Aldridge Transportation Consultants, LLC

Advanced Transportation Planning and Traffic Engineering

John M.W. Aldridge, PE
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April 7, 2022

Mr. Matt Jenkins
Richmond American Homes
4350 S. Monaco Street,
Denver, CO 80237

Re: Transportation Impact Study - Revised
Haven Valley – Security-Widefield, Colorado

Dear Mr. Jenkins:

Aldridge Transportation Consultants (ATC) is pleased to present this Traffic Impact Study regarding the proposed development of Haven Valley in Security-Widefield.

ATC is professional service firm specializing in traffic engineering and transportation planning. ATC's principal, John M.W. Aldridge, is a Colorado licensed professional engineer. In the past 20 years, ATC has prepared over 1,000 traffic impact studies, designed over 100 traffic signals, and has provided expert witness testimony on engineering design and access issues on multi-million dollar interchange and highway projects in Kansas and Colorado.

ATC appreciates the opportunity to be of service. Please call if you have any questions. We can be reached at 303-703-9112.

Respectfully submitted,
Aldridge Transportation Consultants, LLC

John M.W. Aldridge, P.E.
Principal

Signature Page

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

Aldridge Transportation Consultants, LLC

John M.W. Aldridge, P.E.
Principal

I, Jason J.W. Pock, Director of Entitlements for Richmond American Homes, have read and will comply with all the commitments made on my behalf within this report.

_____

Signature and date

Mr. Jason J.W. Pock
Director of Entitlements
Richmond American Homes
4350 S. Monaco Street,
Denver, CO 80237

1. PROJECT DESCRIPTION

Richmond American Homes is proposing to construct 98 single family homes on the south side of Cable Lane and Alturas Dr. in Security-Widefield, Colorado. Figure 1 below shows the location of the site, site plan, and the adjacent streets and intersections. Note that the lot layout and lot count shown is up to date at the writing of this study. It is subject to change as planning and development moves forward. This project was originally studied in 2006 (coincidentally April 7, 2006, to be exact) by Pentacor Engineering. The project was then known as Patriot Village, and it presented development of 106 duplex/townhomes.

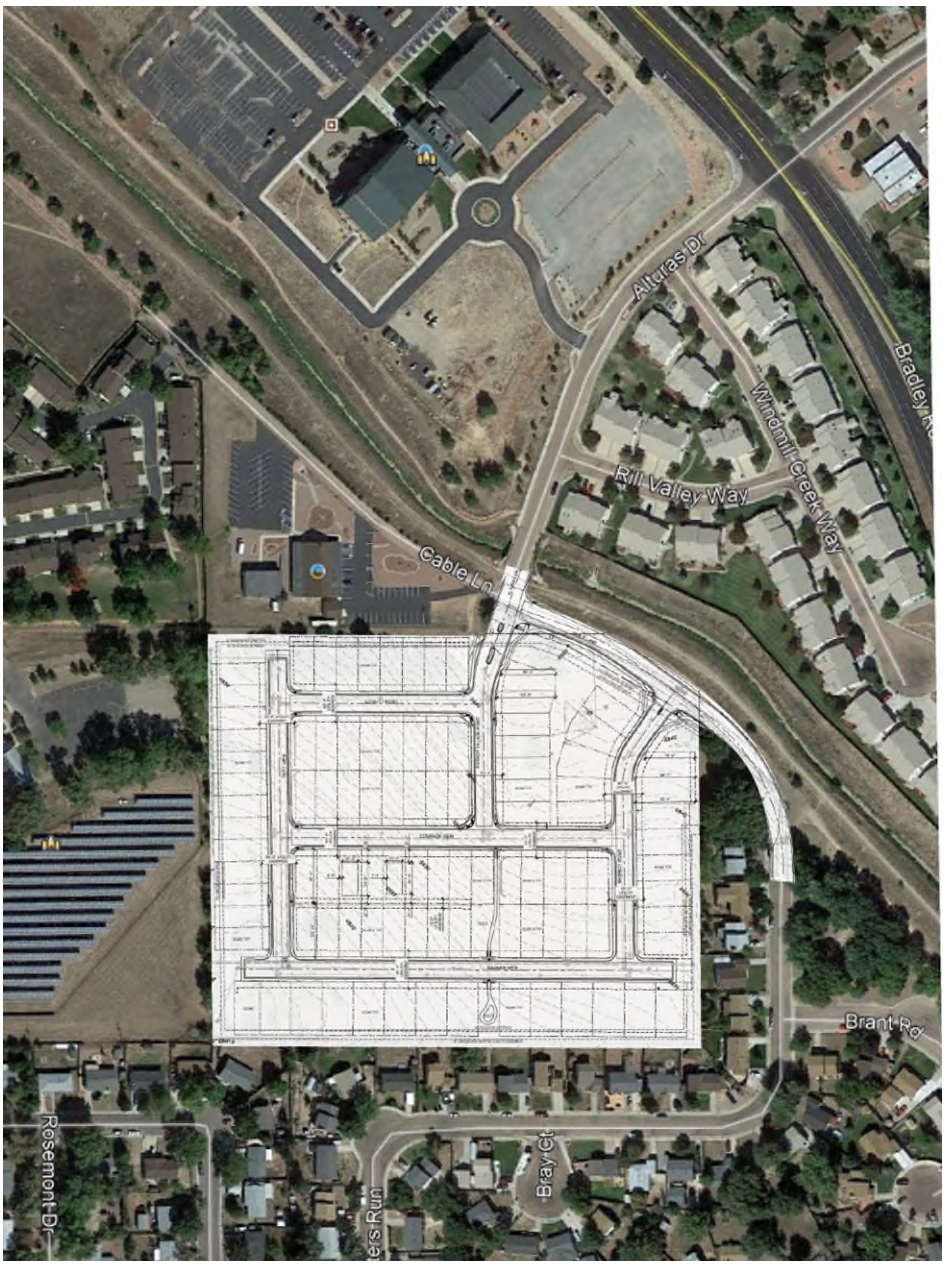


Figure 1

The 2006 study projected 690 average daily trips with 54 in/out AM trips and 63 in/out PM trips. This project with 98 single family attached homes will generate a comparable 706 average daily trips with 47 in/out AM trips and 57 in/out PM trips which is slightly less than the 2006 study. The LOS and operational analyses is also very similar however difficult to compare as the HCM procedures and methodology have improved vastly since 2006. The Pentacor study is attached for reference.

2. GENERAL EXISTING CONDITIONS

The site will be primarily accessed by the Bradley Road and Alturas Dr. intersection. Bradley Road is a four-lane Principal Arterial. It carries approximately 12,000 ADT and is posted at 40 mph. There are sections of attached sidewalk and no bike lanes. Alturas Dr. is a low volume Collector Street. It carries under 400 ADT and is posted at 25 mph. It has attached sidewalk on both sides of the street. Cable Lane is a two-lane narrow paved Local Street that carries very little traffic likely less than 200 ADT. The estimate is based on the Alturas Dr. ADT at the Bradley Road intersection minus the traffic volume accessing the residential development on Windmill Creek Way and Rill Valley Way.

The intersection of Bradley Road and Alturas Dr. is two-way stop-sign controlled. It features a 300-foot westbound left turn deceleration lane and 200-foot eastbound left and right turn deceleration lanes. The Alturas Dr. northbound approach consists of a shared through and left turn lane and an exclusive right turn lane. The southbound approach is a single lane and all movements are shared.

The intersection of Hancock Expressway and Bradley Road was not analyzed as it is a fully developed traffic signal-controlled intersection which would not be impacted by more than a 5 percent increase on the westbound approach leg by the traffic generated by Haven Valley.

The AM and PM peak hours at the intersection of Bradley Road and Alturas Dr. were counted on Tuesday, March 9, 2021, by All Traffic Data. The impact of Covid pandemic restrictions were most felt in March and April 2020. By this time a year later traffic has returned to "normal" or per the ITE publication ***"What a Transportation Professional Needs to Know About Counts and Studies during a Pandemic"*** traffic volumes have established a "new" normal. The counts are attached.

3. DEVELOPMENT SITE CHARACTERISTICS

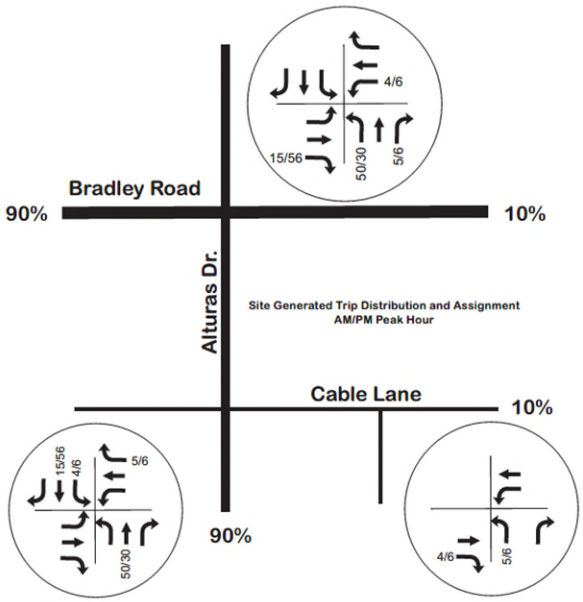
The trip generation for the residential development is defined in Table 1. It is based on the rates and values found in the ***ITE Trip Generation Manual, 11th Edition*** for Category Single-Family Attached ITE Code 215. The ATD and AM/PM Peak Hour site generation is shown in Table 1. There are no fixed route transit options in this area. The site trip generated ADT is 706 qualifying this study as "intermediate."

Table 1

					Weekday					
					AM			PM		
ITE Code	Land Use	Unit	Quantity	ADT	In	Out	Total	In	Out	Total
210	Single Family	DU	98	*7.20*	*0.15*	*0.33*		*0.33*	*0.25*	
				706	**15**	**32**	**47**	**32**	**25**	**57**
Total Trips				**706**	**15**	**32**	**47**	**32**	**25**	**57**

The previous submitted report indicated 9.44 ADT per single family dwelling unit. Please revise back to the 9.44 ADT average rate per ITE manual.

The PM peak hour is the heaviest time of traffic on the highway and the development. It is considered the design hour volume (DHV) for operations and geometric design purposes.



The distribution of the site generated traffic mirrors that of the existing movements at the intersection. Generally, the directional split is 10 percent to the east and 90 percent to the west. The assignment of the traffic is shown in the graphic to the left. Note the distribution of traffic unto Cable Lane is nominal, in the range of 10 percent, as the there are only about 10 homes that would benefit using the access.

4. FUTURE CONDITIONS

A review of the ***2016 El Paso Major Transportation Corridors Plan Update*** revealed only one area on Bradley Road with an existing and 2040 forecasted volume. It shows a 12,000 ADT existing volume and a 2040 volume of 19,800 ADT. That equates to a 2.5% per annum growth. The 3-year growth factor is 1.08 and the 20-year growth factor is 1.65.

The 2040 improvement plan shows no projects on this section of Bradley Road. It does indicate that Bradley Road will be widened to four-lanes from Academy Blvd. to Hancock Expy. and that Grinnell St. will be widened to four-lanes from Powers Blvd. to Bradley Road.

5. PROJECT IMPACTS

ATC uses Synchro v.10 for operations analyses. The Synchro v.10 methodologies are based on the **Highway Capacity Manual, 6th Edition** (HCM). The Synchro HCM reports in the appendix are for reference. LOS is letter rating from A to F. LOS A indicates free-flow traffic conditions and no delay at intersections. LOS F is heavy traffic congestion with significant delay. LOS is provided for the overall operations at signalized intersections. LOS D is generally the benchmark for acceptable signalized intersection operations during the weekday peak hours. The critical movement, not the overall, provides the LOS rating for unsignalized intersections. The critical movement is generally a left turn from the minor approach. Caution is advised when evaluating the LOS at unsignalized intersections particularly when LOS F shows. In cases of a LOS F, the HCM suggests that other evaluation measures should be considered such as the volume over capacity ratio and the 95th percentile queue length to make the most

effective traffic control decision. LOS F at unsignalized intersections is considered normal for the weekday peak hour particularly when the v/c ratio and the 95th percentile queue length are acceptable.

Level of Service Summary
LOS/Delay(secs) - 95th%ile queue length (veh)

Intersection	Existing		2024 Background		2024 TOTAL		2040 Background		2040 TOTAL	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Unsignalized										
Bradley Road/Alturas Dr.	D/26.0	E/41.6	D/28.4	E/47.2	E/41.5	F/73.9	F/65.0	F/134.3	F/185.1	F/>300
	0.3	0.3	0.4	0.3	2	1.9	0.9	0.8	5.1	4.4

The intersection currently operates at LOS D/E based on the critical movement which in this case is the northbound left turn and will continue to do so in 2024 background condition. The ECM specifies that LOS D is the minimum acceptable LOS. However, per the Highway Capacity Manual, this is an acceptable operating condition through 2024 as the volume over capacity ratios are below 1 and only 1-2 cars will queue in the 95th percentile queue. In the 2040 background conditions, the intersection will operate within acceptable operations as the 95th percentile queue length is one vehicle, and the v/c ratio is approximately 0.25. In the 2040 AM and PM Total condition, acceptable operating conditions are not reported. The v/c ratio is over 1 and the queues are 5 and 6 vehicles. There are no reasonable solutions currently for the LOS E/F in the 2024 conditions.

Traffic signal control is not warranted now but could be in the future 2040 conditions, particularly if the surrounding area develops and adds more traffic to the intersection. There is no point in doing a complete traffic signal warrant analysis as the peak hour volume on the minor street approach is well below what is required to meet an applicable volume warrant (MUTCD Warrants 1-2). The intersection should, however, be periodically monitored for warrant volumes, operational delay, and crashes.

The turning movement volumes at the intersection of Alturas Dr. / Cable Lane and Prospect Point / Cable Lane are too small to be evaluated meaningfully. Consequently, traffic counting at these intersections would not provide any useful data. Both intersections will operate at the highest LOS A/A in the AM and PM peak hours and there will be no stacking or queueing during those times.

PEDESTRIAN AND BICYCLE IMPACT EVALUATIONS

Presently there are limited sidewalks and no bike lanes along the frontage of Bradley Road. There are sidewalks but no bike lanes on Alturas Dr. Attached sidewalks are planned for all internal streets and along the south side of Cable Lane. The map on the next page shows the site in yellow and the location of the three schools that would be attended by students in Haven Valley. French Elementary School is approximately one-half mile miles to the east. Sproul Junior High School is about the same distance to the west. Widefield High School is about three quarters of a mile to the south. Students here would be bussed or allowed to use personal vehicles. There are no grocery stores within a mile of the site.

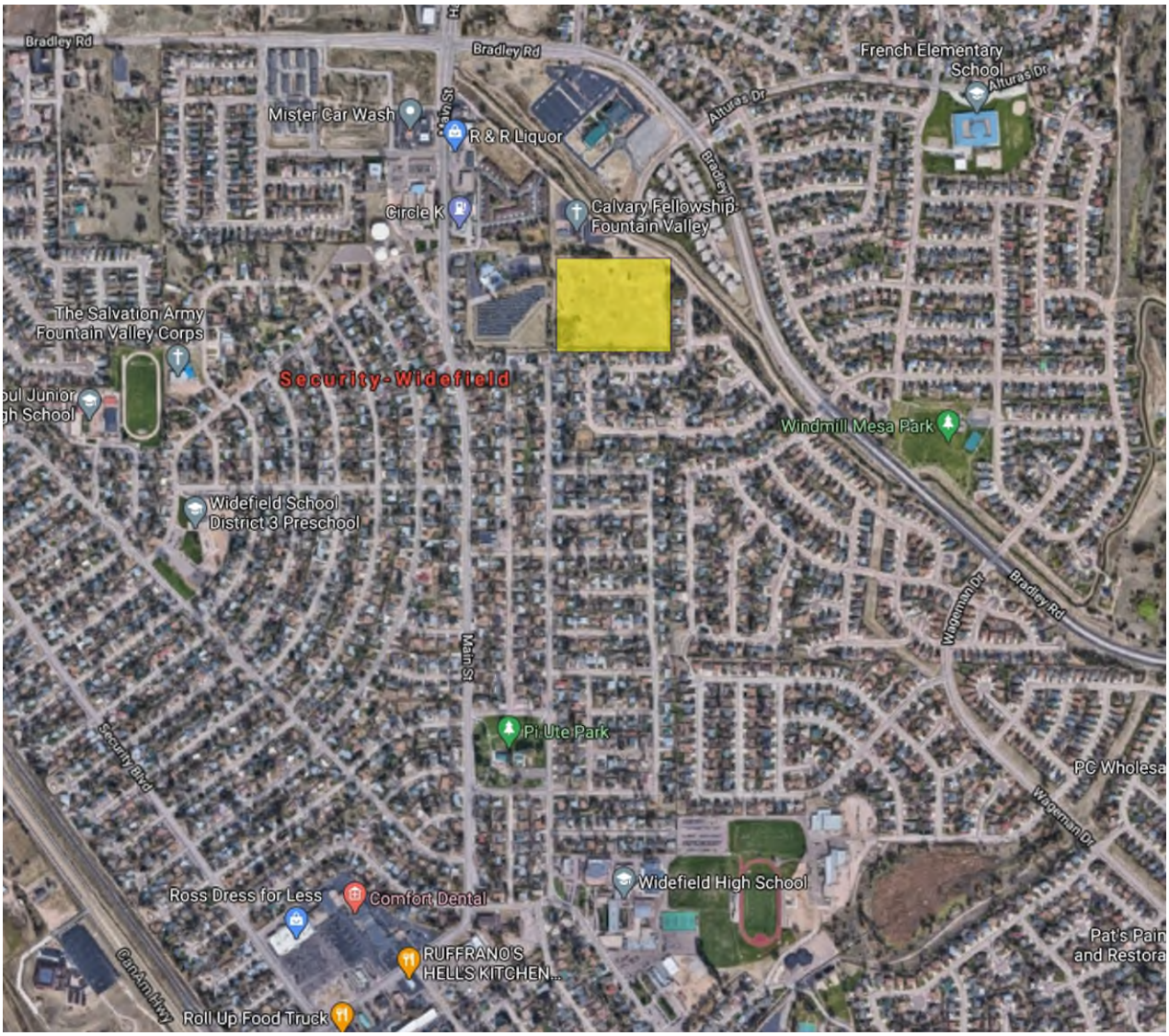


Figure 2 Surrounding Area and Facilities

6. MITIGATION MEASURES

No mitigation measures are necessary to Bradley Road or Alturas Dr. to accommodate the trip generation from Haven Valley safely and efficiently. Although the northbound left turn movement would meet the ECM threshold for a dedicated left turn lane. But as there are no northbound through movements, the need for a dedicated lane is not indicated. There's no indication that the southbound approach needs any improvement such as a separate left turn lane. Traffic signal control at the Bradley Road and Alturas Dr. intersection is not warranted currently but it is anticipated to be in the future should the forecast increase in volume on Bradley Road be realized.

The site plan indicates that Cable Lane will be reconstructed east from Alturas Dr. to Hunters Run match the cross-section of Hunters Run. The roadway improvement will include curb and gutter on both sides and attached sidewalks on the south side. Most of the Haven Valley internal streets are classified as Urban Local (low volume) Roadways with 50-foot right-of-way and 24 feet of pavement. The roads meet the design ADT of 300 vpd or less. They will be posted at 25 mph meet the 150-foot spacing requirement. Road over 300 vpd will be constructed to the Urban Local standard for a design ADT of 3,000 ADT. These are still within 50-foot right-of-way but include 30 feet of pavement. The ECM design criteria str are shown below.

Table 2-7. Roadway Design Standards for Urban Collectors and Locals

Criteria	Collectors		Local	
	Non-Residential	Residential	Local	Local[4] (low volume)
Design Speed / Posted Speed (MPH)	40 / 35	40 / 35	25 / 25	20 / 20
Clear Zone	14'	14'	12'	7'
Minimum Centerline Curve Radius	565'	565'	200'	100'
Number of Through Lanes	2	2	2	2
Lane Width	12'	12'	12'	12'
Right-of-Way	80'	60'	60'[3]	60'[3]
Paved Width (Excluding Gutter Pan)	48'	36'	30'	24'
Median Width (Including Curb & Gutter)	12'	n/a	n/a	n/a
Shoulder Width (Ext., Excluding Gutter)	6'	6'	n/a	n/a
Shoulder Width (Int., Excluding Gutter)	n/a	n/a	n/a	n/a
Required Curb/ Gutter Type (Vertical)	6"	6"	6" (or ramp)	6" (or ramp)
Sidewalk Width (@ FL)	5' detached	5' detached	5' attached	5' attached
Design ADT	20,000	10,000	3,000	300
Design Vehicle	WB-50	WB-50	WB-50	SU-30
Bike Lanes Permitted	No	Yes	No	No
Access Permitted	No[5]	No[5]	Yes	Yes
Access Spacing	See Table 2-35	See Table 2-35	Frontage	Frontage
Intersection Spacing	660'[2]	660'[2]	175'	150'
Parking Permitted	No	No	Yes	Yes
Minimum Flowline Grade of Curb	.50%	.50%	.50%	.50%
Centerline Grade (Min.-Max.)	0.5-6%[1]	0.5-8%[1]	0.5-8%[1]	0.5-8%[1]
Intersection Grades (Min.-Max.)	0.5-4%	0.5-4%	0.5-4%	0.5-4%

[1] 10% maximum grade permitted at the discretion of the ECM Administrator
[2] 330 feet when intersecting local roadways
[3] 50-foot right-of-way plus two 5-foot Public Improvements Easements granted to El Paso County
[4] Section can be used for cul-de-sacs, or roads with two ways out having a maximum of 300 ADT and a maximum length of 1,200 feet
[5] Where no local public or private roadway can provide access, temporary or partial turn movement parcel access may be permitted

Figure 3 shows the forecast vehicles per day (vpd) on the internal roads.

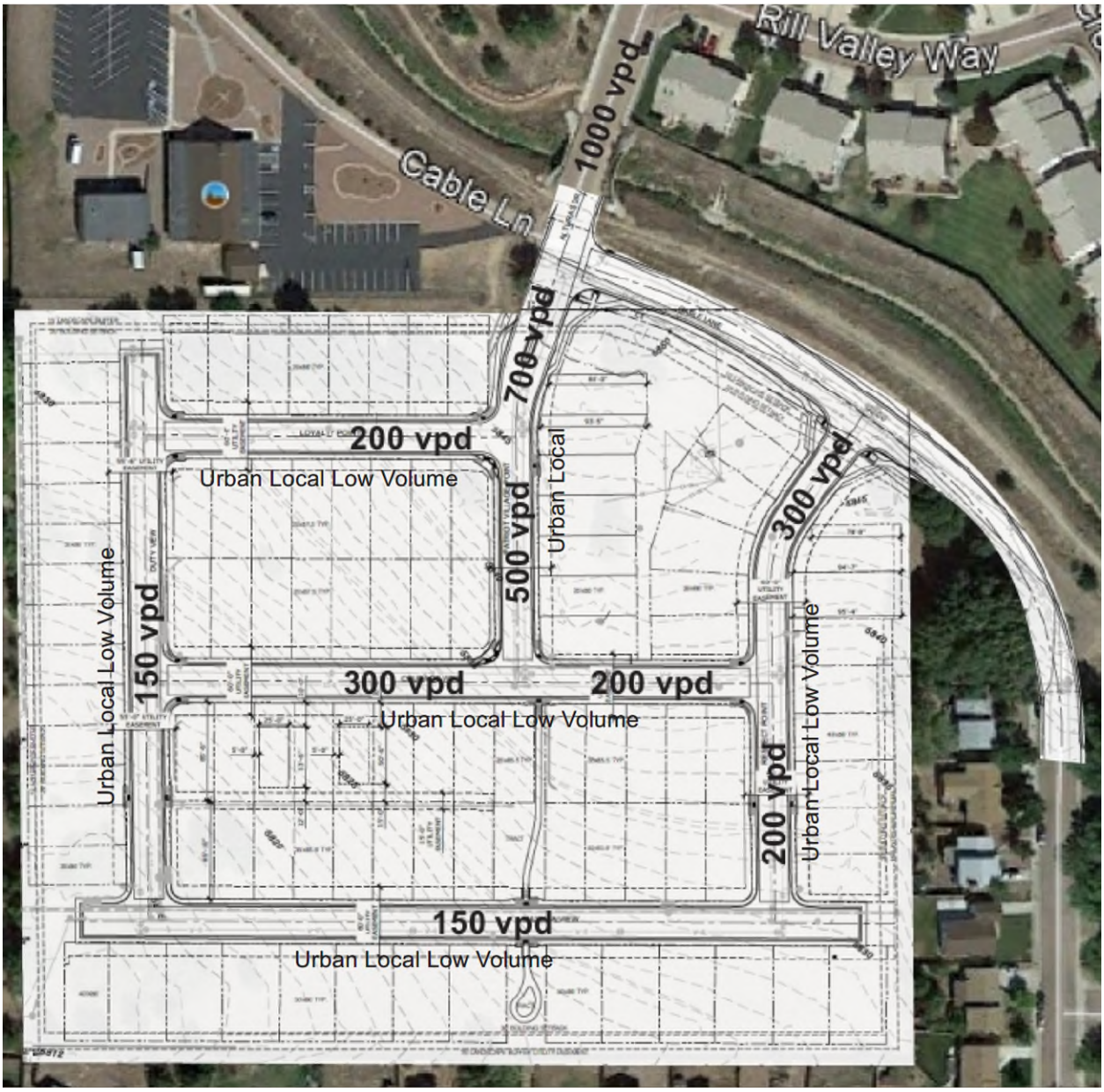


Figure 3 Internal Road Classifications and Volumes per Day

The corresponding cross-sections are presented on the next page.

Figure 2-17. Typical Urban Local (low volume) Cross Section

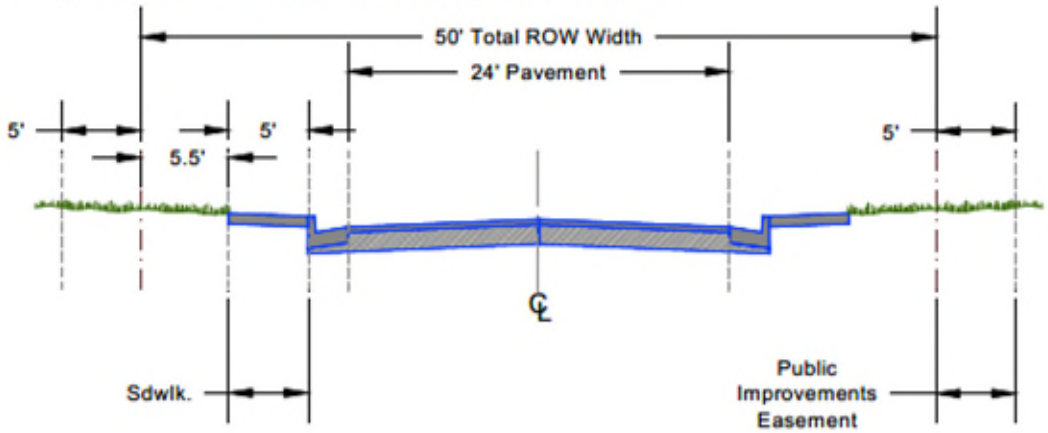
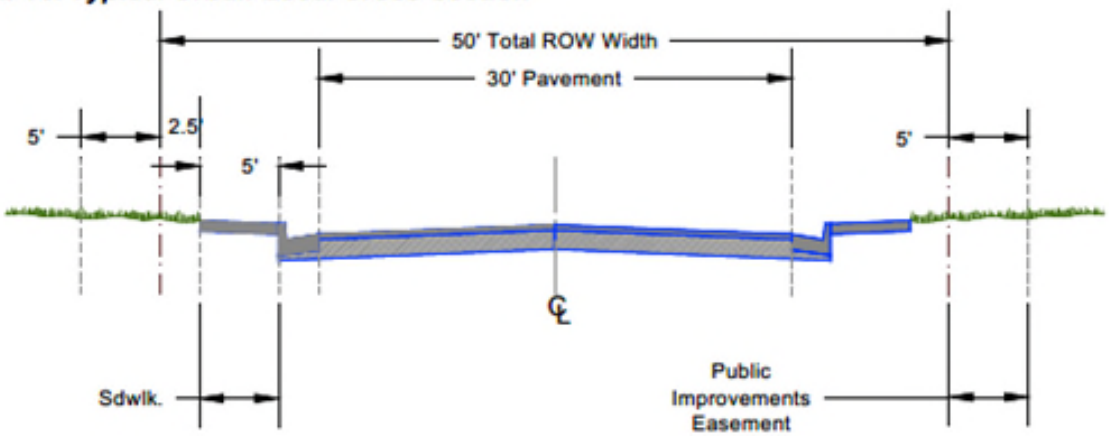


Figure 2-16. Typical Urban Local Cross Section



Per the ECM, the need for turn lanes is determined by the traffic impact study. In this case the peak hour volumes on the internal roads are too low to justify turn lanes.

The only sight distance issue is at Prospect Point and Cable Lane intersection. On 25 mph roadways, 280 feet is required. In the graphic below looking east from the intersection at 10 feet back of curb, this is currently compromised by a growth of trees and bushes. It is anticipated that the reconstruction of Cable Lane will require removal of the trees and when done the sight line will be available. Looking west the sight line is available.

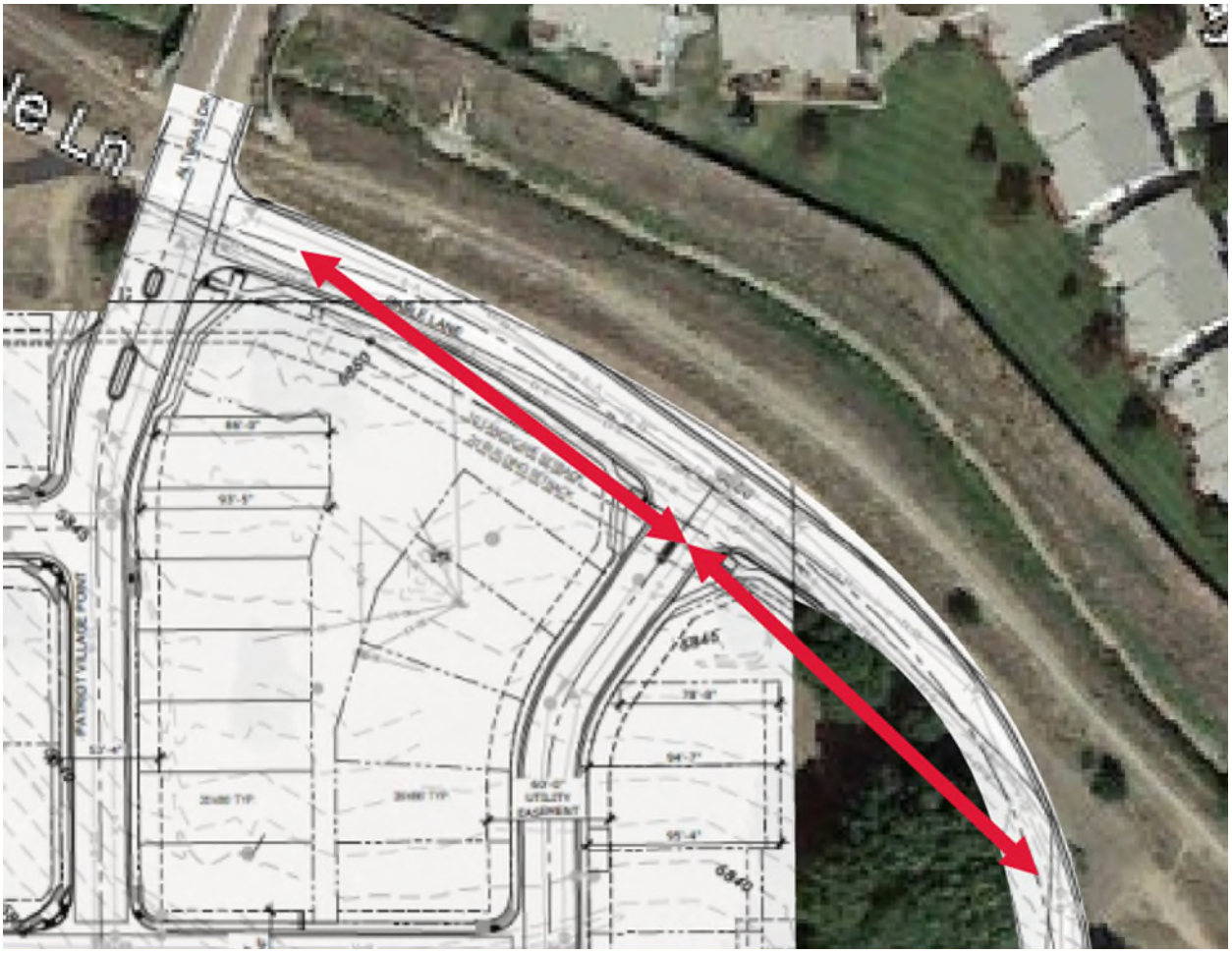


Figure 4 Sight Distance at Prospect Point and Cable Lane

Haven Valley will be assessed a County Road Impact Fee of $3,830.00 per dwelling unit. The purpose of the program is to develop a process to identify transportation improvements needed to accommodate growth, to allocate fairly the costs of transportation improvements among new developments, and to ensure the proper and timely accounting of improvements and funds. The program does not include all roads in the unincorporated County, only higher traffic roads that provide for regional travel.

7. CONCLUSIONS AND RECOMMENDED IMPROVEMENTS SUMMARY

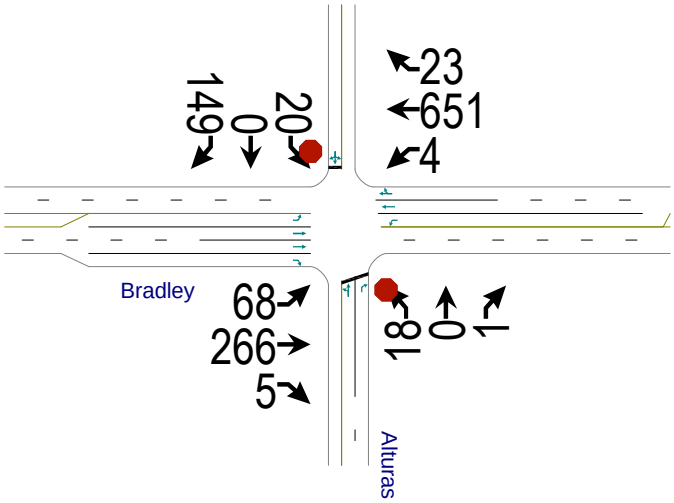
The study and operations analyses contained herein provides evidence that the recommended access locations and type will function within acceptable traffic engineering parameters promulgated by FHWA, AASHTO, MUTCD, CDOT, and El Paso County. The access locations and type are essential for safe and smooth transitions on and off the highway and to reduce to the greatest extent unnecessary on-site circulation. In my professional opinion, the transportation facilities will be adequate and available to serve the proposed development within one year of the full build out of the project and that it meets or exceeds the applicable adopted level of service provided the El Paso County Engineering Criteria Manual.

Per request from El Paso County staff we verify that this Traffic Impact Study meets the requirements for an Intermediate TIS per the Transportation Impact Study Guidelines published in the El Paso County Engineering Criteria Manual.

Review 3 comment:
Please coordinate with the project planner and should deviations be requested please list the deviations in your report as required per ECM App B.8 Traffic Report Standards.

review 4: please list the deviation requests proposed.

APPENDIX


149
0
20
23
651
4
Bradley
68
266
5
18
0
1
Alturas

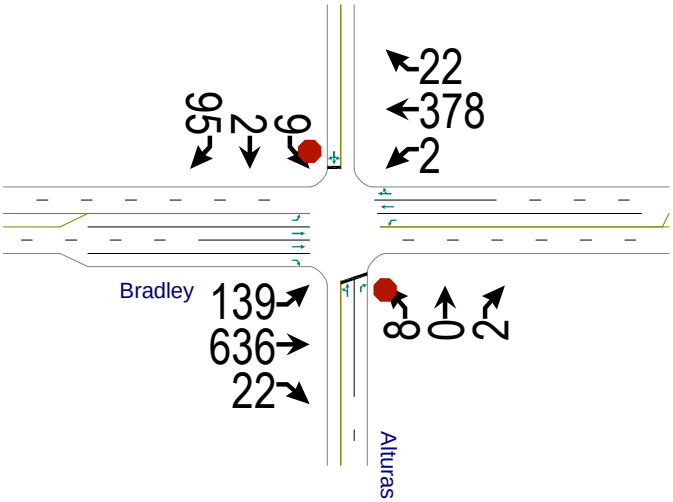
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Future Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	289	5	4	708	25	20	0	1	22	0	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	733	0	0	294	0	0	799	1178	145	1022	1171	367
Stage 1	-	-	-	-	-	-	437	437	-	729	729	-
Stage 2	-	-	-	-	-	-	362	741	-	293	442	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	868	-	-	1264	-	-	276	189	876	190	191	630
Stage 1	-	-	-	-	-	-	568	578	-	380	426	-
Stage 2	-	-	-	-	-	-	629	421	-	691	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	868	-	-	1264	-	-	191	172	876	177	174	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	172	-	177	174	-
Stage 1	-	-	-	-	-	-	520	529	-	348	425	-
Stage 2	-	-	-	-	-	-	466	420	-	631	526	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	25.1	16.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	191	876	868	-	-	1264	-	-	484
HCM Lane V/C Ratio	0.102	0.001	0.085	-	-	0.003	-	-	0.38
HCM Control Delay (s)	26	9.1	9.5	-	-	7.9	-	-	16.9
HCM Lane LOS	D	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	0.3	-	-	0	-	-	1.8


22
378
2
95
2
9
Bradley
139
636
22
8
0
2
Alturas

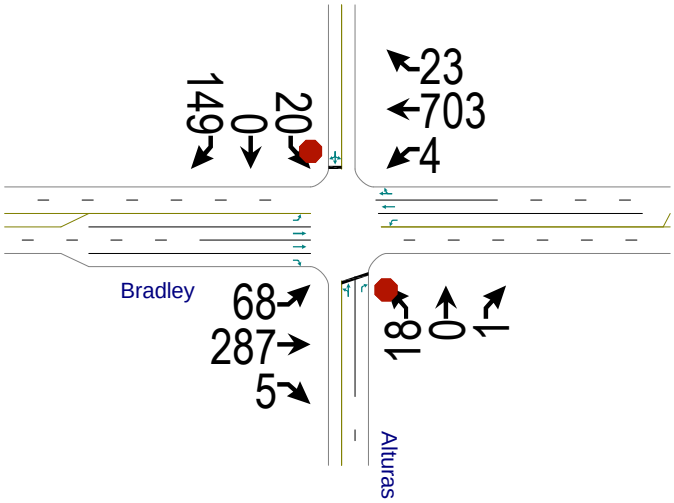
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Future Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	691	24	2	411	24	9	0	2	10	2	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	715	0	0	1204	1432	346	1075	1444	218
Stage 1	-	-	-	-	-	-	993	993	-	427	427	-
Stage 2	-	-	-	-	-	-	211	439	-	648	1017	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1121	-	-	881	-	-	140	133	650	174	131	786
Stage 1	-	-	-	-	-	-	263	322	-	576	584	-
Stage 2	-	-	-	-	-	-	771	576	-	425	313	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1121	-	-	881	-	-	107	115	650	155	113	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	115	-	155	113	-
Stage 1	-	-	-	-	-	-	227	279	-	498	583	-
Stage 2	-	-	-	-	-	-	666	575	-	367	271	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	35.4	13.5
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	650	1121	-	-	881	-	-	539
HCM Lane V/C Ratio	0.081	0.003	0.135	-	-	0.002	-	-	0.214
HCM Control Delay (s)	41.6	10.6	8.7	-	-	9.1	-	-	13.5
HCM Lane LOS	E	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	0.5	-	-	0	-	-	0.8


149
0
20
23
703
4
Bradley
68
287
5
18
0
1
Alturas

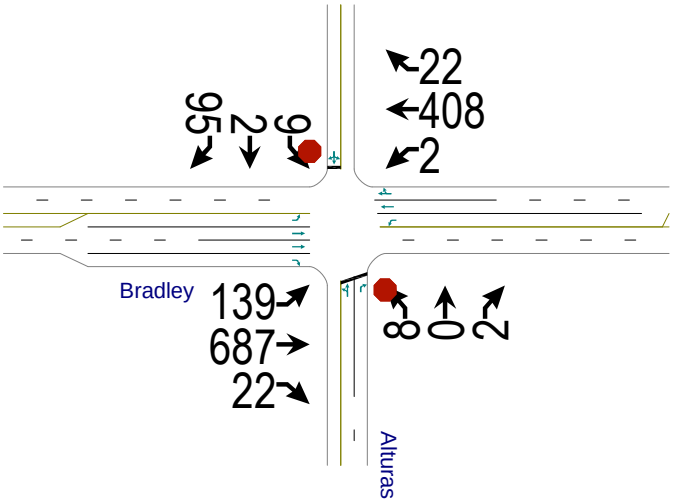
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Future Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	312	5	4	764	25	20	0	1	22	0	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	789	0	0	317	0	0	850	1257	156	1089	1250	395
Stage 1	-	-	-	-	-	-	460	460	-	785	785	-
Stage 2	-	-	-	-	-	-	390	797	-	304	465	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	827	-	-	1240	-	-	254	170	862	170	172	604
Stage 1	-	-	-	-	-	-	551	564	-	352	402	-
Stage 2	-	-	-	-	-	-	606	397	-	681	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	827	-	-	1240	-	-	173	154	862	158	156	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	154	-	158	156	-
Stage 1	-	-	-	-	-	-	502	514	-	321	401	-
Stage 2	-	-	-	-	-	-	442	396	-	619	511	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	27.4	18.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	173	862	827	-	-	1240	-	-	453
HCM Lane V/C Ratio	0.113	0.001	0.089	-	-	0.004	-	-	0.406
HCM Control Delay (s)	28.4	9.2	9.8	-	-	7.9	-	-	18.3
HCM Lane LOS	D	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	0.3	-	-	0	-	-	1.9


22
408
2
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2
9
Bradley
139
687
22
8
0
2
Alturas

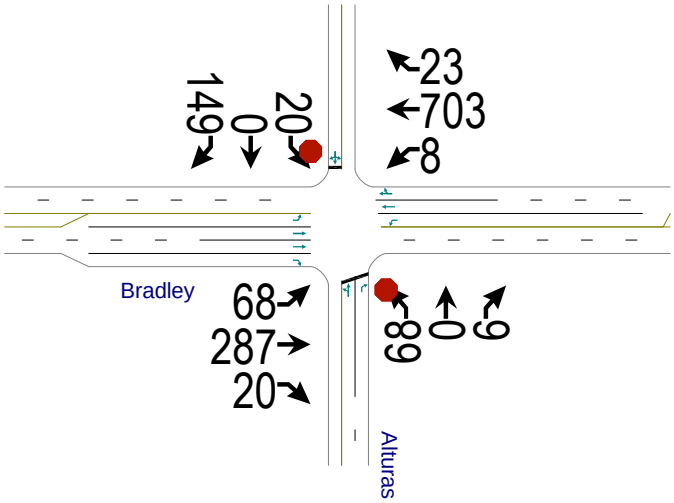
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Future Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	747	24	2	444	24	9	0	2	10	2	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	771	0	0	1276	1521	374	1136	1533	234
Stage 1	-	-	-	-	-	-	1049	1049	-	460	460	-
Stage 2	-	-	-	-	-	-	227	472	-	676	1073	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1090	-	-	840	-	-	124	117	623	157	115	768
Stage 1	-	-	-	-	-	-	243	303	-	551	564	-
Stage 2	-	-	-	-	-	-	755	557	-	409	295	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1090	-	-	840	-	-	94	101	623	140	99	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	101	-	140	99	-
Stage 1	-	-	-	-	-	-	209	261	-	474	563	-
Stage 2	-	-	-	-	-	-	649	556	-	351	254	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	39.9	14.1
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	94	623	1090	-	-	840	-	-	509
HCM Lane V/C Ratio	0.093	0.003	0.139	-	-	0.003	-	-	0.226
HCM Control Delay (s)	47.2	10.8	8.8	-	-	9.3	-	-	14.1
HCM Lane LOS	E	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	0.5	-	-	0	-	-	0.9


149
0
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703
8
Bradley
68
287
20
89
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Alturas

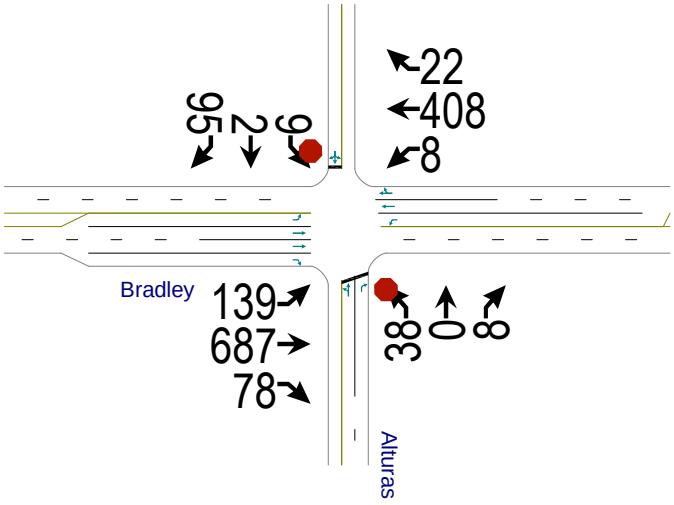
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	266	20	8	651	23	68	0	6	20	0	149
Future Vol, veh/h	68	266	20	8	651	23	68	0	6	20	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	312	22	9	764	25	74	0	7	22	0	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	789	0	0	334	0	0	860	1267	156	1099	1277	395
Stage 1	-	-	-	-	-	-	460	460	-	795	795	-
Stage 2	-	-	-	-	-	-	400	807	-	304	482	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	827	-	-	1222	-	-	250	168	862	167	165	604
Stage 1	-	-	-	-	-	-	551	564	-	347	398	-
Stage 2	-	-	-	-	-	-	597	392	-	681	552	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	827	-	-	1222	-	-	170	152	862	153	149	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	152	-	153	149	-
Stage 1	-	-	-	-	-	-	502	514	-	316	395	-
Stage 2	-	-	-	-	-	-	434	389	-	615	503	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.1	38.9	18.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	170	862	827	-	-	1222	-	-	448
HCM Lane V/C Ratio	0.435	0.008	0.089	-	-	0.007	-	-	0.41
HCM Control Delay (s)	41.5	9.2	9.8	-	-	8	-	-	18.5
HCM Lane LOS	E	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2	0	0.3	-	-	0	-	-	2


22
408
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95
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6
Bradley
139
687
78
38
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8
Alturas

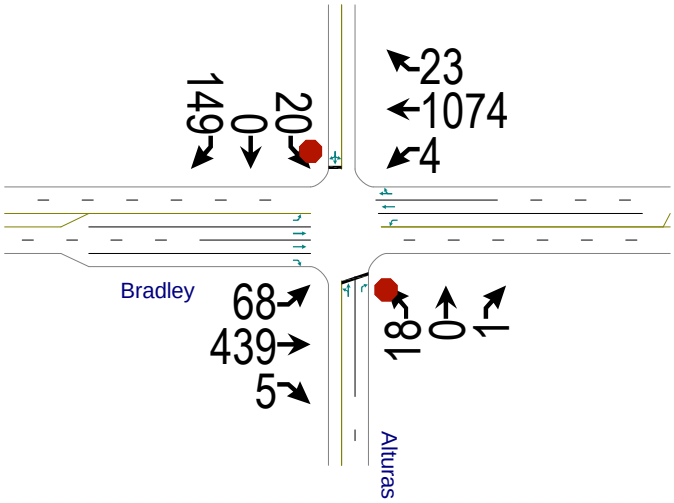
Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	636	78	8	378	22	38	0	8	9	2	95
Future Vol, veh/h	139	636	78	8	378	22	38	0	8	9	2	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	747	85	9	444	24	41	0	9	10	2	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	832	0	0	1290	1535	374	1150	1608	234
Stage 1	-	-	-	-	-	-	1049	1049	-	474	474	-
Stage 2	-	-	-	-	-	-	241	486	-	676	1134	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1090	-	-	796	-	-	121	115	623	153	104	768
Stage 1	-	-	-	-	-	-	243	303	-	540	556	-
Stage 2	-	-	-	-	-	-	741	549	-	409	276	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1090	-	-	796	-	-	91	98	623	134	89	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	98	-	134	89	-
Stage 1	-	-	-	-	-	-	209	261	-	465	550	-
Stage 2	-	-	-	-	-	-	632	543	-	347	238	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.2	62.9	14.4
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	623	1090	-	-	796	-	-	497
HCM Lane V/C Ratio	0.454	0.014	0.139	-	-	0.011	-	-	0.232
HCM Control Delay (s)	73.9	10.9	8.8	-	-	9.6	-	-	14.4
HCM Lane LOS	F	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.9	0	0.5	-	-	0	-	-	0.9


149
0
20
23
1074
4
Bradley
68
439
5
18
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1
Alturas

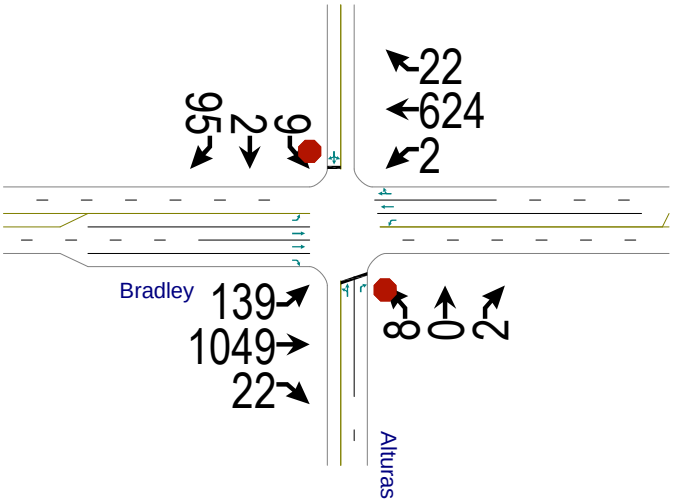
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Future Vol, veh/h	68	266	5	4	651	23	18	0	1	20	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	477	5	4	1168	25	20	0	1	22	0	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1193	0	0	482	0	0	1217	1826	239	1576	1819	597
Stage 1	-	-	-	-	-	-	625	625	-	1189	1189	-
Stage 2	-	-	-	-	-	-	592	1201	-	387	630	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	581	-	-	1077	-	-	137	76	762	74	77	446
Stage 1	-	-	-	-	-	-	439	475	-	199	260	-
Stage 2	-	-	-	-	-	-	460	256	-	608	473	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	581	-	-	1077	-	-	79	66	762	67	67	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	66	-	67	67	-
Stage 1	-	-	-	-	-	-	383	415	-	174	259	-
Stage 2	-	-	-	-	-	-	292	255	-	530	413	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0	62.1	43.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	79	762	581	-	-	1077	-	-	267
HCM Lane V/C Ratio	0.248	0.001	0.127	-	-	0.004	-	-	0.688
HCM Control Delay (s)	65	9.7	12.1	-	-	8.4	-	-	43.7
HCM Lane LOS	F	A	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.9	0	0.4	-	-	0	-	-	4.6


22
624
2
95
2
9
Bradley
139
1049
22
8
0
2
Alturas

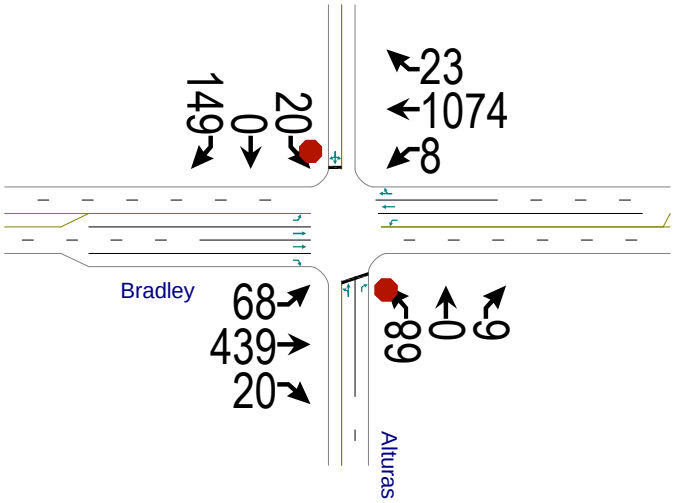
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Future Vol, veh/h	139	636	22	2	378	22	8	0	2	9	2	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	1141	24	2	678	24	9	0	2	10	2	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	702	0	0	1165	0	0	1787	2149	571	1567	2161	351
Stage 1	-	-	-	-	-	-	1443	1443	-	694	694	-
Stage 2	-	-	-	-	-	-	344	706	-	873	1467	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	891	-	-	595	-	-	51	48	464	75	47	645
Stage 1	-	-	-	-	-	-	139	196	-	399	442	-
Stage 2	-	-	-	-	-	-	645	437	-	311	190	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	891	-	-	595	-	-	36	40	464	65	39	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	40	-	65	39	-
Stage 1	-	-	-	-	-	-	116	163	-	332	441	-
Stage 2	-	-	-	-	-	-	537	436	-	257	158	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	110	22.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	36	464	891	-	-	595	-	-	315
HCM Lane V/C Ratio	0.242	0.005	0.17	-	-	0.004	-	-	0.366
HCM Control Delay (s)	134.3	12.8	9.9	-	-	11.1	-	-	22.9
HCM Lane LOS	F	B	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.8	0	0.6	-	-	0	-	-	1.6


149
0
20
23
1074
8
Bradley
68
439
20
89
0
9
Alturas

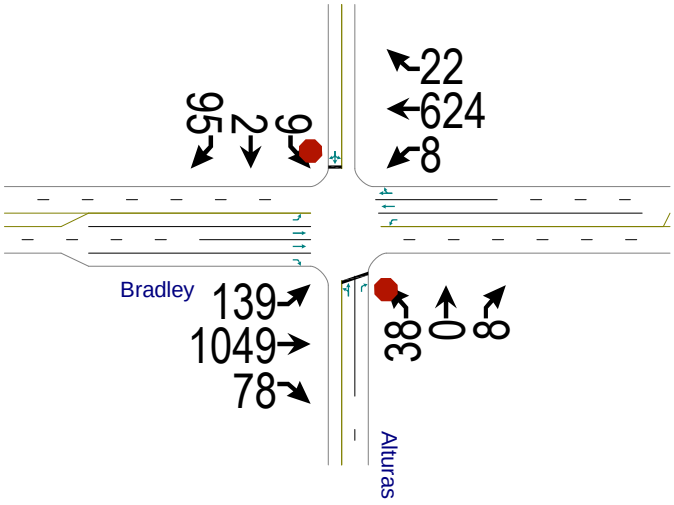
Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	266	20	8	651	23	68	0	6	20	0	149
Future Vol, veh/h	68	266	20	8	651	23	68	0	6	20	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	477	22	9	1168	25	74	0	7	22	0	162

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1193	0	0	499	0	0	1227	1836	239	1586	1846	597
Stage 1	-	-	-	-	-	-	625	625	-	1199	1199	-
Stage 2	-	-	-	-	-	-	602	1211	-	387	647	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	581	-	-	1061	-	-	134	75	762	73	74	446
Stage 1	-	-	-	-	-	-	439	475	-	197	257	-
Stage 2	-	-	-	-	-	-	453	253	-	608	465	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	581	-	-	1061	-	-	77	65	762	65	64	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	65	-	65	64	-
Stage 1	-	-	-	-	-	-	383	415	-	172	255	-
Stage 2	-	-	-	-	-	-	286	251	-	526	406	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0.1	170.9	45.2
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	77	762	581	-	-	1061	-	-	263
HCM Lane V/C Ratio	0.96	0.009	0.127	-	-	0.008	-	-	0.698
HCM Control Delay (s)	185.1	9.8	12.1	-	-	8.4	-	-	45.2
HCM Lane LOS	F	A	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	5.1	0	0.4	-	-	0	-	-	4.7


22
624
8
95
2
6
Bradley
139
1049
78
38
0
8
Alturas

Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	636	78	8	378	22	38	0	8	9	2	95
Future Vol, veh/h	139	636	78	8	378	22	38	0	8	9	2	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	200	300	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	1141	85	9	678	24	41	0	9	10	2	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	702	0	0	1226	0	0	1801	2163	571	1581	2236	351
Stage 1	-	-	-	-	-	-	1443	1443	-	708	708	-
Stage 2	-	-	-	-	-	-	358	720	-	873	1528	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	891	-	-	564	-	-	50	47	464	73	42	645
Stage 1	-	-	-	-	-	-	139	196	-	392	436	-
Stage 2	-	-	-	-	-	-	633	430	-	311	178	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	891	-	-	564	-	-	~ 34	38	464	62	34	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 34	38	-	62	34	-
Stage 1	-	-	-	-	-	-	116	163	-	326	429	-
Stage 2	-	-	-	-	-	-	521	423	-	253	148	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.1	$ 336.5	24.1
HCM LOS			F	C

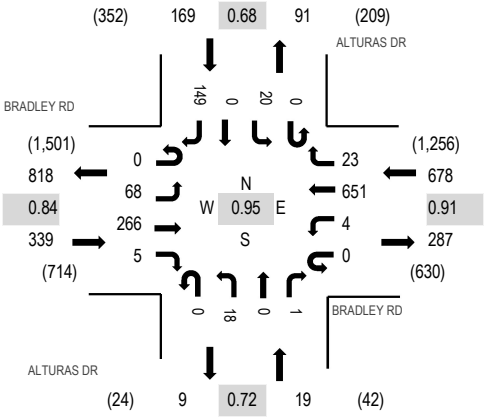
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	34	464	891	-	-	564	-	-	302
HCM Lane V/C Ratio	1.215	0.019	0.17	-	-	0.015	-	-	0.382
HCM Control Delay (s)	$ 404.6	12.9	9.9	-	-	11.5	-	-	24.1
HCM Lane LOS	F	B	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	4.4	0.1	0.6	-	-	0	-	-	1.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

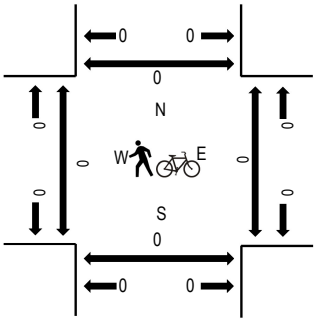
Location: 1 ALTURAS DR & BRADLEY RD AM
Date: Tuesday, March 9, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



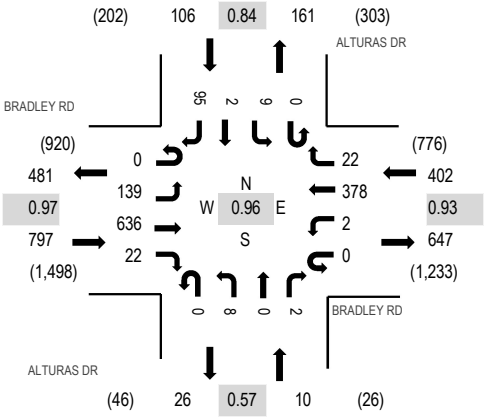
Traffic Counts

Interval Start Time	BRADLEY RD Eastbound				BRADLEY RD Westbound				ALTURAS DR Northbound				ALTURAS DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	13	53	0	0	2	183	2	0	5	0	0	0	3	0	49	310	1,205	0	0	0	0
7:15 AM	0	23	68	2	0	0	154	9	0	4	0	1	0	4	0	32	297	1,183	0	0	0	0
7:30 AM	0	19	78	1	0	0	164	7	0	4	0	0	0	6	0	38	317	1,200	0	0	0	0
7:45 AM	0	13	67	2	0	2	150	5	0	5	0	0	0	7	0	30	281	1,190	0	0	0	0
8:00 AM	0	10	94	2	1	0	142	5	0	2	0	1	0	4	1	26	288	1,159	0	0	0	0
8:15 AM	0	36	84	1	0	3	125	18	0	6	0	2	0	7	1	31	314		0	0	0	0
8:30 AM	0	15	56	1	0	2	146	16	0	4	0	0	0	16	2	49	307		0	0	0	0
8:45 AM	0	12	62	2	0	0	114	6	0	6	0	2	0	14	0	32	250		0	0	0	0
Count Total	0	141	562	11	1	9	1,178	68	0	36	0	6	0	61	4	287	2,364		0	0	0	0
Peak Hour	0	68	266	5	0	4	651	23	0	18	0	1	0	20	0	149	1,205		0	0	0	0

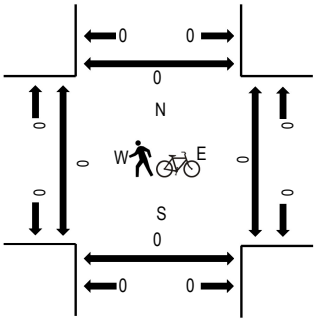
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 ALTURAS DR & BRADLEY RD PM
Date: Tuesday, March 9, 2021
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	BRADLEY RD Eastbound				BRADLEY RD Westbound				ALTURAS DR Northbound				ALTURAS DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	150	3	0	0	97	7	0	3	0	0	0	3	1	21	314	1,256	1	0	0	0
4:15 PM	0	26	156	2	1	0	75	7	0	5	0	2	0	5	0	27	306	1,244	0	0	0	0
4:30 PM	0	35	139	8	0	1	87	4	0	2	0	2	0	3	0	18	299	1,282	0	0	1	0
4:45 PM	0	34	166	5	0	1	95	4	0	2	0	0	0	4	2	24	337	1,315	0	0	0	0
5:00 PM	0	35	149	4	0	0	83	5	0	0	0	1	0	2	0	23	302	1,246	0	0	0	0
5:15 PM	0	38	161	7	0	0	102	6	0	3	0	1	0	0	0	26	344		0	0	0	0
5:30 PM	0	32	160	6	0	1	98	7	0	3	0	0	0	3	0	22	332		0	0	0	0
5:45 PM	0	30	118	5	1	0	91	3	0	1	1	0	0	6	0	12	268		0	0	0	0
Count Total	0	259	1,199	40	2	3	728	43	0	19	1	6	0	26	3	173	2,502		1	0	1	0
Peak Hour	0	139	636	22	0	2	378	22	0	8	0	2	0	9	2	95	1,315		0	0	0	0

TRANSPORTATION
FLOOD CONTROL
WATER / WASTEWATER
LAND DEVELOPMENT
PLANNING / GIS / SURVEYING
CONSTRUCTION ADMINISTRATION
SURVEYING

PENTACOR

TRAFFIC IMPACT STUDY

FOR PATRIOT VILLAGE

El Paso County, Colorado
April 7, 2006
Revised July 7, 2006

Prepared For:
St. Andrew's Homes
1551 Paonia
Colorado Springs, Colorado 80915

Prepared By:
Pentacor Engineering, LLC
5426 N. Academy Blvd. Suite 110
Colorado Springs, CO 80918

Contact: Jeffery A. Maxwell, P.E., PTOE

TRAFFIC IMPACT STUDY

FOR

PATRIOT VILLAGE

April 7, 2006
Revised July 7, 2006

Prepared for:

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Colorado Springs, Colorado 80918
(719) 264-1560

Contact: Jeffery A. Maxwell, P.E., PTOE

INTRODUCTION

The proposed Patriot Village development is located east of Main Street and south of Cable Lane in Security, Colorado. A vicinity map is illustrated in **Figure 1.** The development will include approximately 106 duplex/townhomes.

This traffic study examines the effects of project-generated traffic on existing and proposed roadways in the vicinity of the site for Year 2006 traffic conditions as well as traffic conditions for the long term planning horizon of Year 2030. Where appropriate, recommendations are made for transportation infrastructure improvements.

Existing Transportation System

A site plan of the proposed Patriot Village development is illustrated in **Figure 2**. Existing roadways in the vicinity of the site are described below:

- Cable Lane is a two-lane southeast to northwest asphalt road. This roadway provides access to the Pheasant Run Ranch Subdivision to the south and terminates north of the proposed Patriot Village site.
- Alturas Drive is a two-lane, north/south paved roadway that provides access from Cable Lane to Bradley Road.
- Bradley Road is a four-lane Principal Arterial road (According to the 2003 El Paso County Major Transportation Corridors Plan) with a posted speed limit of 45 mph. This roadway provides access to Hancock Expressway and Academy Boulevard, both major north-south roads in the Security/Colorado Springs area.
- The intersection of Bradley Road/Hancock Expressway (Main St. in Security) is currently signalized.

Existing and Background Traffic

Existing traffic turning movement counts were conducted at the intersections of Alturas Drive/Bradley Road, Alturas Drive/Cable Lane and Bradley Road/Hancock Expressway. The counts, illustrated in **Figure 3**, were conducted by All Traffic Data Services in January, 2005 for the morning and evening peak periods. Complete printouts of all traffic counts can be found in the appendix of this report.

Project generated traffic estimated for the proposed Windmill Creek Subdivision (Bradley Mesa traffic impact report, LSC, 1999) was added to existing traffic counts to develop Year 2006 background traffic for the intersections of Alturas Drive/Bradley Road and Bradley Road/Hancock Expressway. Year 2026 background traffic was estimated based upon an annual growth rate of three-percent. Year 2006 background traffic volumes are illustrated in **Figure 4** and Year 2030 background traffic volumes are illustrated in **Figure 5**.

II. PROJECT-GENERATED TRAFFIC

Trip Generation

The traffic generated as a result of this project has been estimated based upon trip generation rates contained in the 7th Edition, 2003, of Trip Generation, published by the Institute of Transportation Engineers. The results are presented in **Table 1**.

As indicated in Table 1, the development is expected to generate approximately 690 average daily trips. During the AM peak-hour, the development will generate approximately 54 trips while during the PM peak-hour the development will generate approximately 63 trips on the adjacent roadway network.

Trip Distribution

The distribution of project-generated vehicular traffic on adjacent roadways is influenced by several factors including the following:

- The location of the site relative to adjacent roadways
- The configuration of the adjacent roadway network
- The anticipated land uses for the site and the surrounding areas
- Regional employment
- Existing traffic counts

Based upon these factors, directional distributions of project-generated traffic have been estimated, the results of which are illustrated in **Figure 6**.

Traffic Assignment and Total Traffic Volumes

The assignment of project-generated traffic onto the existing and proposed roadway network is illustrated in **Figure 7**. The volumes were derived by applying the trip distribution percentages in Figure 6 to the trip generation estimates in Table 1. Total traffic volumes, which include the combined background and project-generated traffic, are illustrated for Year 2006 in **Figure 8** and for Year 2030 in **Figure 9**.

III. TRAFFIC IMPACTS

The impacts of the proposed Patriot Village development were determined by performing peak-hour analysis utilizing SYNCHRO 6.0 software. The results are reported as Levels of Service (LOS) and can range from free-flow conditions (LOS A) to above-roadway capacity conditions (LOS F).

Level of Service calculations were performed for the intersections of Bradley Road/Hancock Expressway, Bradley Road/ Alturas Drive, Alturas Drive/Cable Lane(Site Access #1) and Cable Lane/Crowned Eagle View. Where appropriate, analyses included morning and evening peak-hour periods for Years 2006 and 2026 background and total traffic. The results are summarized in **Table 2** and complete printouts can be found in the appendix of this report.

Levels of Service

Bradley Road/Hancock Expressway: This signalized intersection is expected to operate at Level of Service "D" or better with or without the addition of project-generated traffic through the Year 2026. All approaches of this intersection currently include two through lanes, with the exception of the eastbound approach. By the Year 2030, the intersection will require two eastbound through lanes in order to accommodate background traffic not associated with this development.

Bradley Road/Alturas Drive: This intersection is expected to operate at an overall Level of Service "D" or better through the Year 2006 with north/south Stop control. The northbound and southbound approaches are expected to fail by Year 2030 with Stop control. Signalization of the intersection will allow for operation at Level of Service "C" or better through the Year 2030.

Cable Lane/Site Access #1: This intersection is expected to operate at an overall Level of Service "A" through the Year 2030 upon the addition of project-generated traffic.

Cable Lane/Site Access #2: This intersection is expected to operate at an overall Level of Service "A" through the Year 2030 upon the addition of project-generated traffic.

IV. RECOMMENDATIONS

The following improvements are recommended in association with the Patriot Village development:

Imperial Eagle Heights (at Cable Lane)

- The northbound approach of this intersection is recommended for construction with a single northbound, shared left-, through, right-turn lane. The intersection is recommended to operate with north/south Stop-control through the Year 2030.

Crowned Eagle View (at Cable Lane)

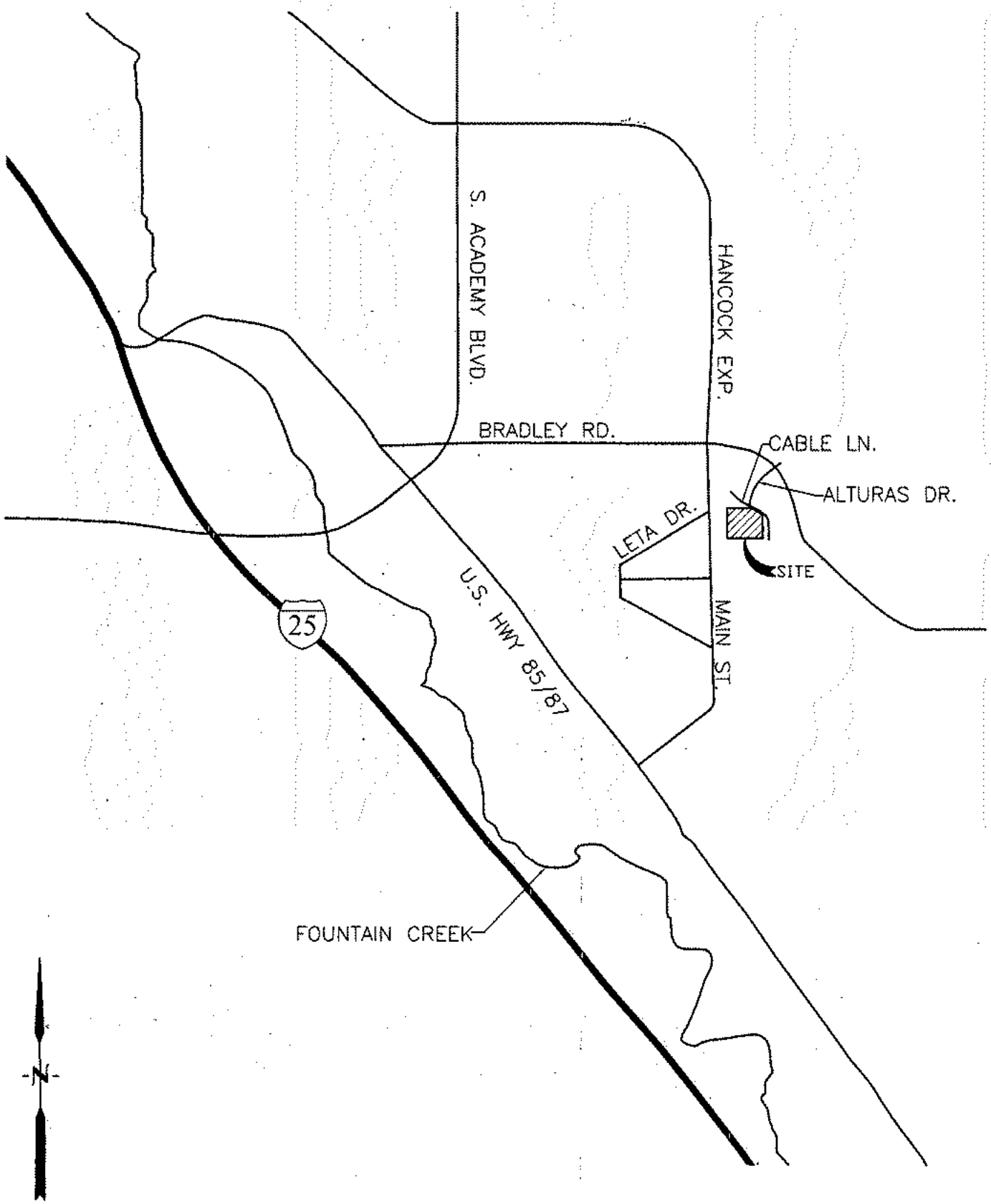
- The northbound approach of this intersection is recommended for construction with a single northbound, shared left and right-turn lane. The intersection is recommended to operate with northbound Stop-control through the Year 2030.

Cable Lane

- In the vicinity of the site, Cable Lane will be constructed to Residential Minor Collector standards (30' pavement section) with curb/gutter on both sides and sidewalk on the south side.

Alturas Drive/Bradley Road intersection

- Alturas Drive shall be re-striped to include a dedicated northbound left-turn lane and a shared through/right-turn lane. The storage length will be limited by the location of the northern site access to the Windmill Creek Subdivision, which is approximately located 120' south of Bradley Road. Signalization of the intersection is recommended when Warrants contained in the Manual on Uniform Traffic Control Devices are met.



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5426 N. ACADEMY, SUITE 110
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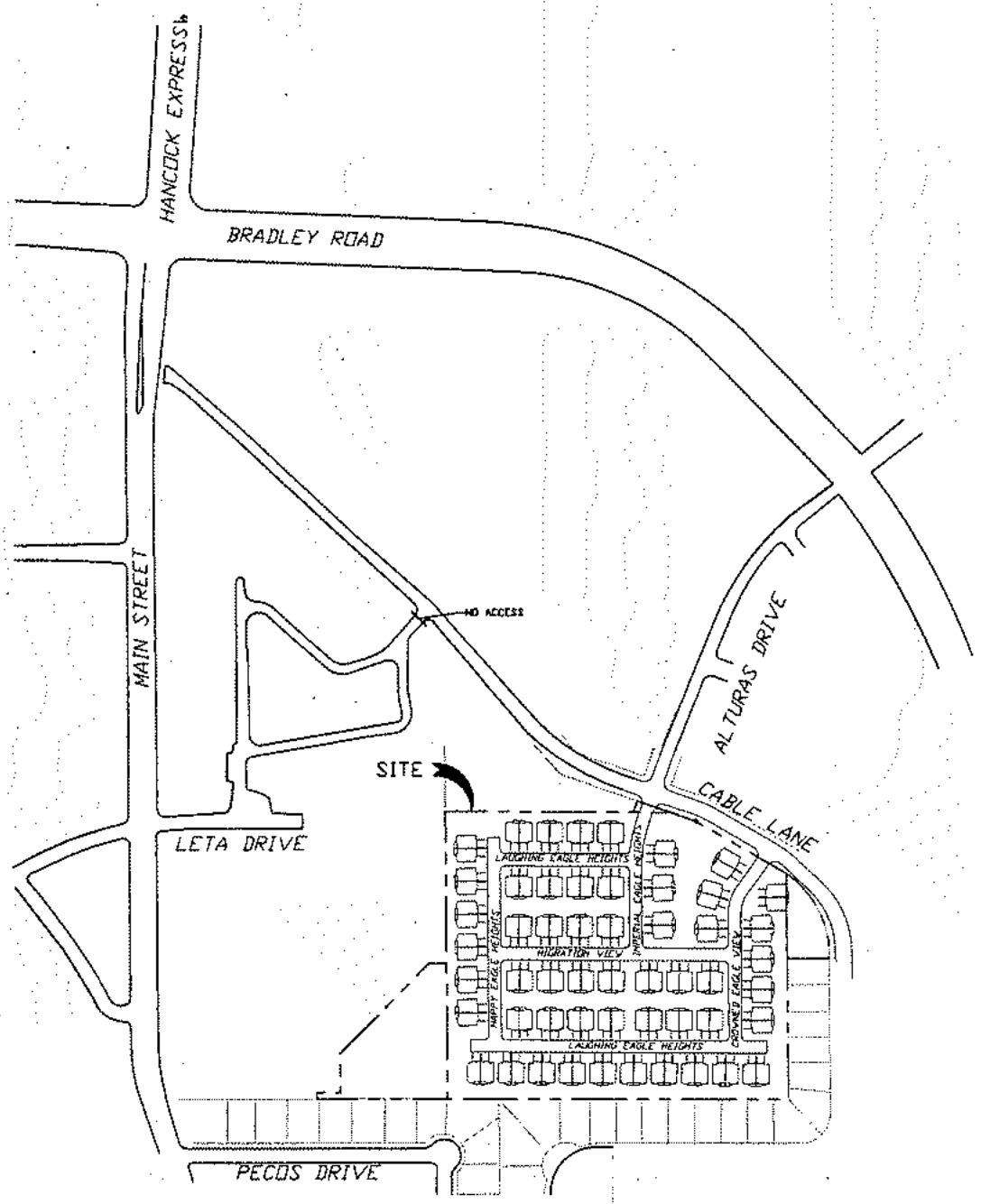
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

VICINITY MAP

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=3000'	7/7/06	1



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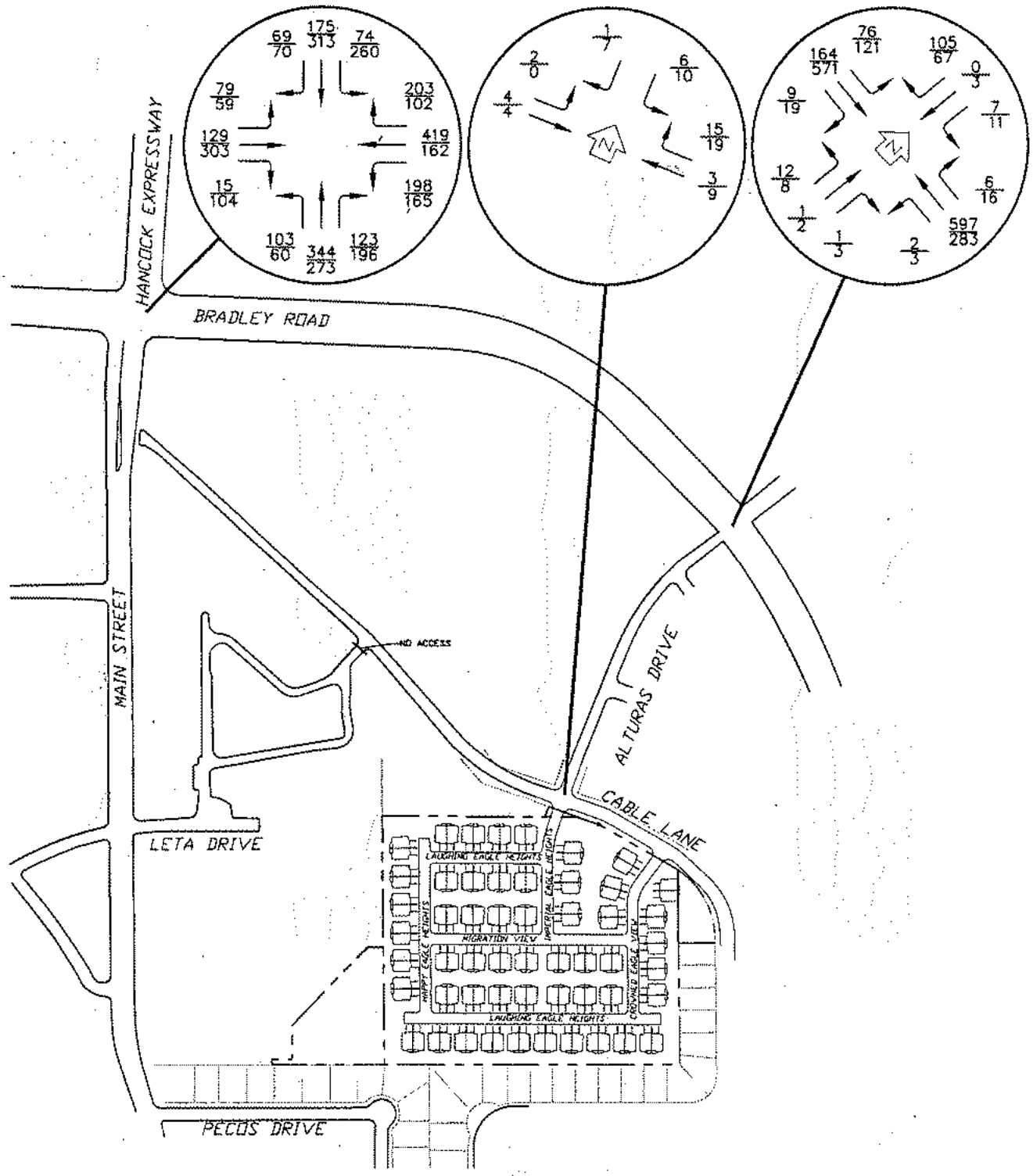
CONTACT: JEFFERY MAXWELL, P.E., PTOE

SITE MAP

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	2



N

N.T.S.

LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

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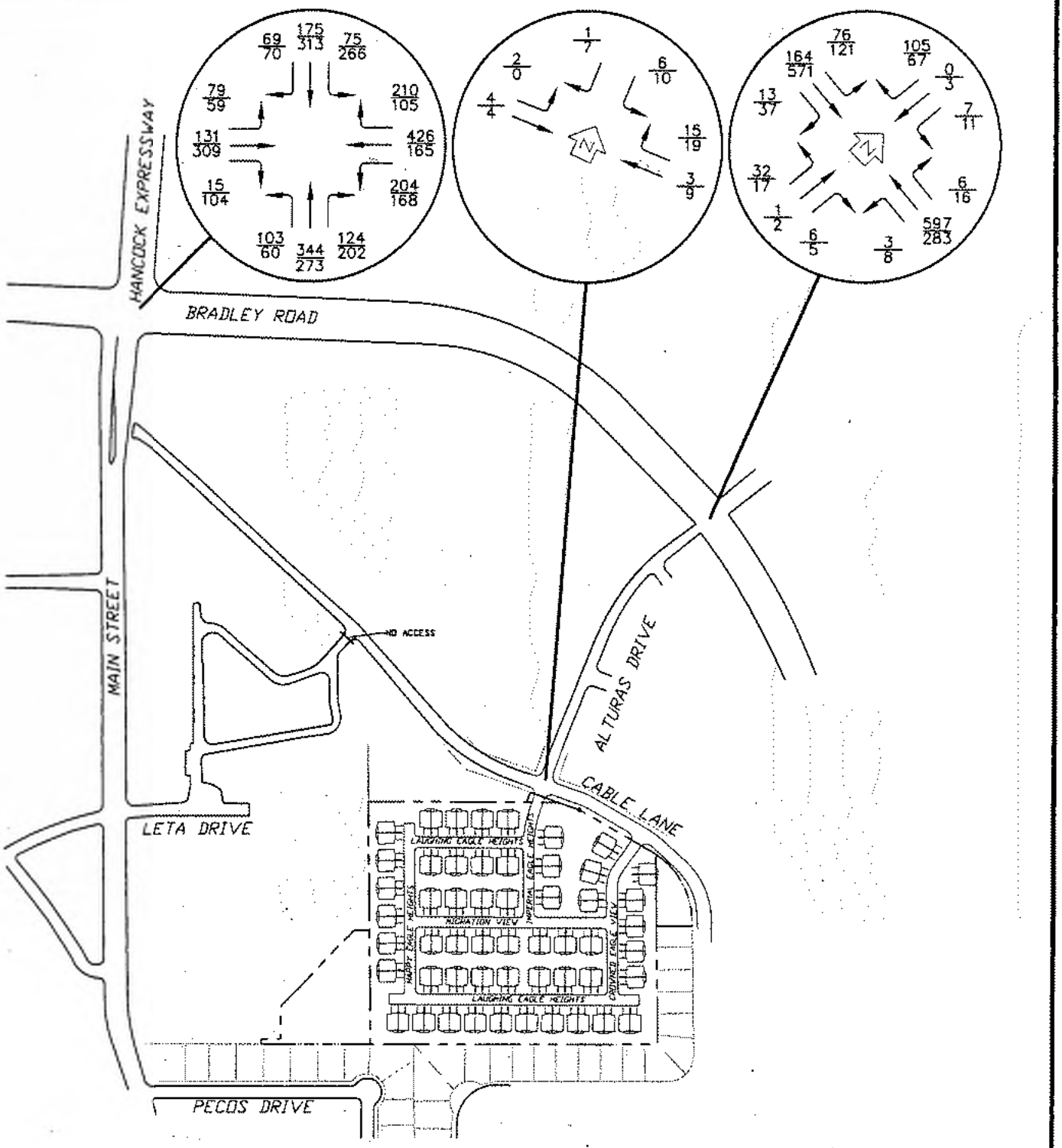
COLORADO SPRINGS, CO 80913
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

EXISTING TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	3



N

N.T.S.

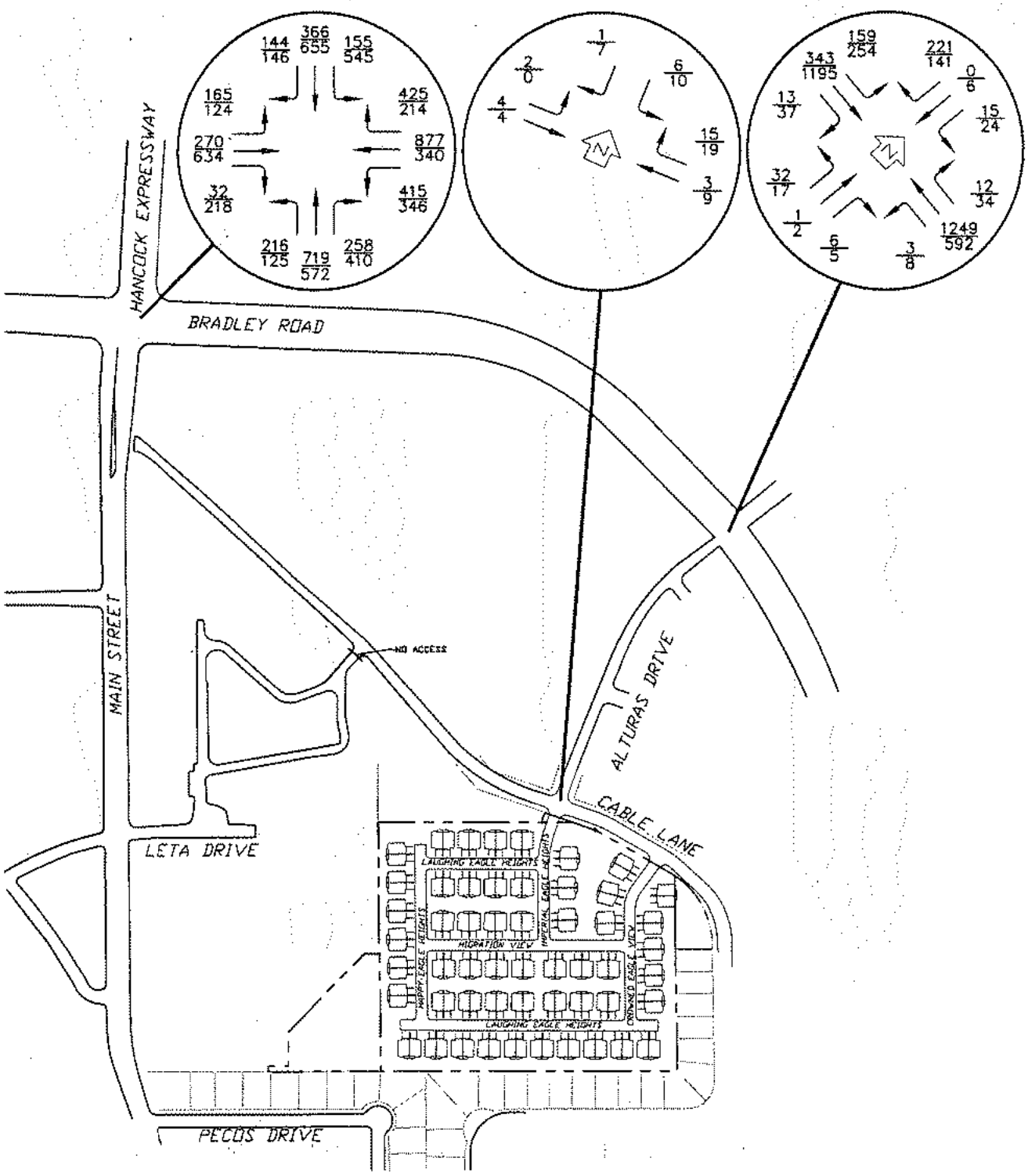
LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

PENTACOR
PENTACOR ENGINEERING, LLC
5426 N. ACADEMY, SUITE 110
COLORADO SPRINGS, CO 80919
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

YEAR 2006 BACKGROUND TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	4



N.T.S.

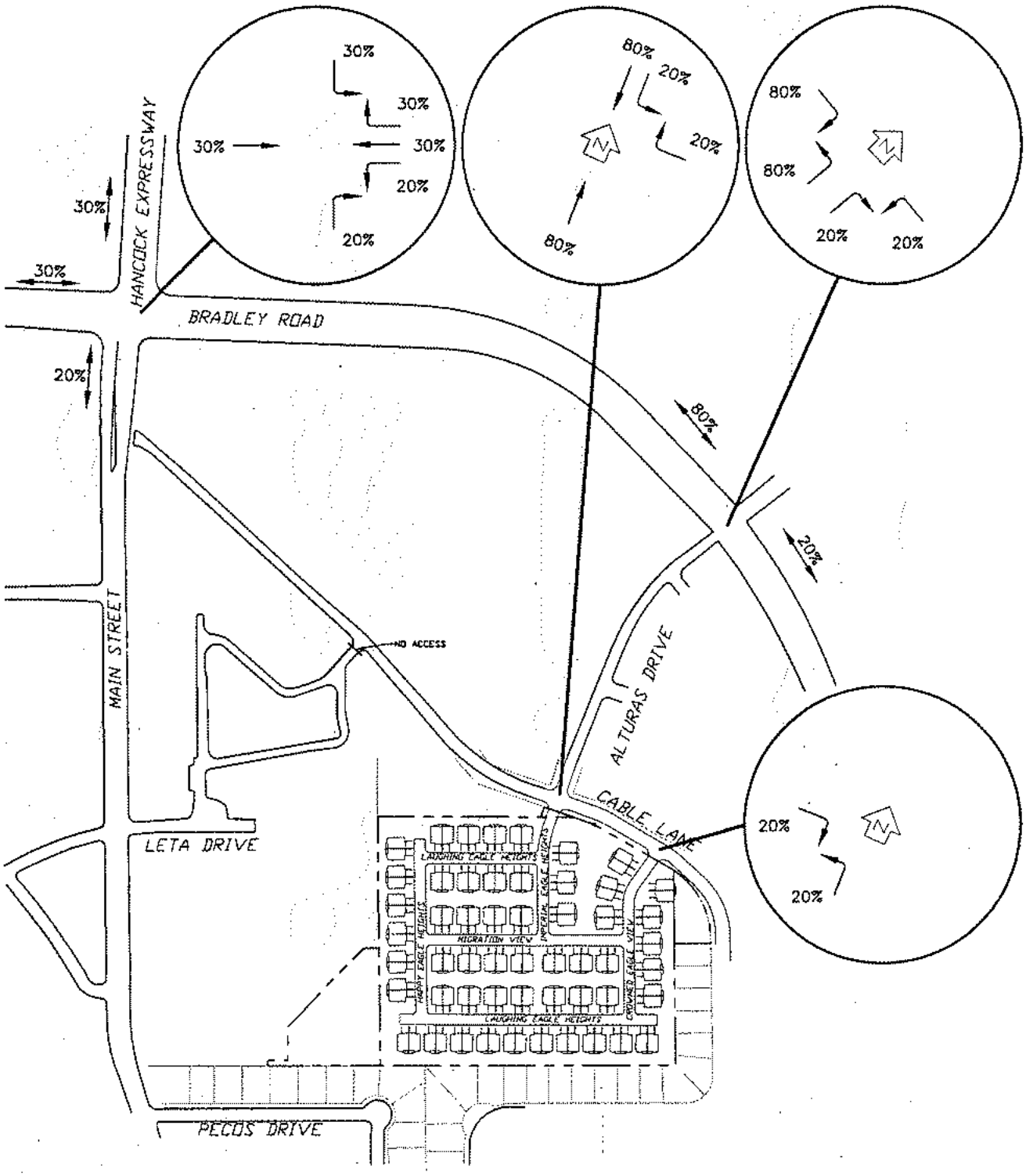
LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

PENTACOR
PENTACOR ENGINEERING, LLC
5426 N. ACADEMY, SUITE 110
COLORADO SPRINGS, CO 80913
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

YEAR 2030 BACKGROUND TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	5



N

N.T.S.

LEGEND:

25% : PERCENT DISTRIBUTION OF PROJECT GENERATED TRAFFIC

PENTACOR

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5426 N. ACADEMY, SUITE 110
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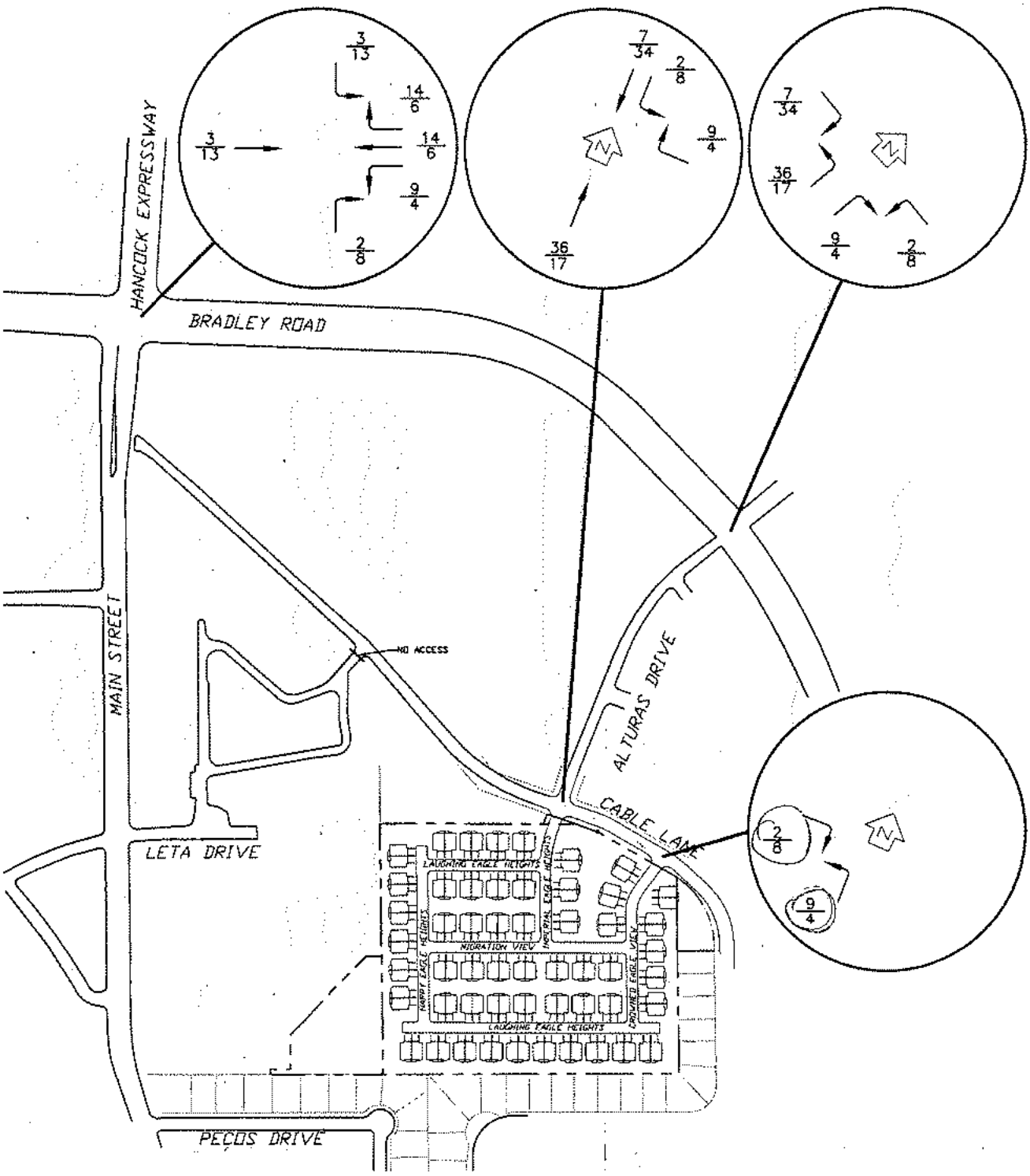
CONTACT: JEFFERY MAXWELL, P.E., PTOE

DISTRIBUTION OF PROJECT-GENERATED TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	6



LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

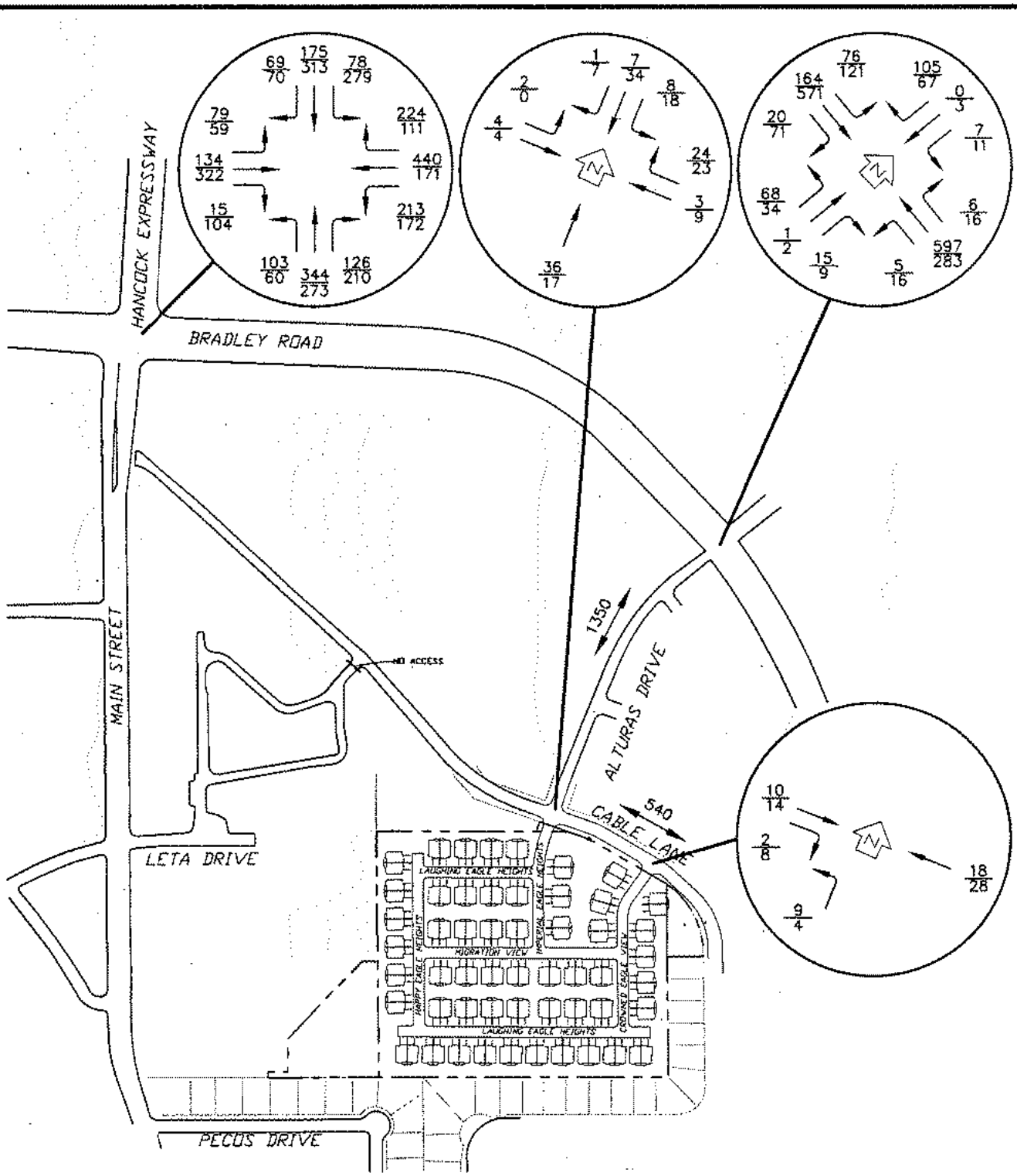
N.T.S.

PENTACOR
PENTACOR ENGINEERING, LLC
5426 N. ACADEMY, SUITE 110
COLORADO SPRINGS, CO 80913
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

ASSIGNMENT
PROJECT-GENERATED TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	7



N.T.S.

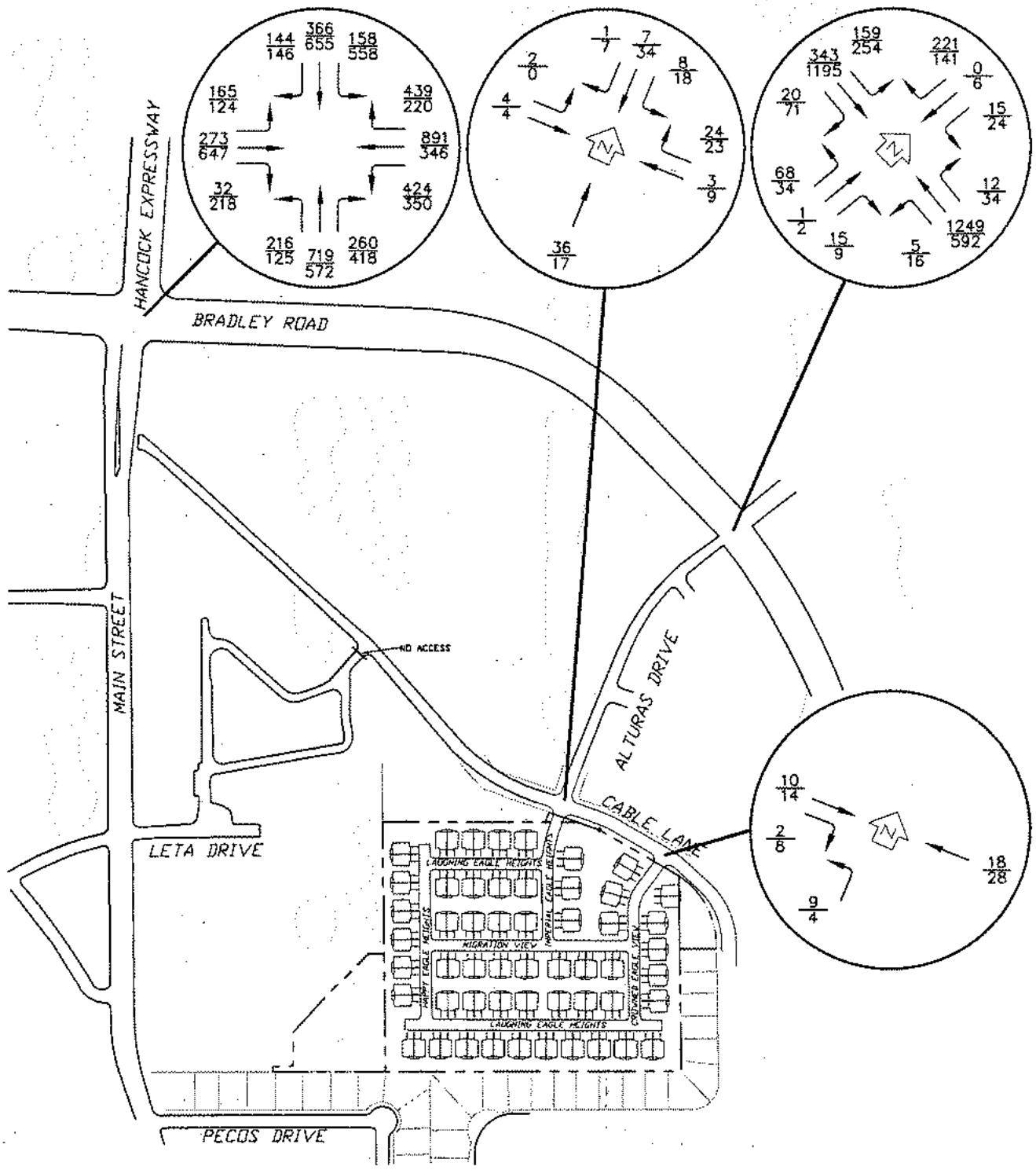
LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

PENTACOR
PENTACOR ENGINEERING, LLC
5426 N. ACADEMY, SUITE 110
COLORADO SPRINGS, CO 80913
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

YEAR 2006 TOTAL TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	8



LEGEND:
00/00 : AM/PM PEAK-HOUR TRAFFIC

N.T.S.

PENTACOR
PENTACOR ENGINEERING, LLC
5426 N. ACADEMY, SUITE 110
COLORADO SPRINGS, CO 80913
(719) 264-1560 FAX: (719) 264-1193
CONTACT: JEFFERY MAXWELL, P.E., PTOE

YEAR 2030 TOTAL TRAFFIC

PATRIOT VILLAGE

SCALE:	DATE:	FIGURE NO.
1"=400'	7/7/06	9

TABLE 1
TRIP GENERATION
PATRIOT VILLAGE

	Land Use	ITE Code	Quantity	Units	TRIP GENERATION RATES					TRIPS GENERATED				
					Weekday	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Weekday	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
PROJECT GENERATED	Townhomes	230	106	units	6.5139	0.0868	0.4236	0.3986	0.1963	690	9	45	42	21

Source: ITE Trip Generation, 7th Edition 2003.
Fitted Curve Equations utilized

Table 2
Intersection Level of Service (LOS)
PATRIOT VILLAGE

Intersection	Traffic Control	Year 2006 Existing Traffic		Year 2006 Background		Year 2006 Total Traffic		Year 2030 Background		Year 2030 Total Traffic	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Bradley/Hancock	Signal										
EB Approach		C	C	C	C	C	C	D	D	D	D
WB Approach		C	B	C	B	C	B	C	D	C	D
NB Approach		C	C	C	C	C	C	C	D	C	D
SB Approach		C	C	C	C	C	C	C	D	C	D
Entire Intersection		C	C	C	C	C	C	C	D	C	D
Bradley/Alturus	N/S Stop										
EB Approach		A	A	A	A	A	A	A	B	C	B
WB Approach		A	A	A	A	A	A	A	B	A	B
NB Approach		C	D	C	D	D	E	F	F	F	F
SB Approach		B	B	B	B	B	B	E	F	E	F
Entire Intersection		A	A	A	A	A	A	C	F	F	F
Bradley/Alturus	Signal										
EB Approach		-	-	-	-	-	-	D	B	A	B
WB Approach		-	-	-	-	-	-	B	A	A	A
NB Approach		-	-	-	-	-	-	C	C	D	C
SB Approach		-	-	-	-	-	-	C	C	D	C
Entire Intersection		-	-	-	-	-	-	C	B	B	B
Alturus/Cable (Imperial Eagle Heights)	N/S Stop										
EB Approach		A	A	A	A	A	A	A	A	A	A
WB Approach		A	A	A	A	A	A	A	A	A	A
NB Approach		--	--	--	--	A	A	--	--	A	A
SB Approach		A	A	A	A	A	A	A	A	A	A
Entire Intersection		A	A	A	A	A	A	A	A	A	A
Cable/Crowned Eagle View	NB Stop										
EB Approach		--	--	--	--	A	A	--	--	A	A
WB Approach		--	--	--	--	A	A	--	--	A	A
NB Approach		--	--	--	--	A	A	--	--	A	A
Entire Intersection		--	--	--	--	A	A	--	--	A	A

APPENDIX

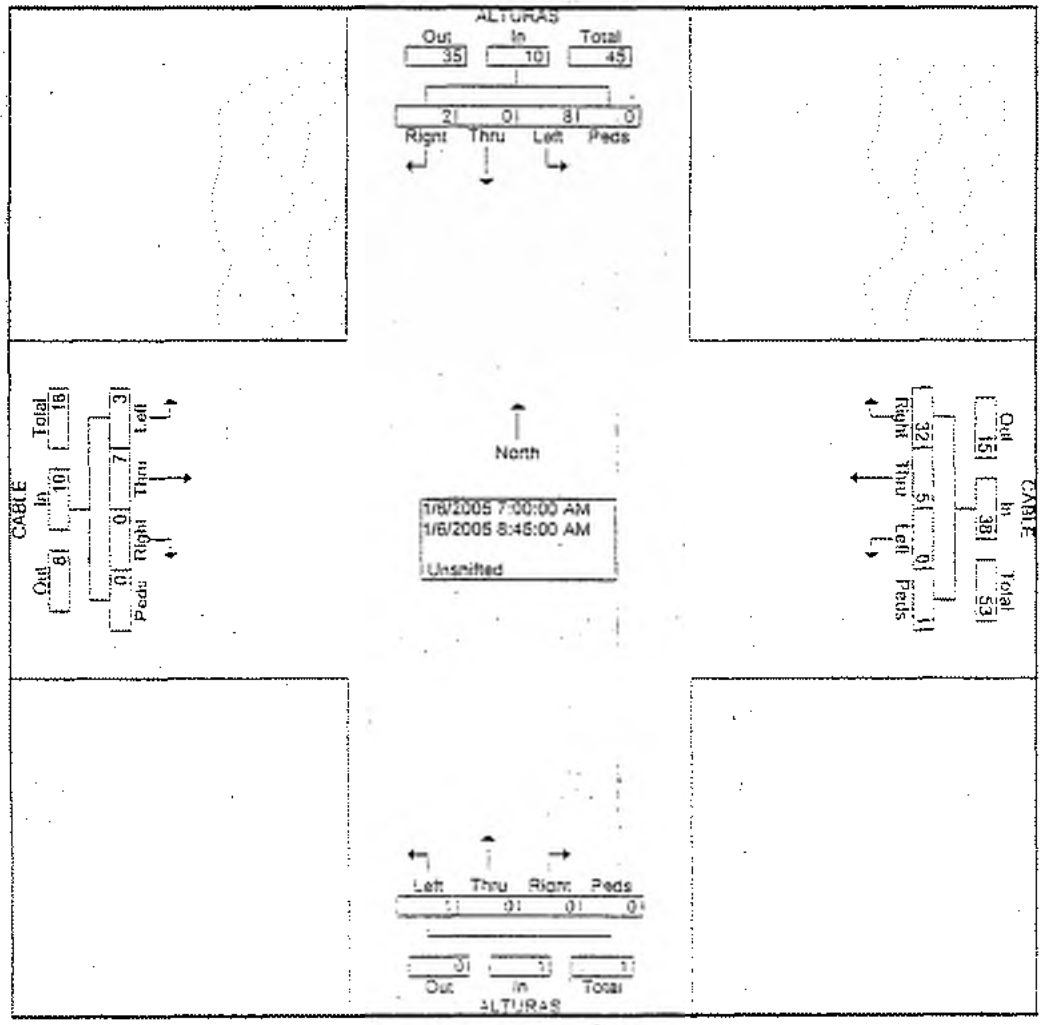
Traffic Counts
Level of Service Calculations

All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
www.alltrafficdata.net

File Name : CABLE&ALTURASAM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

Groups Printed- Unshifted

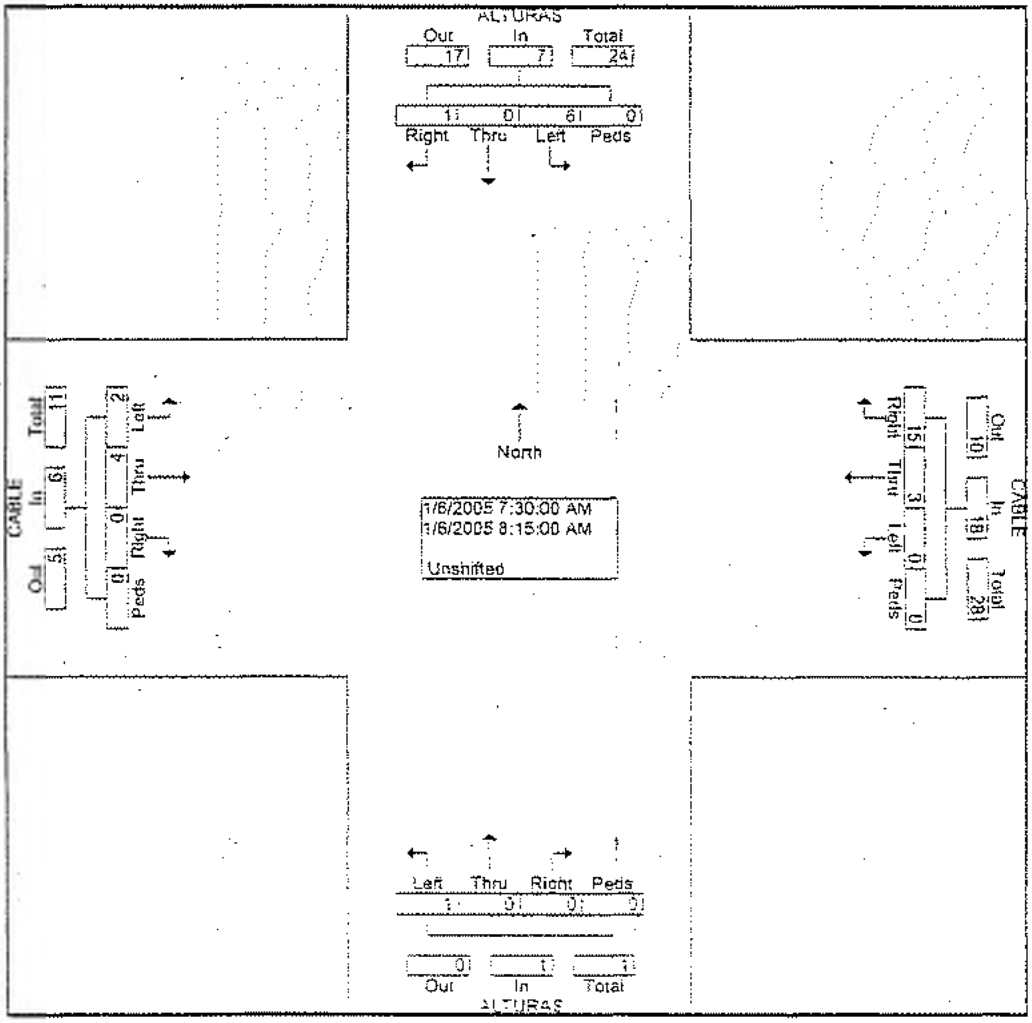
	ALTURAS Southbound				CABLE Westbound				ALTURAS Northbound				CABLE Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	0	0	0	0	7	0	0	0	0	0	0	1	0	0	8
07:15 AM	0	0	1	0	0	1	4	1	0	0	0	0	0	0	0	0	7
07:30 AM	1	0	0	0	0	0	3	0	0	0	0	0	1	2	0	0	7
07:45 AM	2	0	0	0	0	1	4	0	0	0	0	0	1	1	0	0	9
Total	3	0	1	0	0	2	18	1	0	0	0	0	2	4	0	0	31
08:00 AM	2	0	0	0	0	0	3	0	1	0	0	0	0	1	0	0	7
08:15 AM	1	0	1	0	0	2	5	0	0	0	0	0	0	0	0	0	9
08:30 AM	1	0	0	0	0	1	3	0	0	0	0	0	1	1	0	0	7
08:45 AM	1	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	5
Total	5	0	1	0	0	3	14	0	1	0	0	0	1	3	0	0	28
Grand Total	8	0	2	0	0	5	32	1	1	0	0	0	3	7	0	0	59
Apprch %	80.0	0.0	20.0	0.0	0.0	13.2	84.2	2.6	100.0	0.0	0.0	0.0	30.0	70.0	0.0	0.0	
Total %	13.6	0.0	3.4	0.0	0.0	8.5	54.2	1.7	1.7	0.0	0.0	0.0	5.1	11.9	0.0	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
www.alltrafficdata.net

File Name : CABLE&ALTURASAM
Site Code : 00000000
Start Date : 1/6/2005

	ALTURAS Southbound					CABLE Westbound					ALTURAS Northbound					CABLE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	6	0	1	0	7	0	3	15	0	18	1	0	0	0	1	2	4	0	0	6	32
Percent	85.7	0.0	14.3	0.0		0.0	16.7	83.3	0.0		100.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0		
08:15 Volume	1	0	1	0	2	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	9
Peak Factor																					0.889
High Int.	07:45 AM					08:15 AM					08:00 AM					07:30 AM					
Volume	2	0	0	0	2	0	2	5	0	7	1	0	0	0	1	1	2	0	0	3	
Peak Factor					0.875					0.643					0.250					0.500	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
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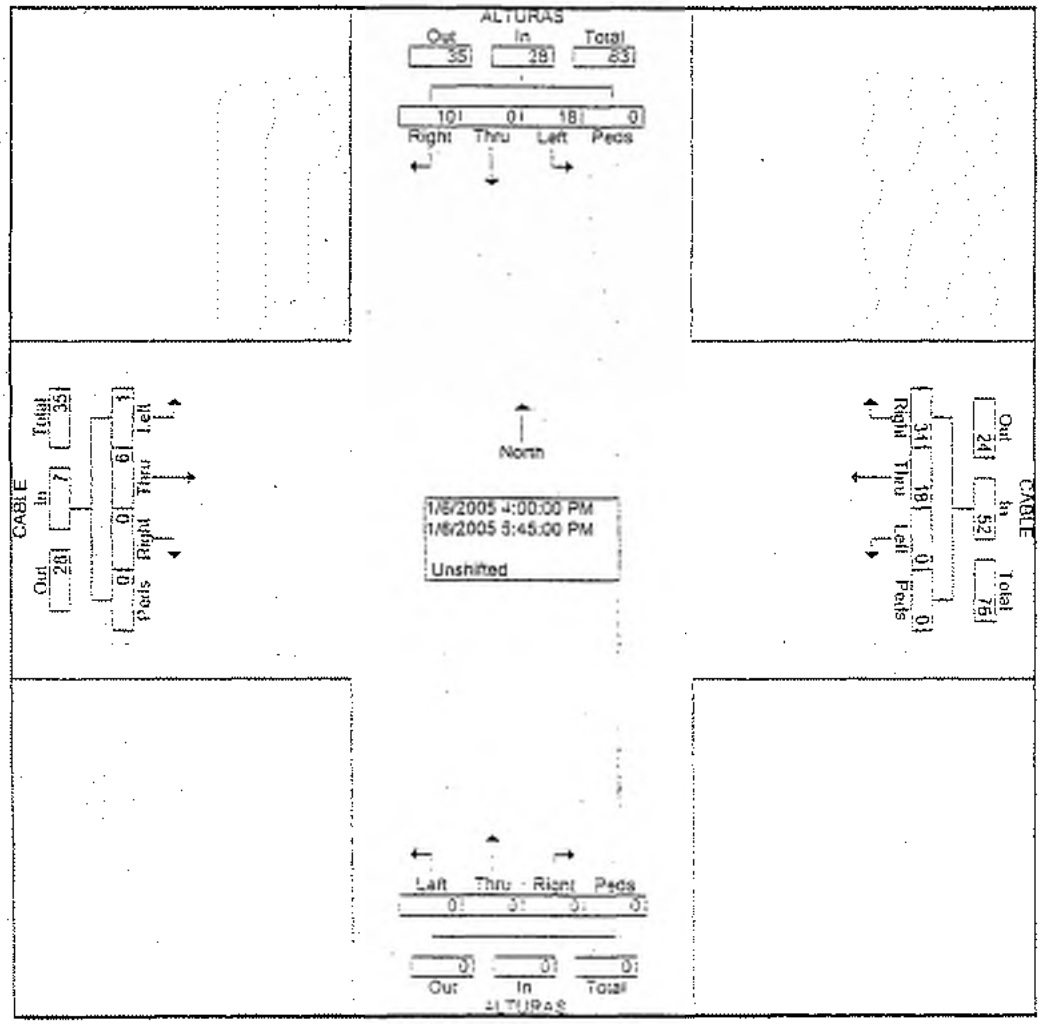
File Name : CABLE&ALTURASPM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

Groups Printed- Unshifted

	ALTURAS Southbound				CABLE Westbound				ALTURAS Northbound				CABLE Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	2	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	7
04:15 PM	2	0	1	0	0	3	5	0	0	0	0	0	0	2	0	0	13
04:30 PM	1	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0	7
04:45 PM	4	0	4	0	0	3	6	0	0	0	0	0	0	0	0	0	17
Total	9	0	5	0	0	8	19	0	0	0	0	0	0	3	0	0	44
05:00 PM	3	0	2	0	0	2	4	0	0	0	0	0	0	1	0	0	12
05:15 PM	2	0	0	0	0	4	2	0	0	0	0	0	0	1	0	0	9
05:30 PM	2	0	3	0	0	2	4	0	0	0	0	0	0	0	0	0	11
05:45 PM	2	0	0	0	0	2	5	0	0	0	0	0	1	1	0	0	11
Total	9	0	5	0	0	10	15	0	0	0	0	0	1	3	0	0	43
Grand Total	18	0	10	0	0	18	34	0	0	0	0	0	1	6	0	0	87
Apprch %	64.3	0.0	35.7	0.0	0.0	34.6	65.4	0.0	0.0	0.0	0.0	0.0	14.3	85.7	0.0	0.0	
Total %	20.7	0.0	11.5	0.0	0.0	20.7	39.1	0.0	0.0	0.0	0.0	0.0	1.1	6.9	0.0	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
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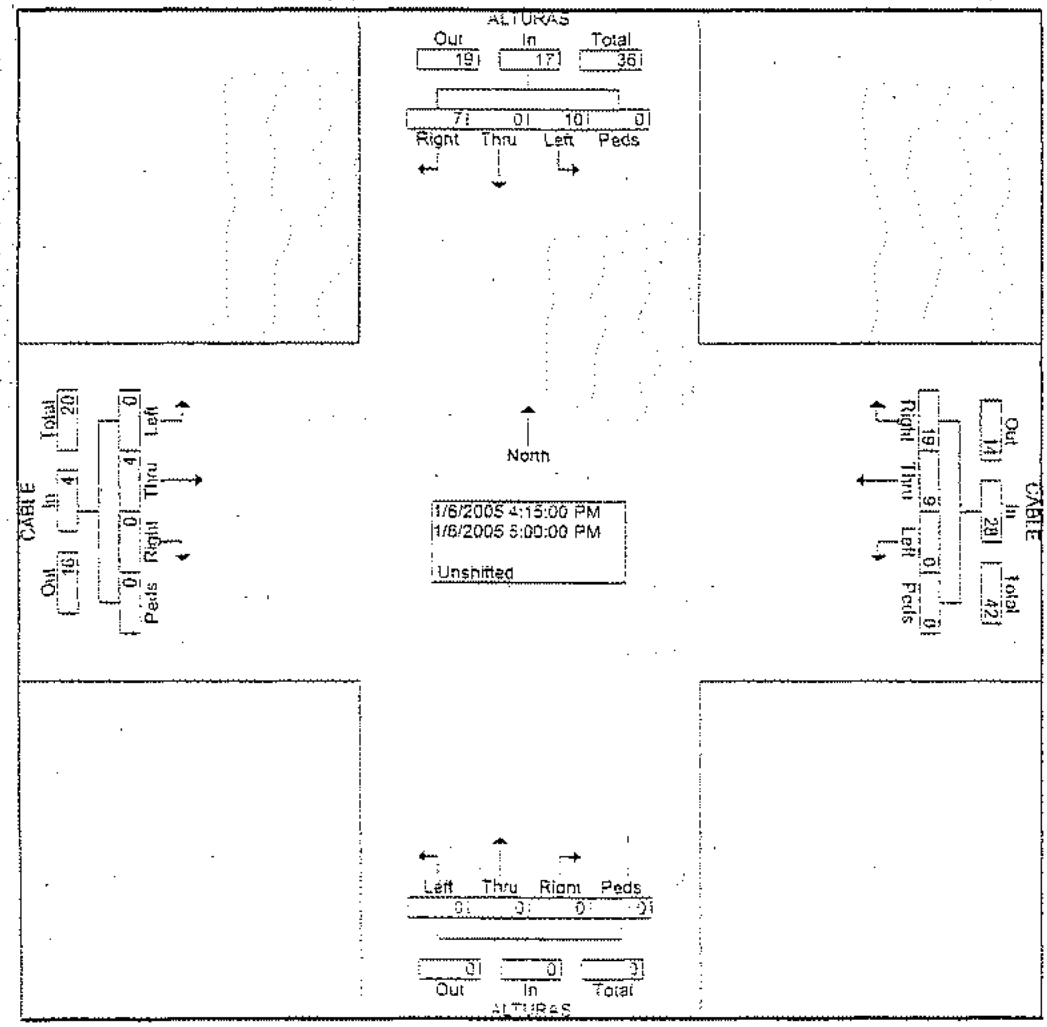
File Name : CABLE&ALTURASPM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 2

	ALTURAS Southbound					CABLE Westbound					ALTURAS Northbound					CABLE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	10	0	7	0	17	0	9	19	0	28	0	0	0	0	0	0	4	0	0	4	49
Percent	58.8	0.0	41.2	0.0		0.0	32.1	67.9	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
04:45 Volume	4	0	4	0	8	0	3	6	0	9	0	0	0	0	0	0	0	0	0	0	17
Peak Factor																					0.721
High Int.	04:45 PM					04:45 PM					3:45:00 PM					04:15 PM					
Volume	4	0	4	0	8	0	3	6	0	9	0	0	0	0	0	0	2	0	0	2	
Peak Factor					0.531					0.778										0.500	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
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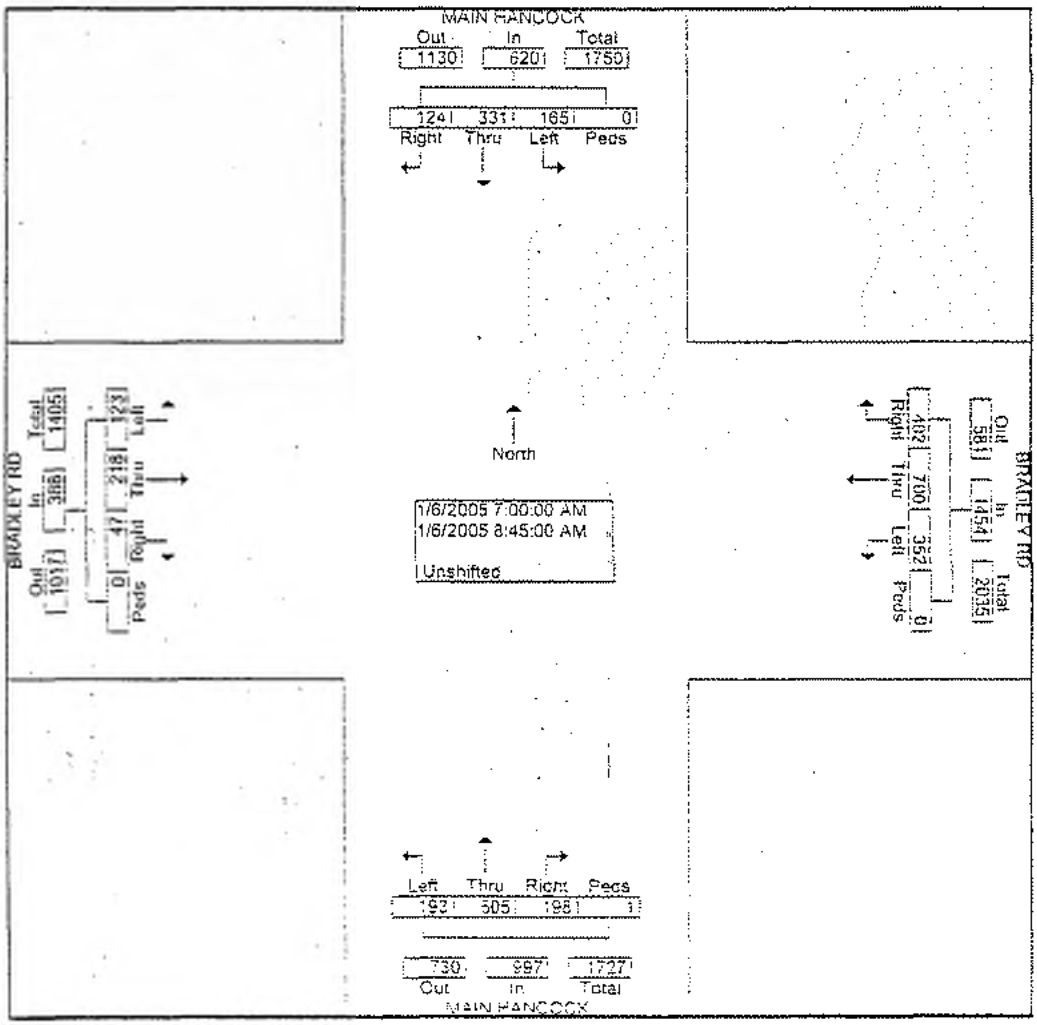
File Name : MAIN&BRADLEYAM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

Groups Printed- Unshifted

	MAIN HANCOCK Southbound				BRADLEY RD Westbound				MAIN HANCOCK Northbound				BRADLEY RD Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	25	42	27	0	69	95	32	0	27	81	49	0	11	17	7	0	482
07:15 AM	14	34	13	0	53	116	44	0	24	73	30	0	21	31	0	0	453
07:30 AM	16	46	13	0	33	129	70	0	31	109	25	0	27	47	5	0	551
07:45 AM	19	53	16	0	43	79	57	0	21	81	19	0	20	34	3	0	445
Total	74	175	69	0	198	419	203	0	103	344	123	0	79	129	15	0	1931
08:00 AM	23	50	14	0	33	65	65	0	20	55	17	0	11	20	2	0	375
08:15 AM	23	36	12	0	51	86	48	0	24	79	20	0	11	21	8	0	419
08:30 AM	22	28	11	0	31	90	58	0	29	68	21	1	11	28	10	0	408
08:45 AM	23	42	18	0	39	40	28	0	17	59	17	0	11	20	12	0	326
Total	91	156	55	0	154	281	199	0	90	261	75	1	44	89	32	0	1528
Grand Total	165	331	124	0	352	700	402	0	193	605	198	1	123	218	47	0	3459
Apprch %	26.6	53.4	20.0	0.0	24.2	48.1	27.6	0.0	19.4	60.7	19.9	0.1	31.7	56.2	12.1	0.0	
Total %	4.8	9.6	3.6	0.0	10.2	20.2	11.6	0.0	5.6	17.5	5.7	0.0	3.6	6.3	1.4	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
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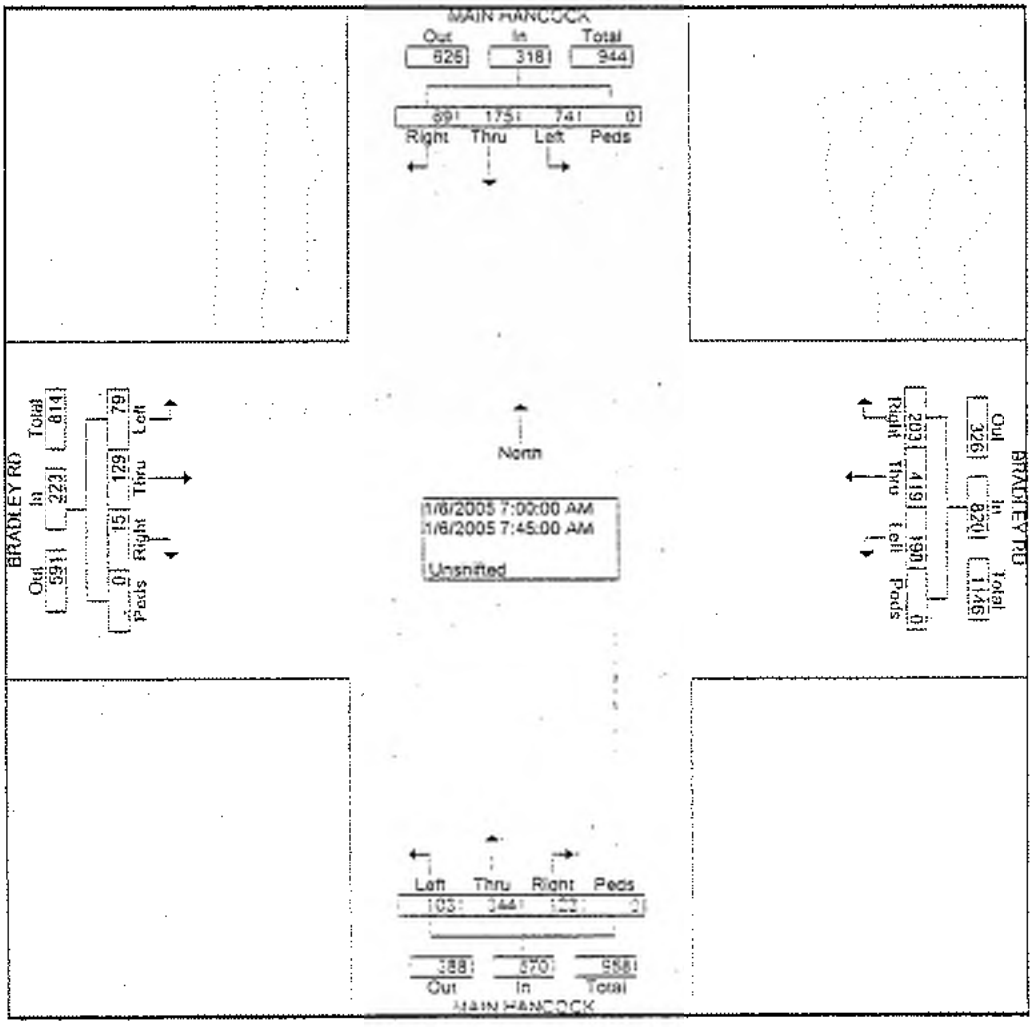
File Name : MAIN&BRADLEYAM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 2

	MAIN HANCOCK Southbound					BRADLEY RD Westbound					MAIN HANCOCK Northbound					BRADLEY RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	74	175	69	0	318	198	419	203	0	820	103	344	123	0	570	79	129	15	0	223	1931
Percent	23.3	55.0	21.7	0.0		24.1	51.1	24.8	0.0		18.1	60.4	21.6	0.0		35.4	57.8	6.7	0.0		
07:30 Volume	16	46	13	0	75	33	129	70	0	232	31	109	25	0	165	27	47	5	0	79	551
Peak Factor																					0.876
High Int.	07:00 AM					07:30 AM					07:30 AM					07:30 AM					
Volume	25	42	27	0	94	33	129	70	0	232	31	109	25	0	165	27	47	5	0	79	
Peak Factor					0.846					0.884					0.864					0.706	



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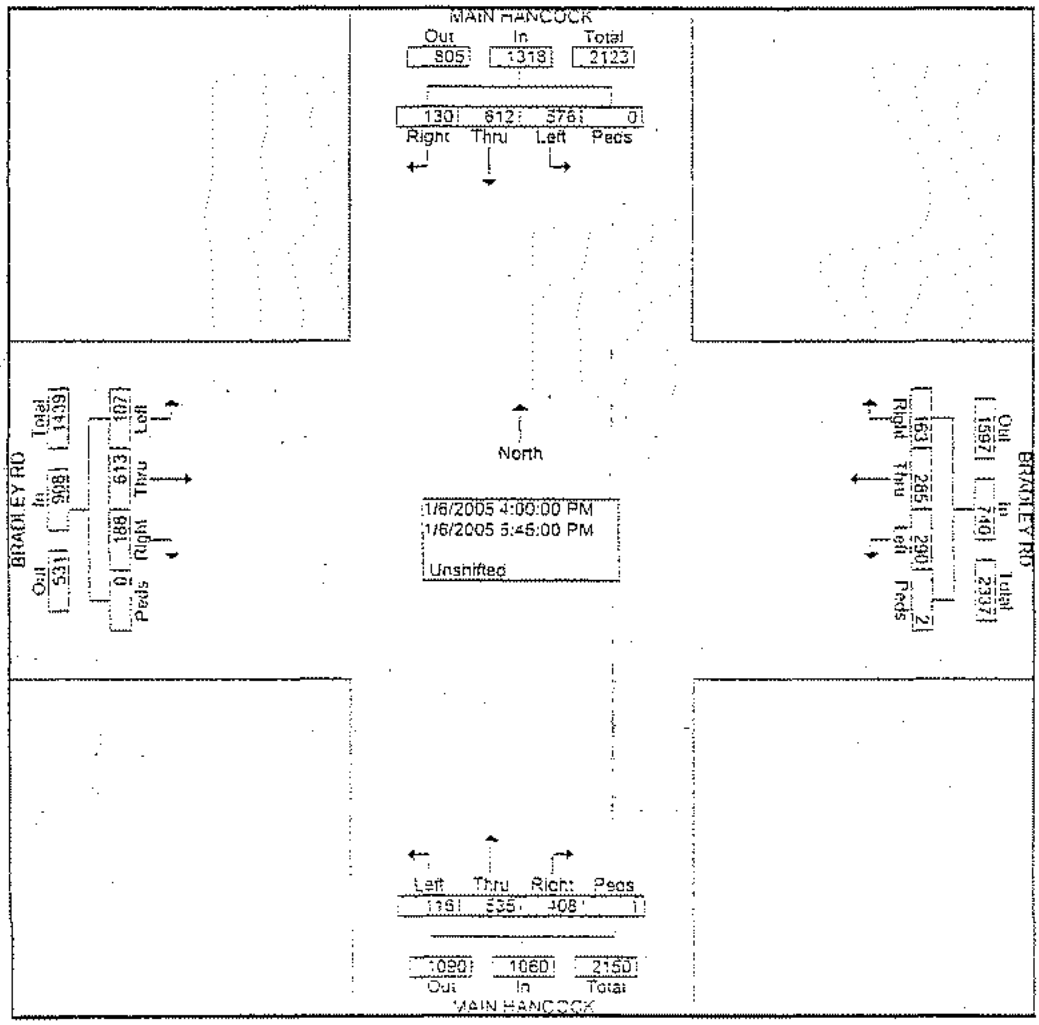
File Name : MAIN&BRADLEYPM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

Groups Printed- Unshifted

	MAIN HANCOCK Southbound				BRADLEY RD Westbound				MAIN HANCOCK Northbound				BRADLEY RD Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	53	86	16	0	52	67	31	0	29	75	47	0	20	64	38	0	573
04:15 PM	61	80	14	0	38	36	31	0	8	72	47	0	11	76	27	0	501
04:30 PM	76	77	19	0	32	29	25	0	13	64	55	0	10	77	27	0	504
04:45 PM	70	70	21	0	43	30	15	0	10	62	47	0	18	86	12	0	484
Total	260	313	70	0	165	162	102	0	60	273	196	0	59	303	104	0	2067
05:00 PM	73	63	19	0	42	38	20	0	8	94	65	1	17	79	22	0	541
05:15 PM	86	85	22	0	33	19	23	2	15	54	57	0	14	88	26	0	524
05:30 PM	91	73	9	0	29	36	10	0	16	69	48	0	10	72	16	0	479
05:45 PM	66	78	10	0	21	30	8	0	17	45	42	0	7	71	20	0	415
Total	316	299	60	0	125	123	61	2	56	262	212	1	48	310	84	0	1959
Grand Total	576	612	130	0	290	285	163	2	116	535	408	1	107	613	188	0	4026
Apprch %	43.7	46.4	9.9	0.0	39.2	38.5	22.0	0.3	10.9	50.5	38.5	0.1	11.8	67.5	20.7	0.0	
Total %	14.3	15.2	3.2	0.0	7.2	7.1	4.0	0.0	2.9	13.3	10.1	0.0	2.7	15.2	4.7	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
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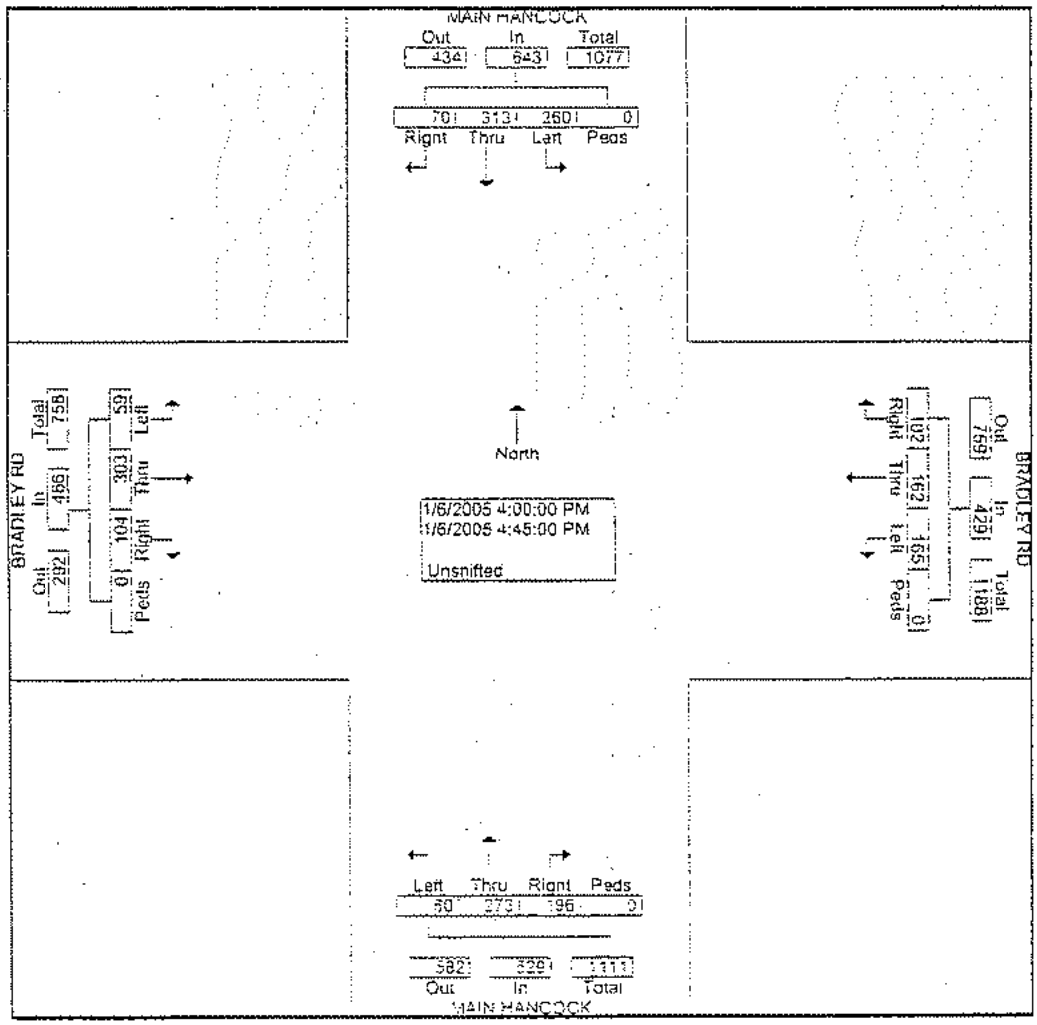
File Name : MAIN&BRADLEYPM
Site Code : 00000000
Start Date : 1/6/2005

	MAIN HANCOCK Southbound					BRADLEY RD Westbound					MAIN HANCOCK Northbound					BRADLEY RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:00 PM																				
Volume	260	313	70	0	643	165	162	102	0	429	60	273	196	0	529	59	303	104	0	466	2067
Percent	40.4	48.7	10.9	0.0		38.5	37.8	23.8	0.0		11.3	51.6	37.1	0.0		12.7	65.0	22.3	0.0		
04:00 Volume	53	86	16	0	155	52	67	31	0	150	29	75	47	0	151	20	64	38	0	122	578
Peak Factor																					0.894
High Int.	04:30 PM					04:00 PM					04:00 PM					04:00 PM					
Volume	76	77	19	0	172	52	67	31	0	150	29	75	47	0	151	20	64	38	0	122	
Peak Factor					0.935					0.715					0.876					0.955	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
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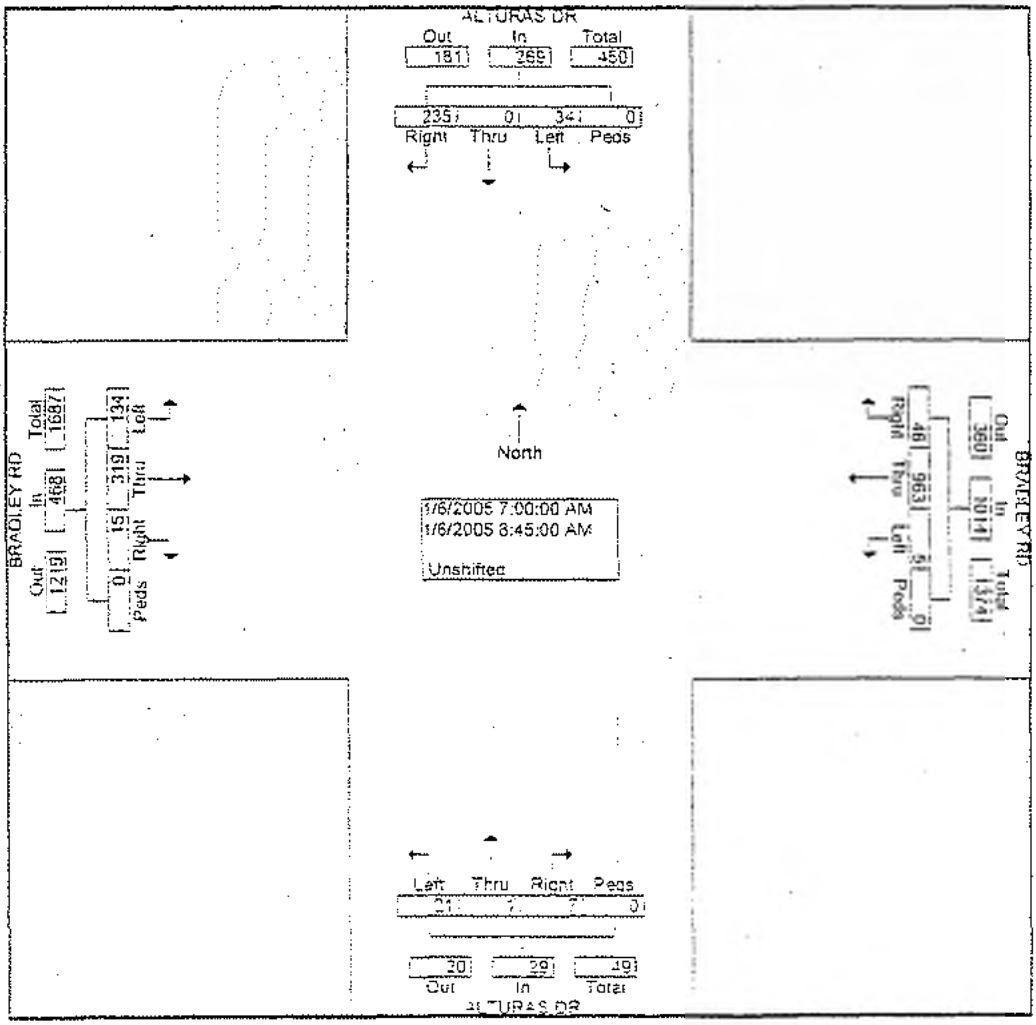
File Name : ALTURAS&BRADLEYAM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

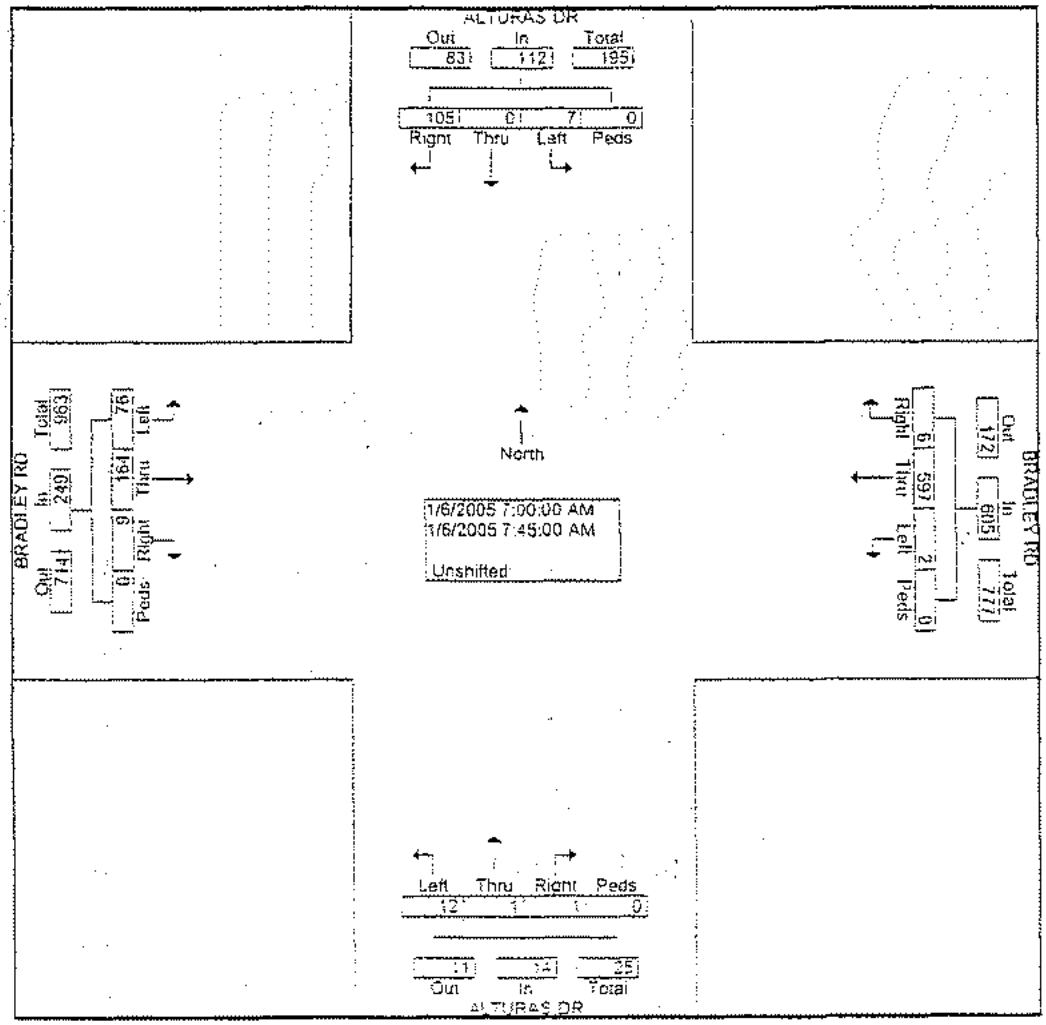
Groups Printed- Unshifted

	ALTURAS DR Southbound				BRADLEY RD Westbound				ALTURAS DR Northbound				BRADLEY RD Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	1	0	22	0	1	152	0	0	4	0	0	0	16	39	2	0	237
07:15 AM	2	0	26	0	0	161	0	0	4	0	1	0	27	37	2	0	260
07:30 AM	3	0	28	0	1	144	1	0	3	0	0	0	22	48	2	0	252
07:45 AM	1	0	29	0	0	140	5	0	1	1	0	0	11	40	3	0	231
Total	7	0	105	0	2	597	6	0	12	1	1	0	76	164	9	0	980
08:00 AM	5	0	27	0	1	106	13	0	3	0	3	0	12	33	3	0	206
08:15 AM	16	0	37	0	1	97	17	0	2	0	1	0	21	35	1	0	228
08:30 AM	4	0	50	0	1	101	8	0	4	0	2	0	13	39	0	0	222
08:45 AM	2	0	16	0	0	62	2	0	0	0	0	0	12	48	2	0	144
Total	27	0	130	0	3	366	40	0	9	0	6	0	58	155	6	0	800
Grand Total	34	0	235	0	5	963	46	0	21	1	7	0	134	319	15	0	1780
Apprch %	12.6	0.0	87.4	0.0	0.5	95.0	4.5	0.0	72.4	3.4	24.1	0.0	28.6	68.2	3.2	0.0	
Total %	1.9	0.0	13.2	0.0	0.3	54.1	2.6	0.0	1.2	0.1	0.4	0.0	7.5	17.9	0.8	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033File Name : ALTURAS&BRADLEYAM
www.alltrafficdata.net Site Code : 00000000
Start Date : 1/6/2005

	ALTURAS DR Southbound					BRADLEY RD Westbound					ALTURAS DR Northbound					BRADLEY RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	7	0	105	0	112	2	597	6	0	605	12	1	1	0	14	76	164	9	0	249	980
Percent	6.3	0.0	93.8	0.0		0.3	98.7	1.0	0.0		85.7	7.1	7.1	0.0		30.5	65.9	3.6	0.0		
07:15 Volume	2	0	26	0	28	0	161	0	0	161	4	0	1	0	5	27	37	2	0	66	260
Peak Factor																					0.942
High Int.	07:30 AM					07:15 AM					07:15 AM					07:30 AM					
Volume	3	0	28	0	31	0	161	0	0	161	4	0	1	0	5	22	48	2	0	72	
Peak Factor					0.903					0.939					0.700					0.865	

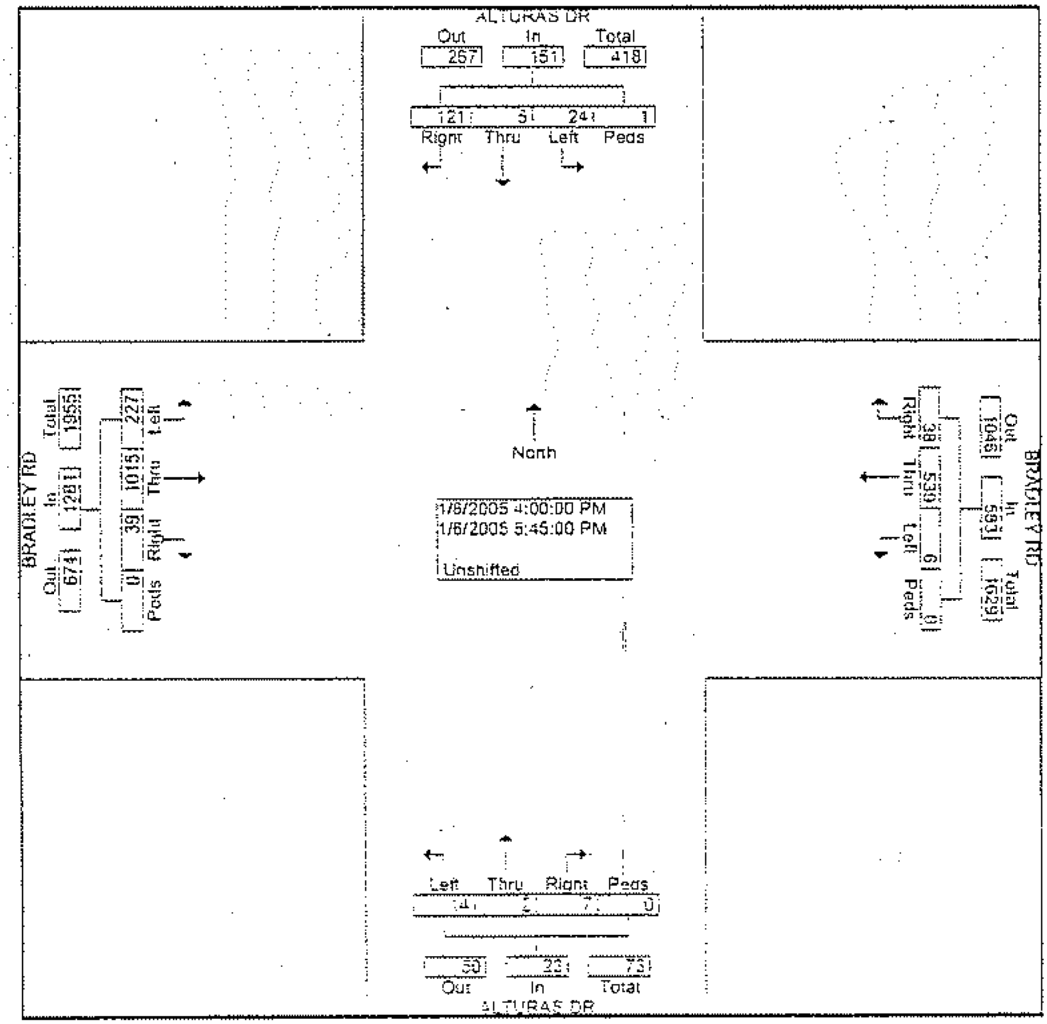


All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033
www.alltrafficdata.net

File Name : ALTURAS&BRADLEYPM
Site Code : 00000000
Start Date : 1/6/2005
Page No : 1

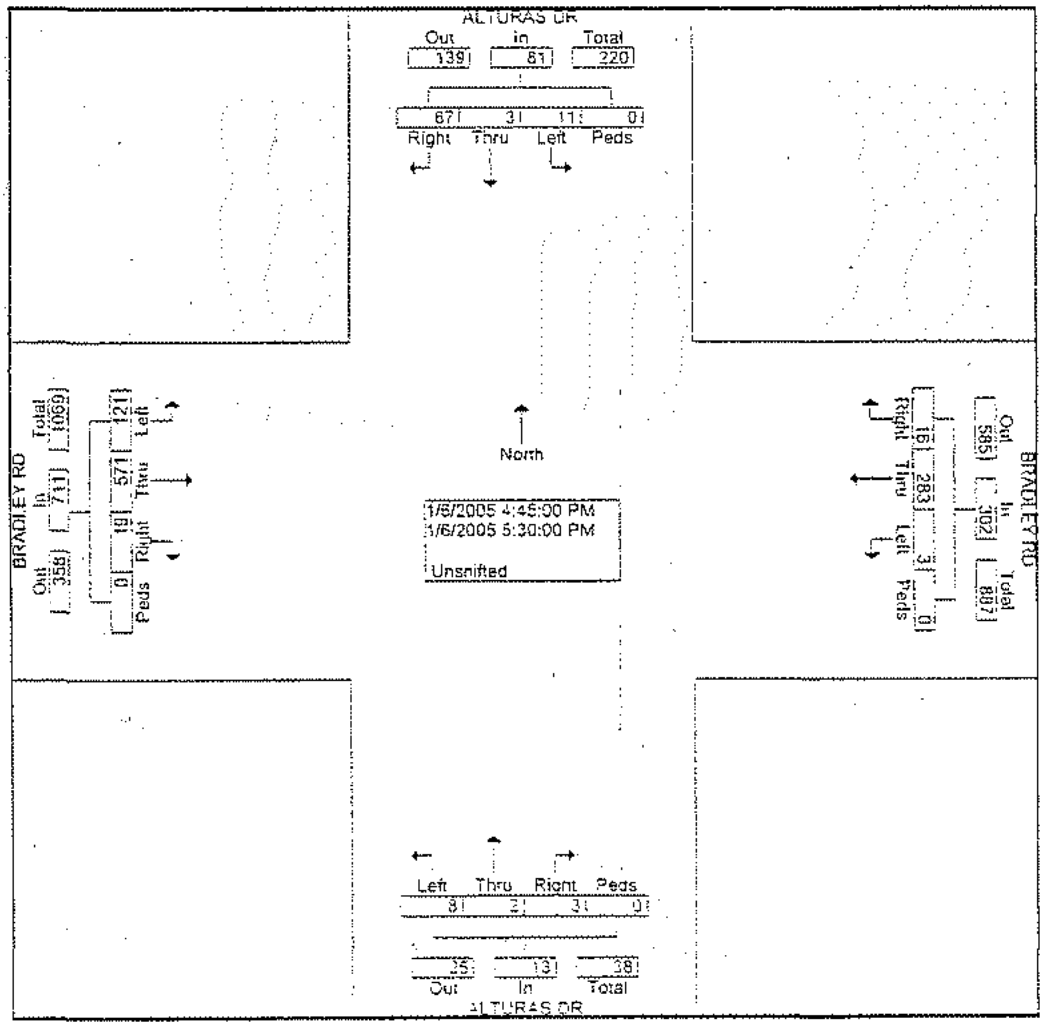
Groups Printed- Unshifted

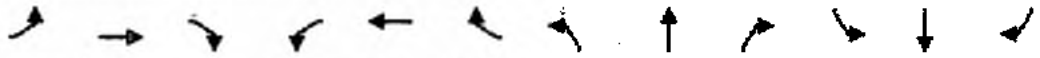
	ALTURAS DR Southbound				BRADLEY RD Westbound				ALTURAS DR Northbound				BRADLEY RD Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	3	0	19	1	0	49	5	0	2	0	1	0	29	97	5	0	211
04:15 PM	2	0	10	0	2	72	5	0	2	0	1	0	30	103	7	0	234
04:30 PM	4	2	15	0	0	67	6	0	0	0	1	0	28	127	5	0	255
04:45 PM	2	3	16	0	1	78	6	0	3	0	0	0	27	139	7	0	282
Total	11	5	60	1	3	266	22	0	7	0	3	0	114	466	24	0	982
05:00 PM	4	0	21	0	0	74	2	0	2	2	2	0	35	129	4	0	275
05:15 PM	4	0	16	0	1	71	3	0	1	0	1	0	30	160	6	0	293
05:30 PM	1	0	14	0	1	60	5	0	2	0	0	0	29	143	2	0	257
05:45 PM	4	0	10	0	1	68	6	0	2	0	1	0	19	117	3	0	231
Total	13	0	61	0	3	273	16	0	7	2	4	0	113	549	15	0	1056
Grand Total	24	5	121	1	6	539	38	0	14	2	7	0	227	1015	39	0	2038
Apprch %	15.9	3.3	80.1	0.7	1.0	92.5	6.5	0.0	60.9	8.7	30.4	0.0	17.7	79.2	3.0	0.0	
Total %	1.2	0.2	5.9	0.0	0.3	26.4	1.9	0.0	0.7	0.1	0.3	0.0	11.1	49.8	1.9	0.0	



All Traffic Data Services, Inc.
9660 W 44th Ave
Wheat Ridge, CO 80033File Name : ALTURAS&BRADLEYPM
www.alltrafficdata.net Site Code : 00000000
Start Date : 1/6/2005

	ALTURAS DR Southbound					BRADLEY RD Westbound					ALTURAS DR Northbound					BRADLEY RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	11	3	67	0	81	3	283	16	0	302	8	2	3	0	13	121	571	19	0	711	1107
Percent	13.6	3.7	82.7	0.0		1.0	93.7	5.3	0.0		61.5	15.4	23.1	0.0		17.0	80.3	2.7	0.0		
05:15 Volume	4	0	16	0	20	1	71	3	0	75	1	0	1	0	2	30	160	6	0	196	293
Peak Factor																					0.945
High Int.	05:00 PM					04:45 PM					05:00 PM					05:15 PM					
Volume	4	0	21	0	25	1	78	6	0	85	2	2	2	0	6	30	160	6	0	196	
Peak Factor					0.810					0.888					0.542					0.907	

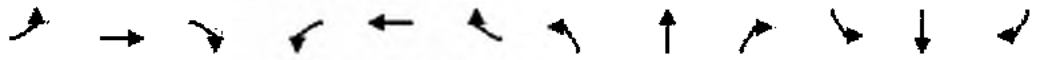




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.48	1.00	1.00	0.50	1.00	1.00	0.63	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	892	1863	1583	926	3539	1583	1178	3539	1583	675	3539	1583
Volume (vph)	79	134	15	213	440	224	103	344	126	78	175	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	146	16	232	478	243	112	374	137	85	190	75
RTOR Reduction (vph)	0	0	10	0	0	124	0	0	77	0	0	47
Lane Group Flow (vph)	86	146	6	232	478	119	112	374	60	85	190	28
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	36.0	23.0	38.0	49.0	32.0	49.0	37.0	22.0	44.0	41.0	24.0	37.0
Effective Green, g (s)	36.0	23.0	38.0	49.0	32.0	49.0	37.0	22.0	44.0	41.0	24.0	37.0
Actuated g/C Ratio	0.36	0.23	0.38	0.49	0.32	0.49	0.37	0.22	0.44	0.41	0.24	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	435	428	665	639	1132	839	525	779	760	463	849	649
v/s Ratio Prot	0.03	0.08	0.00	c0.08	c0.14	c0.05	0.03	c0.11	0.04	c0.03	0.05	0.02
v/s Ratio Perm	0.05		0.01	0.10		0.10	0.05		0.05	0.04		0.03
v/c Ratio	0.20	0.34	0.01	0.36	0.42	0.14	0.21	0.48	0.08	0.18	0.22	0.04
Uniform Delay, d1	21.5	32.2	19.3	15.3	26.7	14.0	21.2	34.0	16.2	18.6	30.5	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	2.2	0.0	1.6	1.2	0.4	0.9	2.1	0.2	0.9	0.6	0.1
Delay (s)	22.5	34.3	19.3	16.8	27.9	14.3	22.1	36.1	16.5	19.5	31.1	20.3
Level of Service	C	C	B	B	C	B	C	D	B	B	C	C
Approach Delay (s)		29.3			21.7			29.3			26.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	76	164	20	5	597	6	68	1	15	7	0	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	178	22	5	649	7	74	1	16	8	0	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	655			200			793	1010	89	931	1025	324
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655			200			793	1010	89	931	1025	324
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			66	99	98	96	100	83
cM capacity (veh/h)	928			1370			215	216	951	202	212	671

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	83	89	89	22	5	324	324	7	91	122
Volume Left	83	0	0	0	5	0	0	0	74	8
Volume Right	0	0	0	22	0	0	0	7	16	114
cSH	928	1700	1700	1700	1370	1700	1700	1700	250	586
Volume to Capacity	0.09	0.05	0.05	0.01	0.00	0.19	0.19	0.00	0.37	0.21
Queue Length 95th (ft)	7	0	0	0	0	0	0	0	40	19
Control Delay (s)	9.3	0.0	0.0	0.0	7.6	0.0	0.0	0.0	27.5	12.7
Lane LOS	A				A				D	B
Approach Delay (s)	2.7				0.1				27.5	12.7
Approach LOS									D	B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	4	0	0	3	24	0	36	0	8	7	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	0	0	3	26	0	39	0	9	8	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	29			4			30	38	4	45	25	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			4			30	38	4	45	25	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	95	100	99	99	100
cM capacity (veh/h)	1584			1617			970	853	1079	923	867	1063

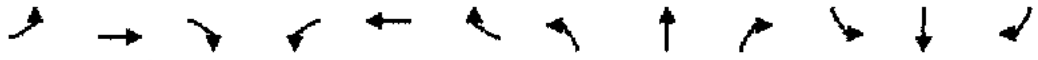
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	29	39	17
Volume Left	2	0	0	9
Volume Right	0	26	0	1
cSH	1584	1617	853	905
Volume to Capacity	0.00	0.00	0.05	0.02
Queue Length 95th (ft)	0	0	4	1
Control Delay (s)	2.4	0.0	9.4	9.1
Lane LOS	A		A	A
Approach Delay (s)	2.4	0.0	9.4	9.1
Approach LOS			A	A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	10	2	0	18	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	2	0	20	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			13		32	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		32	12
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1605		982	1069

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	20	10
Volume Left	0	0	10
Volume Right	2	0	0
cSH	1700	1605	982
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.63	1.00	1.00	0.28	1.00	1.00	0.55	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1182	1863	1583	517	3539	1583	1019	3539	1583	707	3539	1583
Volume (vph)	59	322	104	172	171	111	60	273	210	279	313	70
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	350	113	187	186	121	65	297	228	303	340	76
RTOR Reduction (vph)	0	0	72	0	0	48	0	0	155	0	0	46
Lane Group Flow (vph)	64	350	41	187	186	73	65	297	73	303	340	30
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	35.0	30.0	36.0	47.0	38.0	60.0	25.0	19.0	32.0	45.0	35.0	40.0
Effective Green, g (s)	35.0	30.0	36.0	47.0	38.0	60.0	25.0	19.0	32.0	45.0	35.0	40.0
Actuated g/C Ratio	0.35	0.30	0.36	0.47	0.38	0.60	0.25	0.19	0.32	0.45	0.35	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	443	559	633	406	1345	1013	300	672	570	552	1239	697
v/s Ratio Prot	0.01	c0.19	0.01	c0.06	0.05	0.03	0.01	0.08	c0.05	c0.12	0.10	0.01
v/s Ratio Perm	0.04		0.06	0.16		0.05	0.04		0.09	c0.13		0.04
v/c Ratio	0.14	0.63	0.06	0.46	0.14	0.07	0.22	0.44	0.13	0.55	0.27	0.04
Uniform Delay, d1	21.9	30.2	21.0	17.4	20.3	8.4	29.2	35.8	24.1	18.7	23.4	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	5.2	0.2	3.7	0.2	0.1	1.7	2.1	0.5	3.9	0.5	0.1
Delay (s)	22.6	35.4	21.2	21.2	20.5	8.5	30.8	37.9	24.6	22.6	23.9	18.4
Level of Service	C	D	C	C	C	A	C	D	C	C	C	B
Approach Delay (s)		30.8			17.8			32.0			22.8	
Approach LOS		C			B			C			C	

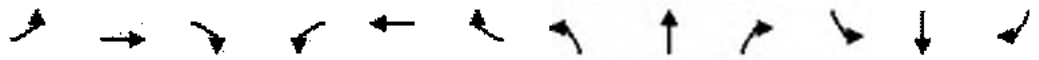
Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	121	571	71	16	283	16	34	2	9	11	3	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	621	77	17	308	17	37	2	10	12	3	73
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	325			698			1147	1243	310	927	1303	154
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	325			698			1147	1243	310	927	1303	154
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			98			71	99	99	94	98	92
cM capacity (veh/h)	1231			894			125	152	686	197	140	865

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	132	310	310	77	17	154	154	17	49	88
Volume Left	132	0	0	0	17	0	0	0	37	12
Volume Right	0	0	0	77	0	0	0	17	10	73
cSH	1231	1700	1700	1700	894	1700	1700	1700	151	523
Volume to Capacity	0.11	0.18	0.18	0.05	0.02	0.09	0.09	0.01	0.32	0.17
Queue Length 95th (ft)	9	0	0	0	1	0	0	0	33	15
Control Delay (s)	8.3	0.0	0.0	0.0	9.1	0.0	0.0	0.0	39.8	13.3
Lane LOS	A				A				E	B
Approach Delay (s)	1.3				0.5				39.8	13.3
Approach LOS									E	B

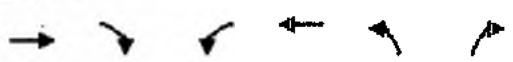
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	4	0	0	9	23	0	17	0	18	34	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	10	25	0	18	0	20	37	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	35			4			53	39	4	36	27	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			4			53	39	4	36	27	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	98	96	99
cM capacity (veh/h)	1577			1617			909	853	1079	954	867	1055

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	35	18	64
Volume Left	0	0	0	20
Volume Right	0	25	0	8
cSH	1577	1617	853	911
Volume to Capacity	0.00	0.00	0.02	0.07
Queue Length 95th (ft)	0	0	2	6
Control Delay (s)	0.0	0.0	9.3	9.2
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.3	9.2
Approach LOS			A	A

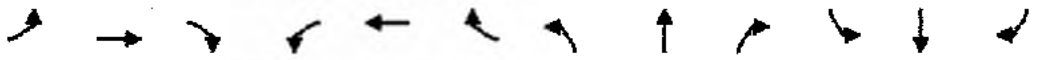
Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	14	8	0	28	4	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	9	0	30	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		50	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		50	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1591		959	1058

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	24	30	4
Volume Left	0	0	4
Volume Right	9	0	0
cSH	1700	1591	959
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

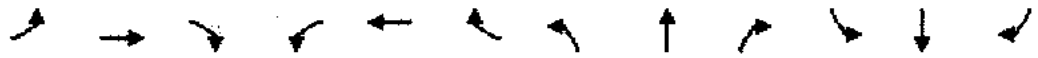
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.21	1.00	1.00	0.38	1.00	1.00	0.50	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	392	3539	1583	715	3539	1583	925	3539	1583	240	3539	1583
Volume (vph)	165	270	32	415	877	425	216	719	258	155	366	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	293	35	451	953	462	235	782	280	168	398	157
RTOR Reduction (vph)	0	0	25	0	0	52	0	0	94	0	0	48
Lane Group Flow (vph)	179	293	10	451	953	410	235	782	186	168	398	109
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	31.0	19.0	28.0	48.0	32.0	45.0	36.0	27.0	52.0	44.0	31.0	43.0
Effective Green, g (s)	31.0	19.0	28.0	48.0	32.0	45.0	36.0	27.0	52.0	44.0	31.0	43.0
Actuated g/C Ratio	0.31	0.19	0.28	0.48	0.32	0.45	0.36	0.27	0.52	0.44	0.31	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	287	672	507	607	1132	776	409	956	886	305	1097	744
v/s Ratio Prot	0.07	0.08	0.01	c0.19	c0.27	c0.08	0.05	c0.22	0.08	c0.07	0.11	0.03
v/s Ratio Perm	0.12		0.02	0.17		0.21	0.16		0.10	0.17		0.07
v/c Ratio	0.62	0.44	0.02	0.74	0.84	0.53	0.57	0.82	0.21	0.55	0.36	0.15
Uniform Delay, d1	27.0	35.6	26.1	18.6	31.6	19.8	23.7	34.2	12.9	20.3	26.8	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	2.1	0.1	8.0	7.6	2.6	5.8	7.7	0.5	7.0	0.9	0.4
Delay (s)	36.9	37.8	26.1	26.7	39.3	22.4	29.5	41.9	13.5	27.3	27.8	17.7
Level of Service	D	D	C	C	D	C	C	D	B	C	C	B
Approach Delay (s)		36.7			32.1			33.5			25.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

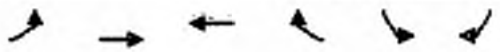
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	159	343	13	3	1249	12	32	1	6	15	0	221
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	173	373	14	3	1358	13	35	1	7	16	0	240
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1371			387			1644	2096	186	1903	2097	679
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1371			387			1644	2096	186	1903	2097	679
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	65			100			0	97	99	45	100	39
cM capacity (veh/h)	497			1168			19	33	824	30	33	394

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	173	186	186	14	3	679	679	13	36	7	16	240
Volume Left	173	0	0	0	3	0	0	0	35	0	16	0
Volume Right	0	0	0	14	0	0	0	13	0	7	0	240
cSH	497	1700	1700	1700	1168	1700	1700	1700	19	824	30	394
Volume to Capacity	0.35	0.11	0.11	0.01	0.00	0.40	0.40	0.01	1.89	0.01	0.55	0.61
Queue Length 95th (ft)	39	0	0	0	0	0	0	0	122	1	45	97
Control Delay (s)	16.1	0.0	0.0	0.0	8.1	0.0	0.0	0.0	845.6	9.4	227.1	27.4
Lane LOS	C				A				F	A	F	D
Approach Delay (s)	5.0				0.0				717.0		40.1	
Approach LOS									F		E	

Intersection Summary			
Average Delay	19.5		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	4	3	15	6	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	3	16	7	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	20				20	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20				20	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1597				996	1069

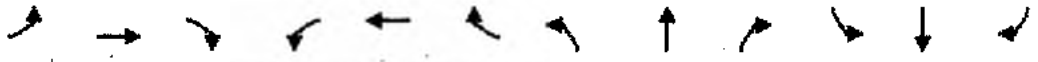
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	7	20	8
Volume Left	2	0	7
Volume Right	0	16	1
cSH	1597	1700	1006
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	2.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	2.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.21	1.00	1.00	0.38	1.00	1.00	0.50	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	392	3539	1583	715	3539	1583	925	3539	1583	240	3539	1583
Volume (vph)	165	270	32	415	877	425	216	719	258	155	366	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	293	35	451	953	462	235	782	280	168	398	157
RTOR Reduction (vph)	0	0	25	0	0	52	0	0	94	0	0	48
Lane Group Flow (vph)	179	293	10	451	953	410	235	782	186	168	398	109
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	31.0	19.0	28.0	48.0	32.0	45.0	36.0	27.0	52.0	44.0	31.0	43.0
Effective Green, g (s)	31.0	19.0	28.0	48.0	32.0	45.0	36.0	27.0	52.0	44.0	31.0	43.0
Actuated g/C Ratio	0.31	0.19	0.28	0.48	0.32	0.45	0.36	0.27	0.52	0.44	0.31	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	287	672	507	607	1132	776	409	956	886	305	1097	744
v/s Ratio Prot	0.07	0.08	0.01	c0.19	c0.27	c0.08	0.05	c0.22	0.08	c0.07	0.11	0.03
v/s Ratio Perm	0.12		0.02	0.17		0.21	0.16		0.10	0.17		0.07
v/c Ratio	0.62	0.44	0.02	0.74	0.84	0.53	0.57	0.82	0.21	0.55	0.36	0.15
Uniform Delay, d1	27.0	35.8	26.1	18.6	31.6	19.8	23.7	34.2	12.9	20.3	26.8	17.3
Progression Factor	1.00	1.00	1.00	1.72	1.44	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	2.1	0.1	7.0	6.7	2.2	5.8	7.7	0.5	7.0	0.9	0.4
Delay (s)	36.9	37.8	26.1	39.1	52.4	23.3	29.5	41.9	13.5	27.3	27.8	17.7
Level of Service	D	D	C	D	D	C	C	D	B	C	C	B
Approach Delay (s)		36.7			42.0			33.5			25.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

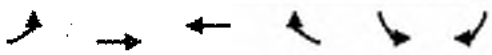
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1776	1583	1770	1583	
Flt Permitted	0.13	1.00	1.00	0.52	1.00	1.00		0.70	1.00	0.73	1.00	
Satd. Flow (perm)	240	3539	1583	975	3539	1583		1305	1583	1367	1583	
Volume (vph)	159	343	13	3	1249	12	32	1	6	15	0	221
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	373	14	3	1358	13	35	1	7	16	0	240
RTOR Reduction (vph)	0	0	5	0	0	5	0	0	5	0	38	0
Lane Group Flow (vph)	173	373	9	3	1358	8	0	36	2	16	202	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	61.0	61.0	61.0	61.0	61.0	61.0		31.0	31.0	31.0	31.0	
Effective Green, g (s)	61.0	61.0	61.0	61.0	61.0	61.0		31.0	31.0	31.0	31.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61		0.31	0.31	0.31	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	146	2159	966	595	2159	966		405	491	424	491	
v/s Ratio Prot		0.11			0.38						c0.15	
v/s Ratio Perm	c0.72		0.01	0.00		0.01		0.03	0.00	0.01		
v/c Ratio	1.18	0.17	0.01	0.01	0.63	0.01		0.09	0.00	0.04	0.41	
Uniform Delay, d1	19.5	8.5	7.6	7.6	12.3	7.6		24.5	23.8	24.1	27.3	
Progression Factor	1.34	1.05	1.15	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	130.2	0.2	0.0	0.0	1.4	0.0		0.4	0.0	0.2	2.5	
Delay (s)	156.4	9.1	8.8	7.6	13.7	7.7		24.9	23.9	24.3	29.8	
Level of Service	F	A	A	A	B	A		C	C	C	C	
Approach Delay (s)		54.6			13.7			24.7			29.5	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	4	3	15	6	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	3	16	7	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	20				20	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20				20	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1597				996	1069

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	7	20	8
Volume Left	2	0	7
Volume Right	0	16	1
cSH	1597	1700	1006
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	2.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	2.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.53	1.00	1.00	0.17	1.00	1.00	0.38	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	990	3539	1583	310	3539	1583	710	3539	1583	324	3539	1583
Volume (vph)	124	634	218	346	340	214	125	572	410	545	655	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	689	237	376	370	233	136	622	446	592	712	159
RTOR Reduction (vph)	0	0	64	0	0	69	0	0	40	0	0	84
Lane Group Flow (vph)	135	689	173	376	370	164	136	622	406	592	712	75
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Effective Green, g (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Actuated g/C Ratio	0.29	0.20	0.30	0.40	0.27	0.56	0.29	0.19	0.35	0.52	0.38	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	357	708	538	358	956	950	312	672	617	588	1345	807
v/s Ratio Prot	0.03	0.19	0.04	c0.17	0.10	0.07	0.04	0.18	0.12	c0.29	0.20	0.02
v/s Ratio Perm	0.08		0.11	c0.25		0.08	0.08		0.17	c0.23		0.08
v/c Ratio	0.38	0.97	0.32	1.05	0.39	0.17	0.44	0.93	0.66	1.01	0.53	0.09
Uniform Delay, d1	27.3	39.7	27.1	27.5	29.8	10.7	27.3	39.8	27.5	27.3	24.1	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	27.9	1.6	61.4	1.2	0.4	4.4	20.6	5.4	38.8	1.5	0.2
Delay (s)	30.3	67.6	28.7	88.8	30.9	11.1	31.7	60.4	32.9	66.1	25.6	14.9
Level of Service	C	E	C	F	C	B	C	E	C	E	C	B
Approach Delay (s)		54.2			48.4			47.0			40.8	
Approach LOS		D			D			D			D	

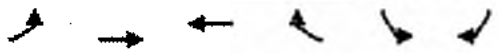
Intersection Summary			
HCM Average Control Delay	47.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	254	1195	37	8	592	34	17	2	5	24	6	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	276	1299	40	9	643	37	18	2	5	26	7	153
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	680			1339			2347	2549	649	1869	2552	322
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680			1339			2347	2549	649	1869	2552	322
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	70			98			0	88	99	14	64	77
cM capacity (veh/h)	908			511			8	18	412	30	18	674

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	276	649	649	40	9	322	322	37	26	186
Volume Left	276	0	0	0	9	0	0	0	18	26
Volume Right	0	0	0	40	0	0	0	37	5	153
cSH	908	1700	1700	1700	511	1700	1700	1700	11	128
Volume to Capacity	0.30	0.38	0.38	0.02	0.02	0.19	0.19	0.02	2.40	1.45
Queue Length 95th (ft)	32	0	0	0	1	0	0	0	105	318
Control Delay (s)	10.7	0.0	0.0	0.0	12.2	0.0	0.0	0.0	1324.0	305.0
Lane LOS	B				B				F	F
Approach Delay (s)	1.8				0.2				1324.0	305.0
Approach LOS									F	F

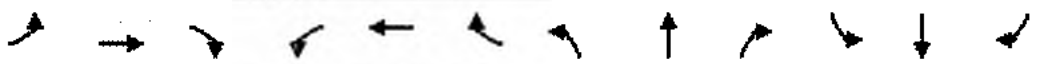
Intersection Summary			
Average Delay	37.5		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	4	9	19	10	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	10	21	11	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30				24	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30				24	20
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1582				991	1058

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	4	30	18
Volume Left	0	0	11
Volume Right	0	21	8
cSH	1582	1700	1018
Volume to Capacity	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.53	1.00	1.00	0.17	1.00	1.00	0.38	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	990	3539	1583	310	3539	1583	710	3539	1583	324	3539	1583
Volume (vph)	124	634	218	346	340	214	125	572	410	545	655	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	689	237	376	370	233	136	622	446	592	712	159
RTOR Reduction (vph)	0	0	64	0	0	69	0	0	40	0	0	84
Lane Group Flow (vph)	135	689	173	376	370	164	136	622	406	592	712	75
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Effective Green, g (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Actuated g/C Ratio	0.29	0.20	0.30	0.40	0.27	0.56	0.29	0.19	0.35	0.52	0.38	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	357	708	538	358	956	950	312	672	617	588	1345	807
v/s Ratio Prot	0.03	0.19	0.04	c0.17	0.10	0.07	0.04	0.18	0.12	c0.29	0.20	0.02
v/s Ratio Perm	0.08		0.11	c0.25		0.08	0.08		0.17	c0.23		0.08
v/c Ratio	0.38	0.97	0.32	1.05	0.39	0.17	0.44	0.93	0.66	1.01	0.53	0.09
Uniform Delay, d1	27.3	39.7	27.1	27.5	29.8	10.7	27.3	39.8	27.5	27.3	24.1	14.7
Progression Factor	1.00	1.00	1.00	1.31	1.31	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	27.9	1.6	61.0	1.2	0.4	4.4	20.6	5.4	38.8	1.5	0.2
Delay (s)	30.3	67.6	28.7	96.9	40.1	9.4	31.7	60.4	32.9	66.1	25.6	14.9
Level of Service	C	E	C	F	D	A	C	E	C	E	C	B
Approach Delay (s)		54.2			54.6			47.0			40.8	
Approach LOS		D			D			D			D	

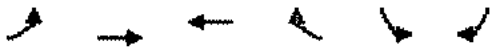
Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1749			1644	
Flt Permitted	0.38	1.00	1.00	0.16	1.00	1.00		0.81			0.96	
Satd. Flow (perm)	711	3539	1583	290	3539	1583		1472			1597	
Volume (vph)	254	1195	37	8	592	34	17	2	5	24	6	141
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	1299	40	9	643	37	18	2	5	26	7	153
RTOR Reduction (vph)	0	0	14	0	0	13	0	4	0	0	112	0
Lane Group Flow (vph)	276	1299	26	9	643	24	0	21	0	0	74	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	65.0	65.0	65.0	65.0	65.0	65.0		27.0			27.0	
Effective Green, g (s)	65.0	65.0	65.0	65.0	65.0	65.0		27.0			27.0	
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.65	0.65		0.27			0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Grp Cap (vph)	462	2300	1029	189	2300	1029		397			431	
v/s Ratio Prot		0.37			0.18							
v/s Ratio Perm	c0.39		0.03	0.03		0.02		0.02			c0.12	
v/c Ratio	0.60	0.56	0.03	0.05	0.28	0.02		0.05			0.17	
Uniform Delay, d1	10.0	9.7	6.2	6.3	7.5	6.2		27.0			27.9	
Progression Factor	1.61	1.63	2.53	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	2.1	0.4	0.0	0.5	0.3	0.0		0.3			0.9	
Delay (s)	18.2	16.2	15.8	6.8	7.8	6.3		27.3			28.8	
Level of Service	B	B	B	A	A	A		C			C	
Approach Delay (s)		16.5			7.7			27.3			28.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	4	9	19	10	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	10	21	11	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30				24	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30				24	20
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1582				991	1058

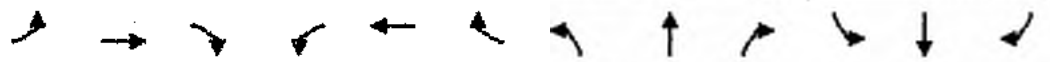
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	4	30	18
Volume Left	0	0	11
Volume Right	0	21	8
cSH	1582	1700	1018
Volume to Capacity	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.24	1.00	1.00	0.36	1.00	1.00	0.50	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	438	3539	1583	663	3539	1583	925	3539	1583	240	3539	1583
Volume (vph)	165	273	32	424	891	439	216	719	260	158	366	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	297	35	461	968	477	235	782	283	172	398	157
RTOR Reduction (vph)	0	0	26	0	0	52	0	0	80	0	0	48
Lane Group Flow (vph)	179	297	9	461	968	425	235	782	203	172	398	109
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	29.0	17.0	26.0	48.0	32.0	45.0	36.0	27.0	54.0	44.0	31.0	43.0
Effective Green, g (s)	29.0	17.0	26.0	48.0	32.0	45.0	36.0	27.0	54.0	44.0	31.0	43.0
Actuated g/C Ratio	0.29	0.17	0.26	0.48	0.32	0.45	0.36	0.27	0.54	0.44	0.31	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	287	602	475	617	1132	776	409	956	918	305	1097	744
v/s Ratio Prot	0.07	0.08	0.01	c0.20	c0.27	c0.08	0.05	c0.22	0.08	c0.07	0.11	0.03
v/s Ratio Perm	0.11		0.02	0.16		0.22	0.16		0.10	0.17		0.07
v/c Ratio	0.62	0.49	0.02	0.75	0.86	0.55	0.57	0.82	0.22	0.56	0.36	0.15
Uniform Delay, d1	28.4	37.6	27.5	18.8	31.8	20.1	23.7	34.2	12.0	20.4	26.8	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	2.9	0.1	8.1	8.3	2.8	5.8	7.7	0.6	7.4	0.9	0.4
Delay (s)	38.3	40.5	27.6	26.9	40.2	22.9	29.5	41.9	12.6	27.7	27.8	17.8
Level of Service	D	D	C	C	D	C	C	D	B	C	C	B
Approach Delay (s)		38.8			32.6			33.3			25.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑	↱	↰	↑	↱		↑	↱
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	159	343	20	5	1249	12	68	1	15	15	0	221
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	173	373	22	5	1358	13	74	1	16	16	0	240
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1371			395			1648	2100	186	1917	2109	679
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1371			395			1648	2100	186	1917	2109	679
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	65			100			0	97	98	43	100	39
cM capacity (veh/h)	497			1161			19	33	824	28	33	394

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	173	186	186	22	5	679	679	13	75	16	16	240
Volume Left	173	0	0	0	5	0	0	0	74	0	16	0
Volume Right	0	0	0	22	0	0	0	13	0	16	0	240
cSH	497	1700	1700	1700	1161	1700	1700	1700	19	824	28	394
Volume to Capacity	0.35	0.11	0.11	0.01	0.00	0.40	0.40	0.01	4.02	0.02	0.57	0.61
Queue Length 95th (ft)	39	0	0	0	0	0	0	0	Err	2	46	97
Control Delay (s)	16.1	0.0	0.0	0.0	8.1	0.0	0.0	0.0	Err	9.5	240.3	27.4
Lane LOS	C				A				F	A	F	D
Approach Delay (s)	4.9				0.0				8215.2		40.9	
Approach LOS									F		E	

Intersection Summary			
Average Delay	333.2		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	4	0	0	3	24	0	36	0	8	7	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	0	0	3	26	0	39	0	9	8	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	29			4			30	38	4	45	25	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			4			30	38	4	45	25	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	95	100	99	99	100
cM capacity (veh/h)	1584			1617			970	853	1079	923	867	1063

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	29	39	17
Volume Left	2	0	0	9
Volume Right	0	26	0	1
cSH	1584	1617	853	905
Volume to Capacity	0.00	0.00	0.05	0.02
Queue Length 95th (ft)	0	0	4	1
Control Delay (s)	2.4	0.0	9.4	9.1
Lane LOS	A		A	A
Approach Delay (s)	2.4	0.0	9.4	9.1
Approach LOS			A	A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	10	2	0	18	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	2	0	20	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			13		32	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		32	12
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1605		982	1069

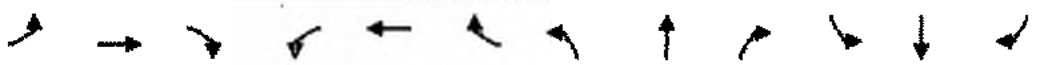
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	20	10
Volume Left	0	0	10
Volume Right	2	0	0
cSH	1700	1605	982
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.24	1.00	1.00	0.36	1.00	1.00	0.50	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	438	3539	1583	663	3539	1583	925	3539	1583	240	3539	1583
Volume (vph)	165	273	32	424	891	439	216	719	260	158	366	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	297	35	461	968	477	235	782	283	172	398	157
RTOR Reduction (vph)	0	0	26	0	0	52	0	0	80	0	0	48
Lane Group Flow (vph)	179	297	9	461	968	425	235	782	203	172	398	109
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	29.0	17.0	26.0	48.0	32.0	45.0	36.0	27.0	54.0	44.0	31.0	43.0
Effective Green, g (s)	29.0	17.0	26.0	48.0	32.0	45.0	36.0	27.0	54.0	44.0	31.0	43.0
Actuated g/C Ratio	0.29	0.17	0.26	0.48	0.32	0.45	0.36	0.27	0.54	0.44	0.31	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	287	602	475	617	1132	776	409	956	918	305	1097	744
v/s Ratio Prot	0.07	0.08	0.01	c0.20	c0.27	c0.08	0.05	c0.22	0.08	c0.07	0.11	0.03
v/s Ratio Perm	0.11		0.02	0.16		0.22	0.16		0.10	0.17		0.07
v/c Ratio	0.62	0.49	0.02	0.75	0.86	0.55	0.57	0.82	0.22	0.56	0.36	0.15
Uniform Delay, d1	28.4	37.6	27.5	18.8	31.8	20.1	23.7	34.2	12.0	20.4	26.8	17.3
Progression Factor	1.00	1.00	1.00	1.24	0.88	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	2.9	0.1	7.3	7.6	2.5	5.8	7.7	0.6	7.4	0.9	0.4
Delay (s)	38.3	40.5	27.6	30.6	35.4	18.3	29.5	41.9	12.6	27.7	27.8	17.8
Level of Service	D	D	C	C	D	B	C	D	B	C	C	B
Approach Delay (s)		38.8			30.0			33.3			25.6	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM Average Control Delay	31.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	75.7%	ICU Level of Service	D	
Analysis Period (min)	15			

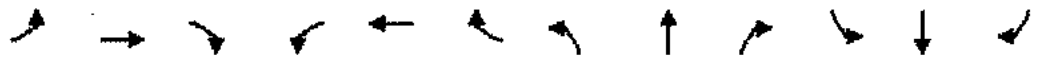
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1775	1583		1770	1583
Flt Permitted	0.17	1.00	1.00	0.53	1.00	1.00		0.72	1.00		0.71	1.00
Satd. Flow (perm)	311	3539	1583	987	3539	1583		1349	1583		1319	1583
Volume (vph)	159	343	20	5	1249	12	68	1	15	15	0	221
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	373	22	5	1358	13	74	1	16	16	0	240
RTOR Reduction (vph)	0	0	6	0	0	3	0	0	13	0	0	82
Lane Group Flow (vph)	173	373	17	5	1358	10	0	75	3	0	16	158
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	75.0	75.0	75.0	75.0	75.0	75.0		17.0	17.0		17.0	17.0
Effective Green, g (s)	75.0	75.0	75.0	75.0	75.0	75.0		17.0	17.0		17.0	17.0
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.75	0.75		0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	233	2654	1187	740	2654	1187		229	269		224	269
v/s Ratio Prot		0.11			0.38							
v/s Ratio Perm	c0.56		0.01	0.01		0.01		0.06	0.01		0.01	0.15
v/c Ratio	0.74	0.14	0.01	0.01	0.51	0.01		0.33	0.01		0.07	0.59
Uniform Delay, d1	7.1	3.5	3.2	3.1	5.1	3.1		36.5	34.5		34.9	38.3
Progression Factor	1.35	0.42	0.02	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	17.7	0.1	0.0	0.0	0.7	0.0		3.8	0.1		0.6	9.1
Delay (s)	27.3	1.6	0.1	3.2	5.8	3.2		40.3	34.6		35.5	47.3
Level of Service	C	A	A	A	A	A		D	C		D	D
Approach Delay (s)		9.3			5.7			39.3			46.6	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	4	0	0	3	24	0	36	0	8	7	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	0	0	3	26	0	39	0	9	8	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	29			4			30	38	4	45	25	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			4			30	38	4	45	25	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	95	100	99	99	100
cM capacity (veh/h)	1584			1617			970	853	1079	923	867	1063

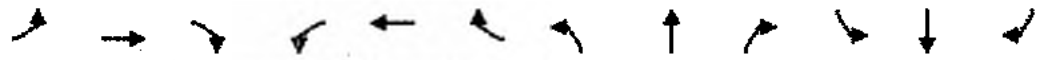
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	29	39	17
Volume Left	2	0	0	9
Volume Right	0	26	0	1
cSH	1584	1617	853	905
Volume to Capacity	0.00	0.00	0.05	0.02
Queue Length 95th (ft)	0	0	4	1
Control Delay (s)	2.4	0.0	9.4	9.1
Lane LOS	A		A	A
Approach Delay (s)	2.4	0.0	9.4	9.1
Approach LOS			A	A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	10	2	0	18	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	2	0	20	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			13		32	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		32	12
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1605		982	1069

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	20	10
Volume Left	0	0	10
Volume Right	2	0	0
cSH	1700	1605	982
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

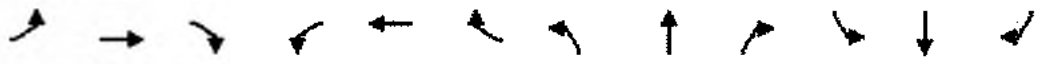
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.53	1.00	1.00	0.17	1.00	1.00	0.38	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	985	3539	1583	310	3539	1583	710	3539	1583	324	3539	1583
Volume (vph)	124	647	218	350	346	220	125	572	418	558	655	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	703	237	380	376	239	136	622	454	607	712	159
RTOR Reduction (vph)	0	0	64	0	0	69	0	0	38	0	0	84
Lane Group Flow (vph)	135	703	173	380	376	170	136	622	416	607	712	75
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Effective Green, g (s)	29.0	20.0	30.0	40.0	27.0	56.0	29.0	19.0	35.0	52.0	38.0	47.0
Actuated g/C Ratio	0.29	0.20	0.30	0.40	0.27	0.56	0.29	0.19	0.35	0.52	0.38	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	356	708	538	358	956	950	312	672	617	588	1345	807
v/s Ratio Prot	0.03	0.20	0.04	c0.17	0.11	0.07	0.04	0.18	0.12	c0.30	0.20	0.02
v/s Ratio Perm	0.08		0.11	c0.25		0.08	0.08		0.17	c0.24		0.08
v/c Ratio	0.38	0.99	0.32	1.06	0.39	0.18	0.44	0.93	0.67	1.03	0.53	0.09
Uniform Delay, d1	27.3	39.9	27.1	27.5	29.8	10.8	27.3	39.8	27.7	27.3	24.1	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	32.2	1.6	64.7	1.2	0.4	4.4	20.6	5.8	45.7	1.5	0.2
Delay (s)	30.3	72.1	28.7	92.3	31.0	11.2	31.7	60.4	33.5	72.9	25.6	14.9
Level of Service	C	E	C	F	C	B	C	E	C	E	C	B
Approach Delay (s)		57.3			49.6			47.1			43.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

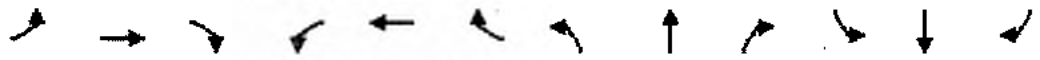
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	254	1195	71	16	592	34	34	2	9	24	6	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	276	1299	77	17	643	37	37	2	10	26	7	153
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	680			1376			2364	2566	649	1891	2607	322
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680			1376			2364	2566	649	1891	2607	322
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	70			96			0	87	98	8	60	77
cM capacity (veh/h)	908			494			8	17	412	28	16	674

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	276	649	649	77	17	322	322	37	39	10	33	153
Volume Left	276	0	0	0	17	0	0	0	37	0	26	0
Volume Right	0	0	0	77	0	0	0	37	0	10	0	153
cSH	908	1700	1700	1700	494	1700	1700	1700	8	412	25	674
Volume to Capacity	0.30	0.38	0.38	0.05	0.04	0.19	0.19	0.02	5.05	0.02	1.32	0.23
Queue Length 95th (ft)	32	0	0	0	3	0	0	0	Err	2	101	22
Control Delay (s)	10.7	0.0	0.0	0.0	12.5	0.0	0.0	0.0	Err	13.9	527.7	11.9
Lane LOS	B				B				F	B	F	B
Approach Delay (s)	1.8				0.3				8002.0		102.4	
Approach LOS									F		F	

Intersection Summary			
Average Delay	160.0		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	4	0	0	9	23	0	17	0	18	34	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	10	25	0	18	0	20	37	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	35			4			53	39	4	36	27	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			4			53	39	4	36	27	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	98	96	99
cM capacity (veh/h)	1577			1617			909	853	1079	954	867	1055

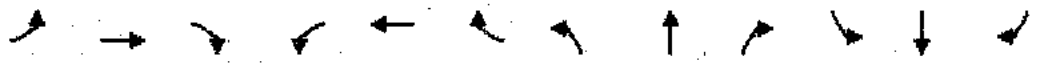
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	35	18	64
Volume Left	0	0	0	20
Volume Right	0	25	0	8
cSH	1577	1617	853	911
Volume to Capacity	0.00	0.00	0.02	0.07
Queue Length 95th (ft)	0	0	2	6
Control Delay (s)	0.0	0.0	9.3	9.2
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.3	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	14	8	0	28	4	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	9	0	30	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		50	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		50	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1591		959	1058

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	24	30	4
Volume Left	0	0	4
Volume Right	9	0	0
cSH	1700	1591	959
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.53	1.00	1.00	0.17	1.00	1.00	0.38	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	985	3539	1583	324	3539	1583	710	3539	1583	324	3539	1583
Volume (vph)	124	647	218	350	346	220	125	572	418	558	655	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	703	237	380	376	239	136	622	454	607	712	159
RTOR Reduction (vph)	0	0	67	0	0	67	0	0	37	0	0	84
Lane Group Flow (vph)	135	703	170	380	376	172	136	622	417	607	712	75
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	28.0	19.0	29.0	40.0	27.0	56.0	29.0	19.0	36.0	52.0	38.0	47.0
Effective Green, g (s)	28.0	19.0	29.0	40.0	27.0	56.0	29.0	19.0	36.0	52.0	38.0	47.0
Actuated g/C Ratio	0.28	0.19	0.29	0.40	0.27	0.56	0.29	0.19	0.36	0.52	0.38	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	346	672	522	375	956	950	312	672	633	588	1345	807
v/s Ratio Prot	0.04	0.20	0.05	c0.17	0.11	0.07	0.04	0.18	0.12	c0.30	0.20	0.02
v/s Ratio Perm	0.07		0.10	c0.23		0.08	0.08		0.16	c0.24		0.08
v/c Ratio	0.39	1.05	0.33	1.01	0.39	0.18	0.44	0.93	0.66	1.03	0.53	0.09
Uniform Delay, d1	28.1	40.5	27.8	27.7	29.8	10.8	27.3	39.8	26.8	27.3	24.1	14.7
Progression Factor	1.00	1.00	1.00	1.33	1.33	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	47.4	1.7	49.6	1.2	0.4	4.4	20.6	5.3	45.7	1.5	0.2
Delay (s)	31.3	87.9	29.5	86.5	40.8	9.4	31.7	60.4	32.1	72.9	25.6	14.9
Level of Service	C	F	C	F	D	A	C	E	C	E	C	B
Approach Delay (s)		67.9			50.7			46.6			43.9	
Approach LOS		E			D			D			D	

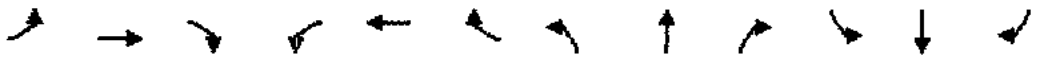
Intersection Summary			
HCM Average Control Delay	51.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1778	1583		1792	1583
Flt Permitted	0.39	1.00	1.00	0.17	1.00	1.00		0.78	1.00		0.83	1.00
Satd. Flow (perm)	724	3539	1583	310	3539	1583		1458	1583		1541	1583
Volume (vph)	254	1195	71	16	592	34	34	2	9	24	6	141
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	1299	77	17	643	37	37	2	10	26	7	153
RTOR Reduction (vph)	0	0	24	0	0	11	0	0	8	0	0	118
Lane Group Flow (vph)	276	1299	53	17	643	26	0	39	2	0	33	35
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	69.0	69.0	69.0	69.0	69.0	69.0		23.0	23.0		23.0	23.0
Effective Green, g (s)	69.0	69.0	69.0	69.0	69.0	69.0		23.0	23.0		23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69		0.23	0.23		0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	500	2442	1092	214	2442	1092		335	364		354	364
v/s Ratio Prot		0.37			0.18							
v/s Ratio Perm	c0.38		0.05	0.05		0.02		0.03	0.01		0.02	0.10
v/c Ratio	0.55	0.53	0.05	0.08	0.26	0.02		0.12	0.01		0.09	0.10
Uniform Delay, d1	7.8	7.6	5.0	5.1	5.9	4.9		30.5	29.7		30.3	30.3
Progression Factor	1.67	1.69	3.25	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.3	0.0	0.7	0.3	0.0		0.7	0.0		0.5	0.5
Delay (s)	14.4	13.1	16.2	5.8	6.1	4.9		31.2	29.7		30.8	30.8
Level of Service	B	B	B	A	A	A		C	C		C	C
Approach Delay (s)		13.5			6.1			30.9			30.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	4	0	0	9	23	0	17	0	18	34	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	10	25	0	18	0	20	37	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	35			4			53	39	4	36	27	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			4			53	39	4	36	27	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	98	96	99
cM capacity (veh/h)	1577			1617			909	853	1079	954	867	1055

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	35	18	64
Volume Left	0	0	0	20
Volume Right	0	25	0	8
cSH	1577	1617	853	911
Volume to Capacity	0.00	0.00	0.02	0.07
Queue Length 95th (ft)	0	0	2	6
Control Delay (s)	0.0	0.0	9.3	9.2
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.3	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	14	8	0	28	4	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	9	0	30	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		50	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		50	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1591		959	1058

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	24	30	4
Volume Left	0	0	4
Volume Right	9	0	0
cSH	1700	1591	959
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

KELLY BARLOW

- 10 TRIPS DAY — NO 6 TRIPS / DAY

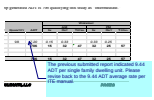
MR. FIEDLER -

DENNIS -

JOANNA

TIS_v4.pdf Markup Summary 5-9-2022

Daniel Torres (2)



Subject: Callout
Page Label: 4
Author: Daniel Torres
Date: 5/9/2022 2:00:19 PM
Status:
Color:
Layer:
Space:

The previous submitted report indicated 9.44 ADT per single family dwelling unit. Please revise back to the 9.44 ADT average rate per ITE manual.

Subject: Text Box
Page Label: 12
Author: Daniel Torres
Date: 5/9/2022 2:13:42 PM
Status:
Color:
Layer:
Space:

Review 3 comment:
Please coordinate with the project planner and should deviations be requested please list the deviations in your report as required per ECM App B.8 Traffic Report Standards.

review 4: please list the deviation requests proposed.