	0	0	0	0	0	1	476	0	7	484	4262
530-630	1254	1174	0	4	2432	2	55	1261	0	1318	0	0	0	0	0	1	493	0	11	505	4255
545-645	1173	1249	0	4	2426	1	51	1230	0	1282	0	0	0	0	0	1	472	0	13	486	4194
06-07	1138	1289	0	2	2429	1	48	1143	0	1192	0	0	0	0	0	1	514	0	13	528	4149
PEAK HOUR																					
515-615	1244	1179	0	4	2427	4	70	1277	0	1351	0	0	0	0	0	1	476	0	7	484	4262

PEDESTRIAN OBSERVATIONS

Intersection of: Sam Eig Hwy.
and: Diamondback Dr.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 3, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	Sam Eig Hwy. NORTH LEG				Sam Eig Hwy. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	2	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	6	0	0	0	0	0	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	2	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	3	0	0	0	0	0	0	0

TIME	EAST LEG				Diamondback Dr. WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45					0	0	0	0
45-00					0	0	0	0
07:0-15					0	0	0	0
15-30					0	0	0	0
30-45					0	0	0	0
45-00					0	0	0	0
08:0-15					0	0	0	0
15-30					0	0	0	0
30-45					0	0	0	0
45-00					0	0	0	0
09:0-15					0	0	0	0
15-30					0	0	0	0
TOTALS	0	0	0	0	0	0	0	0
PM								
04:0-15					0	0	0	0
15-30					0	0	0	0
30-45					0	0	0	0
45-00					0	0	0	0
05:0-15					0	0	0	0
15-30					0	0	0	0
30-45					0	0	0	0
45-00					0	0	0	0
06:0-15					0	0	0	0
15-30					0	0	0	0
30-45					0	0	0	0
45-00					0	0	0	0
TOTALS	0	0	0	0	0	0	0	0

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Sam Eig Hwy.
and: Fields Rd.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 3, 2004
Weather: Fair, Cold
Entered by: TT

Day: Tuesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Sam Eig Hwy.					TRAFFIC FROM SOUTH on: Sam Eig Hwy.					TRAFFIC FROM EAST on: Fields Rd.					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45		131	75	0	206	0		491	54	545	42		17	0	59					0	810
45-00		136	79	0	215	0		507	60	567	45		20	1	66					0	848
07:0-15		162	70	0	232	0		560	60	620	55		19	0	74					0	926
15-30		190	148	1	339	0		533	86	619	50		16	1	67					0	1025
30-45		190	124	4	318	0		609	100	709	53		20	0	73					0	1100
45-00		247	202	2	451	0		520	111	631	84		17	1	102					0	1184
08:0-15		276	159	1	436	0		507	123	630	55		23	0	78					0	1144
15-30		299	161	2	462	0		509	118	627	79		24	4	107					0	1196
30-45		289	154	1	444	0		521	107	628	55		13	1	69					0	1141
45-00		301	210	1	512	0		450	98	548	73		24	0	97					0	1157
09:0-15		281	121	0	402	0		375	83	458	61		21	1	83					0	943
15-30		256	115	0	371	0		319	57	376	59		32	2	93					0	840
3 Hr Totals	0	2758	1618	12	4388	0	0	5901	1057	6958	711	0	246	11	968	0	0	0	0	0	10531
1 Hr Totals																					
630-730	0	619	372	1	992	0	0	2091	260	2351	192	0	72	2	266	0	0	0	0	0	3609
645-745	0	678	421	5	1104	0	0	2209	306	2515	203	0	75	2	280	0	0	0	0	0	3899
07-08	0	789	544	7	1340	0	0	2222	357	2579	242	0	72	2	316	0	0	0	0	0	4235
715-815	0	903	633	8	1544	0	0	2169	420	2589	242	0	76	2	320	0	0	0	0	0	4453
730-830	0	1012	646	9	1667	0	0	2145	452	2597	271	0	84	5	360	0	0	0	0	0	4624
745-845	0	1111	676	6	1793	0	0	2057	459	2516	273	0	77	6	356	0	0	0	0	0	4665
08-09	0	1165	684	5	1854	0	0	1987	446	2433	262	0	84	5	351	0	0	0	0	0	4638
815-915	0	1170	646	4	1820	0	0	1855	406	2261	268	0	82	6	356	0	0	0	0	0	4437
830-930	0	1127	600	2	1729	0	0	1665	345	2010	248	0	90	4	342	0	0	0	0	0	4081
PEAK HOUR																					
745-845	0	1111	676	6	1793	0	0	2057	459	2516	273	0	77	6	356	0	0	0	0	0	4665
PM																					
04:0-15		390	54	1	445	1		274	47	322	103		43	1	147					0	914
15-30		402	58	0	460	1		313	44	358	103		60	0	163					0	981
30-45		421	51	0	472	0		321	45	366	126		77	0	203					0	1041
45-00		503	71	0	574	0		305	62	367	121		70	1	192					0	1133
05:0-15		514	99	0	613	0		306	77	383	154		111	1	266					0	1262
15-30		509	69	1	579	0		363	85	448	144		96	1	241					0	1268
30-45		510	85	1	596	0		371	75	446	140		100	1	241					0	1283
45-00		479	72	0	551	0		380	82	462	113		94	5	212					0	1225
06:0-15		542	101	0	643	0		337	60	397	116		93	0	209					0	1249
15-30		517	71	0	588	0		363	86	449	90		93	7	190					0	1227
30-45		526	68	0	594	0		313	81	394	109		78	0	187					0	1175
45-00		521	70	1	592	0		347	70	417	80		57	2	139					0	1148
3 Hr Totals	0	5834	869	4	6707	2	0	3993	814	4809	1399	0	972	19	2390	0	0	0	0	0	13906
1 Hr Totals																					
04-05	0	1716	234	1	1951	2	0	1213	198	1413	453	0	250	2	705	0	0	0	0	0	4069
415-515	0	1840	279	0	2119	1	0	1245	228	1474	504	0	318	2	824	0	0	0	0	0	4417
430-530	0	1947	290	1	2238	0	0	1295	269	1564	545	0	354	3	902	0	0	0	0	0	4704
445-545	0	2036	324	2	2362	0	0	1345	299	1644	559	0	377	4	940	0	0	0	0	0	4946
05-06	0	2012	325	2	2339	0	0	1420	319	1739	551	0	401	8	960	0	0	0	0	0	5038
515-615	0	2040	327	2	2369	0	0	1451	302	1753	513	0	383	7	903	0	0	0	0	0	5025
530-630	0	2048	329	1	2378	0	0	1451	303	1754	459	0	380	13	852	0	0	0	0	0	4984
545-645	0	2064	312	0	2376	0	0	1393	309	1702	428	0	358	12	798	0	0	0	0	0	4876
06-07	0	2106	310	1	2417	0	0	1360	297	1657	395	0	321	9	725	0	0	0	0	0	4799
PEAK HOUR																					
05-06	0	2012	325	2	2339	0	0	1420	319	1739	551	0	401	8	960	0	0	0	0	0	5038

PEDESTRIAN OBSERVATIONS

Intersection of: Sam Eig Hwy.
and: Fields Rd.
Location: Montgomery Co., Md.

Counted by: RAJ
Date: November 3, 2004
Weather: Fair, Cold
Entered by: TT

Day: Tuesday

The Traffic Group

TIME	Sam Eig Hwy. NORTH LEG				Sam Eig Hwy. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0

TIME	Fields Rd. EAST LEG				WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0				
45-00	0	0	0	0				
07:0-15	2	0	0	0				
15-30	2	0	0	0				
30-45	0	0	0	0				
45-00	1	0	0	0				
08:0-15	0	0	0	0				
15-30	1	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
09:0-15	0	0	0	0				
15-30	0	0	0	0				
TOTALS	6	0	0	0	0	0	0	0
PM								
04:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	1	0	0	0				
05:0-15	0	0	0	0				
15-30	2	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
06:0-15	0	0	0	0				
15-30	0	0	0	0				
30-45	0	0	0	0				
45-00	0	0	0	0				
TOTALS	3	0	0	0	0	0	0	0

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Md. 119
and: Muddy Branch Rd.
Location: Montgomery Co., Md.

Counted by: AN, LL
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Muddy Branch Rd.					TRAFFIC FROM SOUTH on: Muddy Branch Rd.					TRAFFIC FROM EAST on: Md. 119					TRAFFIC FROM WEST on: Md. 119					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45	7	33	22	0	62	0	60	31	9	100	9	64	20	0	93	0	18	554	6	578	833
45-00	29	50	53	0	132	0	75	34	10	119	11	87	14	0	112	0	24	685	13	722	1085
07:0-15	32	51	42	0	125	0	70	50	11	131	11	93	18	0	122	0	21	685	18	724	1102
15-30	47	51	49	0	147	0	86	56	9	151	15	94	16	0	125	0	18	675	14	707	1130
30-45	25	44	39	0	108	0	95	70	21	186	21	83	19	0	123	0	30	776	15	821	1238
45-00	28	72	45	0	145	0	119	77	22	218	12	118	31	0	161	1	32	740	23	796	1320
08:0-15	18	68	51	0	137	0	115	76	17	208	12	131	31	0	174	0	26	675	13	714	1233
15-30	38	84	53	0	175	0	119	72	30	221	18	146	32	0	196	0	23	718	23	764	1356
30-45	43	78	42	0	163	0	104	71	26	201	27	153	30	0	210	0	23	692	28	743	1317
45-00	33	71	50	0	154	0	104	85	30	219	27	161	31	0	219	0	30	605	34	669	1261
09:0-15	29	51	38	0	118	0	93	87	29	209	24	150	29	0	203	1	19	568	21	609	1139
15-30	27	52	32	0	111	0	93	73	37	203	21	146	27	0	194	0	34	565	23	622	1130
3 Hr Totals	356	705	516	0	1577	0	1133	782	251	2166	208	1426	298	0	1932	2	298	7938	231	8469	11875
1 Hr Totals																					
630-730	115	185	166	0	466	0	291	171	39	501	46	338	68	0	452	0	81	2599	51	2731	4150
645-745	133	196	183	0	512	0	326	210	51	587	58	357	67	0	482	0	93	2821	60	2974	4555
07-08	132	218	175	0	525	0	370	253	63	686	59	388	84	0	531	1	101	2876	70	3048	4790
715-815	118	235	184	0	537	0	415	279	69	763	60	426	97	0	583	1	106	2866	65	3038	4921
730-830	109	268	188	0	565	0	448	295	90	833	63	478	113	0	654	1	111	2909	74	3095	5147
745-845	127	302	191	0	620	0	457	296	95	848	69	548	124	0	741	1	104	2825	87	3017	5226
08-09	132	301	196	0	629	0	442	304	103	849	84	591	124	0	799	0	102	2690	98	2890	5167
815-915	143	284	183	0	610	0	420	315	115	850	96	610	122	0	828	1	95	2583	106	2785	5073
830-930	132	252	162	0	546	0	394	316	122	832	99	610	117	0	826	1	106	2430	106	2643	4847
PEAK HOUR																					
745-845	127	302	191	0	620	0	457	296	95	848	69	548	124	0	741	1	104	2825	87	3017	5226
PM																					
04:0-15	47	79	21	0	147	0	56	60	14	130	52	347	46	0	445	1	41	184	30	256	978
15-30	57	96	28	0	181	0	78	89	35	202	52	427	49	1	529	0	28	197	29	254	1166
30-45	70	108	23	0	201	0	47	62	24	133	39	498	64	0	601	0	43	190	34	267	1202
45-00	68	87	29	0	184	0	64	88	25	177	38	444	66	0	548	0	45	193	37	275	1184
05:0-15	94	120	26	0	240	0	52	95	35	182	56	503	67	1	627	1	59	210	36	306	1355
15-30	80	128	26	0	234	1	62	102	38	203	41	526	62	1	630	0	67	197	43	307	1374
30-45	79	126	34	0	239	0	59	83	34	176	39	542	56	0	637	0	61	217	41	319	1371
45-00	128	117	29	0	274	0	63	85	28	176	45	543	54	1	643	0	82	209	59	350	1443
06:0-15	94	84	28	0	206	0	70	96	35	201	38	543	53	1	635	0	54	211	34	299	1341
15-30	99	158	30	0	287	0	65	87	37	189	44	512	59	2	617	0	59	210	62	331	1424
30-45	112	97	28	0	237	0	63	97	31	191	47	467	64	1	579	0	65	187	46	298	1305
45-00	78	100	24	1	203	0	65	67	36	168	45	433	73	1	552	0	55	184	27	266	1189
3 Hr Totals	1006	1300	326	1	2633	1	744	1011	372	2128	536	5785	713	9	7043	2	659	2389	478	3528	15332
1 Hr Totals																					
04-05	242	370	101	0	713	0	245	299	98	642	181	1716	225	1	2123	1	157	764	130	1052	4530
415-515	289	411	106	0	806	0	241	334	119	694	185	1872	246	2	2305	1	175	790	136	1102	4907
430-530	312	443	104	0	859	1	225	347	122	695	174	1971	259	2	2406	1	214	790	150	1155	5115
445-545	321	461	115	0	897	1	237	368	132	738	174	2015	251	2	2442	1	232	817	157	1207	5284
05-06	381	491	115	0	987	1	235	365	135	737	181	2114	239	3	2537	1	269	833	179	1282	5543
515-615	381	455	117	0	953	1	254	366	135	756	163	2154	225	3	2545	0	264	834	177	1275	5529
530-630	400	485	121	0	1006	0	257	351	134	742	166	2140	222	4	2532	0	256	847	196	1299	5579
545-645	433	456	115	0	1004	0	261	365	131	757	174	2065	230	5	2474	0	260	817	201	1278	5513
06-07	383	439	110	1	933	0	263	347	139	749	174	1955	249	5	2383	0	233	792	169	1194	5259
PEAK HOUR																					
530-630	400	485	121	0	1006	0	257	351	134	742	166	2140	222	4	2532	0	256	847	196	1299	5579

PEDESTRIAN OBSERVATIONS

Intersection of: Md. 119
and: Muddy Branch Rd.
Location: Montgomery Co., Md.

Counted by: AN, LL
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	Muddy Branch Rd. NORTH LEG				Muddy Branch Rd. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	3	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	2	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	1	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	3	2	0	0	0	0	0	0
PM								
04:0-15	0	0	0	1	3	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	1	1	0	0	0	1	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	1	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	2	2	0	1	3	1	0	0

TIME	Md. 119 EAST LEG				Md. 119 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	4	0	0	0
45-00	0	0	0	0	2	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	1	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	1	0	0	0	0	0	0
09:0-15	0	0	0	0	1	1	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	1	0	0	11	1	1	0
PM								
04:0-15	1	0	0	0	0	0	0	0
15-30	0	0	0	0	1	1	0	0
30-45	0	0	0	0	0	1	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	2	0	2	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	1	1	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	1	0	0	0	5	3	2	0

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Muddy Branch Rd.
and: Diamondback Dr. / Shop. Ctr. Access
Location: Montgomery Co., Md.

Counted by: FC, TP
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Muddy Branch Rd.					TRAFFIC FROM SOUTH on: Muddy Branch Rd.					TRAFFIC FROM EAST on: Diamondback Dr.					TRAFFIC FROM WEST on: Shop. Ctr. Access					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45	2	51	70	0	123	0	29	29	13	71	14	8	8	0	30	0	6	19	0	25	249
45-00	3	87	62	0	152	0	47	47	27	121	19	9	6	0	34	0	2	14	0	16	323
07:0-15	14	78	78	0	170	0	33	33	20	86	19	15	16	0	50	0	9	28	1	38	344
15-30	10	89	116	0	215	0	54	54	31	139	20	14	9	0	43	1	5	33	1	40	437
30-45	10	78	125	2	215	0	64	64	32	160	25	13	19	0	57	0	12	33	1	46	478
45-00	17	99	138	0	254	0	82	82	25	189	34	12	12	0	58	0	7	29	2	38	539
08:0-15	20	94	131	1	246	0	61	61	31	153	43	22	17	0	82	0	15	30	1	46	527
15-30	15	117	141	0	273	0	80	80	33	193	35	19	17	0	71	0	16	29	1	46	583
30-45	21	91	93	0	205	0	71	71	26	168	35	17	32	0	84	0	21	27	6	54	511
45-00	14	122	109	1	246	0	101	101	23	225	45	14	23	0	82	0	17	33	4	54	607
09:0-15	18	83	54	0	155	0	68	68	18	154	40	23	12	0	75	0	15	27	2	44	428
15-30	9	63	60	0	132	0	94	94	12	200	39	16	16	0	71	0	9	31	3	43	446
3 Hr Totals	153	1052	1177	4	2386	0	784	784	291	1859	368	182	187	0	737	1	134	333	22	490	4598
1 Hr Totals																					
630-730	29	305	326	0	660	0	163	163	91	417	72	46	39	0	157	1	22	94	2	119	1353
645-745	37	332	381	2	752	0	198	198	110	506	83	51	50	0	184	1	28	108	3	140	1582
07-08	51	344	457	2	854	0	233	233	108	574	98	54	56	0	208	1	33	123	5	162	1798
715-815	57	360	510	3	930	0	261	261	119	641	122	61	57	0	240	1	39	125	5	170	1981
730-830	62	388	535	3	988	0	287	287	121	695	137	66	65	0	268	0	50	121	5	176	2127
745-845	73	401	503	1	978	0	294	294	115	703	147	70	78	0	295	0	59	115	10	184	2160
08-09	70	424	474	2	970	0	313	313	113	739	158	72	89	0	319	0	69	119	12	200	2228
815-915	68	413	397	1	879	0	320	320	100	740	155	73	84	0	312	0	69	116	13	198	2129
830-930	62	359	316	1	738	0	334	334	79	747	159	70	83	0	312	0	62	118	15	195	1992
PEAK HOUR																					
08-09	70	424	474	2	970	0	313	313	113	739	158	72	89	0	319	0	69	119	12	200	2228
PM																					
04:0-15	14	61	60	0	135	1	3	109	20	133	84	42	25	0	151	0	25	21	9	55	474
15-30	17	82	38	0	137	0	3	83	8	94	86	53	41	0	180	0	25	18	5	48	459
30-45	24	84	30	0	138	0	5	108	9	122	100	43	34	0	177	0	30	21	8	59	496
45-00	38	91	37	0	166	0	6	92	15	113	98	57	55	0	210	0	29	22	11	62	551
05:0-15	19	103	54	0	176	0	3	136	26	165	104	46	51	0	201	0	39	19	9	67	609
15-30	28	134	59	0	221	0	3	127	19	149	126	63	56	0	245	0	35	29	5	69	684
30-45	27	104	45	0	176	0	3	123	25	151	120	50	45	0	215	0	29	25	9	63	605
45-00	24	113	76	0	213	0	3	132	14	149	132	53	55	0	240	0	37	21	7	65	667
06:0-15	29	88	58	0	175	0	5	110	20	135	112	49	63	0	224	0	53	27	11	91	625
15-30	32	103	62	0	197	0	6	119	20	145	103	78	61	0	242	0	43	29	11	83	667
30-45	23	103	58	0	184	0	6	121	17	144	102	65	42	0	209	0	44	30	14	88	625
45-00	30	90	43	0	163	0	5	88	19	112	102	63	50	0	215	0	49	26	4	79	569
3 Hr Totals	305	1156	620	0	2081	1	51	1348	212	1612	1269	662	578	0	2509	0	438	288	103	829	7031
1 Hr Totals																					
04-05	93	318	165	0	576	1	17	392	52	462	368	195	155	0	718	0	109	82	33	224	1980
415-515	98	360	159	0	617	0	17	419	58	494	388	199	181	0	768	0	123	80	33	236	2115
430-530	109	412	180	0	701	0	17	463	69	549	428	209	196	0	833	0	133	91	33	257	2340
445-545	112	432	195	0	739	0	15	478	85	578	448	216	207	0	871	0	132	95	34	261	2449
05-06	98	454	234	0	786	0	12	518	84	614	482	212	207	0	901	0	140	94	30	264	2565
515-615	108	439	238	0	785	0	14	492	78	584	490	215	219	0	924	0	154	102	32	288	2581
530-630	112	408	241	0	761	0	17	484	79	580	467	230	224	0	921	0	162	102	38	302	2564
545-645	108	407	254	0	769	0	20	482	71	573	449	245	221	0	915	0	177	107	43	327	2584
06-07	114	384	221	0	719	0	22	438	76	536	419	255	216	0	890	0	189	112	40	341	2486
PEAK HOUR																					
545-645	108	407	254	0	769	0	20	482	71	573	449	245	221	0	915	0	177	107	43	327	2584

PEDESTRIAN OBSERVATIONS

Intersection of: Muddy Branch Rd.
and: Diamondback Dr. / Shop. Ctr. Access
Location: Montgomery Co., Md.

Counted by: FC, TP
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	Muddy Branch Rd. NORTH LEG				Muddy Branch Rd. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	2	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	3	0	0	0
08:0-15	1	1	1	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	1	0	0	0	0	0	0	0
09:0-15	1	0	0	0	4	0	0	0
15-30	1	0	0	0	1	0	1	0
TOTALS	4	1	1	0	13	0	1	0
PM								
04:0-15	4	0	0	0	0	0	0	0
15-30	1	0	0	0	4	0	0	0
30-45	2	0	0	0	2	0	1	0
45-00	2	0	0	0	2	0	0	0
05:0-15	1	0	0	0	0	0	0	0
15-30	2	0	0	0	1	0	0	0
30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	3	0	0	1
45-00	0	0	0	0	0	0	0	0
TOTALS	13	0	0	0	13	0	1	1

TIME	Diamondback Dr. EAST LEG				Shop. Ctr. Access WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	1	0	0	0	0	0	1	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	2	1	0	0
15-30	0	0	0	0	2	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	1	0	0	1	0	0	0
09:0-15	0	0	0	0	3	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	2	1	0	0	9	1	1	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	1	1	0	0
30-45	4	0	0	0	3	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	4	0	0	0	2	0	0	0
45-00	1	0	0	0	4	0	0	0
06:0-15	0	0	0	0	0	1	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	5	0	0	0	0	0	0	0
TOTALS	15	0	0	0	14	2	0	0

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Diamondabck Dr.
and: Story Dr. / Bickerstaff Way
Location: Montgomery Co., Md.

Counted by: TT
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Story Dr.					TRAFFIC FROM SOUTH on: Bickerstaff Way					TRAFFIC FROM EAST on: Diamondabck Dr.					TRAFFIC FROM WEST on: Diamondabck Dr.					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	U-TN	LEFT	THRU	RIGHT	TOTAL	
AM																					
06:30-45	2	0	67	0	69	0	1	1	35	37	10	25	2	0	37	0	3	101	0	104	247
45-00	8	0	54	0	62	0	0	0	25	25	5	39	1	0	45	0	0	111	1	112	244
07:0-15	12	1	78	0	91	0	0	3	40	43	5	35	4	0	44	0	3	132	0	135	313
15-30	5	0	71	0	76	0	5	2	29	36	9	39	6	0	54	0	3	154	2	159	325
30-45	5	8	87	0	100	0	2	2	40	44	10	45	10	0	65	0	7	177	1	185	394
45-00	8	0	60	0	68	0	1	1	17	19	10	45	2	0	57	0	2	181	1	184	328
08:0-15	10	2	93	0	105	0	1	0	35	36	15	77	5	1	98	0	3	181	1	185	424
15-30	12	2	74	0	88	0	3	5	48	56	14	65	6	0	85	0	9	206	1	216	445
30-45	23	0	114	0	137	0	0	8	38	46	16	66	6	1	89	0	10	143	3	156	428
45-00	28	3	86	0	117	0	2	3	28	33	12	64	2	0	78	0	5	118	1	124	352
09:0-15	15	0	106	0	121	0	3	0	33	36	10	54	13	0	77	0	7	106	3	116	350
15-30	4	2	53	0	59	0	1	0	29	30	14	55	3	0	72	0	4	107	0	111	272
3 Hr Totals	132	18	943	0	1093	0	19	25	397	441	130	609	60	2	801	0	56	1717	14	1787	3500
1 Hr Totals																					
630-730	27	1	270	0	298	0	6	6	129	141	29	138	13	0	180	0	9	498	3	510	1129
645-745	30	9	290	0	329	0	7	7	134	148	29	158	21	0	208	0	13	574	4	591	1276
07-08	30	9	296	0	335	0	8	8	126	142	34	164	22	0	220	0	15	644	4	663	1360
715-815	28	10	311	0	349	0	9	5	121	135	44	206	23	1	274	0	15	693	5	713	1471
730-830	35	12	314	0	361	0	7	8	140	155	49	232	23	1	305	0	21	745	4	770	1591
745-845	53	4	341	0	398	0	5	14	138	157	55	253	19	2	329	0	24	711	6	741	1625
08-09	73	7	367	0	447	0	6	16	149	171	57	272	19	2	350	0	27	648	6	681	1649
815-915	78	5	380	0	463	0	8	16	147	171	52	249	27	1	329	0	31	573	8	612	1575
830-930	70	5	359	0	434	0	6	11	128	145	52	239	24	1	316	0	26	474	7	507	1402
PEAK HOUR																					
08-09	73	7	367	0	447	0	6	16	149	171	57	272	19	2	350	0	27	648	6	681	1649
PM																					
04:0-15	6	3	26	0	35	0	0	5	11	16	50	176	26	0	252	0	11	62	4	77	380
15-30	8	1	33	0	42	0	0	0	4	4	28	164	24	0	216	1	10	48	3	62	324
30-45	16	0	24	1	41	0	9	1	13	23	28	189	23	0	240	1	21	59	6	87	391
45-00	13	1	28	0	42	0	2	2	12	16	33	186	33	0	252	0	9	61	5	75	385
05:0-15	15	3	57	0	75	0	6	2	17	25	40	214	34	0	288	0	13	86	2	101	489
15-30	28	1	47	0	76	0	2	0	17	19	56	222	23	1	302	0	11	94	1	106	503
30-45	12	2	62	0	76	0	6	4	21	31	63	241	33	0	337	0	19	83	3	105	549
45-00	22	0	32	0	54	0	2	1	16	19	41	251	36	0	328	0	10	101	1	112	513
06:0-15	8	2	45	0	55	0	2	3	14	19	61	239	41	1	342	0	13	93	3	109	525
15-30	7	1	40	0	48	0	4	4	19	27	54	241	31	1	327	0	22	92	1	115	517
30-45	9	2	66	0	77	0	1	2	13	16	40	236	36	0	312	0	6	93	0	99	504
45-00	8	1	54	0	63	0	2	3	10	15	38	231	29	0	298	0	22	72	1	95	471
3 Hr Totals	152	17	514	1	684	0	36	27	167	230	532	2590	369	3	3494	2	167	944	30	1143	5551
1 Hr Totals																					
04-05	43	5	111	1	160	0	11	8	40	59	139	715	106	0	960	2	51	230	18	301	1480
415-515	52	5	142	1	200	0	17	5	46	68	129	753	114	0	996	2	53	254	16	325	1589
430-530	72	5	156	1	234	0	19	5	59	83	157	811	113	1	1082	1	54	300	14	369	1768
445-545	68	7	194	0	269	0	16	8	67	91	192	863	123	1	1179	0	52	324	11	387	1926
05-06	77	6	198	0	281	0	16	7	71	94	200	928	126	1	1255	0	53	364	7	424	2054
515-615	70	5	186	0	261	0	12	8	68	88	221	953	133	2	1309	0	53	371	8	432	2090
530-630	49	5	179	0	233	0	14	12	70	96	219	972	141	2	1334	0	64	369	8	441	2104
545-645	46	5	183	0	234	0	9	10	62	81	196	967	144	2	1309	0	51	379	5	435	2059
06-07	32	6	205	0	243	0	9	12	56	77	193	947	137	2	1279	0	63	350	5	418	2017
EAK HOUR																					
530-630	49	5	179	0	233	0	14	12	70	96	219	972	141	2	1334	0	64	369	8	441	2104

PEDESTRIAN OBSERVATIONS

Intersection of: Diamondabck Dr.
and: Story Dr. / Bickerstaff Way
Location: Montgomery Co., Md.

Counted by: TT
Date: November 10, 2004
Weather: Fair, Cold
Entered by: TT

Day: Wednesday

The Traffic Group

TIME	Story Dr. NORTH LEG				Bickerstaff Way SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	1	0
07:0-15	0	0	0	0	2	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	5	0	0	0
45-00	0	0	0	0	2	0	0	0
08:0-15	1	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	1	0	0	0	12	0	1	0
PM								
04:0-15	1	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	4	0	0	0
45-00	1	0	0	0	2	0	0	0
05:0-15	2	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	2	0
30-45	0	0	0	0	1	0	1	0
45-00	1	0	0	0	1	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	4	0	1	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	10	0	1	0	11	0	3	0

TIME	Diamondabck Dr. EAST LEG				Diamondabck Dr. WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	1	0	2
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	1	1	1
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	1	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	1
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
TOTALS	1	0	0	0	4	2	1	4
PM								
04:0-15	1	0	0	0	1	0	0	1
15-30	2	0	0	0	1	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	1	0	1	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	4	1	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	5	0	0	0	8	1	1	1

APPENDIX B

Intersection Capacity

Analysis Worksheets

The Traffic Group

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

Intersection of: MD 119
and: Sam Eig Hwy
Conditions: 2004 Existing Traffic

Date of Count: 11/4/2004
Day of Week: Thursday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15
PM Peak: 5:30-6:30

N

SAM EIG HWY

1128	236	PM
468	499	AM
R	L	

R L L

MD 119

--- R
--- T
--- T

R	1	2
T	313	1255
	AM	PM

PM	AM	
561	1125	L
425	1873	T

L ---
L ---
T ---
T ---

MD 119

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	499	0.53	264				264
EB	1873	0.55	1030				1030
WB	313	0.53	166	1125	0.53	596	

CLV TOTAL= 1294
Level of Service (LOS)= C

AM V/C =0.81

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	831	1.00	831				831
EB	425	0.55	234				962
WB	1255	0.53	665	561	0.53	297	

CLV TOTAL= 1793
Level of Service (LOS)= F

PM V/C =1.12

Scenario ID - EXIST1

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

Intersection of: MD 119 | Date of Count: 11/4/2004

and: Sam Eig Hwy | Day of Week: Thursday

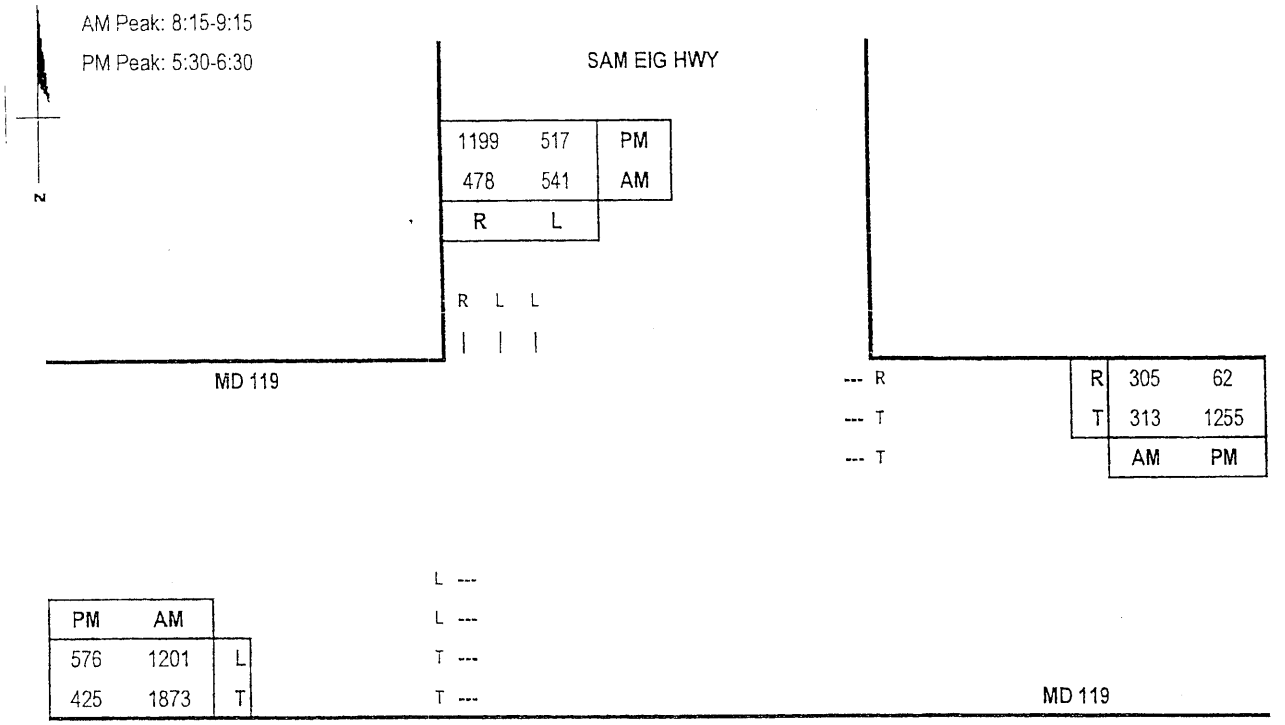
Conditions: Background Traffic | Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15

PM Peak: 5:30-6:30



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	541	0.53	287				287
EB	1873	0.55	1030				1030
WB	313	0.53	166	1201	0.53	637	
						CLV TOTAL=	1317
						Level of Service (LOS)=	D

AM V/C =0.82

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	894	1.00	894				894
EB	425	0.55	234				970
WB	1255	0.53	665	576	0.53	305	
						CLV TOTAL=	1864
						Level of Service (LOS)=	F

PM V/C =1.17

Scenario ID - BACK1

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

Intersection of: MD 119 | Date of Count: 11/4/2004

and: Sam Eig Hwy | Day of Week: Thursday

Conditions: Total Traffic | Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15

PM Peak: 5:30-6:30

N

SAM EIG HWY

1199	520	PM
478	547	AM
R	L	

R L L

MD 119

--- R
--- T
--- T

R	306	68
T	313	1255
	AM	PM

L ---
L ---
T ---
T ---

PM	AM	
576	1201	L
425	1873	T

MD 119

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	547	0.53	290				290
EB	1873	0.55	1030				1030
WB	313	0.53	166	1201	0.53	637	

CLV TOTAL= 1320

Level of Service (LOS)= D

AM V/C =0.83

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	894	1.00	894				894
EB	425	0.55	234				970
WB	1255	0.53	665	576	0.53	305	

CLV TOTAL= 1864

Level of Service (LOS)= F

PM V/C =1.17

Scenario ID - TOT1

sli, 041011\1.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

Intersection of: MD 119
and: Sam Eig Hwy
Conditions: Total Traffic

Date of Count: 11/4/2004
Day of Week: Thursday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15
PM Peak: 5:30-6:30

N

SAM EIG HWY

1199	520	PM
478	547	AM
R	L	

R L L

MD 119

--- R
--- T
--- T

R	306	68
T	313	1255
	AM	PM

L ---
L ---
T ---
T ---

PM	AM	
576	1201	L
425	1873	T

MD 119

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	547	0.60	328				328
EB	1873	0.55	1030				1030
WB	313	0.55	172	1201	0.60	721	

CLV TOTAL= 1358
Level of Service (LOS)= D
AM V/C =0.85

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	853	1.00	853				853
EB	425	0.55	234				1036
WB	1255	0.55	690	576	0.60	346	

CLV TOTAL= 1889
Level of Service (LOS)= F
PM V/C =1.18

Scenario ID - TOT1

sli, 041011\1i.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

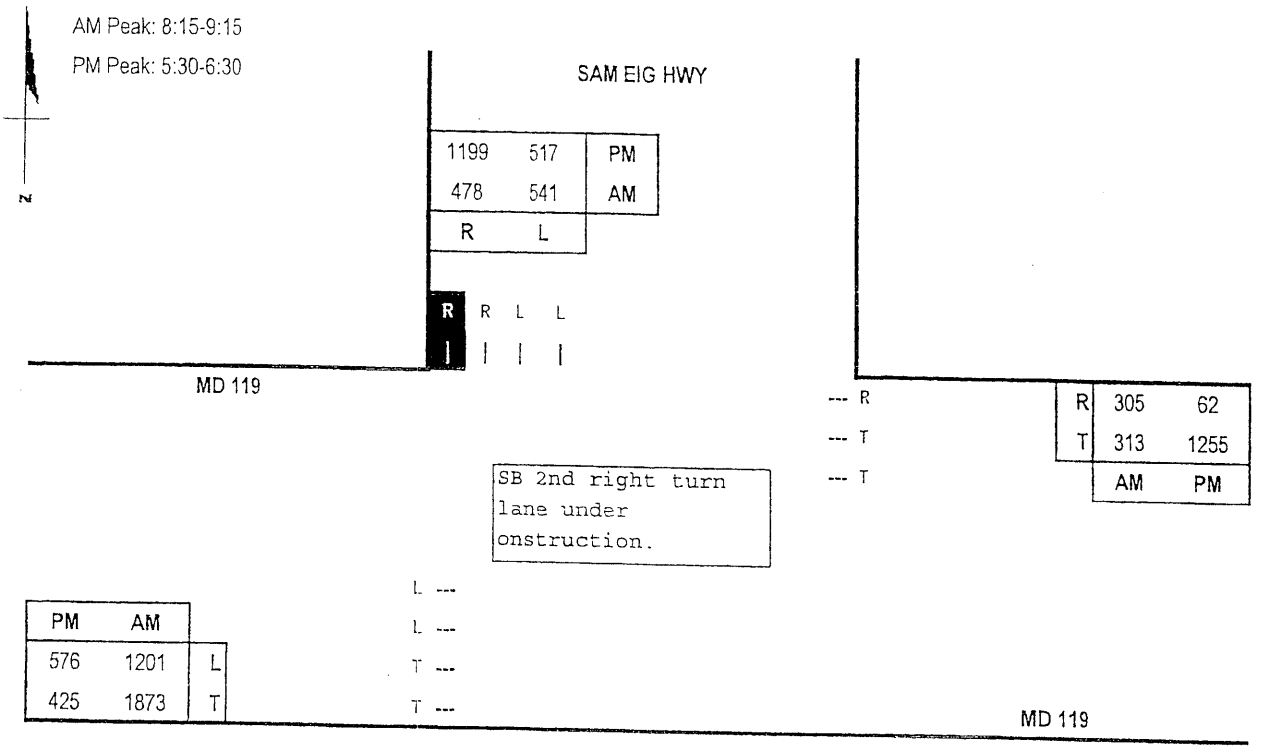
Intersection of: MD 119
and: Sam Eig Hwy
Conditions: Background Traffic w/ improvement

Date of Count: 11/4/2004
Day of Week: Thursday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15
PM Peak: 5:30-6:30



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	541	0.53	287				287
EB	1873	0.55	1030				1030
WB	313	0.53	166	1201	0.53	637	

CLV TOTAL= 1317
Level of Service (LOS)= D

AM V/C =0.82

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	623	0.53	330				330
EB	425	0.55	234				970
WB	1255	0.53	665	576	0.53	305	

CLV TOTAL= 1300
Level of Service (LOS)= C

PM V/C =0.81

Scenario ID - BACK1

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

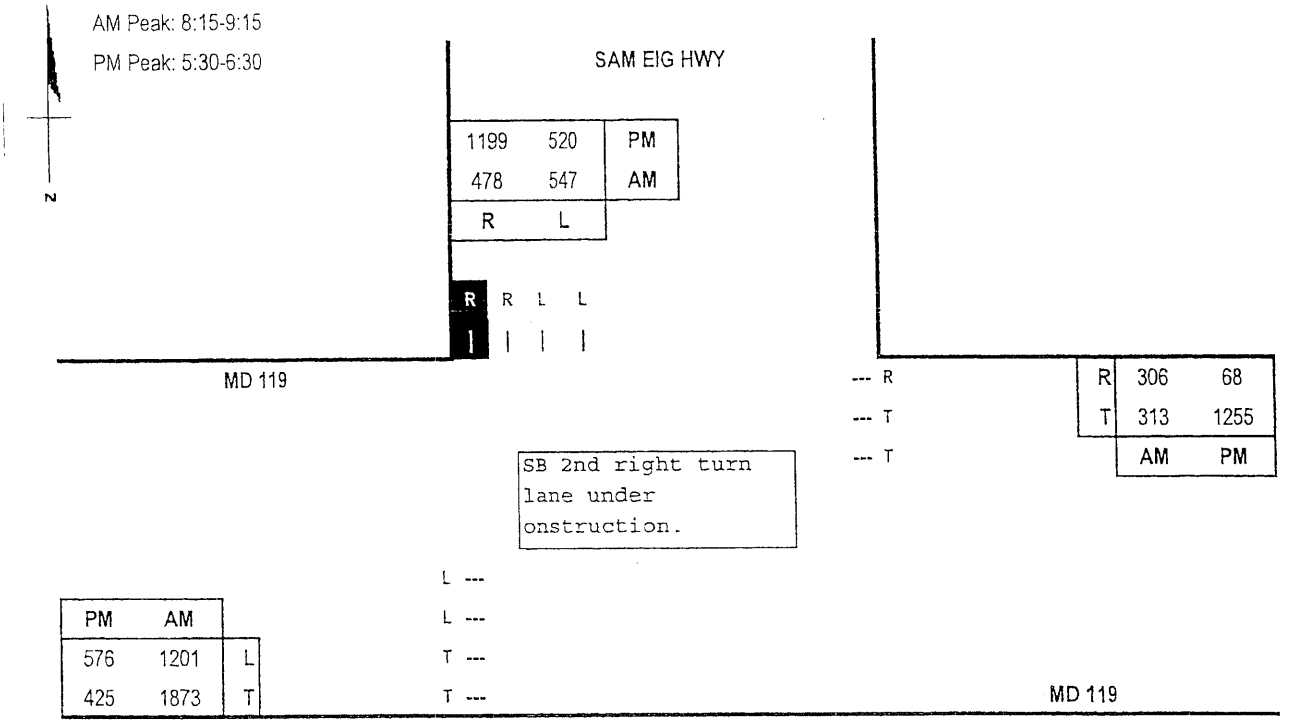
Intersection of: MD 119
and: Sam Eig Hwy
Conditions: Total Traffic
w/ improvement

Date of Count: 11/4/2004
Day of Week: Thursday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:15-9:15
PM Peak: 5:30-6:30



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	547	0.53	290				290
EB	1873	0.55	1030				1030
WB	313	0.53	166	1201	0.53	637	

CLV TOTAL= 1320
Level of Service (LOS)= D

AM V/C =0.83

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	623	0.53	330				330
EB	425	0.55	234				970
WB	1255	0.53	665	576	0.53	305	

CLV TOTAL= 1300
Level of Service (LOS)= C

PM V/C =0.81

Scenario ID - TOT1

sli, 041011\1i.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY

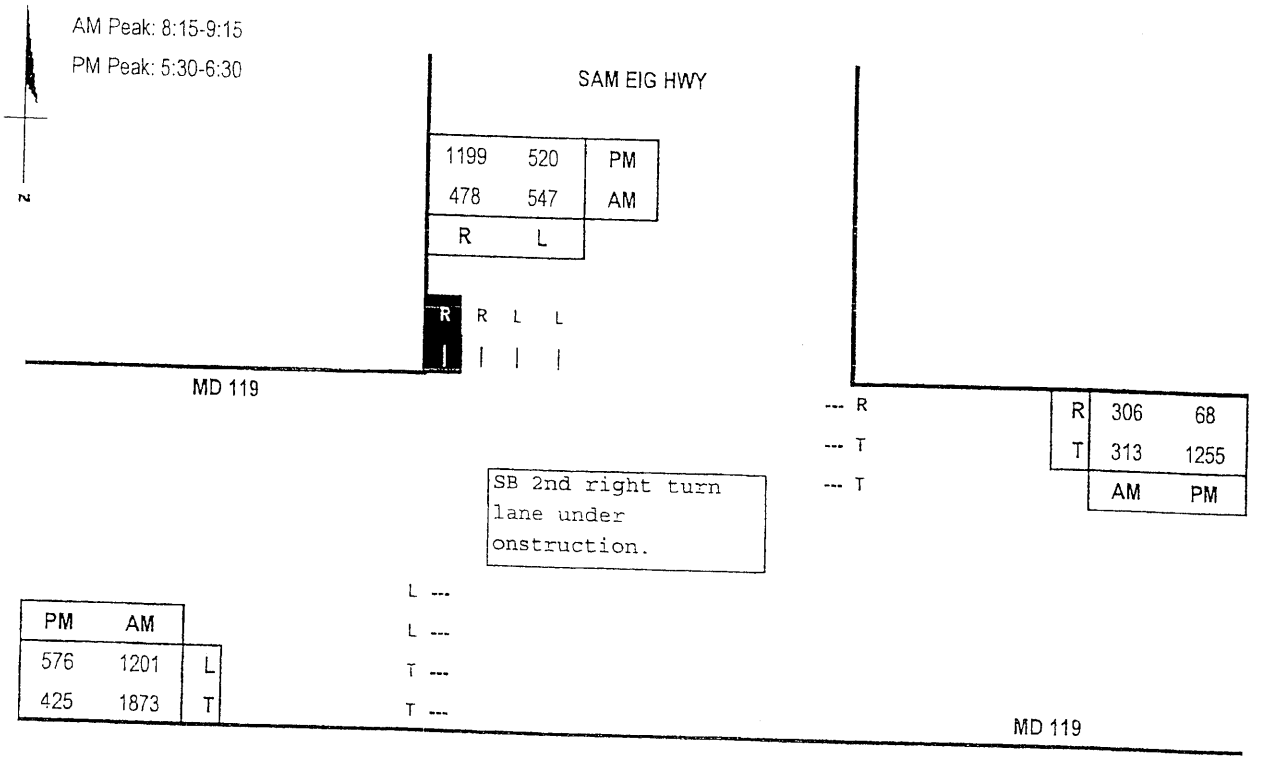
for MSHA

Intersection of: MD 119
and: Sam Eig Hwy
Conditions: Total Traffic
w/ improvement

Date of Count: 11/4/2004
Day of Week: Thursday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
SB	547	0.60	328				328
EB	1873	0.55	1030				1030
WB	313	0.55	172	1201	0.60	721	

CLV TOTAL= 1358
Level of Service (LOS)= D
AM V/C =0.85

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
SB	571	0.55	314				314
EB	425	0.55	234				1036
WB	1255	0.55	690	576	0.60	346	

CLV TOTAL= 1350
Level of Service (LOS)= D
PM V/C =0.84

Scenario ID - TOT1

sli, 041011\2.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: Sam Eig Hwy
and: Diamondback Dr
Conditions: 2004 Existing Traffic

Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:15-6:15

SAM EIG HWY

R	T	U	
1244	1179	4	PM
305	883	4	AM

R RT T T

DIAMONDBACK DR

PM	AM	
477	959	L
0	0	T
7	29	R

L ---
L ---
R ---

LT T T

	L	T	R
AM	25	1558	0
PM	74	1277	0

SAM EIG HWY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	1583	0.37	586	4	0.00	0	586
SB	1192	0.37	441	25	1.00	25	
EB	4	1.00	4	0	0.00	0	508
WB	0	0.00	0	959	0.53	508	

CLV TOTAL= 1094
Level of Service (LOS)= B
AM V/C =0.68

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	1351	0.37	500	4	0.00	0	1069
SB	995	1.00	995	74	1.00	74	
EB	0	0.00	0	0	0.00	0	253
WB	0	0.00	0	477	0.53	253	

CLV TOTAL= 1322
Level of Service (LOS)= D
PM V/C =0.83

Scenario ID - EXIST2

sli, 041011\2.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: Sam Eig Hwy
and: Diamondback Dr
Conditions: Background Traffic

Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:15-6:15

N

SAM EIG HWY

1300	1531	4	PM
315	935	4	AM
R	T	U	

R RT T T

DIAMONDBACK DR

PM	AM	
489	1019	L
0	0	T
7	29	R

L ---
L ---
R ---

LT T T

	L	T	R
AM	25	1938	0
PM	74	1352	0

SAM EIG HWY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	1963	0.37	726	4	0.00	0	726
SB	1254	0.37	464	25	1.00	25	
EB	4	1.00	4	0	0.00	0	540
WB	0	0.00	0	1019	0.53	540	

CLV TOTAL= 1266
Level of Service (LOS)= C
AM V/C =0.79

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	1426	0.37	528	4	0.00	0	1123
SB	2835	0.37	1049	74	1.00	74	
EB	0	0.00	0	0	0.00	0	259
WB	0	0.00	0	489	0.53	259	

CLV TOTAL= 1382
Level of Service (LOS)= D
PM V/C =0.86

Scenario ID - BACK2

sli, 041011\2.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: Sam Eig Hwy
and: Diamondback Dr
Conditions: Total Traffic

Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:15-6:15

N

SAM EIG HWY

1319	1531	4	PM
320	935	4	AM
R	T	U	

R RT T T

DIAMONDBACK DR

PM	AM	
500	1039	L
0	0	T
10	35	R

L ---
L ---
R ---

LT T T

	L	T	R
AM	26	1938	0
PM	80	1352	0

SAM EIG HWY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	1964	0.37	727	4	0.00	0	727
SB	1259	0.37	466	26	1.00	26	
EB	9	1.00	9	0	0.00	0	551
WB	0	0.00	0	1039	0.53	551	

CLV TOTAL= 1278
Level of Service (LOS)= C
AM V/C =0.8

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	1432	0.37	530	4	0.00	0	1136
SB	2854	0.37	1056	80	1.00	80	
EB	0	0.00	0	0	0.00	0	265
WB	0	0.00	0	500	0.53	265	

CLV TOTAL= 1401
Level of Service (LOS)= D
PM V/C =0.88

Scenario ID - TOT2

sli, 041011\3.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

Intersection of: Sam Eig Hwy
and: Fields Rd
Conditions: 2004 Existing Traffic

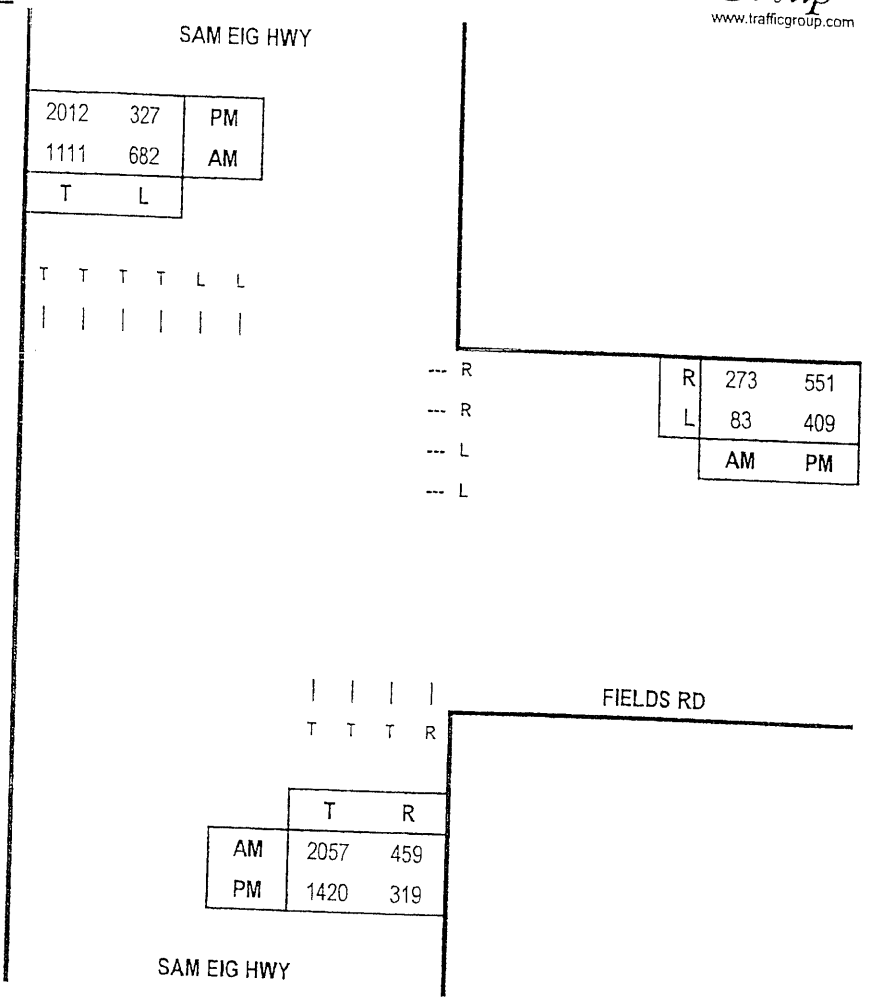
Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:00-6:00

N



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	83	0.53	44				44
NB	2057	0.37	761	682	0.53	361	1122
SB	1111	0.30	333				

CLV TOTAL= 1166
Level of Service (LOS)= C

AM V/C =0.73

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	409	0.53	217				217
NB	1420	0.37	525	327	0.53	173	698
SB	2012	0.30	604				

CLV TOTAL= 915
Level of Service (LOS)= A

PM V/C =0.57

Scenario ID - EXIST3

sli, 041011\3.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

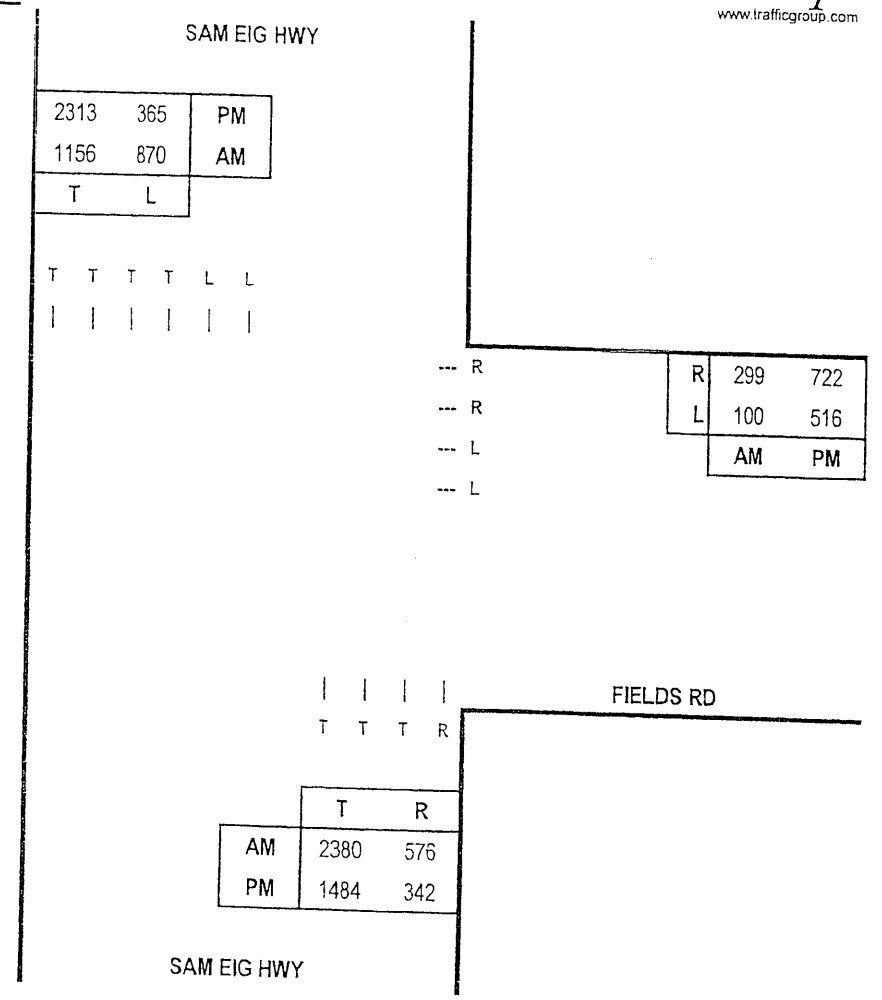
Intersection of: Sam Eig Hwy
and: Fields Rd
Conditions: Background Traffic

Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:00-6:00



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	100	0.53	53				53
NB	2380	0.37	881	870	0.53	461	1342
SB	1156	0.30	347				

CLV TOTAL= 1395
Level of Service (LOS)= D
AM V/C =0.87

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	516	0.53	273				273
NB	1484	0.37	549	365	0.53	193	742
SB	2313	0.30	694				

CLV TOTAL= 1015
Level of Service (LOS)= B
PM V/C =0.63

Scenario ID - BACK3

sli, 041011\3.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

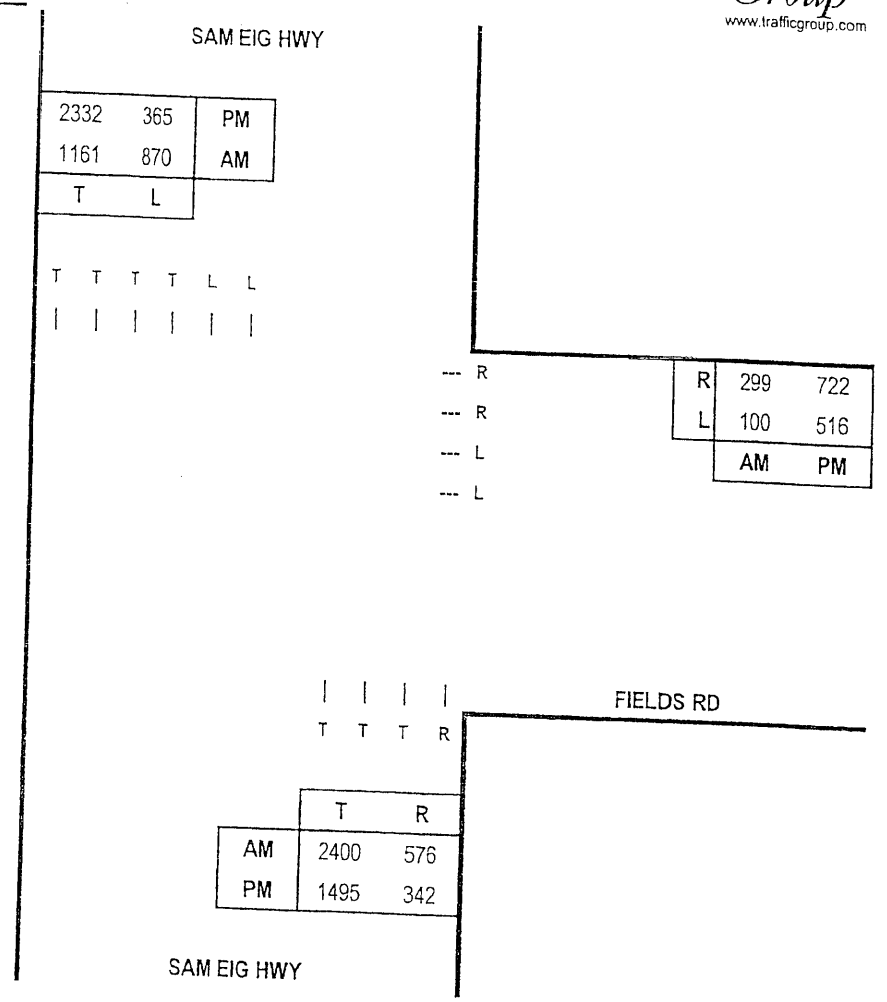
Intersection of: Sam Eig Hwy
and: Fields Rd
Conditions: Total Traffic

Date of Count: 11/3/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:00-6:00



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	100	0.53	53				53
NB	2400	0.37	888	870	0.53	461	1349
SB	1161	0.30	348				

CLV TOTAL= 1402
Level of Service (LOS)= D
AM V/C =0.88

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	516	0.53	273				273
NB	1495	0.37	553	365	0.53	193	746
SB	2332	0.30	700				

CLV TOTAL= 1019
Level of Service (LOS)= B
PM V/C =0.64

Scenario ID - TOT3

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: 2004 Existing Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

MUDDY BRANCH RD

400	485	121	PM
127	302	191	AM
R	T	L	

FR T T L

MD 119

--- FR
--- T
--- T
--- L

R	69	166
T	548	2140
L	124	226
	AM	PM

PM	AM	
256	105	L
847	2825	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L T T FR

MD 119

	L	T	R
AM	457	296	95
PM	257	351	134

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	296	0.53	157	191	1.00	191	617
SB	302	0.53	160	457	1.00	457	
EB	2825	0.37	1045	124	1.00	124	1169
WB	548	0.53	290	105	1.00	105	

CLV TOTAL= 1786
Level of Service (LOS)= F

AM V/C =1.12

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	351	0.53	186	121	1.00	121	514
SB	485	0.53	257	257	1.00	257	
EB	847	0.37	313	226	1.00	226	1390
WB	2140	0.53	1134	256	1.00	256	

CLV TOTAL= 1904
Level of Service (LOS)= F

PM V/C =1.19

Scenario ID - EXIST4

sli, 041011\4.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Background Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

408	505	121	PM
129	305	191	AM
R	T	L	

FR T T L

MD 119

--- FR
--- T
--- T
--- L

R	69	166
T	551	2160
L	131	277
	AM	PM

PM	AM	
258	113	L
852	2847	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	355	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	1.00	191	619
SB	305	0.53	162	457	1.00	457	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1803
Level of Service (LOS)= F

AM V/C =1.13

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	355	0.53	188	121	1.00	121	525
SB	505	0.53	268	257	1.00	257	
EB	852	0.37	315	277	1.00	277	1403
WB	2160	0.53	1145	258	1.00	258	

CLV TOTAL= 1928
Level of Service (LOS)= F

PM V/C =1.21

Scenario ID - BACK4

sli, 041011\4.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

R	T	L	
408	505	121	PM
130	306	191	AM

FR T T L

MD 119

--- FR
--- T
--- T
--- L

	AM	PM
R	69	166
T	551	2160
L	131	277

L ---
T ---
T ---
T ---
R ---

	PM	AM
L	259	113
T	852	2847
R	196	87

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	1.00	191	619
SB	306	0.53	162	457	1.00	457	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1803
Level of Service (LOS)= F

AM V/C =1.13

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.53	189	121	1.00	121	525
SB	505	0.53	268	257	1.00	257	
EB	852	0.37	315	277	1.00	277	1404
WB	2160	0.53	1145	259	1.00	259	

CLV TOTAL= 1929
Level of Service (LOS)= F

PM V/C =1.21

Scenario ID - TOT4

sli, 041011\4.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

MUDDY BRANCH RD

408	505	121	PM
130	306	191	AM
R	T	L	

FR T T L

MD 119

--- FR
--- T
--- T
--- L

R	69	166
T	551	2160
L	131	277
	AM	PM

PM	AM	
259	113	L
852	2847	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.55	175	191	1.00	191	625
SB	306	0.55	168	457	1.00	457	
EB	2847	0.40	1139	131	1.00	131	1270
WB	551	0.55	303	113	1.00	113	

CLV TOTAL= 1895
Level of Service (LOS)= F

AM V/C =1.18

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.55	196	121	1.00	121	535
SB	505	0.55	278	257	1.00	257	
EB	852	0.40	341	277	1.00	277	1447
WB	2160	0.55	1188	259	1.00	259	

CLV TOTAL= 1982
Level of Service (LOS)= F

PM V/C =1.24

Scenario ID - TOT4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\4i.xls-clv, 11/23/04

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Background Traffic w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

MUDDY BRANCH RD

	R	T	L
PM	408	505	121
AM	129	305	191

FR T T L

MD 119

	PM	AM
R	258	113
T	852	2847
L	196	87

L ---
T ---
T ---
T ---
R ---

construction complete for SB 2nd left turn lane

--- FR
--- T
--- T
--- L

	AM	PM
R	69	166
T	551	2160
L	131	277

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	355	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	0.53	101	619
SB	305	0.53	162	457	1.00	457	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1803
Level of Service (LOS)= F
AM V/C =1.13

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	355	0.53	188	121	0.53	64	525
SB	505	0.53	268	257	1.00	257	
EB	852	0.37	315	277	1.00	277	1403
WB	2160	0.53	1145	258	1.00	258	

CLV TOTAL= 1928
Level of Service (LOS)= F
PM V/C =1.21

Scenario ID - BACK4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\4i.xls-clv, 11/23/04

The Traffic Group
www.trafficgroup.com

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic
w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

R	T	L	
408	505	121	PM
130	306	191	AM

FR T T L L

MD 119

--- FR
--- T
--- T
--- L

	AM	PM
R	69	166
T	551	2160
L	131	277

construction complete for SB 2nd left turn lane

	PM	AM
L	259	113
T	852	2847
R	196	87

L ---
T ---
T ---
T ---
R ---

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	0.53	101	619
SB	306	0.53	162	457	1.00	457	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1803
Level of Service (LOS)= F

AM V/C =1.13

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.53	189	121	0.53	64	525
SB	505	0.53	268	257	1.00	257	
EB	852	0.37	315	277	1.00	277	1404
WB	2160	0.53	1145	259	1.00	259	

CLV TOTAL= 1929
Level of Service (LOS)= F

PM V/C =1.21

Scenario ID - TOT4

sli, 041011\4i.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic
w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

R	T	L	
408	505	121	PM
130	306	191	AM

FR T T L L

MD 119

--- FR
--- T
--- T
--- L

	AM	PM
R	69	166
T	551	2160
L	131	277

construction complete for SB 2nd left turn lane

L ---
T ---
T ---
T ---
R ---

	PM	AM
L	259	113
T	852	2847
R	196	87

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.55	175	191	0.60	115	625
SB	306	0.55	168	457	1.00	457	
EB	2847	0.40	1139	131	1.00	131	1270
WB	551	0.55	303	113	1.00	113	

CLV TOTAL= 1895
Level of Service (LOS)= F

AM V/C =1.18

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.55	196	121	0.60	73	535
SB	505	0.55	278	257	1.00	257	
EB	852	0.40	341	277	1.00	277	1447
WB	2160	0.55	1188	259	1.00	259	

CLV TOTAL= 1982
Level of Service (LOS)= F

PM V/C =1.24

Scenario ID - TOT4

sli, 041011\4ii.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Background Traffic w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

408	505	121	PM
129	305	191	AM
R	T	L	

FR T T L L

MD 119

--- FR
--- T
--- T
--- L

R	69	166
T	551	2160
L	131	277
	AM	PM

PM	AM	
258	113	L
852	2847	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	355	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	0.53	101	404
SB	305	0.53	162	457	0.53	242	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1588
Level of Service (LOS)= E

AM V/C =0.99

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	355	0.53	188	121	0.53	64	404
SB	505	0.53	268	257	0.53	136	
EB	852	0.37	315	277	1.00	277	1403
WB	2160	0.53	1145	258	1.00	258	

CLV TOTAL= 1807
Level of Service (LOS)= F

PM V/C =1.13

Scenario ID - BACK4

sli, 041011\4ii.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic
w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

R	T	L	
408	505	121	PM
130	306	191	AM

FR T T L

MD 119

--- FR
--- T
--- T
--- L

	AM	PM
R	69	166
T	551	2160
L	131	277

PM	AM	
259	113	L
852	2847	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.53	169	191	0.53	101	404
SB	306	0.53	162	457	0.53	242	
EB	2847	0.37	1053	131	1.00	131	1184
WB	551	0.53	292	113	1.00	113	

CLV TOTAL= 1588
Level of Service (LOS)= E

AM V/C =0.99

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.53	189	121	0.53	64	404
SB	505	0.53	268	257	0.53	136	
EB	852	0.37	315	277	1.00	277	1404
WB	2160	0.53	1145	259	1.00	259	

CLV TOTAL= 1808
Level of Service (LOS)= F

PM V/C =1.13

Scenario ID - TOT4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

sli, 041011\4ii.xls-clv, 11/23/04

The Traffic Group
www.trafficgroup.com

Intersection of: MD 119
and: Muddy Branch Rd
Conditions: Total Traffic
w/ improvement

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

Lane Use + Traffic Volumes

AM Peak: 7:45-8:45
PM Peak: 5:30-6:30

N

MUDDY BRANCH RD

408	505	121	PM
130	306	191	AM
R	T	L	

FR T T L L

MD 119

--- FR
--- T
--- T
--- L

R	69	166
T	551	2160
L	131	277
	AM	PM

PM	AM	
259	113	L
852	2847	T
196	87	R

L ---
T ---
T ---
T ---
R ---

L L T T FR

MD 119

	L	T	R
AM	457	318	149
PM	257	356	144

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	318	0.55	175	191	0.60	115	442
SB	306	0.55	168	457	0.60	274	
EB	2847	0.40	1139	131	1.00	131	1270
WB	551	0.55	303	113	1.00	113	

CLV TOTAL= 1712
Level of Service (LOS)= F
AM V/C =1.07

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	356	0.55	196	121	0.60	73	432
SB	505	0.55	278	257	0.60	154	
EB	852	0.40	341	277	1.00	277	1447
WB	2160	0.55	1188	259	1.00	259	

CLV TOTAL= 1879
Level of Service (LOS)= F
PM V/C =1.17

Scenario ID - TOT4

sli, 041011\5.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

Intersection of: Muddy Branch Rd
and: Diamondback Dr
Conditions: 2004 Existing Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:45-6:45

N

MUDDY BRANCH RD

R	T	L	
108	407	254	PM
70	424	476	AM

RT T L

SHOP CTR ACCESS

--- TR
--- T
--- L

	AM	PM
R	158	449
T	72	245
L	89	221

PM	AM	
177	69	L
107	119	T
43	12	R

L ---
TR ---

L T TR

DIAMONDBACK DR

	L	T	R
AM	313	313	113
PM	20	482	71

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	426	0.53	226	476	1.00	476	702
SB	494	0.53	262	313	1.00	313	
EB	131	1.00	131	89	1.00	89	220
WB	230	0.53	122	69	1.00	69	

CLV TOTAL= 922
Level of Service (LOS)= A

AM V/C =0.58

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	553	0.53	293	254	1.00	254	547
SB	515	0.53	273	20	1.00	20	
EB	150	1.00	150	221	1.00	221	545
WB	694	0.53	368	177	1.00	177	

CLV TOTAL= 1092
Level of Service (LOS)= B

PM V/C =0.68

Scenario ID - EXIST5

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\5.xls-clv, 11/23/04

Intersection of: Muddy Branch Rd
and: Diamondback Dr
Conditions: Background Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:45-6:45

N

MUDDY BRANCH RD

108	407	260	PM
70	424	506	AM
R	T	L	

RT T L
| | |

SHOP CTR ACCESS

--- TR
--- T
--- L

R	163	477
T	72	245
L	94	249
	AM	PM

PM	AM	
177	69	L
107	119	T
43	12	R

L ---
TR ---

L	T	TR

DIAMONDBACK DR

	L	T	R
AM	313	313	143
PM	20	482	77

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	456	0.53	242	506	1.00	506	748
SB	494	0.53	262	313	1.00	313	
EB	131	1.00	131	94	1.00	94	225
WB	235	0.53	125	69	1.00	69	

CLV TOTAL= 973
Level of Service (LOS)= A
AM V/C =0.61

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	559	0.53	296	260	1.00	260	556
SB	515	0.53	273	20	1.00	20	
EB	150	1.00	150	249	1.00	249	560
WB	722	0.53	383	177	1.00	177	

CLV TOTAL= 1116
Level of Service (LOS)= B
PM V/C =0.7

Scenario ID - BACK5

sli, 041011\5.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: Muddy Branch Rd
and: Diamondback Dr
Conditions: Total Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:45-6:45

MUDDY BRANCH RD

108	407	261	PM
70	424	506	AM
R	T	L	

RT T L

SHOP CTR ACCESS

--- TR
--- T
--- L

R	164	477
T	72	245
L	96	249
	AM	PM

PM	AM	
177	69	L
107	119	T
43	12	R

L ---
TR ---

L T TR

DIAMONDBACK DR

	L	T	R
AM	313	313	143
PM	20	482	79

MUDDY BRANCH RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	456	0.53	242	506	1.00	506	748
SB	494	0.53	262	313	1.00	313	
EB	131	1.00	131	96	1.00	96	227
WB	236	0.53	125	69	1.00	69	

CLV TOTAL= 975
Level of Service (LOS)= A
AM V/C =0.61

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	561	0.53	297	261	1.00	261	558
SB	515	0.53	273	20	1.00	20	
EB	150	1.00	150	249	1.00	249	560
WB	722	0.53	383	177	1.00	177	

CLV TOTAL= 1118
Level of Service (LOS)= B
PM V/C =0.7

Scenario ID - TOT5

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\6.xls-clv, 11/23/04

Intersection of: Story Dr
and: Diamondabck Dr
Conditions: 2004 Existing Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:30-6:30

STORY DR

49	5	179	PM
73	7	367	AM
R	T	L	

RT L

DIAMONDABCK DR

--- R
--- T
--- T
--- L

R	57	219
T	272	972
L	21	143
	AM	PM

PM	AM	
64	27	L
369	648	T
8	6	R

L ---
T ---
TR ---

L TR

DIAMONDABCK DR

	L	T	R
AM	6	16	149
PM	14	12	70

BICKERSTAFF WAY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	165	1.00	165	367	1.00	367	532
SB	80	1.00	80	6	1.00	6	
EB	654	0.53	347	21	1.00	21	368
WB	272	0.53	144	27	1.00	27	

CLV TOTAL= 900
Level of Service (LOS)= A
AM V/C =0.56

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	82	1.00	82	179	1.00	179	261
SB	54	1.00	54	14	1.00	14	
EB	377	0.53	200	143	1.00	143	579
WB	972	0.53	515	64	1.00	64	

CLV TOTAL= 840
Level of Service (LOS)= A
PM V/C =0.53

Scenario ID - EXIST6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\6.xls-clv, 11/23/04

The Traffic Group
www.trafficgroup.com

Intersection of: Story Dr
and: Diamondabck Dr
Conditions: Background Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:30-6:30

N

STORY DR

R	T	L	
49	5	179	PM
73	7	367	AM

RT L
| |
DIAMONDABCK DR

--- R
--- T
--- T
--- L

	AM	PM
R	57	219
T	282	1028
L	21	143

PM	AM	
64	27	L
381	708	T
8	6	R

L ---
T ---
TR ---

| |
L TR
DIAMONDABCK DR

	L	T	R
AM	6	16	149
PM	14	12	70

BICKERSTAFF WAY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	165	1.00	165	367	1.00	367	532
SB	80	1.00	80	6	1.00	6	
EB	714	0.53	378	21	1.00	21	399
WB	282	0.53	149	27	1.00	27	

CLV TOTAL= 931
Level of Service (LOS)= A
AM V/C =0.58

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	82	1.00	82	179	1.00	179	261
SB	54	1.00	54	14	1.00	14	
EB	389	0.53	206	143	1.00	143	609
WB	1028	0.53	545	64	1.00	64	

CLV TOTAL= 870
Level of Service (LOS)= A
PM V/C =0.54

Scenario ID - BACK6

sli, 041011\6.xls-clv, 11/23/04

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

Intersection of: Story Dr
and: Diamondabck Dr
Conditions: Total Traffic

Date of Count: 11/10/2004
Day of Week: Wednesday
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

AM Peak: 8:00-9:00
PM Peak: 5:30-6:30

STORY DR

49	5	187	PM
75	7	381	AM
R	T	L	

RT L

DIAMONDABCK DR

--- R
--- T
--- T
--- L

R	60	233
T	282	1028
L	24	154
	AM	PM

PM	AM	
65	27	L
381	708	T
10	6	R

L ---
T ---
TR ---

L TR

DIAMONDABCK DR

	L	T	R
AM	7	16	161
PM	14	12	76

BICKERSTAFF WAY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	177	1.00	177	381	1.00	381	558
SB	82	1.00	82	7	1.00	7	
EB	714	0.53	378	24	1.00	24	402
WB	282	0.53	149	27	1.00	27	

CLV TOTAL= 960
Level of Service (LOS)= A
AM V/C =0.6

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	88	1.00	88	187	1.00	187	275
SB	54	1.00	54	14	1.00	14	
EB	391	0.53	207	154	1.00	154	610
WB	1028	0.53	545	65	1.00	65	

CLV TOTAL= 885
Level of Service (LOS)= A
PM V/C =0.55

Scenario ID - TOT6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

sli, 041011\7.xls-clv, 11/23/04

Intersection of: Bickerstaff Way
and: South Site Access
Conditions: Total Traffic

Date of Count:
Day of Week:
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes

BICKERSTAFF WAY

156	13	PM
34	3	AM
T	L	

14
3
adjusted lefts

TL

LR

R	13	6
L	0	0
	AM	PM

TR

SOUTH SITE ACCESS

	T	R
AM	171	0
PM	96	0

BICKERSTAFF WAY

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	13	1.00	13				13
NB	171	1.00	171	3	1.00	3	174
SB	37	1.00	37				

CLV TOTAL= 187
Level of Service (LOS)= A
AM V/C =0.12

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	6	1.00	6				6
NB	96	1.00	96	13	1.00	13	169
SB	169	1.00	169				

CLV TOTAL= 175
Level of Service (LOS)= A
PM V/C =0.11

nario ID - TOT7

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

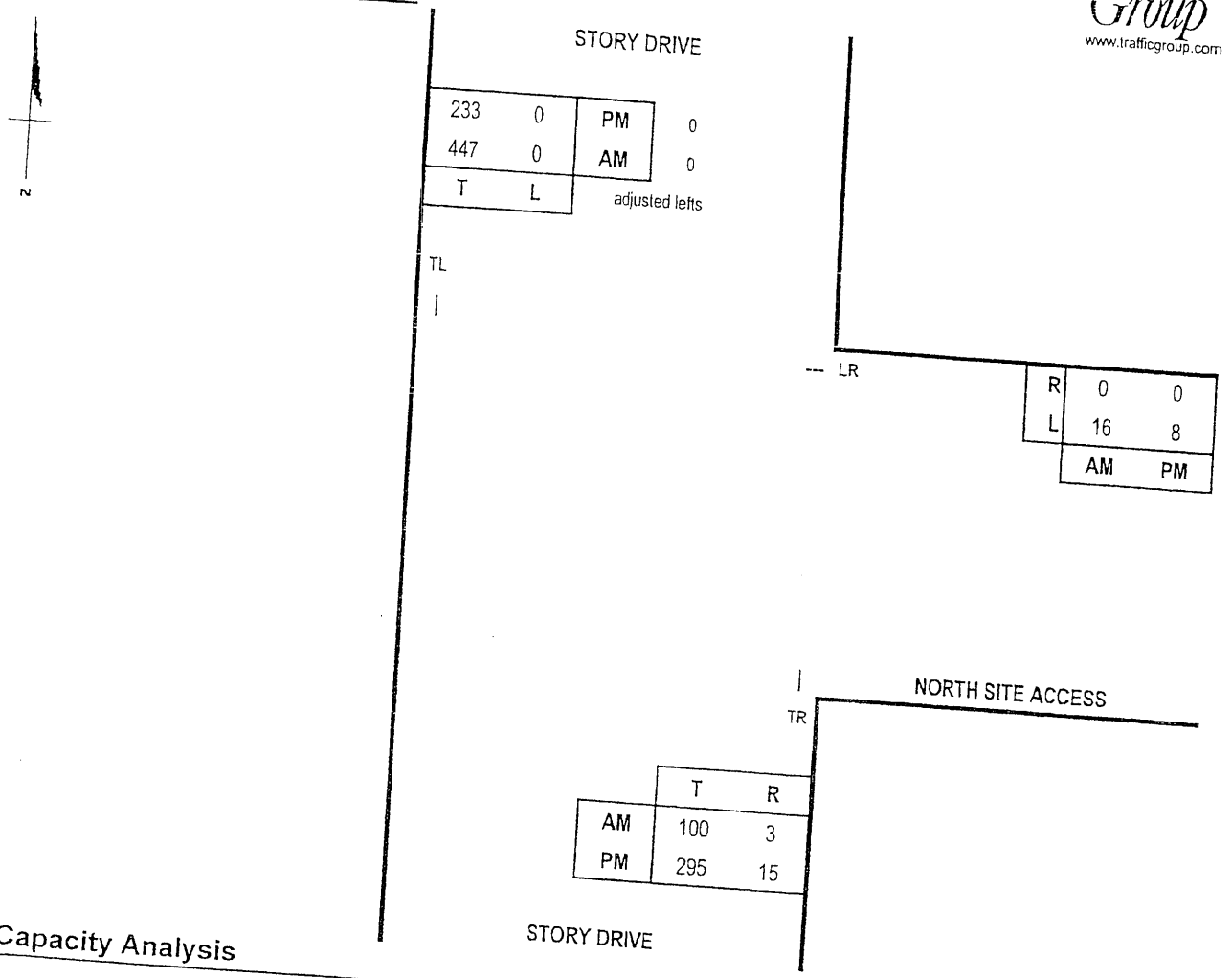
sli, 041011\8.xls-clv, 11/23/04

Intersection of: Story Drive
and: North Site Access
Conditions: Total Traffic

Date of Count:
Day of Week:
Analyst: Shulin Li

The Traffic Group
www.trafficgroup.com

Lane Use + Traffic Volumes



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
WB	16	1.00	16				16
NB	103	1.00	103	0	1.00	0	447
SB	447	1.00	447				

CLV TOTAL= 463
Level of Service (LOS)= A
AM V/C =0.29

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
WB	8	1.00	8				8
NB	310	1.00	310	0	1.00	0	310
SB	233	1.00	233				

CLV TOTAL= 318
Level of Service (LOS)= A
PM V/C =0.2

Scenario ID - TOT8

APPENDIX C

Background Development Information

The Traffic Group

Kimley-Horn
and Associates, Inc.

13755 Sunrise Valley Drive
Suite 450
Herndon, Virginia 20171

TEL 703.674.1300
FAX 703.674.1350

Date: Oct 21 2004

Fax Transmittal- Please note new address, phone and fax number above

To: Wes Guckert
Firm/Location: The Traffic Group
From: Ed Papazian
Original coming by mail: Yes ☐ No ☑

Fax No.: 1-410-931-6601
Job No.:
Job Name:

If you have any problems, please call 703.674.~~1300~~ 1307 and ask for: Ed

Total number of pages, including cover sheet: 9

Comments:

Wes:

Here is what I have that may help.

From Nov 7, 2001 memo -

1. Cover page
2. List of approved and unbuilt developments. (The Washingtonian North parcel is not built. I'm not sure about the others.) Directions of Approach
3. Trip assignment of approved and unbuilt developments. Note - trips based on Sixth Edition of Trip Generation
4. Trip generation of Washingtonian Waterfront
5. Graphic showing assignment of Wash. Waterfront trips.

From April 16, 2003 memo with revised quantity for Washingtonian Waterfront. (I don't know what was finally approved)

6. Cover page
7. Trip generation
8. Directions of Approach

(This memo dealt with a specific site driveway issue and didn't include trip assignments onto surrounding roadways.)

This facsimile is intended for the addressee named herein and may contain information that is confidential. If you are not the intended recipient or the employee or agent responsible for delivery to the addressee, you are hereby notified that any review, dissemination, disclosure, or copying of this communication is strictly prohibited. If you have received this facsimile in error, please immediately notify us by telephone, and return the original facsimile to us at the address above via the U.S. Postal Service. Thank you.

Hope this is useful

Ed

Kimley-Horn
and Associates, Inc.

MEMORANDUM

To: Jeff Parana
The Peterson Companies

From: Edward Y. Papazian, PE
Robert B. Schiesel

Date: November 7, 2001

Subject: Washingtonian Waterfront
Traffic Impact Analysis

Suite A
9411 Lee Highway
Fairfax, Virginia
22031

INTRODUCTION

This memorandum presents the results of an updated traffic analysis for the proposed Washingtonian Waterfront mixed-use development in Gaithersburg, Maryland. The site is part of the Washingtonian Center development and is located on Washingtonian Boulevard south of its interchange with Sam Eig Highway. Figure 1 is a study area map.

This analysis is an update of the previous studies conducted for the Washingtonian Center and is based on current traffic counts in the area. This study was conducted in accordance with direction provided by the Public Works department of the City of Gaithersburg. This study analyses the impact of the proposed Washingtonian Waterfront development on four local intersections. It also addresses specific items requested by City of Gaithersburg staff.

AREA TRANSPORTATION SYSTEM

The following is a description of the key roadways that serve the Washingtonian Center area.

Existing Roadway System

The key roadways in the study area are Sam Eig Highway, Washingtonian Boulevard, Fields Road and Diamondback Drive. Figure 2 shows the roadway system and lane designations at area intersections.

TEL 703 934 0909
FAX 703 934 8975

latest Trip Generation report prepared by the Institute of Transportation Engineers (ITE)[1]. The list of approved and unbuilt developments and the resulting number of trips are shown in Table 1.

Table 1 – Traffic Generated by Remaining Parcels of Washingtonian Center

Name	Land Use (Code)	Amount	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Two-Way*	*In*	*Out*	*Two-Way*
Two Washingtonian Center	Office (710)	297,615	392	53	445	70	343	413
Washingtonian North	Office (710)	850,000 (three buildings[1])	1,128	154	1,282	202	989	1,191
South Seven	Office (710)	300,000 (two buildings[2])	454	62	516	84	410	494

[1] – 330,000 SF, 275,000 SF and 245,000 SF
[2] – Two buildings each of 150,000 SF

These volumes were distributed through the study area intersections based on the directions of approach of development traffic, shown in Table 2.

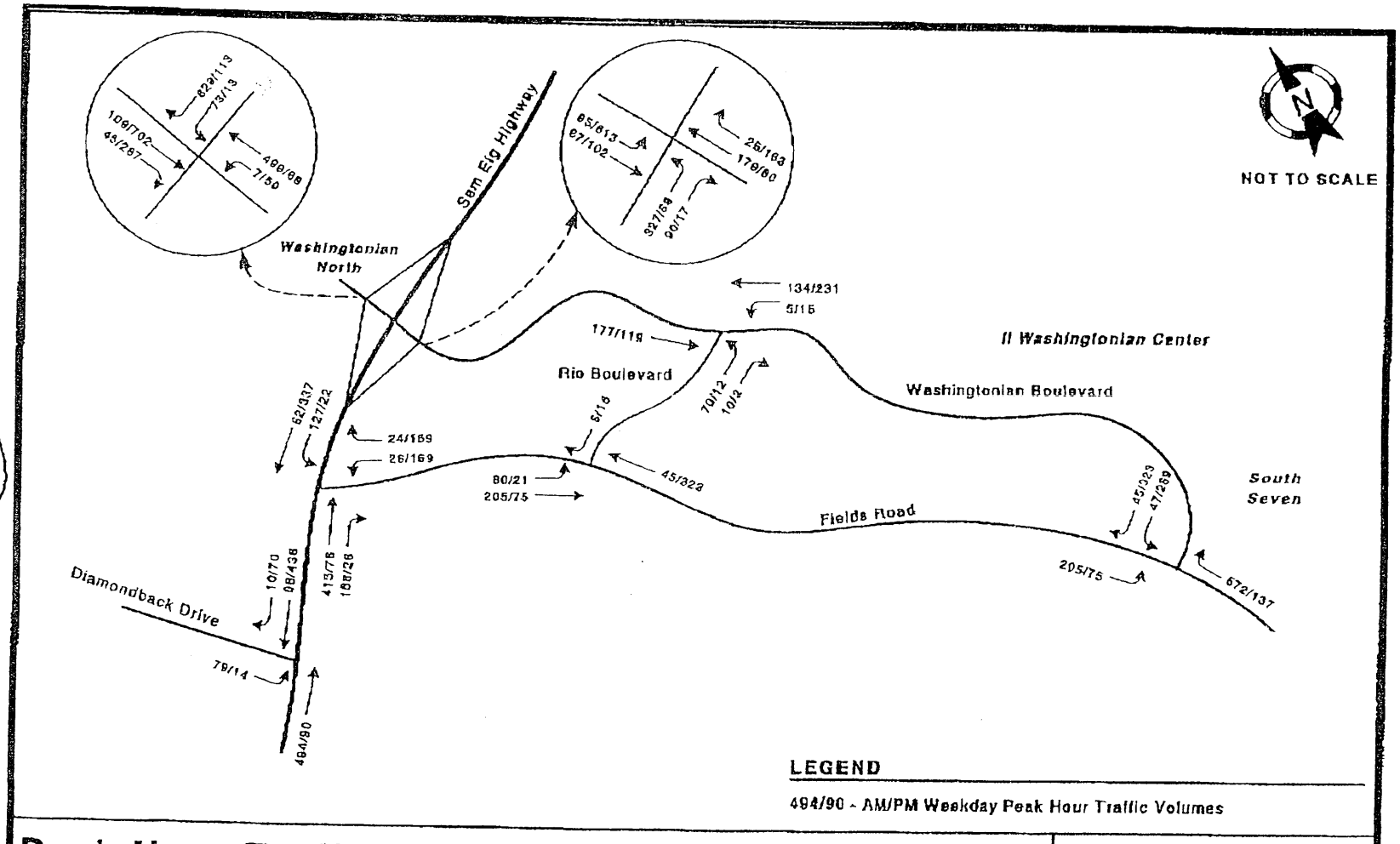
Table 2 – Directions of Approach of Development Traffic

Direction From/To	Residential Development	Office Development	Retail Development
North on I-270	19%	26%	28%
East on I-370/Shady Grove Road	15%	12%	8%
South on I-270	37%	24%	24%
South and East on Fields Road	17%	9%	12%
South on Sam Eig Highway	8%	25%	26%
West on Diamondback Drive	4%	4%	2%

These directions of approach are those contained in previous traffic studies conducted for the Washingtonian Center

The trip assignments for approved developments are shown on Figure 5. Background traffic for this study is comprised of the existing traffic volumes (Figure 4), and the traffic generated by approved and unbuilt or unoccupied parcels on the Washingtonian Center. These volumes added together are displayed on Figure 6.

[1] Trip Generation, Institute of Transportation Engineers, Sixth Edition, 1997



LEGEND

494/90 - AM/PM Weekday Peak Hour Traffic Volumes

Peak Hour Traffic Volumes Generated by Approved and Unbuilt Developments

Washingtonian Waterfront
Gaithersburg, Maryland

FIGURE 5

Kimley-Horn and Associates, Inc.

3

4

Site Generated Traffic Volumes

Peak hour traffic volumes generated by the proposed Washingtonian Waterfront mixed-use development were calculated based upon the rates contained in the latest ITE Trip Generation report. The resulting trip generation figures are shown in Table 3.

Table 3 – Traffic Generated by Proposed Washingtonian Waterfront

Land Use and Quantity	Land Use Code	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Two-Way*	*In*	*Out*	*Two-Way*
48,000 SF Specialty Retail Stores	814	16	15	31	53	71	124
18,000 SF High-Quality Restaurant	831	10	5	15	90	45	135
210-room Hotel	312	72	50	122	78	52	130
240 Apartments	222	18	54	72	54	34	88
Total		**116**	**124**	**240**	**275**	**202**	**477**

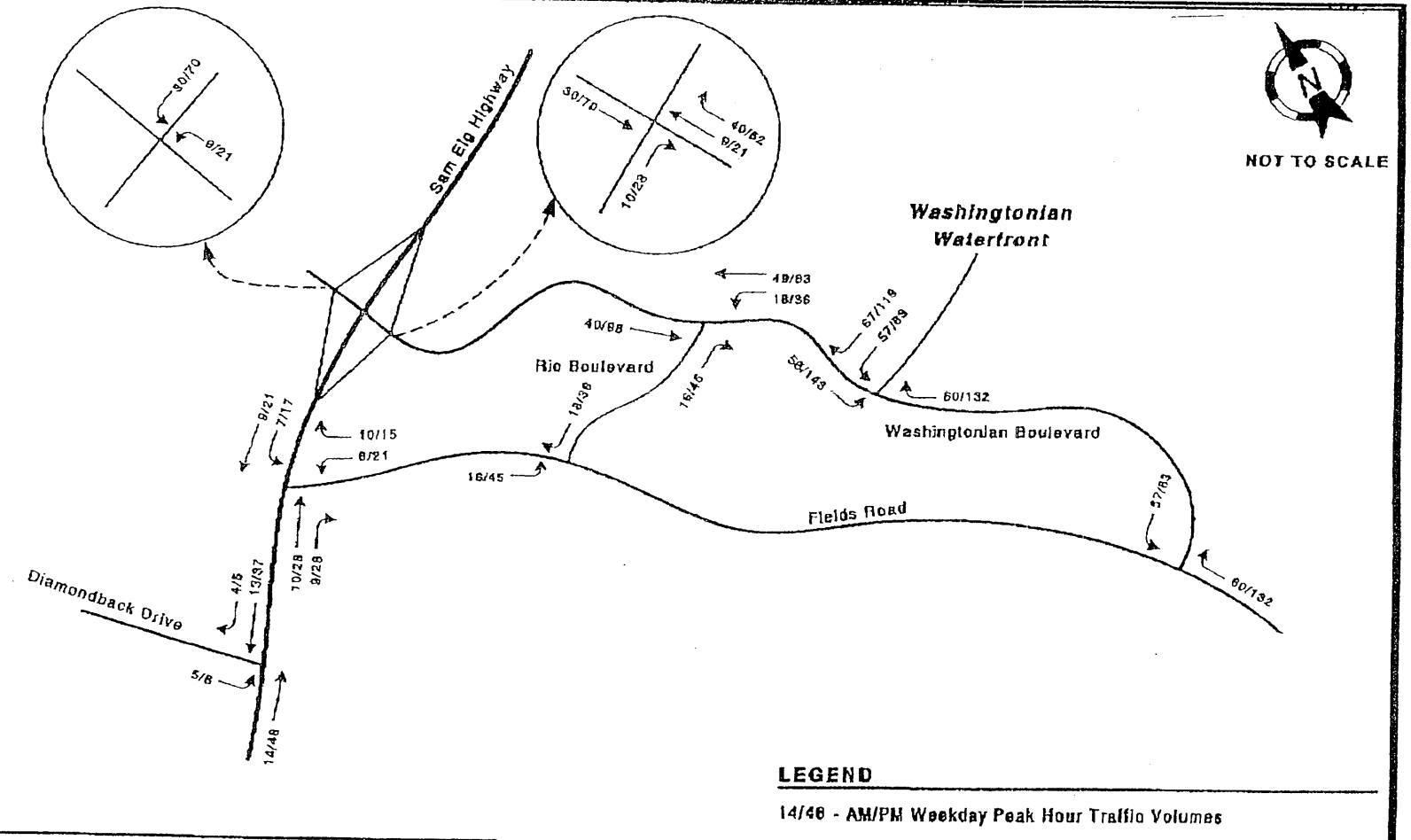
These trips were assigned to the area intersections based on the directions of approach of development traffic contained in Table 2. Figure 7 shows the assignment of trips generated by the proposed Washingtonian Waterfront.

Total Future Traffic Volumes

Total future traffic volumes were calculated by adding the traffic generated by the proposed Washingtonian Waterfront (Figure 7), to background traffic volumes (Figure 6). The resulting total future traffic volumes are shown on Figure 8.

ASSESSMENT OF TRAFFIC CONDITIONS

Several different assessments of traffic conditions were conducted. They include intersection capacity analyses, traffic signal operations at the junction of the signalized ramp connections from Sam Eig Highway at Washingtonian Boulevard, weaving along Sam Eig Highway, adequacy of stacking distances along Washingtonian Boulevard into the Waterfront parcel, and adequacy of roundabout at Washingtonian Boulevard and Rio Boulevard.



LEGEND

14/46 - AM/PM Weekday Peak Hour Traffic Volumes

Peak Hour Traffic Volumes Generated by Washingtonian Waterfront

Washingtonian Waterfront
Gaithersburg, Maryland

FIGURE 7

Kimley-Horn and Associates, Inc.

5

Kimley-Horn
and Associates, Inc.

MEMORANDUM

To: Jeff Parana
The Peterson Companies

From: Edward Y. Papazian, P.E.

Date: April 16, 2003

Subject: Washingtonian Waterfront
Analysis of the Intersection of Washingtonian Boulevard and the Main Driveway to Waterfront

Suite 450
13755 Sunrise Valley Drive
Herndon, Virginia
20171

INTRODUCTION

This memorandum presents an analysis of the intersection of Washingtonian Boulevard and the main driveway to the Washingtonian Waterfront development, and specifically the adequacy of the length of the southbound left turn lane along Washingtonian Boulevard into the Washingtonian Waterfront Parcel. The proposed development program for the Washingtonian Waterfront parcel consists of the following.

- 47,180 square feet of specialty retail stores
- 18,100 square feet of quality restaurants
- 210 room hotel
- 87,815 square feet of office

DESCRIPTION OF PREVIOUS STUDY

A traffic study dated November 7, 2001 contained detailed analyses of the adequacy of the area roadway system for a development program that was essentially the same as the current program, with the exception that the previous program included 240 apartment residential units in place of the office building. The November 7, 2001 study was based on existing traffic counts conducted in the fall of 2001 and included buildout of the Washingtonian Center. The study concluded that the area roadway system will accommodate the proposed development with acceptable levels of traffic service and demonstrated that the length of the left turn lane along Washingtonian Boulevard into the main driveway serving the Washingtonian Waterfront was more than sufficient to accommodate the peak hour left turn demand. Overall analysis of the intersection of

TEL 703 674 1300
FAX 703 674 1350

Washingtonian Boulevard and the driveway to the Waterfront was not part of this study. The November 2001 study included an analysis of an alternate development plan for the Washingtonian Waterfront involving substituting a 125,000 square foot office building in place of the 240 residential units. The study concluded that traffic generated by the alternate plan with the office building would be accommodated on the area roadway system. The intersection of Washingtonian Boulevard and the driveway to the Waterfront was not evaluated with this alternate plan.

The following section describes the analysis of the intersection with the current proposed plan for the Washingtonian Waterfront parcel.

INTERSECTION ANALYSIS

Peak hour traffic volumes generated by the proposed Washingtonian Waterfront were calculated based upon trip generation rates contained in the latest ITE Trip Generation report. The resulting trip generation figures are shown in Table 1.

Table 1 – Traffic Generated by Proposed Washingtonian Waterfront

Land Use and Quantity	Land Use Code	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Two-way*	*In*	*Out*	*Two-way*
47,180 SF Specialty Retail Stores	814	16	15	31	52	70	122
18,100 SF High-Quality Restaurant	831	10	5	15	91	45	136
210 Room Hotel	312	72	50	122	78	52	130
87,815 SF Office	710	148	20	168	30	148	178
Total	---	**246**	**90**	**336**	**251**	**315**	**566**

These trips were assigned to Washingtonian Boulevard based on the same distributions contained in the November 2001 study. These distributions are shown in Table 2.

Vehicle access along Washingtonian Boulevard serving the Waterfront parcel consists of a main driveway with full movements permitted and a right turn in and right turn out driveway located approximately 200 feet to the north. The focus of this analysis is the main driveway.

7

Table 2 — Directions of Approach of Development Traffic		
Directions From/To	Office/Hotel	Retail
North on I-270	26%	28%
East on I-370/Shady Grove Road	12%	8%
South on I-270	24%	24%
South and East on Fields Road	9%	12%
South on Sam Ely Highway	25%	26%
West on Diamondback Drive	4%	12%

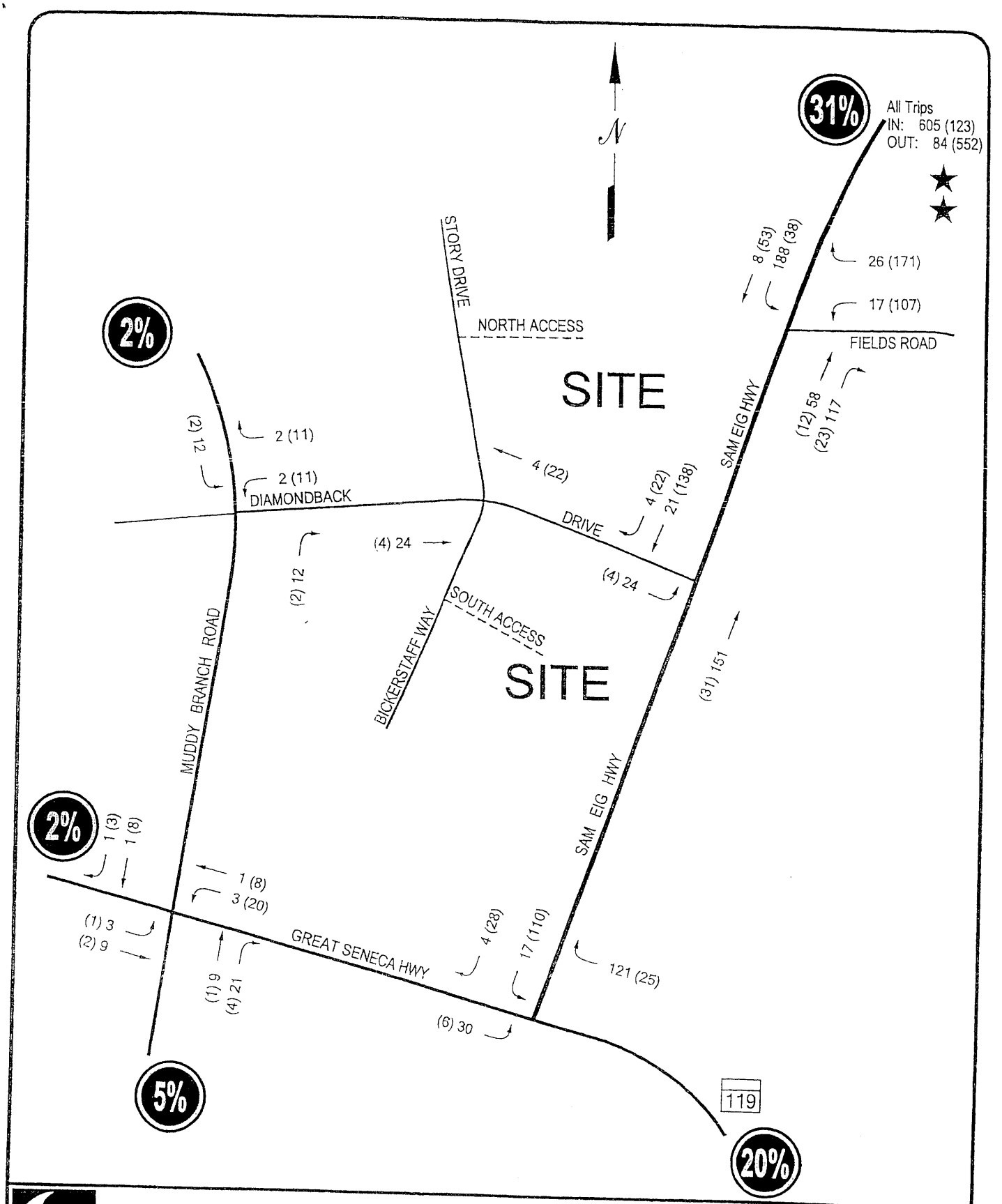
Through traffic along Washingtonian Boulevard was taken from the August 21, 1998 traffic study for the Washingtonian North parcel. The estimated through traffic in the 1998 study was based on existing traffic counts conducted during the course of the development of the Washingtonian Center plus the forecast traffic resulting from the remaining buildout.

Figure 1 shows the estimated through traffic along Washingtonian Boulevard and the assignment of Washingtonian Waterfront entering and exiting traffic at the driveways serving the Waterfront parcel.

The trips generated by the Waterfront parcel were assigned to the driveways based on the assumption that 90 percent of the right turn in and 50 percent of the right turn out traffic and all of the left turn in and left turn out traffic would use the main driveway. The remaining 10 percent of the right turn in and 50 percent of the right turn out traffic would use the right turn in and right turn out driveway.

The lane designations at the intersection of the main driveway are shown on Figure 2. The intersection will be stop sign controlled with the stop sign controlling the exiting movement from the driveway.

8



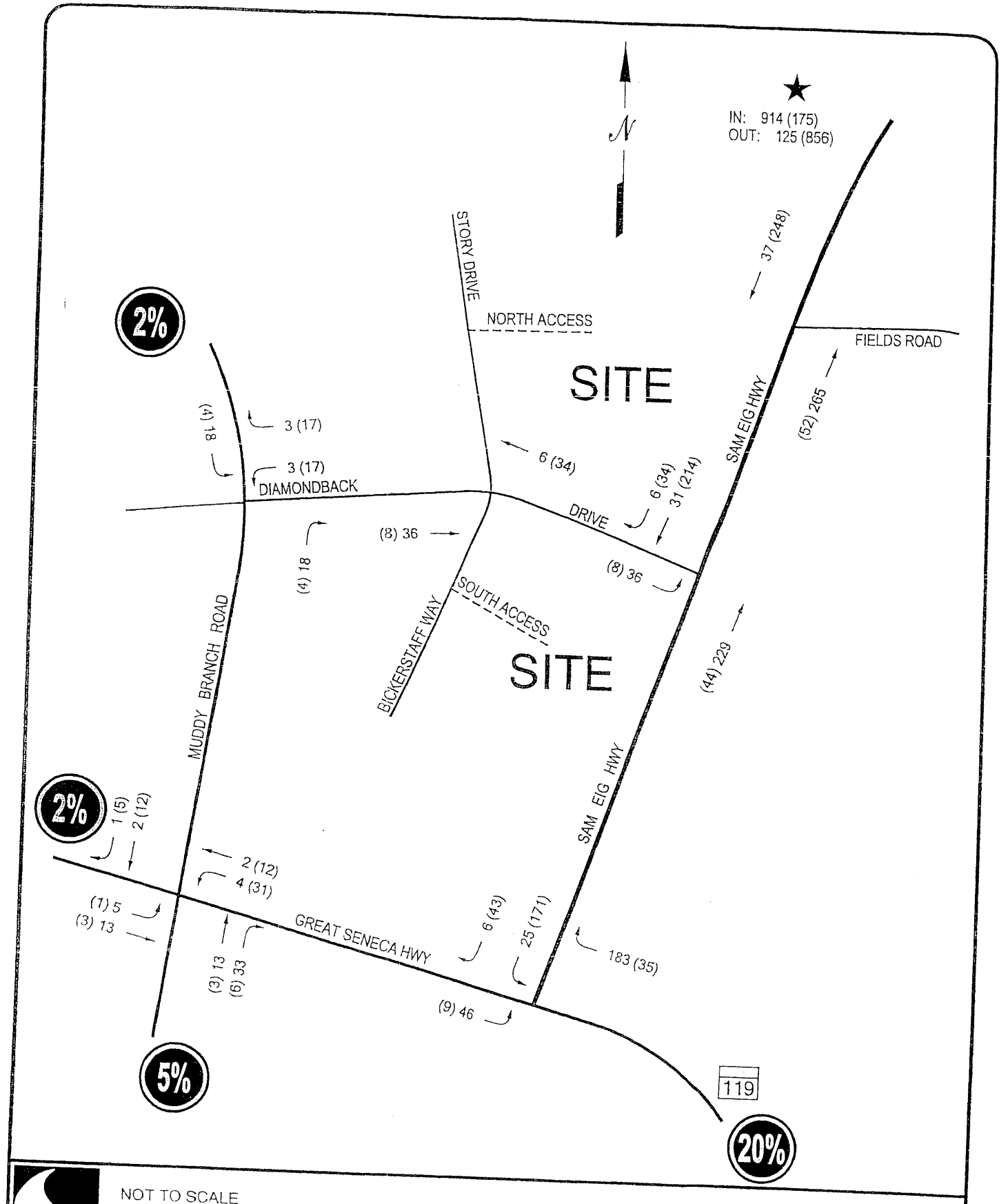
NOT TO SCALE

The Traffic Group

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

TRIP ASSIGNMENT FOR DEVELOPMENTS #1 & 3

sli, 041011\0410.dwg-1&3d, 11/23/04



NOT TO SCALE

The Traffic Group

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

TRIP ASSIGNMENT FOR DEVELOPMENT #2

li, 041011\0410.dwg-2d, 11/23/04

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RECEIVED
DEC 10 2004
PLANNING COMMISSION
GAITHERSBURG, MD

December 8, 2004

North Gaithersburg Investments, LLC
2401 Research Boulevard
Suite 202
Rockville, Maryland 20850

RE: Crown Farm
Accident Data
Gaithersburg, Maryland
Our Job No: 2004-1011

Dear North Gaithersburg Investment, LLC:

As discussed, The Traffic Group, Inc. has had an opportunity to obtain accident data from the Maryland State Highway Administration Accident Data Files to determine the number of accidents that have occurred at the Sam Eig Highway and Diamondback Drive intersection in Montgomery County. This information was obtained for the years 2001 through 2003, which is the most current information available from the Maryland State Highway Administration at this time.

Attached to this letter is Exhibit 1 which shows a breakdown of the accidents that have been recorded at the Sam Eig Highway and Diamondback Drive intersection for the years 2001 through 2003. A review of Exhibit 1 indicates that over this three year period, a total of 21 accidents have occurred at the subject intersection. This would equate to an average of seven accidents per year. A roadway with the amount of traffic that Sam Eig Highway serves, seven accidents per year would equate to an Accident Rate of 0.89 per MVE (million vehicles entering) which is low and would fall below the State Average for a Signalized Intersection.

Also attached is Exhibit 2 which is a Collision Diagram which illustrates the types of accidents and the accident patterns based on the information contained on Exhibit 1 for the past three years. Several of these accidents were rear-end accidents which

EXHIBIT #58 X-181 12/01/04
PENGAD-Bayonne, N. J.

EXHIBIT 58 X-181 12/01/04
PENGAD-Bayonne, N. J.

The Traffic Group, Inc. 9900 Franklin Square Drive Su
Phone: 410-931-6600 Fax: 410-931-6601 Toll Free: 1-80

Attachment "J"

are common and expected to occur at a signalized intersection. A full summary of each accident for each year is also attached.

In summary, based on the accident information provided, it is our opinion that the intersection of Sam Eig Highway and Diamondback Drive has a low number of accidents for a road that carries the amount of traffic that Sam Eig Highway carries on a daily basis and is below the State Average. Therefore, it is our opinion that the signalized intersection of Sam Eig Highway and Diamondback Drive is not experiencing any safety concerns.

If you have any questions concerning the attached information, please do not hesitate to contact me.

Sincerely,

Glenn Cook

Glenn E. Cook
Senior Project Manager

GEC:clg

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	2001	2002	2003	3 Year Total	1 Year Average
Roadway Intersections					
*Sam Eig Highway (0.41 mp) at Diamondback Drive (0.35 mp)	4	6	11	21	7.0

*intersection only

Accident Frequency	4	6	11	21	7.0
Accident Location:					
Intersection Related	4	6	11	21	7.0
Non-intersection	0	0	0	0	0.0
Accident Severity:					
Not Injured	2	2	3	7	2.3
Possible Injury	2	1	2	5	1.7
Injured	0	1	4	5	1.7
Disabled	0	2	2	4	1.3
Fatal	0	0	0	0	0.0
Injuries Involved:					
Occupants Killed	0	0	0	0	0.0
Pedestrians Killed	0	0	0	0	0.0
Occupants Injuried	3	5	15	23	7.7
Pedestrians Injuried	0	0	0	0	0.0
Vehicles Involved:					
Single Vehicle	1	0	0	1	0.3
Two Vehicles	3	6	8	17	5.7
Three or More	0	0	3	3	1.0
Collision Type:					
Unknown	0	0	0	0	0.0
Other	0	0	1	1	0.3
Hit and Run	0	0	0	0	0.0
Rear-end	0	0	4	4	1.3
Sideswipe	0	0	1	1	0.3
Angle	1	4	5	10	3.3
Opposite Direction	1	2	0	3	1.0
Single Vehicle:	2	0	0	2	0.7
Pedestrian	0	0	0	0	
Bicycle	0	0	0	0	
Animal	0	0	0	0	
Fixed Object	1	0	0	1	
Other	1	0	0	1	

The Traffic Group

EXHIBIT 1
3 YEAR CRASH REVIEW SUMMARY (2001 - 2003)
SAM EIG HIGHWAY & DIAMONDBACK DRIVE

	2001	2002	2003	3 Year Total	1 Year Average
Weather:					
Clear/Cloudy	4	6	10	20	6.7
Foggy	0	0	0	0	0.0
Raining	0	0	1	1	0.3
Snow/Sleet	0	0	0	0	0.0
Other	0	0	0	0	0.0
Light:					
Daylight	1	1	4	6	2.0
Dawn/Dusk	0	0	0	0	0.0
Dark (lights on/off)	3	5	7	15	5.0
Other	0	0	0	0	0.0
Surface Condition:					
Dry	4	6	9	19	6.3
Wet	0	0	1	1	0.3
Snow/Sleet	0	0	0	0	0.0
Ice	0	0	1	1	0.3
Other	0	0	0	0	0.0
Time of Day:					
12 MN - 5 AM	1	4	0	5	1.7
AM 6 AM - 9 AM	1	0	1	2	0.7
MD 10 AM - 3 PM	0	0	1	1	0.3
PM 4 PM - 7 PM	2	1	7	10	3.3
8 PM - 11 PM	0	1	2	3	1.0
Unknown	0	0	0	0	0.0
Day of Week:					
Monday	0	1	5	6	2.0
Tuesday	0	1	1	2	0.7
Wednesday	1	1	3	5	1.7
Thursday	0	1	1	2	0.7
Friday	2	2	0	4	1.3
Saturday	0	0	1	1	0.3
Sunday	1	0	0	1	0.3
Time of Year (by quarter):					
1st January - March	1	1	5	7	2.3
2nd April - June	0	1	0	1	0.3
3rd July - September	0	3	2	5	1.7
4th October - December	3	1	4	8	2.7
Number of Accidents	**4**	**6**	**11**	**21**	**7.0**

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EXHIBIT 1
3 YEAR CRASH REVIEW SUMMARY (2001 - 2003)
SAM EIG HIGHWAY & DIAMONDBACK DRIVE

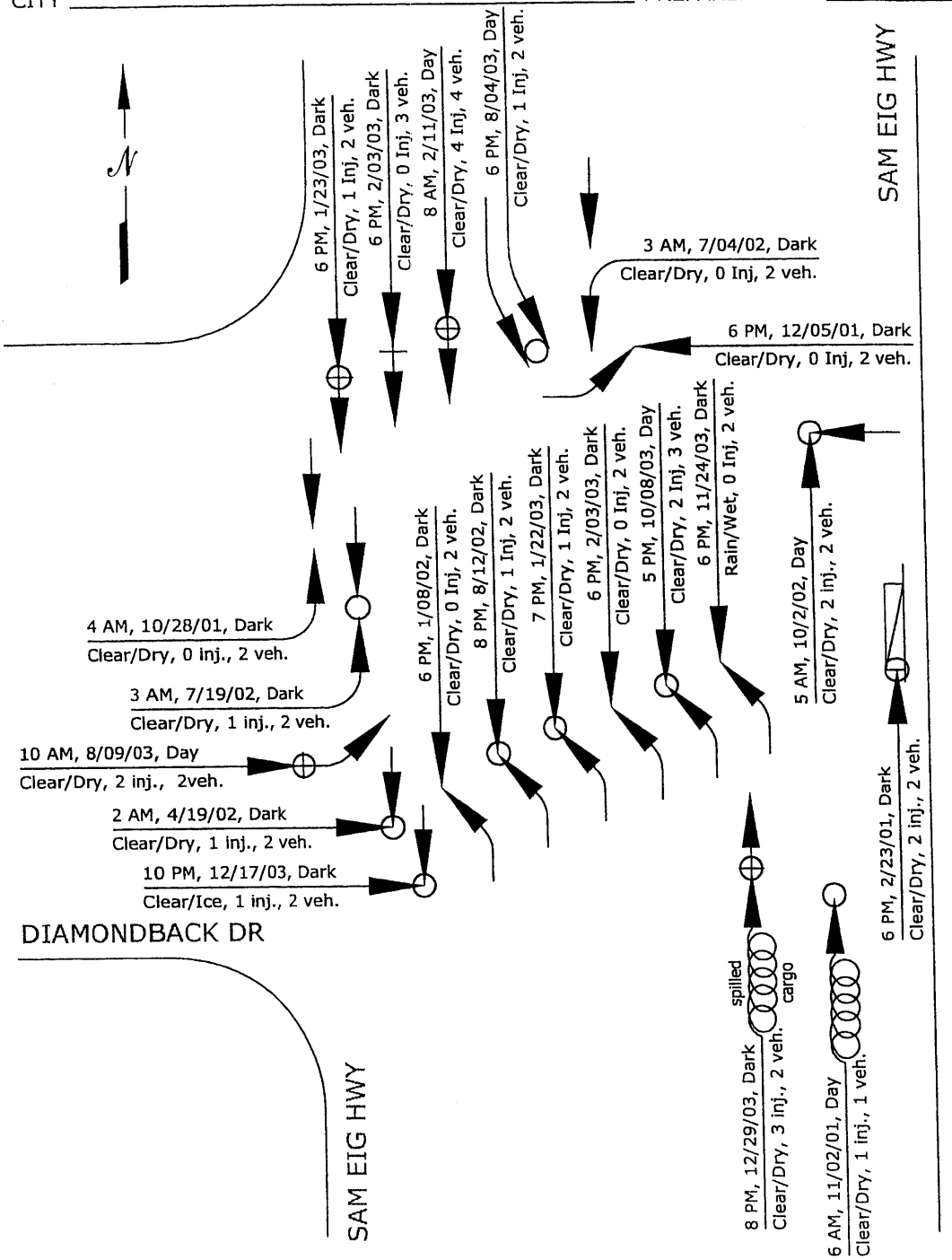
MG, MGRAHAMTEMP\ACCREV.XLS-SUMMARY, 12/03/04

COLLISION DIAGRAM

INTERSECTION SAM EIG HIGHWAY AND DIAMONDBACK DRIVE

PERIOD 3 YEARS FROM 1 JAN. 2001 TO 31 DEC. 2003

CITY MONTGOMERY COUNTY PREPARED BY Mgraham



ACCIDENTS:
2001 - 4
2002 - 6
2003 - 11

The Traffic Group

LEGEND:
- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- PARKED VEHICLE
- FIXED OBJECT
- FATAL ACCIDENT
- INJURY ACCIDENT

EXHIBIT 2
COLLISION DIAGRAM
YEARS 2001 - 2003 (3 YEARS)
SAM EIG HWY & DIAMONDBACK DR

MG, MGRAHAM TEMP\COLLDIAG.DWG-EXIST, 12/03/04

Data Entry

ID#	Report #	LM	Date	DA	TD	IR	AS	OK	PK	OI	PI	W	L	S	#V	V1	V2	CT	FH	SH	FO	D1	D2	M1	M2	L	A	PC	SC	CD1	CD2	MOY
	2003	11																														
1	09038713	0.40	2/11/2003	3	8	3	4	0	0	4	0	1	1	2	4	2	2	3	1	1	0	2	2	1	6	S	3	7	0	1	1	2
2	08483748	0.41	1/22/2003	4	19	2	2	0	0	1	0	1	3	2	2	21	2	2	1	99	0	1	2	12	1	S	2	7	0	1	1	1
3	08483743	0.41	1/23/2003	5	18	3	3	0	0	1	0	1	3	2	2	20	2	3	1	99	0	2	2	3	6	S	1	7	0	1	1	1
4	09724909	0.41	2/3/2003	2	18	2	1	0	0	0	0	1	3	2	2	2	2	2	1	9	5	1	2	12	1	S	1	11	0	1	1	2
5	09724909	0.41	10/8/2003	4	17	2	3	0	0	2	0	1	1	2	3	2	2	2	1	99	0	1	2	12	1	N	L	7	0	1	1	10
6	10060531	0.41	11/24/2003	2	18	2	1	0	0	0	0	3	4	1	2	2	8	2	1	99	0	1	2	12	1	S	2	11	0	1	1	11
7	10060599	0.41	12/17/2003	4	22	2	3	0	0	1	0	1	3	4	2	2	21	11	1	0	0	2	3	3	4	S	2	7	0	1	1	12
8	10059982	0.41	12/29/2003	2	20	2	4	0	0	3	0	1	3	2	2	2	20	88	2	12	0	1	1	1	6	N	2	7	0	1	99	12
9	09769858	0.45	8/4/2003	2	18	3	3	0	0	1	0	1	1	2	2	2	2	10	1	99	4	2	2	13	13	E	1	15	0	1	1	8
10	08483745	0.47	2/3/2003	2	18	3	1	0	0	0	0	1	3	2	3	2	21	3	1	0	0	2	2	3	6	S	2	7	0	1	1	2
	Diamondback Rd																															
11	08475957	0.35	8/9/2003	7	10	3	2	0	0	2	0	1	1	2	2	2	21	3	1	0	0	3	3	1	4	E	L	7	0	1	1	8

	2002	6																													
12	09325443	0.41	1/8/2002	3	18	2	1	0	0	0	0	1	3	2	2	2	2	2	1	99	0	1	2	12	1	S	3	11	0	1	1	1
13	09284148	0.41	4/19/2002	6	2	2	4	0	0	1	0	1	3	2	2	2	2	11	1	9	4	3	2	1	1	S	3	0	0	99	99	4
14	08739365	0.41	7/4/2002	5	3	2	1	0	0	0	0	1	3	2	2	2	2	14	1	0	0	2	4	12	1	N	1	7	0	1	1	7
15	08740153	0.41	7/19/2002	6	3	2	2	0	0	1	0	1	3	2	2	8	2	14	1	99	0	3	2	12	1	S	3	11	0	1	1	7
16	08310197	0.41	8/12/2002	2	20	2	3	0	0	1	0	1	3	2	2	2	2	2	1	1	0	1	2	12	1	S	1	7	0	1	1	8
17	08067808	0.41	10/2/2002	4	5	2	4	0	0	2	0	1	1	2	2	99	20	11	1	0	0	2	4	1	1	W	2	11	0	1	1	10

	2001	4																													
18	7708283	0.41	10/28/2001	1	4	2	1	0	0	0	0	1	3	2	2	2	2	14	1	99	0	3	2	12	1	S	2	7	0	1	1	10
19	8506009	0.41	2/23/2001	6	18	2	2	0	0	2	0	1	3	2	2	8	21	17	2	0	0	1	0	12	10	N	2	11	0	1	1	2
20	8739020	0.41	12/5/2001	4	18	2	1	0	0	0	0	1	3	2	2	8	8	2	1	99	0	3	4	12	1	W	3	7	0	1	1	12
21	9141552	0.41	11/2/2001	6	6	2	2	0	0	1	0	1	1	2	1	2		17	9	99	4	4		1		W	2	7	0	1	0	11

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RECEIVED
DEC 10 2004
PLANNING COMMISSION
GAITHERSBURG, MD

December 8, 2004

North Gaithersburg Investment, LLC
2401 Research Boulevard
Suite 202
Rockville, MD 20850

RE: Crown Farm
Gaithersburg, Maryland;
Possible grade separated interchange at
Sam Eig Highway and Diamondback Drive
Our Job No: 2004-1011

Dear North Gaithersburg Investment, LLC:

The Traffic Group, Inc. has recently completed a Traffic Impact Analysis for the proposed development of the Crown Farm which is located along the west side of Sam Eig Highway just south of its intersection with Fields Road. As part of this Traffic Impact Study, it was requested by the City of Gaithersburg, that the intersection of Sam Eig Highway and Diamondback Drive be evaluated.

The Traffic Impact Analysis that was conducted dated December 8, 2004, indicated that the intersection of Sam Eig Highway and Diamondback Drive was projected to operate at a Level of Service "C" during the morning peak period and a Level of Service "D" during the evening peak period based on the build-out of the developments included in the analysis. This Traffic Impact Analysis took into consideration the development of the Crown Farm, which is planned to consist of 80 townhouse units and two other nearby developments. As part of the background traffic conditions, the traffic projected to be generated by the Washingtonian Center (north and south), which is planned to consist of 1.2 million square feet of office space, and the Rio Waterfront Property, which is an additional 106,000 square feet of commercial space were included in the analysis. When assuming the development of these properties and the Crown Farm, the intersection of Sam Eig Highway and Diamondback Drive is still projected to operate at satisfactory levels of

EXHIBIT #59 X-181 12/10/04 PENGAD-Bayonne, N. J.

EXHIBIT 59 X-181 12/10/04 PENGAD-Bayonne, N. J.

Attachment "K"

service with over 1.3 million square feet of commercial space yet to be developed in this area.

The 1990 Shady Grove Study Area Master Plan suggests a possible grade separated interchange at this location. However, this design was schematic and "illustrative only". The Master Plan further states "...that equivalent at-grade solutions may work and be more appropriate." It is clear from our analysis that the traffic projections that were developed fifteen years ago have not materialized and, based on our analysis and projections, a grade separated interchange is not necessary at this location.

Therefore, based on current information, the at-grade intersection is more than capable of supporting the development planned in this area.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Glenn Cook

Glenn E. Cook
Senior Project Manager

GEC:clg

(F:\2004\2004-1011\wp\North Gaithersburg.DOC)

9 December 2004

Phoenix Noise & Vibration, LLC
930 North East Street, Suite 4
Frederick, Maryland 21701
301.846.4227 (phone)
301.846.4355 (fax)
www.phoenixnv.com

Traffic Noise Analysis
Crown Farm Property
Montgomery County, Maryland

Report #041209

RECEIVED
DEC 10 2004
PLANNING COMMISSION
GAITHERSBURG, MD

For: North Gaithersburg Investment, LLC
By: Scott Harvey, P.E.

PENGAD-Bayonne, N. J.
EXHIBIT
#60
X-181
12/10/04

PENGAD-Bayonne, N. J.
EXHIBIT
60
X-181
12/10/04

Attachment "L"

Engineering Solutions for Sound and Vibration Control

Executive Summary

Phoenix Noise & Vibration has conducted a noise impact analysis on the proposed townhouse development at the Crown Farm Property in Montgomery County, Maryland. This analysis included on-site noise measurements, traffic noise modeling, future traffic noise level analysis, determination of proposed townhome barrier effect and recommendations.

Results indicate that outdoor noise levels in rear yards, most open space, and tot lots will meet Montgomery County Guidelines for residential use. Some buildings will be impacted by traffic noise, however with proper construction techniques, recommended interior noise level requirements can be met.

Noise Regulations

Traffic noise impact for proposed residential developments in Montgomery County is governed by "Staff Guidelines for the Consideration of Transportation Noise Impacts In Land Use Planning and Development", June 1983. Specifically for residential developments, the guidelines are presented in Table 2-1 on page 8, as reprinted here:

Table 2-1
Maximum Levels for Exterior Noise ant the Building Line[1]
For Noise Sensitive Land Uses

Guideline Value	Area of Application
Ldn = 55 dBA	This guideline is suggested as an appropriate goal in permanent rural areas of the County where residential zoning is for five or more acres per dwelling unit and background levels are low enough to allow maintenance of a 55 dBA Level. This guideline is consistent with Federal, State, and County goals for residential areas.
Ldn = 60 dBA	This is the basic residential noise guideline which will be applied in most areas of the County where suburban densities predominate. Maintenance of this level will protect health and substantially prevent activity interference both indoors and outdoors. Noise attenuation measures will be recommended to allow attainment of this level.
Ldn = 65 dBA	This guideline will generally be applied in the urban ring, freeway, and major highway corridor areas, where ambient levels are such that application of a stricter guideline would be infeasible or inequitable. Significant activity interference will occur outdoors and indoors if windows are partially opened, but available evidence indicates hearing is adequately protected. Noise attenuation measures will be strongly recommended to attain this level.

[1] Building line as used here refers to habitable structures only. It does not include garages, sheds, or recreational accessory buildings.

Given the close proximity to Sam Eig Highway for the proposed site and references made to highways and freeways in the guidelines, the 65 dBA Ldn guideline value is chosen as most appropriate for the Crown Farm Development.

Noise Measurements

On November 18 and 19, 2004, Phoenix NV personnel conducted an on-site measurement survey to determine the current levels of traffic noise on the site. This involved continuous noise level measurement and monitoring for one continuous 24-hour period. During that period, 30 minute Leq values were recorded. Leq is the average noise level over some designated time period; in this case that time period is 30 minutes. These measured levels were in turn used to calculate the Day-Night Average Noise Level or Ldn, which is consistent with the County guidelines.

Measurements were made in two locations, designated as "A" and "F", the results of which are provided in the following table:

Noise Measurement Location	Day Night Avg. Noise Level, Ldn
A	63.3 dBA
F	67.3 dBA

The exact locations of the measurement points are shown on the enclosed site plan. These points were determined to be worst-case locations (those areas on the site where noise levels were highest) based upon topography and proposed location of the townhomes. Both points were in roughly the same vertical plane as the roadway and in clear line of site with the roadway. Notice that Point A experiences lower noise levels than Point F. This is due to the presence of a hill to the north of the site which shields Point A from portions of the traffic noise.

Computer Modeling

In order to determine the future noise impact on the property as well as the effects of proposed buildings on the rear yards, the Crown Farm site was computer modeled using the Federal Highway Administration's Traffic Noise Model (TNM). This is a three dimensional model capable of determining traffic noise levels based upon roadway characteristics such as width, grade, and speed, traffic volumes, site topography and ground cover, and distances to the roadway. Information from the site survey, the site plans, as well as WSSC database for roadway's layout and topography, was used to create the computer model.

Calibration Run

A calibration model was first created which produced noise level results that match the actual on site measurements by Phoenix NV. This is referred to as the calibration run. The site was modeled as is with current roadway layout and significant topographical features. The traffic control signal was also modeled in this run to simulate its effect on traffic flow. The results of the calibration run are presented in the following table along with the measured noise levels for comparison.

Noise Measurement Location	Day Night Avg. Noise Level, Ldn	
	Calibration Run Results	On site Measured Results
A	65.1	63.3 dBA
F	67.7	67.3 dBA

While the results at Point A differ by almost 2 dBA, those at Point F are within an acceptable margin and the overall results considered acceptable. Accepting the higher results for Point A simply errs toward a conservative result.

Future Run with and without townhomes

After the creation of the calibration run, a Future Run was created to determine the effects of additional traffic on the Sam Eig Highway and the effects of site grading, roadways and townhomes.

This future run was based upon traffic volume increase factor of 1.32 provided by The Traffic Group. This increase factor is based upon an annual increase of 1.5% over the next 21 years. This increase was applied to current average daily traffic volumes of 36, 226 vehicles per day, as provided by Maryland Department of Transportation, State Highway Administration, in order to determine the future year 2025 noise levels.

Given the orientation of the buildings, the rear yards and outdoor areas will be shielded by the buildings. To determine this shielding effect, the townhomes were modeled as 25 foot high barriers. The model calculates the future noise levels both with and without townhomes in place. Noise levels were calculated at 37 different locations around the site, each designated by lot number, open space area, or a site measurement location.

A graphical representation of the model along with the input and output data for both model runs is presented in the appendix. To see the output at the particular point, see page with header "Results: Sound Levels" for each model run. Note that the relevant sound levels are listed in the "Calculated" column under both "No Barrier" and "With Barrier" headings.

The future modeling results in absence of the townhomes were used to delineate the "unmitigated" noise contours. These contours were determined for both the ground level and upper level conditions and are shown on the enclosed site plan.

Due to the complex nature of delineating noise contours after the presence of buildings on the site, post construction or "mitigated contours" have not been determined. This concept of "mitigated noise contours" is not generally accepted in the noise control industry. However, 37 points on the site have been modeled in strategic locations in order to show the overall effect of the townhomes on the site. These are mostly located in rear yard areas which can be seen in the graphical representation of the model in the appendix. Some locations are in the open space, designated as "OS" and in the tot lot. By comparing the noise level results presented in the table with the layout, one can clearly deduce what the expected noise levels on the site will be after construction of the townhomes.

Results and Recommendations

By reviewing the results, one can clearly see that the proposed townhomes will be impacted by noise levels as high as 68 to 69 dBA Ldn; however rear yard areas will be at or below 62 dBA. Many rear yards will be below 60 dBA. These conditions meet Montgomery County Guidelines for outdoor areas in residential developments.

Regarding impact upon the buildings, a house of standard construction in today's market will reduce noise levels as high as 65 dBA to an interior noise level of 45 dBA without modification. When exterior noise levels rise above 65 dBA it is uncertain whether or not required interior noise levels will be met. In this instance, the recommended noise level is 45 dBA Ldn.

To insure achievement of required interior noise levels, Sound Transmission Class ratings (STC) of building elements should be specified. For rooms with moderate window sizes (20% of exterior surface area or less) the following STC ratings will maintain 45 dBA interior levels for levels up to 68 dBA:

Building Element	STC rating
Walls	39 STC
Windows	28 STC
Doors	28 STC

An exterior wall constructed of 2x4 wood studs, a minimum exterior layer of either ½-inch exterior grade drywall, OSB, or plywood with an interior layer of drywall and 3-½ inches of fiberglass batt in the cavity will achieve a rating of 39 STC.

An exterior wall constructed of 2x4 wood studs, 4-inch brick façade and an interior layer of drywall and 3-½ inches of fiberglass batt in the cavity will achieve a rating of 56 STC.

Properly constructed, a ½ inch insulated window composed of two 1/8-inch panes separated by a ¼-inch air space is capable of achieving a rating of 28 STC. It is strongly recommended that test results from a certified third party laboratory be obtained from prospective suppliers before purchase.

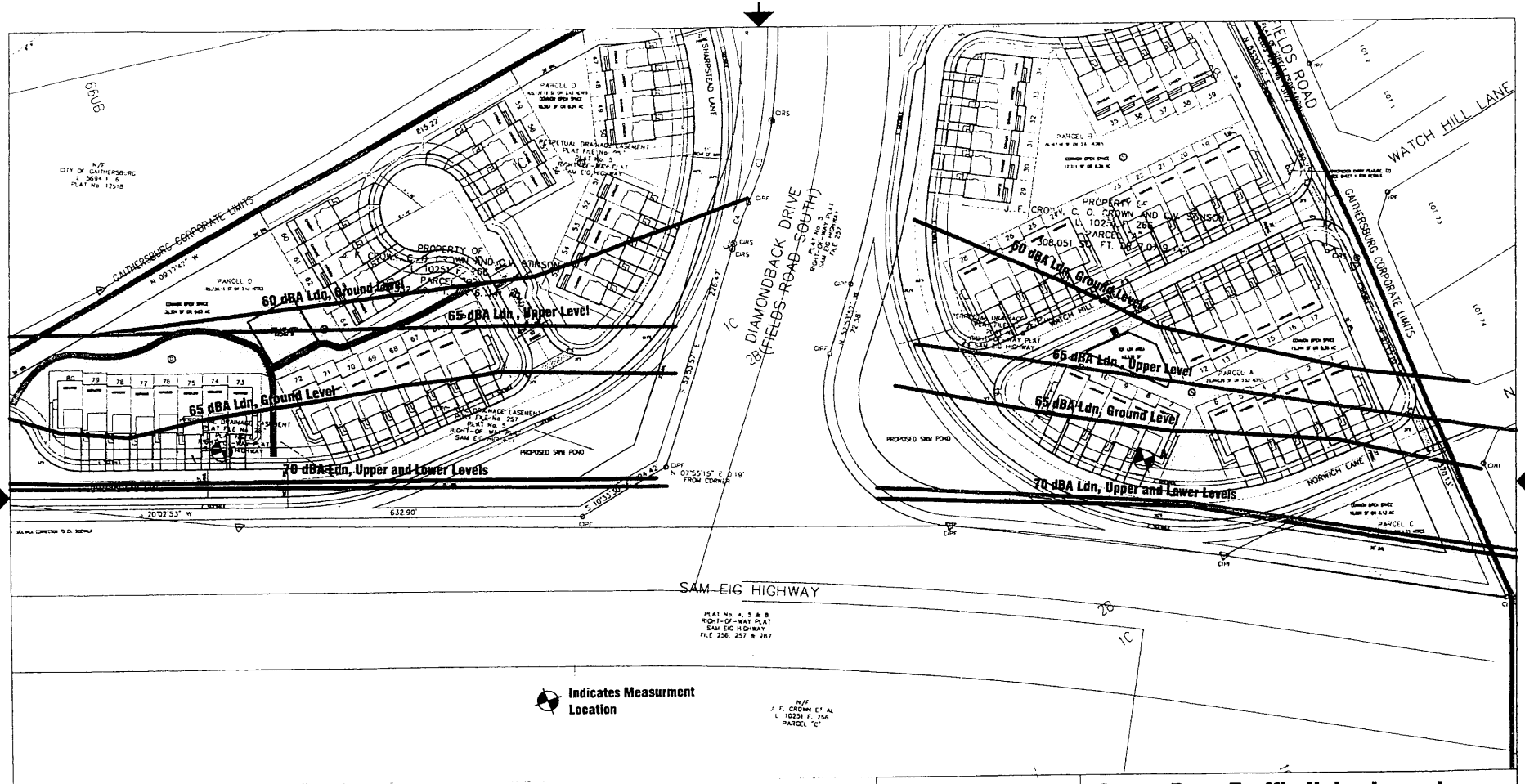
Properly constructed, a standard insulated metal door with a magnetic weather strip is capable of achieving a rating of 28 STC. It is strongly recommended that test results from a certified third party laboratory be obtained from prospective suppliers before purchase.

For units impacted by levels higher than 68 dBA or units with window areas exceeding 20%, it is strongly recommended that a building shell analysis be carried out for the specific units in order to determine the required STC ratings for each building element. If the proposed townhome units have rooms that have windows comprising more than 20% of the exterior façade, a building shell analysis is recommended for the front row of houses along Sam Eig Highway. This will insure achievement of the recommended 45 dBA Ldn interior noise level.

Conclusions

The proposed rear yards, open space, and tot lot areas will meet Montgomery County Guidelines for traffic noise impact. Some townhome units will be impacted by levels as high as 69 dBA. A building shell analysis may be required if the amount of window and door surface areas exceeds 20%.

Appendix



Note: All noise contours are for the pre-construction, year 2025 condition. Upon construction of proposed buildings, noise levels will be reduced significantly, due to barrier effect of buildings. In the post construction condition, all rear yard noise levels will be below 62 dBA Ldn, most will be below 60 dBA Ldn.

Phoenix
Noise & Vibration, LLC
930 North East Street, Suite 4
Frederick, Maryland 21701
301-846-4227

Crown Farm Traffic Noise Impact

Unmitigated Year 2025 Noise Contours

SIZE	FSCM NO.	DWG NO. 1	REV
SCALE NTS	9 December 2004	SHEET	

Traffic Noise Model

Calibration Run

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
A	26	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
F	30	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	2	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Sam Eig NB	36.0	point1	1	1,252,468.0	525,985.0	398.00				Average	
		point2	2	1,252,716.0	526,677.0	400.00				Average	
		point3	3	1,252,772.0	526,834.0	402.00				Average	
		point4	4	1,252,907.0	527,205.0	416.00				Average	
		point5	5	1,252,960.0	527,336.0	422.00				Average	
		point6	6	1,253,056.4	527,544.9	432.00					
Sam Eig SB	36.0	point10	10	1,253,484.0	528,370.0	441.00				Average	
		point11	11	1,253,283.0	528,068.0	441.00				Average	
		point46	46	1,253,143.0	527,837.0	438.00				Average	
		point13	13	1,253,023.8	527,615.2	432.00					
Sam Eig SB-2	36.0	point47	47	1,253,003.4	527,571.8	432.00	Signal	0.00	100	Average	
		point14	14	1,252,905.0	527,360.0	422.00				Average	
		point15	15	1,252,851.0	527,226.0	416.00				Average	
		point16	16	1,252,715.0	526,854.0	402.00				Average	
		point17	17	1,252,660.0	526,697.0	400.00				Average	
		point18	18	1,252,411.0	526,005.0	398.00					
Sam Eig NB-2	36.0	point48	48	1,253,084.5	527,602.3	432.00	Signal	0.00	100	Average	
		point7	7	1,253,196.0	527,807.0	438.00				Average	
		point8	8	1,253,333.0	528,036.0	441.00				Average	
		point9	9	1,253,534.0	528,337.0	441.00					

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

Roadway Name	Points Name	No.	Segment Autos V veh/hr	Autos S mph	MTrucks V veh/hr	MTrucks S mph	HTrucks V veh/hr	HTrucks S mph	Buses V veh/hr	Buses S mph	Motorcycles V veh/hr	Motorcycles S mph
Sam Eig NB	point1	1	1538	45	16	45	16	45	0	0	0	0
	point2	2	1538	45	16	45	16	45	0	0	0	0
	point3	3	1538	45	16	45	16	45	0	0	0	0
	point4	4	1538	45	16	45	16	45	0	0	0	0
	point5	5	1538	45	16	45	16	45	0	0	0	0
	point6	6										
Sam Eig SB	point10	10	1538	45	16	45	16	45	0	0	0	0
	point11	11	1538	45	16	45	16	45	0	0	0	0
	point46	46	1538	45	16	45	16	45	0	0	0	0
	point13	13										
Sam Eig SB-2	point47	47	1538	45	16	45	16	45	0	0	0	0
	point14	14	1538	45	16	45	16	45	0	0	0	0
	point15	15	1538	45	16	45	16	45	0	0	0	0
	point16	16	1538	45	16	45	16	45	0	0	0	0
	point17	17	1538	45	16	45	16	45	0	0	0	0
	point18	18										
Sam Eig NB-2	point48	48	1538	45	16	45	16	45	0	0	0	0
	point7	7	1538	45	16	45	16	45	0	0	0	0
	point8	8	1538	45	16	45	16	45	0	0	0	0
	point9	9										

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
A	26	1	1,252,930.0	527,714.0	436.00	4.92	0.00	66	10.0	8.0	Y
F	30	1	1,252,606.0	526,870.0	409.50	4.92	0.00	66	10.0	8.0	Y

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,252,495.0	526,747.0	413.00	25.00	0.00	0	0		
									point2	2	1,252,539.0	526,731.0	413.00	25.00	0.00	0	0		
									point3	3	1,252,591.0	526,867.0	412.00	25.00	0.00	0	0		
									point4	4	1,252,547.0	526,884.0	412.00	25.00					
Barrier2	W	0.00	99.99	0.00				0.00	point5	5	1,252,578.0	526,973.0	411.00	25.00	0.00	0	0		
									point6	6	1,252,626.0	526,976.0	411.00	25.00	0.00	0	0		
									point7	7	1,252,629.0	527,073.0	412.00	25.00	0.00	0	0		
									point8	8	1,252,583.0	527,070.0	412.00	25.00					
Barrier3	W	0.00	99.99	0.00				0.00	point9	9	1,252,592.0	527,102.0	412.00	25.00	0.00	0	0		
									point10	10	1,252,627.0	527,105.0	412.00	25.00	0.00	0	0		
									point11	11	1,252,619.0	527,201.0	413.00	25.00	0.00	0	0		
									point12	12	1,252,581.0	527,199.0	413.00	25.00					
Barrier4	W	0.00	99.99	0.00				0.00	point13	13	1,252,562.0	527,269.0	416.75	25.00	0.00	0	0		
									point14	14	1,252,588.0	527,298.0	416.75	25.00	0.00	0	0		
									point15	15	1,252,518.0	527,364.0	422.75	25.00	0.00	0	0		
									point16	16	1,252,492.0	527,335.0	422.75	25.00					
Barrier5	W	0.00	99.99	0.00				0.00	point17	17	1,252,698.0	527,614.0	426.00	25.00	0.00	0	0		
									point18	18	1,252,745.0	527,617.0	426.00	25.00	0.00	0	0		
									point19	19	1,252,734.0	527,738.0	431.00	25.00	0.00	0	0		
									point20	20	1,252,687.0	527,734.0	431.00	25.00					

Phoenix Noise & Vibration
SBH

30 November 2004
TNM 2.5

INPUT: TERRAIN LINES
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

Terrain Line Name	Points No.	Coordinates (ground) X ft	Y ft	Z ft
Terrain Line1	1	1,252,906.0	527,761.0	440.00
	2	1,252,997.0	527,701.0	440.00
	3	1,253,027.0	527,739.0	440.00
	4	1,253,112.0	527,878.0	440.00
Terrain Line2	5	1,252,912.0	527,866.0	448.00
	6	1,253,037.0	527,784.0	448.00
	7	1,253,159.0	527,991.0	448.00
	8	1,253,150.0	527,997.0	448.00
	9	1,253,123.0	527,979.0	448.00
Terrain Line3	11	1,253,042.0	527,859.0	450.00
	12	1,253,057.0	527,827.0	450.00
	13	1,253,100.0	527,897.0	450.00
	14	1,253,067.0	527,901.0	450.00

Phoenix Noise & Vibration
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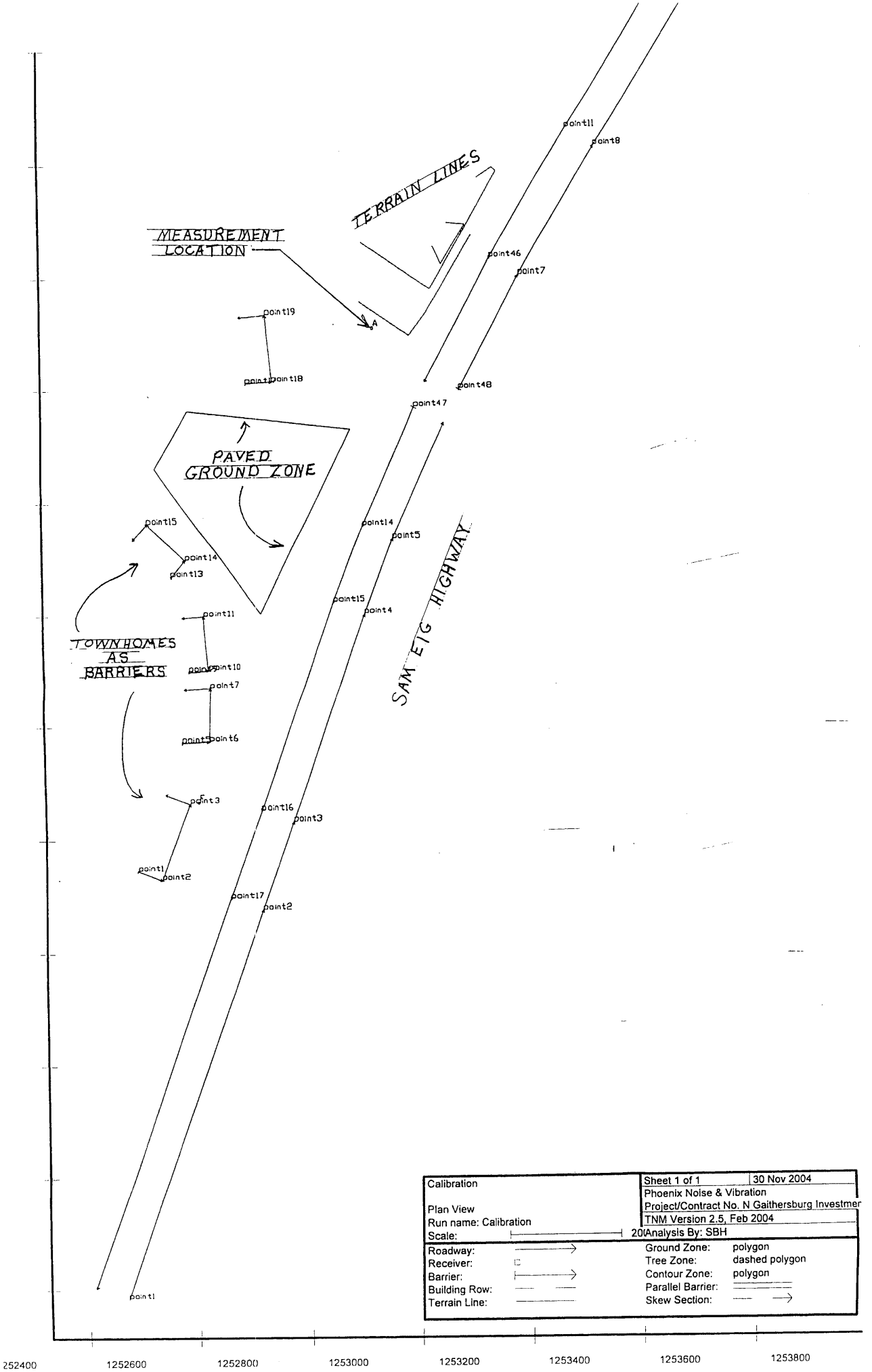
30 November 2004
TNM 2.5

INPUT: GROUND ZONES
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Calibration

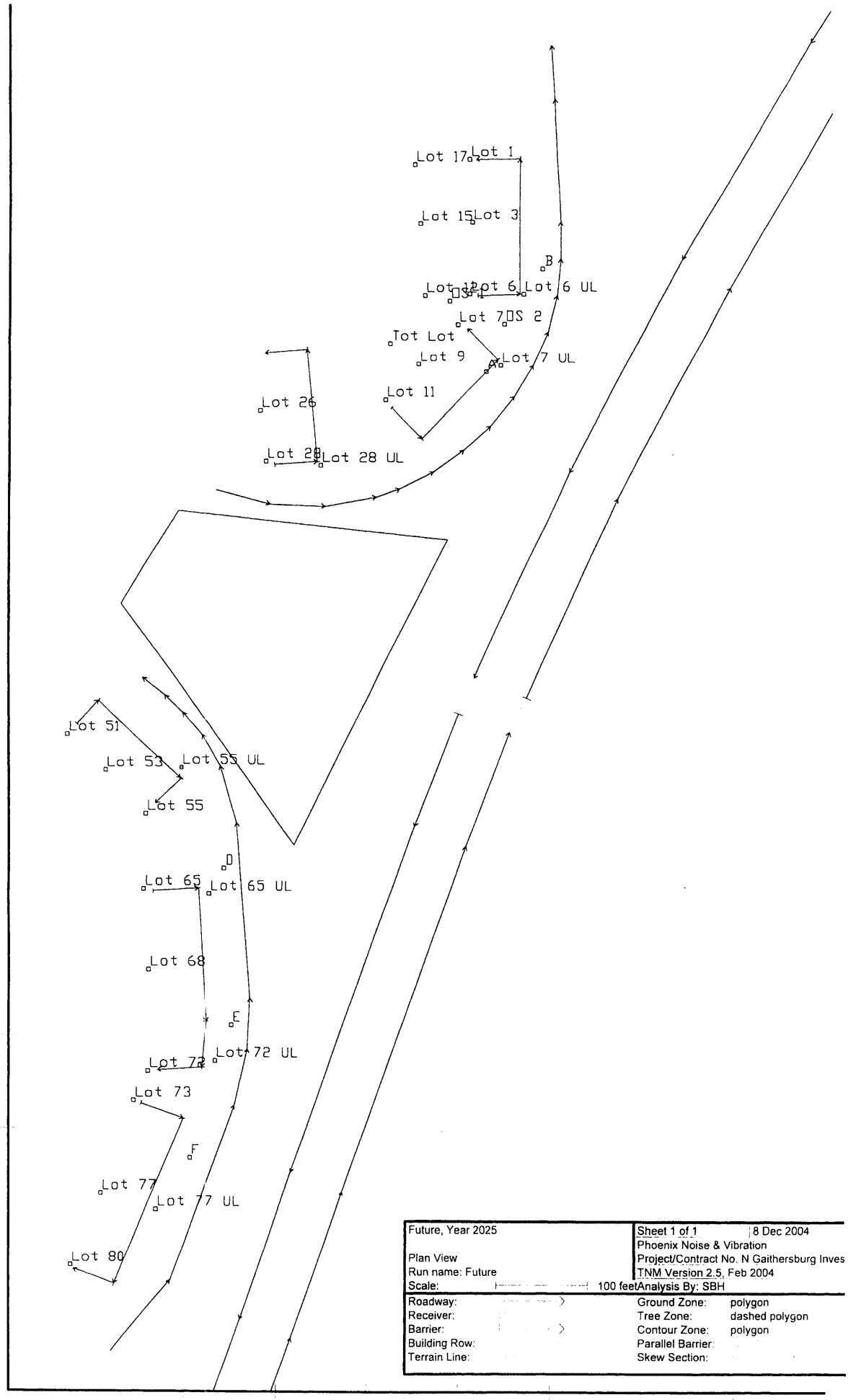
Ground Zone Name	Type	Flow Resistivity cgs rayls	Points No.	Coordinates X ft	Y ft
Ground Zone1	Pavement	20000	1	1,252,886.5	527,534.2
			2	1,252,719.5	527,205.6
			3	1,252,534.4	527,463.8
			4	1,252,594.4	527,565.5

Traffic Noise Model

Future Run



Calibration		Sheet 1 of 1	30 Nov 2004
		Phoenix Noise & Vibration	
Plan View		Project/Contract No. N Gaithersburg Investmer	
Run name: Calibration		TNM Version 2.5, Feb 2004	
Scale:	20	Analysis By: SBH	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	



Future, Year 2025		Sheet 1 of 1	8 Dec 2004
		Phoenix Noise & Vibration	
Plan View		Project/Contract No. N Gaithersburg Inves	
Run name: Future		TNM Version 2.5, Feb 2004	
Scale:	100 feet	Analysis By: SBH	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Phoenix Noise & Vibration
SBH

8 December 2004
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Lot 80	1	1	0.0	62.4	66	62.4	10	----	57.3	5.1	8	-2.9
Lot 77	2	1	0.0	61.8	66	61.8	10	----	50.0	11.8	8	3.8
Lot 73	3	1	0.0	63.6	66	63.6	10	----	60.4	3.2	8	-4.8
Lot 72	4	1	0.0	63.9	66	63.9	10	----	60.2	3.7	8	-4.3
Lot 68	5	1	0.0	62.4	66	62.4	10	----	50.1	12.3	8	4.3
Lot 65	6	1	0.0	61.3	66	61.3	10	----	59.1	2.2	8	-5.8
Lot 55	7	1	0.0	61.4	66	61.4	10	----	61.0	0.4	8	-7.6
Lot 53	8	1	0.0	56.4	66	56.4	10	----	51.9	4.5	8	-3.5
Lot 51	9	1	0.0	54.4	66	54.4	10	----	50.0	4.4	8	-3.6
Lot 28	12	1	0.0	60.8	66	60.8	10	----	59.4	1.4	8	-6.6
Lot 26	13	1	0.0	59.4	66	59.4	10	----	52.6	6.8	8	-1.2
Lot 11	14	1	0.0	63.3	66	63.3	10	----	60.4	2.9	8	-5.1
Lot 9	15	1	0.0	62.8	66	62.8	10	----	50.4	12.4	8	4.4
Lot 7	16	1	0.0	63.6	66	63.6	10	----	57.7	5.9	8	-2.1
Lot 6	17	1	0.0	65.4	66	65.4	10	----	61.7	3.7	8	-4.3
Lot 3	18	1	0.0	63.5	66	63.5	10	----	50.2	13.3	8	5.3
Lot 1	19	1	0.0	61.2	66	61.2	10	----	54.5	6.7	8	-1.3
Lot 17	20	1	0.0	57.4	66	57.4	10	----	53.3	4.1	8	-3.9
Lot 15	21	1	0.0	59.0	66	59.0	10	----	53.3	5.7	8	-2.3
Tot Lot	22	1	0.0	60.9	66	60.9	10	----	54.4	6.5	8	-1.5
OS 1	23	1	0.0	62.5	66	62.5	10	----	58.9	3.6	8	-4.4
OS 2	24	1	0.0	66.9	66	66.9	10	Snd Lvl	66.8	0.1	8	-7.9
Lot 12	25	1	0.0	61.2	66	61.2	10	----	56.4	4.8	8	-3.2

RESULTS: SOUND LEVELS

A	26	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
B	27	1	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	8	-8.0
D	28	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
E	29	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
F	30	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Lot 6 UL	32	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
Lot 7 UL	33	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
Lot 28 UL	34	1	0.0	65.4	66	65.4	10	----	64.5	0.9	8	-7.1
Lot 65 UL	35	1	0.0	66.9	66	66.9	10	Snd Lvl	66.7	0.2	8	-7.8
Lot 72 UL	36	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
Lot 55 UL	37	1	0.0	65.2	66	65.2	10	----	65.0	0.2	8	-7.8
Lot 77 UL	38	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	35	0.0	3.6	13.3
All Impacted	10	0.0	0.0	0.2
All that meet NR Goal	4	11.8	12.4	13.3

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INPUT: ROADWAYS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Sam Eig NB	36.0	point1	1	1,252,468.0	525,985.0	398.00				Average	
		point2	2	1,252,716.0	526,677.0	400.00				Average	
		point3	3	1,252,772.0	526,834.0	402.00				Average	
		point4	4	1,252,907.0	527,205.0	416.00				Average	
		point5	5	1,252,955.1	527,326.3	422.00					
Sam Eig SB	36.0	point10	10	1,253,484.0	528,370.0	441.00				Average	
		point11	11	1,253,283.0	528,068.0	441.00				Average	
		point12	12	1,253,143.0	527,837.0	438.00				Average	
		point13	13	1,253,020.0	527,607.0	432.00				Average	
		point14	14	1,252,915.9	527,384.3	422.00					
Norwich Lane	24.0	point19	19	1,252,634.0	527,586.9	424.00				Average	
		point20	20	1,252,693.1	527,572.3	423.00				Average	
		point21	21	1,252,753.5	527,570.3	424.00				Average	
		point22	22	1,252,809.2	527,580.1	424.00				Average	
		point23	23	1,252,835.0	527,589.4	424.00				Average	
		point24	24	1,252,871.8	527,607.2	426.00				Average	
		point25	25	1,252,905.4	527,630.0	428.00				Average	
		point26	26	1,252,934.6	527,656.3	430.00				Average	
		point27	27	1,252,960.6	527,687.9	432.00				Average	
		point28	28	1,252,981.2	527,721.9	434.00				Average	
		point29	29	1,252,996.9	527,758.9	436.00				Average	
		point30	30	1,253,006.8	527,797.5	438.00				Average	
		point31	31	1,253,011.1	527,836.6	440.00				Average	
		point32	32	1,253,010.8	527,876.3	442.00				Average	
		point33	33	1,253,004.0	528,007.0	448.00				Average	

		point34	34	1,253,000.0	528,063.0	448.00				
Sharpstead Lane	24.0	point35	35	1,252,522.0	526,662.4	410.00				Average
		point36	36	1,252,585.5	526,739.2	410.00				Average
		point37	37	1,252,653.9	526,926.5	408.00				Average
		point38	38	1,252,668.6	526,986.3	408.00				Average
		point39	39	1,252,671.8	527,041.2	408.00				Average
		point40	40	1,252,657.9	527,229.4	410.00				Average
		point41	41	1,252,639.8	527,289.1	412.00				Average
		point42	42	1,252,619.9	527,323.0	414.00				Average
		point43	43	1,252,599.5	527,346.3	416.00				Average
		point44	44	1,252,580.2	527,365.5	418.00				Average
		point45	45	1,252,557.5	527,383.6	420.00				
Sam Eig SB-2	36.0	point46	46	1,252,898.9	527,346.7	422.00	Signal	0.00	100	Average
		point15	15	1,252,851.0	527,226.0	416.00				Average
		point16	16	1,252,715.0	526,854.0	402.00				Average
		point17	17	1,252,660.0	526,697.0	400.00				Average
		point18	18	1,252,411.0	526,005.0	398.00				
Sam Eig NB-2	36.0	point47	47	1,252,973.4	527,363.9	422.00	Signal	0.00	100	Average
		point6	6	1,253,073.0	527,580.0	432.00				Average
		point7	7	1,253,196.0	527,807.0	438.00				Average
		point8	8	1,253,333.0	528,036.0	441.00				Average
		point9	9	1,253,534.0	528,337.0	441.00				

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INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Roadway Name	Points Name	No.	Segment Autos V veh/hr	Autos S mph	MTrucks V veh/hr	MTrucks S mph	HTrucks V veh/hr	HTrucks S mph	Buses V veh/hr	Buses S mph	Motorcycles V veh/hr	Motorcycles S mph
Sam Eig NB	point1	1	2023	45	21	45	21	45	0	0	0	0
	point2	2	2023	45	21	45	21	45	0	0	0	0
	point3	3	2023	45	21	45	21	45	0	0	0	0
	point4	4	2023	45	21	45	21	45	0	0	0	0
	point5	5										
Sam Eig SB	point10	10	2023	45	21	45	21	45	0	0	0	0
	point11	11	2023	45	21	45	21	45	0	0	0	0
	point12	12	2023	45	21	45	21	45	0	0	0	0
	point13	13	2023	45	21	45	21	45	0	0	0	0
	point14	14										
Norwich Lane	point19	19	0	0	0	0	0	0	0	0	0	0
	point20	20	0	0	0	0	0	0	0	0	0	0
	point21	21	0	0	0	0	0	0	0	0	0	0
	point22	22	0	0	0	0	0	0	0	0	0	0
	point23	23	0	0	0	0	0	0	0	0	0	0
	point24	24	0	0	0	0	0	0	0	0	0	0
	point25	25	0	0	0	0	0	0	0	0	0	0
	point26	26	0	0	0	0	0	0	0	0	0	0
	point27	27	0	0	0	0	0	0	0	0	0	0
	point28	28	0	0	0	0	0	0	0	0	0	0
	point29	29	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0

	point31	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	point33	33	0	0	0	0	0	0	0	0	0	0
	point34	34										
Sharpstead Lane	point35	35	0	0	0	0	0	0	0	0	0	0
	point36	36	0	0	0	0	0	0	0	0	0	0
	point37	37	0	0	0	0	0	0	0	0	0	0
	point38	38	0	0	0	0	0	0	0	0	0	0
	point39	39	0	0	0	0	0	0	0	0	0	0
	point40	40	0	0	0	0	0	0	0	0	0	0
	point41	41	0	0	0	0	0	0	0	0	0	0
	point42	42	0	0	0	0	0	0	0	0	0	0
	point43	43	0	0	0	0	0	0	0	0	0	0
	point44	44	0	0	0	0	0	0	0	0	0	0
	point45	45										
Sam Eig SB-2	point46	46	2023	45	21	45	21	45	0	0	0	0
	point15	15	2023	45	21	45	21	45	0	0	0	0
	point16	16	2023	45	21	45	21	45	0	0	0	0
	point17	17	2023	45	21	45	21	45	0	0	0	0
	point18	18										
Sam Eig NB-2	point47	47	2023	45	21	45	21	45	0	0	0	0
	point6	6	2023	45	21	45	21	45	0	0	0	0
	point7	7	2023	45	21	45	21	45	0	0	0	0
	point8	8	2023	45	21	45	21	45	0	0	0	0
	point9	9										

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INPUT: RECEIVERS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Lot 80	1	1	1,252,478.2	526,755.6	412.50	4.92	0.00	66	10.0	8.0	
Lot 77	2	1	1,252,510.6	526,831.7	411.00	4.92	0.00	66	10.0	8.0	
Lot 73	3	1	1,252,547.0	526,931.5	411.50	4.92	0.00	66	10.0	8.0	
Lot 72	4	1	1,252,562.5	526,963.3	410.50	4.92	0.00	66	10.0	8.0	
Lot 68	5	1	1,252,562.8	527,071.0	410.50	4.92	0.00	66	10.0	8.0	
Lot 65	6	1	1,252,558.0	527,158.4	410.50	4.92	0.00	66	10.0	8.0	
Lot 55	7	1	1,252,560.2	527,238.2	411.00	4.92	0.00	66	10.0	8.0	Y
Lot 53	8	1	1,252,517.5	527,284.4	411.50	4.92	0.00	66	10.0	8.0	Y
Lot 51	9	1	1,252,475.0	527,322.8	412.00	4.92	0.00	66	10.0	8.0	
Lot 28	12	1	1,252,688.2	527,617.1	425.00	4.92	0.00	66	10.0	8.0	
Lot 26	13	1	1,252,682.9	527,671.7	427.00	4.92	0.00	66	10.0	8.0	
Lot 11	14	1	1,252,819.2	527,683.8	429.00	4.92	0.00	66	10.0	8.0	
Lot 9	15	1	1,252,855.6	527,722.3	430.00	4.92	0.00	66	10.0	8.0	
Lot 7	16	1	1,252,898.6	527,765.1	433.00	4.92	0.00	66	10.0	8.0	
Lot 6	17	1	1,252,912.2	527,798.8	440.50	4.92	0.00	66	10.0	8.0	
Lot 3	18	1	1,252,914.9	527,875.1	444.50	4.92	0.00	66	10.0	8.0	
Lot 1	19	1	1,252,911.9	527,941.6	445.80	4.92	0.00	66	10.0	8.0	
Lot 17	20	1	1,252,851.8	527,936.3	439.00	4.92	0.00	66	10.0	8.0	
Lot 15	21	1	1,252,857.4	527,872.4	437.00	4.92	0.00	66	10.0	8.0	
Tot Lot	22	1	1,252,824.2	527,744.8	429.00	4.92	0.00	66	10.0	8.0	
OS 1	23	1	1,252,890.2	527,791.0	434.00	4.92	0.00	66	10.0	8.0	
OS 2	24	1	1,252,949.6	527,766.7	436.00	4.92	0.00	66	10.0	8.0	

Lot 12	25	1	1,252,863.0	527,797.0	433.00	4.92	0.00	66	10.0	8.0	
A	26	1	1,252,930.0	527,714.0	436.00	4.92	0.00	66	10.0	8.0	
B	27	1	1,252,991.0	527,826.0	448.00	4.92	0.00	66	10.0	8.0	
D	28	1	1,252,643.0	527,180.0	410.00	4.92	0.00	66	10.0	8.0	
E	29	1	1,252,651.0	527,012.0	408.50	4.92	0.00	66	10.0	8.0	
F	30	1	1,252,606.0	526,870.0	409.50	4.92	0.00	66	10.0	8.0	Y
Lot 6 UL	32	1	1,252,970.8	527,798.7	440.50	25.00	0.00	66	10.0	8.0	Y
Lot 7 UL	33	1	1,252,946.2	527,721.9	433.00	25.00	0.00	66	10.0	8.0	Y
Lot 28 UL	34	1	1,252,748.9	527,612.9	425.00	25.00	0.00	66	10.0	8.0	Y
Lot 65 UL	35	1	1,252,627.0	527,153.4	411.00	25.00	0.00	66	10.0	8.0	Y
Lot 72 UL	36	1	1,252,633.2	526,974.0	410.50	25.00	0.00	66	10.0	8.0	Y
Lot 55 UL	37	1	1,252,597.8	527,287.6	416.00	25.00	0.00	66	10.0	8.0	Y
Lot 77 UL	38	1	1,252,569.9	526,814.8	411.00	25.00	0.00	66	10.0	8.0	Y

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INPUT: BARRIERS
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier5	W	0.00	99.99	0.00				0.00	point17	17	1,252,698.0	527,614.0	426.00	25.00	1.00	1	0		
									point18	18	1,252,745.0	527,617.0	426.00	25.00	1.00	1	0		
									point19	19	1,252,734.0	527,738.0	431.00	25.00	1.00	1	0		
									point20	20	1,252,687.0	527,734.0	431.00	25.00					
Barrier6	W	0.00	99.99	0.00				0.00	point21	21	1,252,826.0	527,675.0	429.00	25.00	1.00	1	0		
									point22	22	1,252,859.0	527,642.0	429.00	25.00	1.00	1	0		
									point23	23	1,252,943.0	527,728.0	434.00	25.00	1.00	1	0		
									point24	24	1,252,909.0	527,762.0	434.00	25.00					
Barrier7	W	0.00	99.99	0.00				0.00	point25	25	1,252,921.0	527,797.0	441.00	25.00	1.00	1	0		
									point26	26	1,252,967.0	527,799.0	441.00	25.00	1.00	1	0		
									point27	27	1,252,967.0	527,943.0	446.50	25.00	1.00	1	0		
									point28	28	1,252,919.0	527,942.0	446.50	25.00					
Barrier8	W	0.00	99.99	0.00				0.00	point29	29	1,252,555.0	526,929.0	412.00	25.00	1.00	1	0		
									point30	30	1,252,599.0	526,913.0	412.00	25.00	1.00	1	0		
									point31	31	1,252,526.0	526,735.0	413.00	25.00	1.00	1	0		
									point32	32	1,252,481.0	526,751.0	413.00	25.00					
Barrier9	W	0.00	99.99	0.00				0.00	point33	33	1,252,568.0	527,156.0	412.50	25.00	1.00	1	0		
									point34	34	1,252,616.0	527,159.0	412.50	25.00	1.00	1	0		
									point35	35	1,252,624.0	527,016.0	411.50	25.00	1.00	1	0		
									point36	36	1,252,619.0	526,967.0	411.00	25.00	1.00	1	0		
									point37	37	1,252,572.0	526,964.0	411.00	25.00					
Barrier10	W	0.00	99.99	0.00				0.00	point38	38	1,252,485.0	527,334.0	422.75	25.00	1.00	1	0		
									point39	39	1,252,509.0	527,360.0	422.75	25.00	1.00	1	0		
									point40	40	1,252,597.0	527,276.0	418.00	25.00	1.00	1	0		
									point41	41	1,252,570.0	527,249.0	418.00	25.00					

INPUT: GROUND ZONES

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INPUT: GROUND ZONES
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Ground Zone Name	Type	Flow Resistivity cgs rayls	Points No.	Coordinates X ft	Y ft
Ground Zone1	Pavement	20000	1	1,252,886.5	527,534.2
			2	1,252,719.5	527,205.6
			3	1,252,534.4	527,463.8
			4	1,252,594.4	527,565.5

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INPUT: CONTOUR ZONES
PROJECT/CONTRACT: N Gaithersburg Investment: Crown Farm
RUN: Future, Year 2025

Contour Zone Name	Grid Height	Minimum Grid Spacing	Contour Tolerance	Points No.	Coordinates X	Y
	ft	ft	dB		ft	ft
Contour Zone2	25.00	200.00	1	1	1,253,268.1	528,130.9
				2	1,253,072.4	527,804.8
				3	1,252,927.2	527,542.9
				4	1,252,454.5	527,589.1
				5	1,252,874.4	528,218.9
Contour Zone3	25.00	200.00	1	6	1,252,508.0	527,490.3
				7	1,252,775.9	527,110.6
				8	1,252,560.5	526,570.4
				9	1,252,303.0	526,747.8