

**LSC TRANSPORTATION CONSULTANTS, INC.**

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**TRANSPORTATION  
CONSULTANTS, INC.**

January 18, 2008

Mr. Stanley Searle  
President  
Searle Ranch  
2500 East Highway 105  
Monument, Colorado 80132

RE: Silverado Ranch  
Updated Traffic Impact Analysis  
LSC #066510

Dear Mr. Searle:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Silverado Ranch residential development. As shown on Figure 1, the site is to be located south of Drennan Road and east of Peyton Highway in El Paso County, Colorado.

### **REPORT CONTENTS**

This report was prepared for submittal to El Paso County. The report identifies the traffic impacts of the proposed development on the area roadways, and presents recommendations for short-term and long-term roadway system improvements. The report contains the following: a determination of the existing roadway and traffic conditions in the vicinity of the site including the roadway widths, surface conditions, lane geometries, traffic controls, posted speed limits, intersection sight distances, etc.; the average weekday and peak-hour traffic volumes on the roadways in the vicinity of the site; the projected average weekday and peak-hour vehicle-trips to be generated by the development; the assignment of the projected traffic volumes to the area roadway system; a projection of the future background and resulting total traffic volumes on the area roadway system; and the resulting traffic impacts. The traffic impacts have been quantified by projecting the future turning movement traffic volumes and levels of service at the Drennan Road/Peyton Highway and site access intersections. We have recommended short-term and long-term roadway system improvements.

### **PROPOSED LAND USE AND ACCESS PLAN**

As shown on Figure 1, the site is located in a rural area of El Paso County, Colorado. Schriever Air Force Base is located approximately eight miles northwest of the site.

Figure 2 shows the site plan. The site is planned to contain 64 single-family homes, with lots of 2.5 acres or greater.

Figure 2 also shows the proposed site access spacing from the Drennan Road/Peyton Highway intersection. Full-movement site access is proposed to Peyton Highway. Interim full-movement site access is proposed to Drennan Road until Drennan Road is reclassified as a Principal Arterial (as shown on the *El Paso County Recommended Preserved Corridor Network*) and constructed as a four-lane facility. At that time the site access to Drennan Road would be restricted to right-in/right-out turning movements only.

The project is planned to be built in two phases. Phase 1 would consist of 20 lots on the western portion of the site and would utilize both site access intersections. Phase 2 would consist of the remaining 44 lots, along with the construction of the remaining internal street network.

## ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

Figure 1 shows the roadway system in the vicinity of the site. The area roadways are identified below followed by a brief description. Figure 3 shows the existing traffic controls and lane geometries for the Drennan Road/Peyton Highway intersection.

- **Drennan Road** is a nine-mile-long roadway extending from Curtis Road east to Ellicott Highway. The *El Paso County Recommended 2030 Major Transportation Corridors* shows Drennan Road as a two-lane Collector. The *El Paso County Recommended Preserved Corridor Network* shows Drennan Road as a four-lane Principal Arterial. Drennan Road is currently a 26-foot-wide gravel road with a posted speed limit of 45 miles per hour (mph).
- **Peyton Highway** is a paved two-lane roadway beginning one-quarter mile south of Loop Road in the southern part of El Paso County, and continuing north to Falcon Highway. Peyton Highway begins again on an alignment one mile west of the previous alignment on Falcon Highway and continues to northern El Paso County. Adjacent to the site, Peyton Highway is an improved two-lane roadway with less than one-foot-wide shoulders. The *El Paso County Recommended 2030 Major Transportation Corridors* and *El Paso County Recommended Preserved Corridor Network* show Peyton Highway as a two-lane Minor Arterial. Peyton Highway has a posted speed limit of 55 mph adjacent to the site.

### Sight Distance

The sight distance requirement for a posted speed limit of 55 mph is 550 feet for passenger vehicles and 715 feet for single-unit trucks and buses. LSC provided the sight distance information for the proposed site access intersection locations to the planner for Drennan Road and Peyton Highway. The sight distances on Drennan Road at the Drennan Road/site access intersection location have been

field measured to be unrestricted for passenger cars. The sight distances on Peyton Highway at the Peyton Road/sight access intersection location have been field measured to be over 1,000 feet.

### **Existing Traffic Conditions**

Figure 3 shows the peak-hour traffic volumes at the Drennan Road/Peyton Highway intersection, as well as the 24-hour average weekday traffic volumes on Drennan Road and Peyton Highway. The traffic volumes are from manual traffic counts conducted by LSC in July 2006. The traffic count reports are attached.

### **Existing Levels of Service**

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of very little congestion or delay. LOS F is indicative of a high level of congestion or delay.

The Drennan Road/Peyton Highway intersection has been analyzed to determine the existing levels of service based on the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 2000 Edition* by the Transportation Research Board. The existing LOS is shown in Figure 3. All of the movements at the analyzed intersection are currently operating at acceptable levels of service during the peak hours. The level of service reports are attached.

### **TRIP GENERATION**

Estimates of the traffic volumes expected to be generated by the site have been made using the nationally published trip generation rates found in *Trip Generation, 7th Edition, 2003* by the Institute of Transportation Engineers (ITE). Table 1 shows the results of the trip generation estimates, including a breakdown by project phase.

The development is projected to generate about 612 new vehicle-trips on the average weekday, with about half of the vehicles entering and half of the vehicles exiting the site in a 24-hour period. During the morning peak hour, which typically occurs for one hour between 6:30 and 8:30 a.m., about 12 vehicles would enter and 36 vehicles would exit the site. During the afternoon peak hour, which typically occurs for one hour between 4:30 and 6:30 p.m., about 41 vehicles would enter and 24 vehicles would exit the site.

### **TRIP DISTRIBUTION AND ASSIGNMENT**

The directional distribution of the site-generated traffic volumes on the area roadways is an important factor in determining the development's traffic impacts. Figure 4 shows the specific short-term distribution estimates for the site-generated traffic volumes. The estimates were based on the following factors: the location of the site with respect to the regional employment, commercial, and activity centers in the Colorado Springs metropolitan and surrounding area; the site's proposed land

uses; the site's proposed access system; the roadway system serving the site; and the existing traffic patterns as indicated by the traffic counts.

When the distribution percentages (from Figure 4) are applied to the trip generation estimates (from Table 1), the short-term site-generated traffic volumes on the area roadways can be determined. Figure 4 shows the short-term site-generated traffic volumes for Phase 1. Figure 5 shows the short-term site-generated traffic volumes for Phases 1 and 2. Figure 6 shows the long-term (year 2030) trip distribution percentages, as well as Phases 1 and 2 site-generated traffic volumes.

### **2010, 2017 and 2030 BACKGROUND TRAFFIC**

Figures 7, 8, and 9 shows the background traffic volume estimates for the years 2010, 2017, and 2030 (respectively) as well as the lane geometries and traffic controls for the intersections in the vicinity of the site. Background traffic is the traffic volume estimated to be on the area roadways without consideration of the proposed development. Background traffic includes the traffic generated by the surrounding developments and the through traffic on the area roadways. The 2010 and 2017 background traffic volume estimates were based on a three percent annual growth rate. The 2030 background volume projections were based on the Pikes Peak Area Council of Governments (PPACG), the model traffic volumes from the *2030 El Paso County Major Transportation Corridors Plan*, and LSC's previous work in the area (including partial buildout (25 percent) of the Ellicott Springs Sketch Plan project). This assumption for development within the Ellicott Springs Sketch Plan area is the primary reason for the large background growth by 2030.

### **2010 TOTAL TRAFFIC**

Figure 10 shows the sum of the 2010 traffic volumes (from Figure 7) plus the Phase 1 short-term site-generated traffic volumes (from Figure 4). Figure 10 also shows the lane geometries and traffic controls for the intersections in the vicinity of the site.

### **2017 TOTAL TRAFFIC**

Figure 11 shows the sum of the 2017 traffic volumes (from Figure 8) plus the Phases 1 and 2 short-term site-generated traffic volumes (from Figure 5). Figure 11 also shows the lane geometries and traffic controls for the intersections in the vicinity of the site.

### **2030 TOTAL TRAFFIC**

Figure 12 shows the total traffic volumes for the year 2030, as well as the lane geometries and traffic controls for the intersections in the vicinity of the site. The 2030 total traffic volumes are the sum of the Phases 1 and 2 long-term site-generated traffic volumes (from Figure 6) plus the 2030 background traffic volumes (from Figure 9). Figure 13 shows the 2030 total traffic volumes, lane geometries, and traffic controls assuming a right-in/right-out access on Drennan Road per the request of the February 26, 2007 El Paso County staff comments.

## **PROJECTED LEVELS OF SERVICE**

The Drennan Road/Peyton Highway, Drennan Road/site access, and Peyton Highway/site access intersections have been analyzed to determine the projected levels of service for the existing plus site-generated, 2030 background, and 2030 total traffic volumes based on the signalized and unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 2000 Edition* by the Transportation Research Board. The level of service reports are attached.

Assuming two-way stop-sign control at the Drennan Road/Peyton Highway intersection, most of the movements at the intersection are projected to operate at acceptable levels of service during the peak hours through the year 2030. Assuming all-way stop-sign control with the recommended turn lane improvements or a one-lane modern roundabout with no required auxiliary lanes, all of the movements at the intersection are projected to operate at acceptable levels of service during the peak hours through the year 2030 with or without the addition of the site-generated traffic volumes.

All of the movements at the stop-sign controlled Drennan Road/site access and Peyton Highway/site access intersections are projected to operate at acceptable levels of service during the peak hours through the year 2030 with the addition of the site-generated traffic volumes.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Sight Distance**

1. The sight distance requirement for a posted speed limit of 55 mph is 550 feet for passenger vehicles and 715 feet for single-unit trucks and buses. LSC provided the sight distance information for the proposed site access intersection locations to the planner for Drennan Road and Peyton Highway. The sight distances on Drennan Road at the Drennan Road/site access intersection location have been field measured to be greater than one-quarter mile in both directions. The sight distances on Peyton Highway at the Peyton Road/site access intersection location have been field measured to be over 1,000 feet.

### **Trip Generation**

2. Phase 1 of the development is projected to generate about 191 new vehicle-trips on the average weekday. During the morning peak hour, about four vehicles would enter and 11 vehicles would exit the site. During the afternoon peak hour, about 13 vehicles would enter and seven vehicles would exit the site.
3. Both phases of the development are projected to generate about 612 new vehicle-trips on the average weekday. During the morning peak hour, about 12 vehicles would enter and 36 vehicles would exit the site. During the afternoon peak hour, about 41 vehicles would enter and 24 vehicles would exit the site.

### Levels of Service

4. All of the movements at the stop-sign controlled Drennan Road/Peyton Highway intersection are projected to operate at acceptable levels of service during the peak hours in the short term.
5. Assuming two-way stop-sign control at the Drennan Road/Peyton Highway intersection, most of the movements at the intersection are projected to operate at acceptable levels of service during the peak hours through the year 2030. Assuming all-way stop-sign control with the 2030 laneage shown or a one-lane modern roundabout with no required auxiliary lanes, all of the movements at the intersection are projected to operate at acceptable levels of service during the peak hours through the year 2030.
6. All of the movements at the stop-sign controlled Drennan Road/site access and Peyton Highway/site access intersections are projected to operate at acceptable levels of service during the peak hours through the year 2030 with the addition of the site-generated traffic volumes.

### 2010 Short-Term Recommendations

7. The Drennan Road/site access intersection would be allowed as full movement until Drennan Road is upgraded to a four-lane Principal Arterial, which requires one-half mile spacing of intersections.
8. A stop sign should be installed at the Drennan Road/site access intersection for the northbound approach.
9. A stop sign should be installed at the Peyton Highway/site access intersection for the west-bound approach.
10. Auxiliary turn lanes would not be needed at the Drennan Road/site access and Peyton Highway/site access intersections, since the Rural Minor Arterial triggers of 25 vehicles per hour for left turns and 50 vehicles per hour for right turns would not be met.
11. Based on the *2030 El Paso County Recommended Major Transportation Corridors Plan Map (MTCP)*, Peyton Highway is shown as a Minor Arterial and Drennan Road is shown as a Major Collector. Therefore, the total right-of-way required would be 100 feet for Peyton Highway and 90 feet for Drennan Road. The Silverado Ranch development should dedicate 50 feet east of the centerline of Peyton Highway and 45 feet south of the centerline of Drennan Road based on the *2030 El Paso County MTCP*.
12. Based on the *El Paso County Corridor Preservation Map*, Peyton Highway is shown as a Minor Arterial and Drennan Road is shown as a four-lane Principal Arterial. Therefore, the total required right-of-way would remain at 100 feet for Peyton Highway and increase to 180 feet for Drennan Road. The Silverado Ranch development should dedicate 50 feet east of the

centerline of Peyton Highway and reserve an additional 45 feet south of Drennan Road based on the *El Paso County Corridor Preservation Map*.

### **2017 Recommendations**

13. Drennan Road is expected to exceed the paving threshold of 300 ADT with the 2017 total traffic scenario. Therefore, it is possible that with Phase 2 of the development, there may be a requirement to pave Drennan Road along the site frontage between Peyton Highway and the site access (if not already required by another development to the east). Whomever paves portions of Drennan Road may be eligible for cost recovery. The Silverado Ranch development will likely contribute a very small percentage toward the total Drennan Road average daily traffic volumes in the future.

### **Long-Term Recommendations**

14. The Drennan Road/site access intersection may be restricted to right-in/right-out turning movements only when Drennan Road is expanded to four lanes and reclassified as a Principal Arterial, as shown on the *El Paso County Recommended Preserved Corridor Network*.
15. Auxiliary right-turn and left-turn lanes are not warranted at the Drennan Road/Peyton Highway intersection based on the existing plus site-generated traffic volumes. However, as the background traffic volumes increase over time, auxiliary turn lanes will likely become warranted. Exclusive right-turn and left-turn lanes may ultimately be required for most of the intersection's turning movements, with the possible exception of the eastbound right-turn movement. Table 2 shows the future auxiliary turn lanes needed and the recommended left-turn storage lengths based on the 2030 total traffic volumes. The right-turn deceleration lanes should be 600 feet including a lane transition taper, based on the 55 mph posted speed limit.

In regards to the discussion in the latest comments from the El Paso County Development Services Department about the acceptable LOS being contingent on turn lane construction, the volume projections using a three percent growth rate for existing volumes in the short to intermediate term plus the addition of site traffic would not trigger turn lanes. Should gradual growth continue into the long term or if other subdivisions in the area, such as Ellicott Springs, are developed, some turn-lane thresholds at the intersection would begin to be exceeded. It is most likely that the first turn movements to eventually reach the thresholds would be north/south deceleration lane(s) on Peyton Highway. This would not be due to capacity requirements, but speed change/safety requirements. It is likely that the first of such lanes would be the southbound left-turn lane. Other speed change lanes may be triggered depending on area development patterns should two-way stop-sign control remain east/west for the foreseeable future. Turn lanes on the east/west approaches may be added as needed for capacity/to maintain acceptable levels of service. This would most likely occur with significant area development through a large project such as Ellicott Springs or numerous smaller subdivisions with a significant cumulative effect. What the 2030 volumes show is

25 percent Ellicott Springs and an assumption of growth to the north/northeast that would utilize Peyton and Drennan (west).

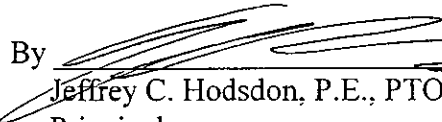
16. As the background traffic volumes increase on Drennan Road and Peyton Highway over time, it may become necessary to reverse the "minor street" from Drennan Road to Peyton Highway (i.e., switch the stop-sign control to north/south instead of east/west) depending on growth areas and distribution of added traffic volumes or to install all-way stop-sign control or a modern roundabout at the Drennan Road/Peyton Highway intersection if the approach traffic volumes are relatively balanced. With all-way stop-sign control, the intersection is projected to operate at LOS D or better. Ultimately (beyond the year 2030 planning and design horizon), the stop-sign controlled intersection may need a traffic signal. Auxiliary lanes would not be necessary if the intersection were converted to a roundabout.

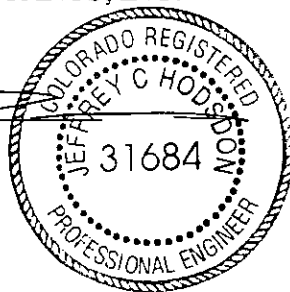
\* \* \* \* \*

We trust this updated traffic impact analysis will assist you in gaining approval of the proposed Silverado Ranch residential development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By   
Jeffrey C. Hodsdon, P.E., PTOE  
Principal



JCH:TLC:bjwb

Enclosures: Tables 1-2  
Figures 1-13  
Traffic Count Reports  
Level of Service Reports



**Table 1  
Silverado Ranch  
Trip Generation Estimates**

Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>					Total Trips Generated				
				Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
					In	Out	In	Out		In	Out	In	Out
1	210	Single-Family Detached Housing	20 DU <sup>(2)</sup>	9.57	0.19	0.56	0.64	0.37	191	4	11	13	7
2	210	Single-Family Detached Housing	44 DU	9.57	0.19	0.56	0.64	0.37	421	8	25	28	16
<b>Total</b>									<b>612</b>	<b>12</b>	<b>36</b>	<b>41</b>	<b>24</b>

Notes:

(1) Source: "Trip Generation, 7th Edition, 2003" by the Institute of Transportation Engineers .

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

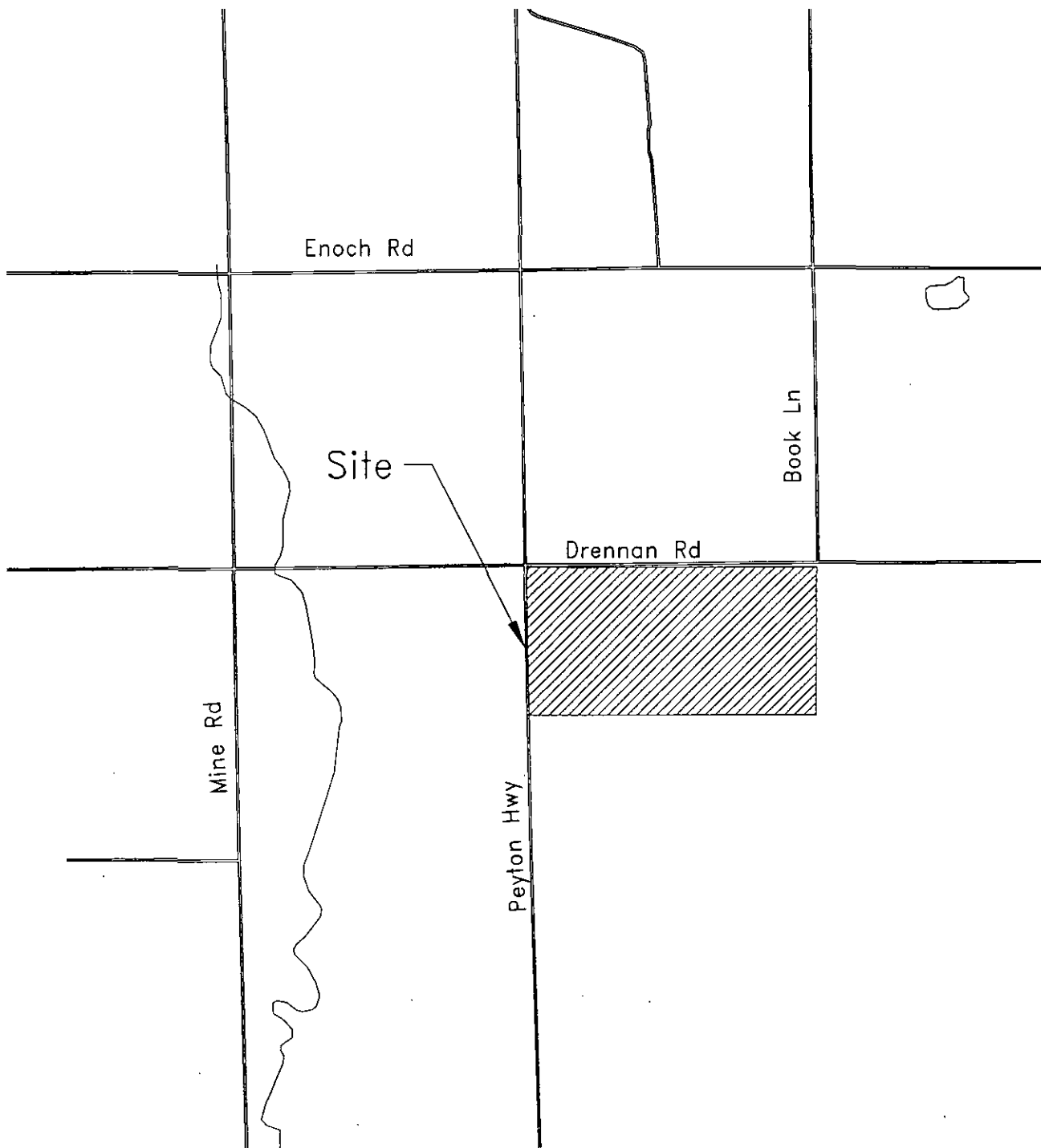
**Table 2**  
**Silverado Ranch**  
**Future Auxiliary Lane Requirements**  
**Drennan Road/Peyton Highway Intersection**

		2030 Turning Volume (vehicles per hour) <sup>(1)</sup>	Number of Turn Lanes Proposed	Required Storage Length per Table 4-8 (Colorado State Highway Access Code) <sup>(2)</sup>	Recommended Storage Length <sup>(2)(3)</sup>	Deceleration Length Including Lane Transition Taper <sup>(2)(4)</sup>	Total Lane Length Including Taper <sup>(2)</sup>
AM Peak Hour	NB LT <sup>(5)</sup>	32	1	35	35	600	635
	SB LT	50	1	50	250	600	850
	EB LT	125	1	125	125	600	725
	WB LT	76	1	80	80	600	680
AM Peak Hour	NB RT	25	1	—	—	600	600
	SB RT	75	1	—	—	600	600
	EB RT	27	1	—	—	600	600
	WB RT	225	1	—	—	600	600
PM Peak Hour	NB LT	28	1	30	35	600	635
	SB LT	250	1	250	250	600	850
	EB LT	100	1	100	125	600	725
	WB LT	28	1	30	80	600	680
PM Peak Hour	NB RT	100	1	—	—	600	600
	SB RT	150	1	—	—	600	600
	EB RT	23	1	—	—	600	600
	WB RT	125	1	—	—	600	600

**Notes:**

- (1) Converted to passenger car equivalents. This is the highest volume from either Figure 12 or 13 (partial access on Drennan Road).
- (2) Shown in feet
- (3) From the highest AM or PM volume
- (4) Assumes the posted speed limit on Drennan Road will be 55 miles per hour (mph), instead of the existing 45 mph.
- (5) Approach/turning movement: NB = northbound, SB = southbound, EB = eastbound, WB = westbound, RT = right turn, LT = left turn

Source: LSC Transportation Consultants, Inc.

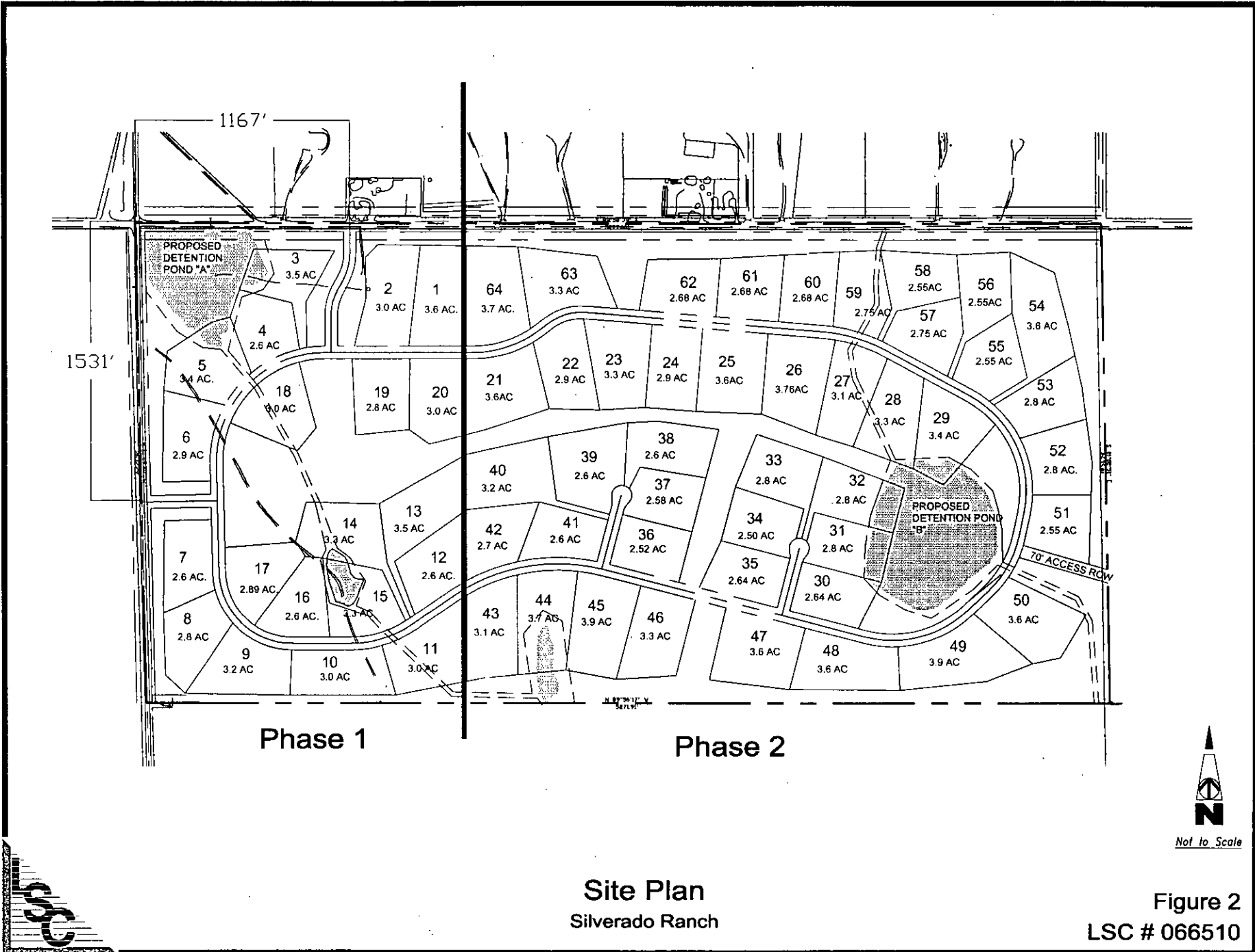


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**Vicinity Map**  
Silverado Ranch

**Figure 1**  
**LSC # 066510**





Phase 1

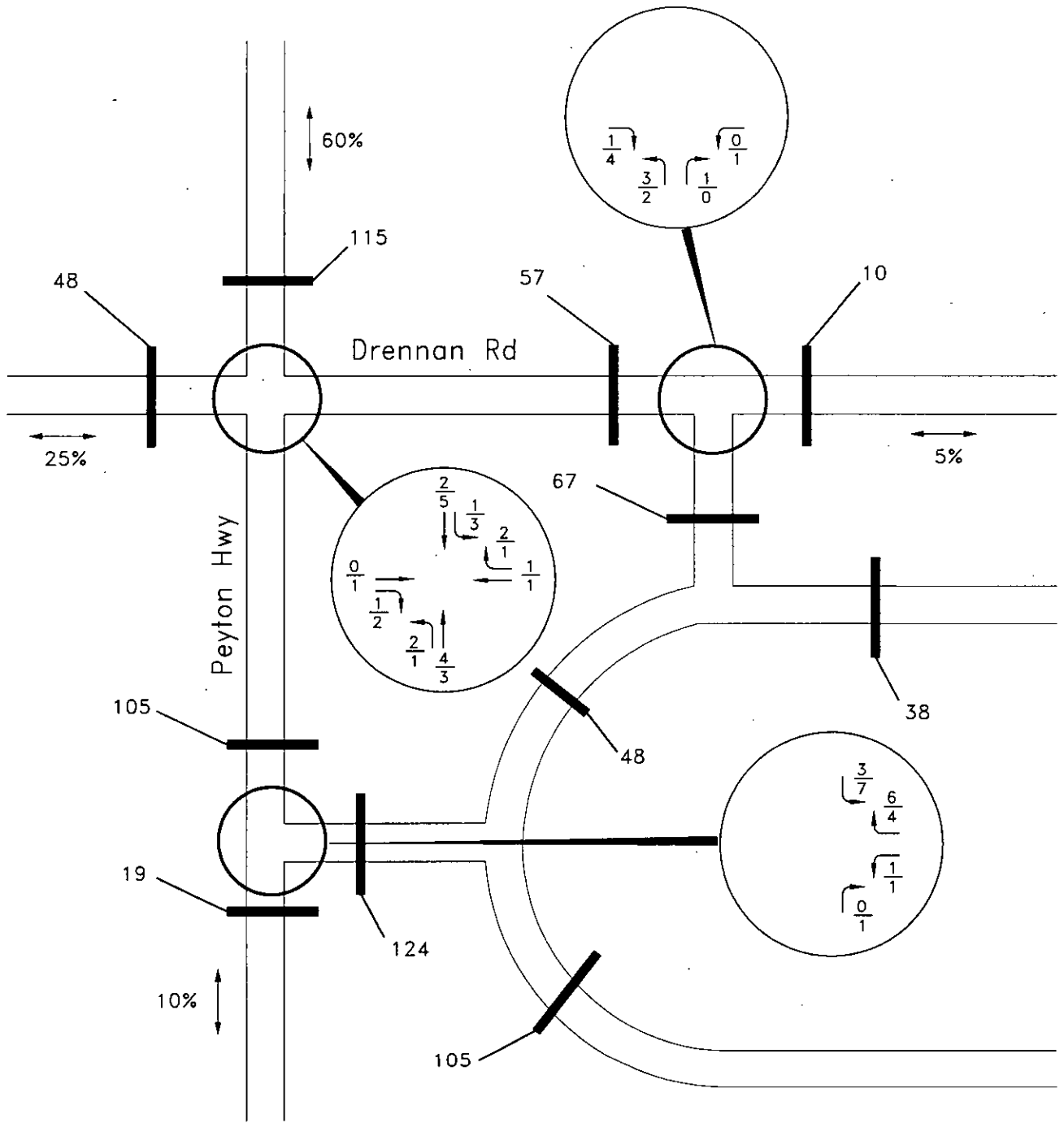
Phase 2

Site Plan  
Silverado Ranch

Figure 2  
LSC # 066510







Legend:

$\frac{xxx}{xxx} \frac{am}{pm}$  -Weekday peak-hour traffic (vehicles per hour)

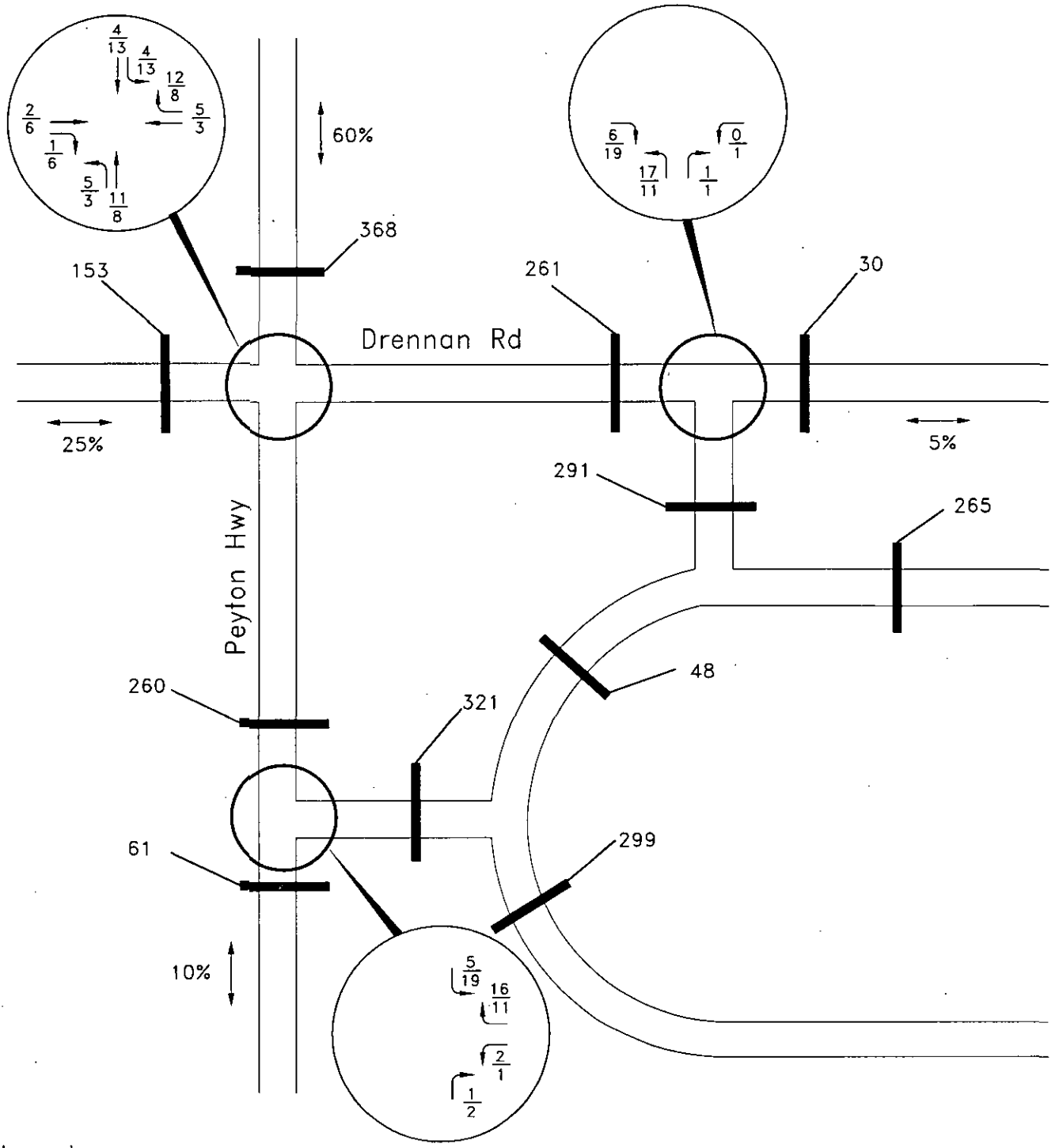
XX,XXX -Average weekday traffic (vehicles per day)



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**Short-Term Phase I  
Directional Distribution  
and Site-Generated Traffic**  
Silverado Ranch

**Figure 4**  
LSC # 066510



Legend:

$\frac{xxx}{xxx} \frac{am}{pm}$  - Weekday peak-hour traffic (vehicles per hour).

XX,XXX - Average weekday traffic (vehicles per day)



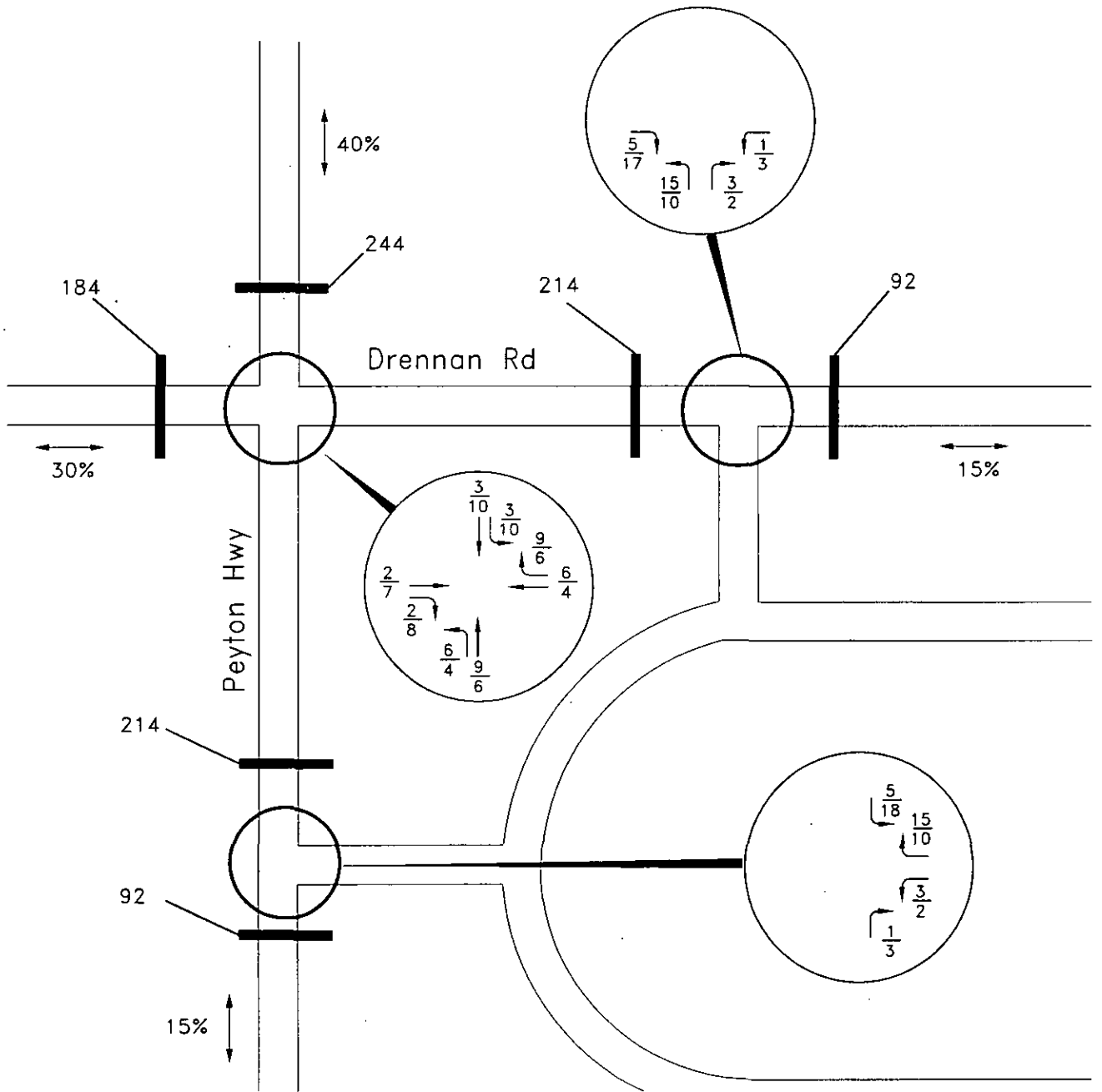
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### Short-Term Phase I & 2 Directional Distribution and Site-Generated Traffic

Silverado Ranch

Figure 5  
LSC # 066510

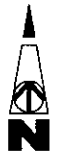




Legend:

$\frac{xxx}{xxx} \frac{am}{pm}$  - Weekday peak-hour traffic (vehicles per hour)

XX,XXX - Average weekday traffic (vehicles per day)



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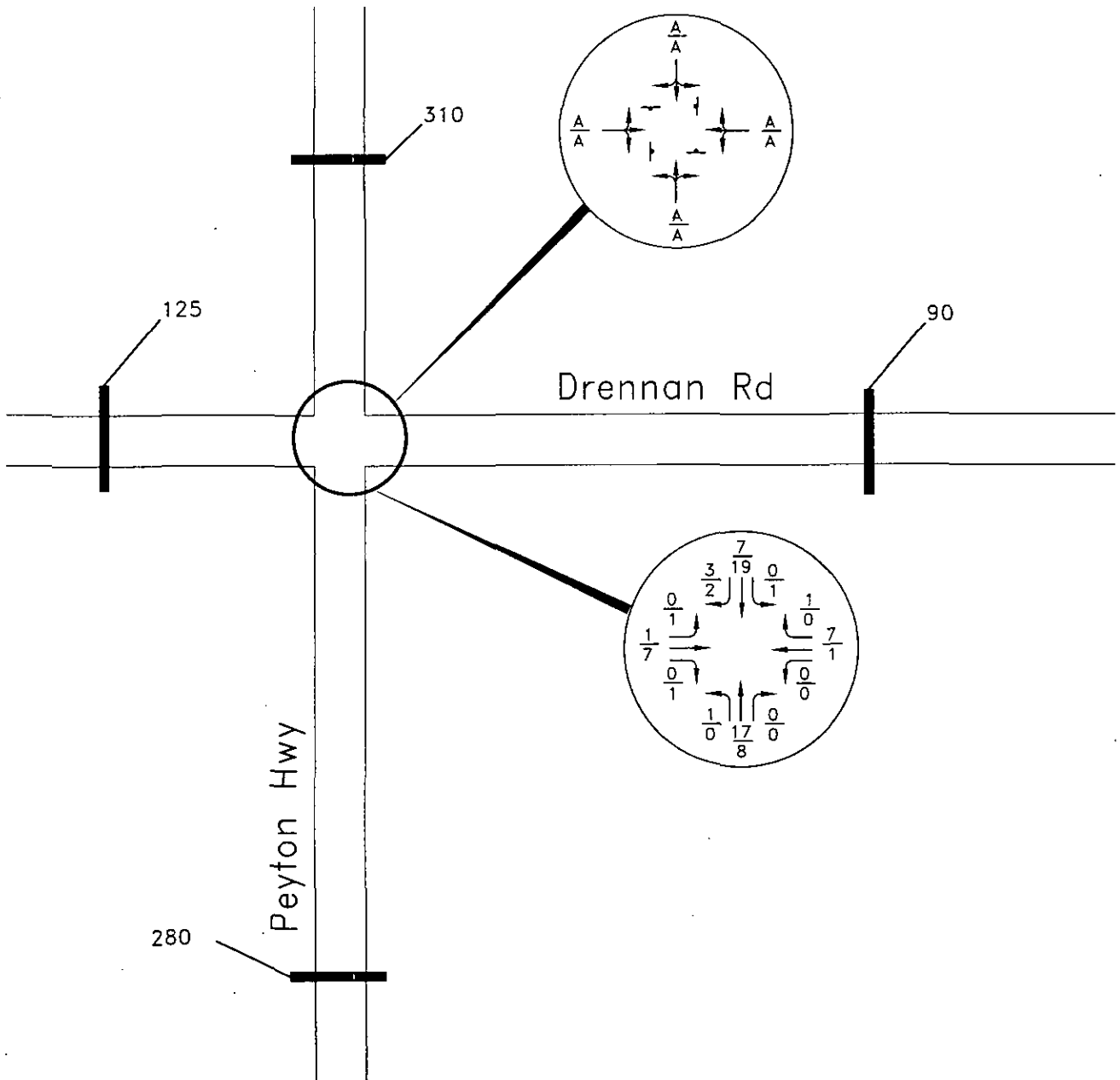
## 2030 Directional Distribution and Site-Generated Traffic

Silverado Ranch

Figure 6

LSC # 066510

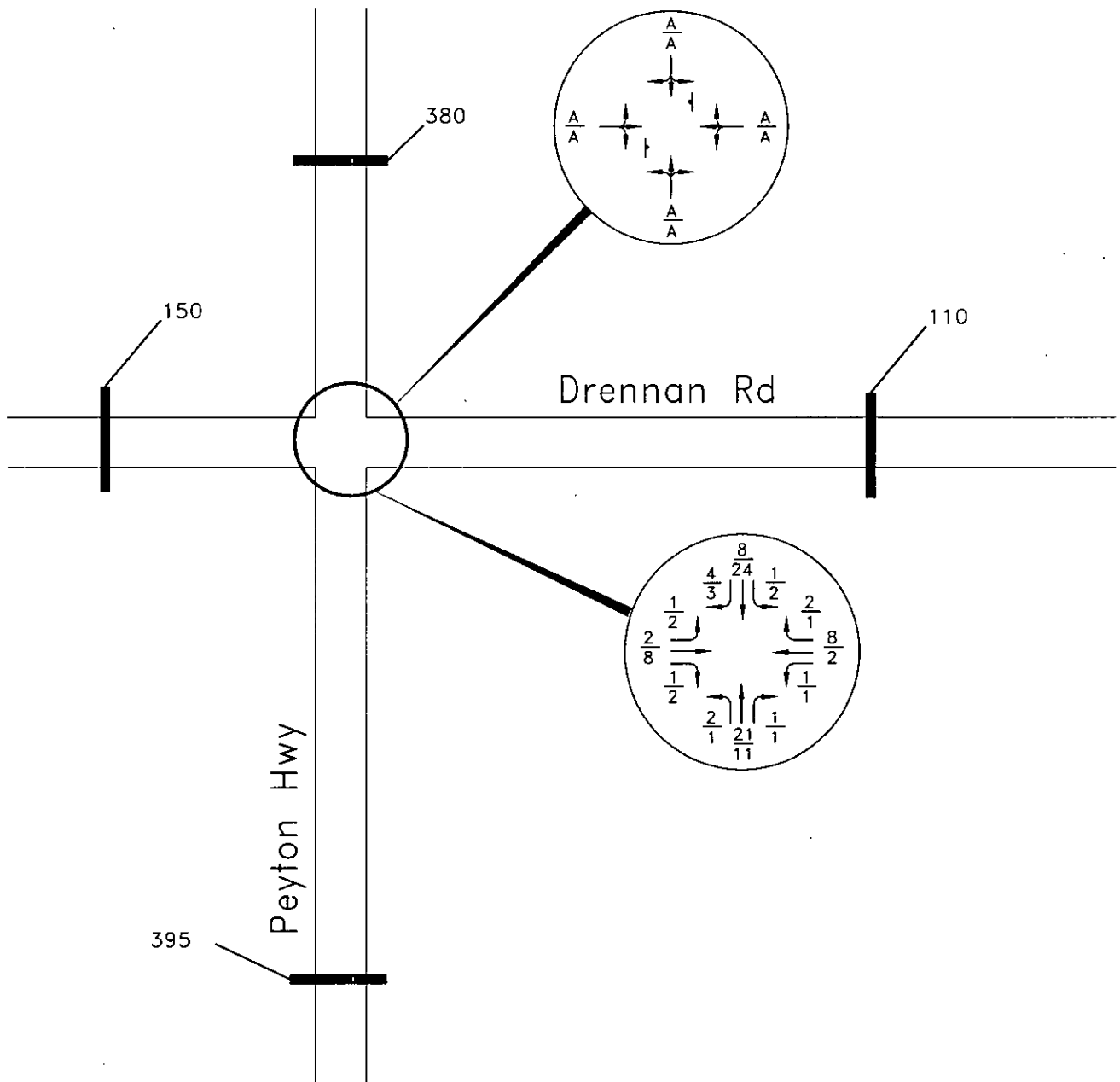




2010 Background Traffic, Lane Geometry,  
Traffic Control and LOS

Silverado Ranch

Figure 7  
LSC # 066510



Legend:

$\frac{xxx}{xxx} \frac{am}{pm}$  -Weekday peak-hour traffic (vehicles per hour)

XX,XXX -Average weekday traffic (vehicles per day)

$\frac{X}{X} \frac{am}{pm}$  -Individual movement peak-hour Level of Service

t -Stop sign



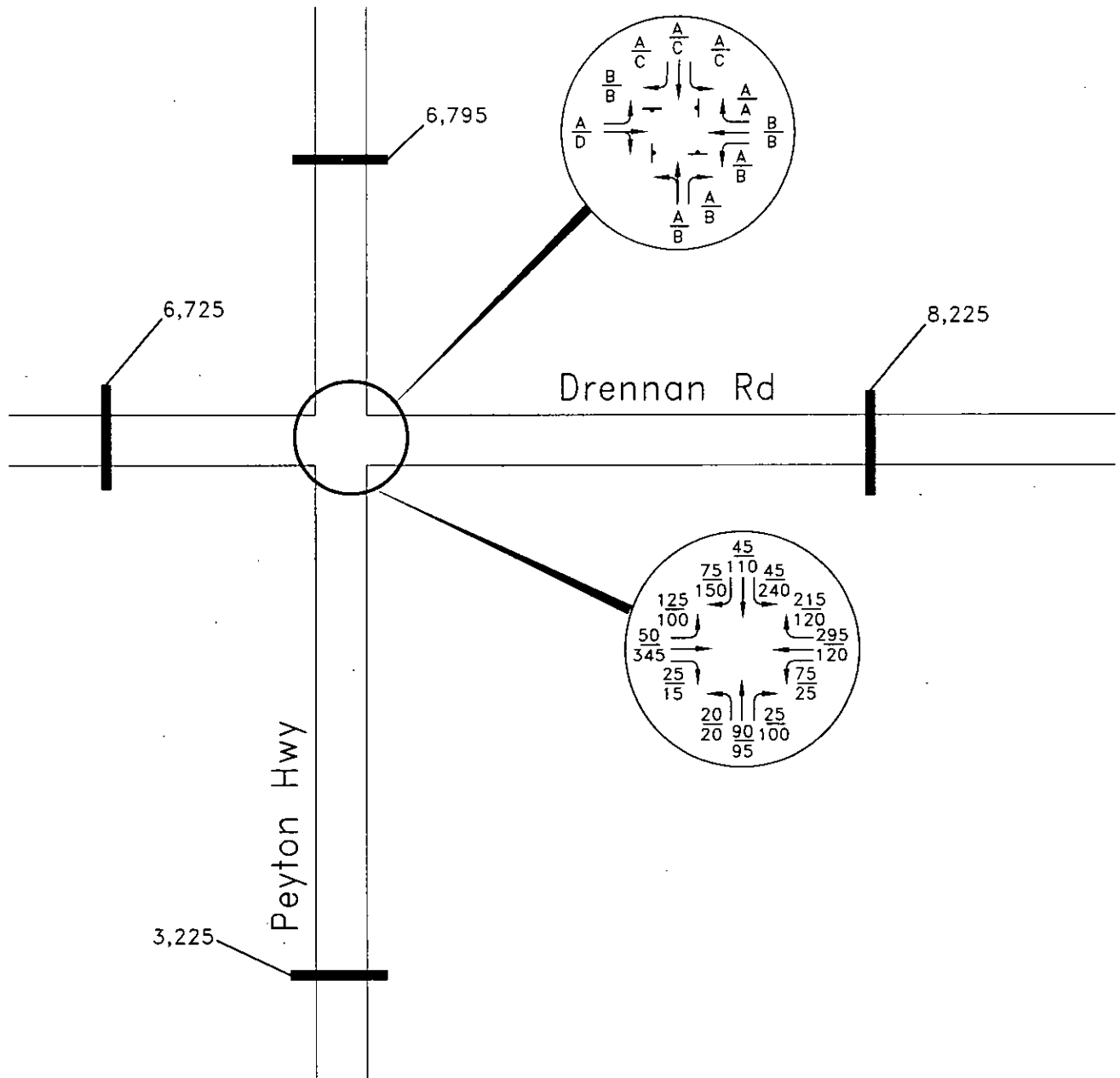
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## 2017 Background Traffic, Lane Geometry, Traffic Control and LOS

Silverado Ranch

Figure 8

LSC # 066510



**Legend:**

$\frac{xxx}{xxx} \frac{am}{pm}$  -Weekday peak-hour traffic (vehicles per hour)

XX,XXX -Average weekday traffic (vehicles per day)

$\frac{X}{X} \frac{am}{pm}$  -Individual movement peak-hour Level of Service

† -Stop sign



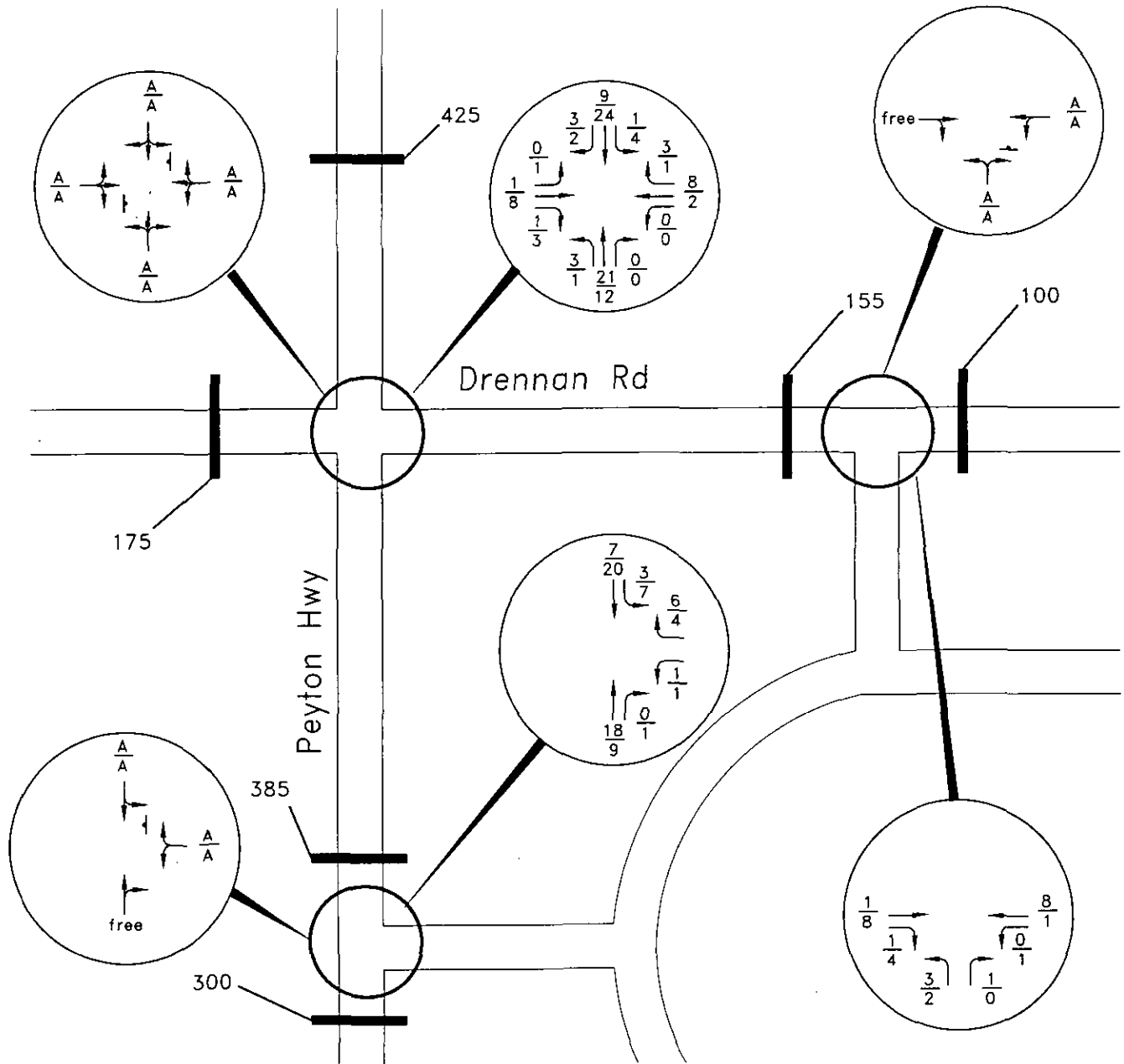
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**2030 Background Traffic, Lane Geometry,  
Traffic Control and LOS**

Silverado Ranch

Figure 9

LSC # 066510



Legend:

$\frac{xxx}{xxx} \frac{am}{pm}$  - Weekday peak-hour traffic (vehicles per hour)

XX,XXX - Average weekday traffic (vehicles per day)

$\frac{X}{X} \frac{am}{pm}$  - Individual movement peak-hour Level of Service

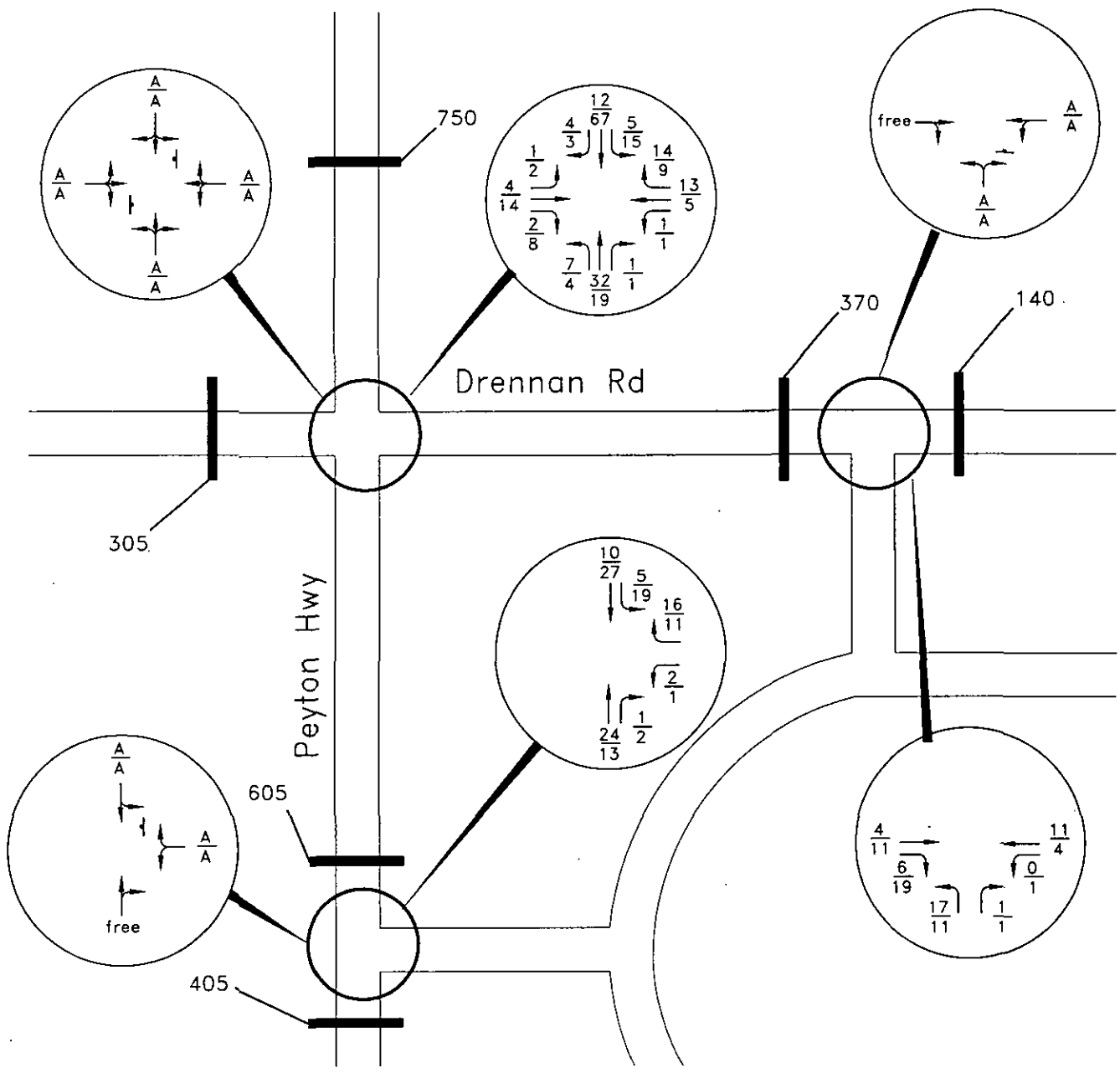
† - Stop sign



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2010 Phase 1 Total Traffic,  
Lane Geometry, Traffic Control & LOS  
Silverado Ranch

Figure 10  
LSC # 066510



Legend:

$\frac{xxx \text{ am}}{xxx \text{ pm}}$  -Weekday peak-hour traffic (vehicles per hour)

XX,XXX -Average weekday traffic (vehicles per day)

$\frac{X \text{ am}}{X \text{ pm}}$  -Individual movement peak-hour Level of Service

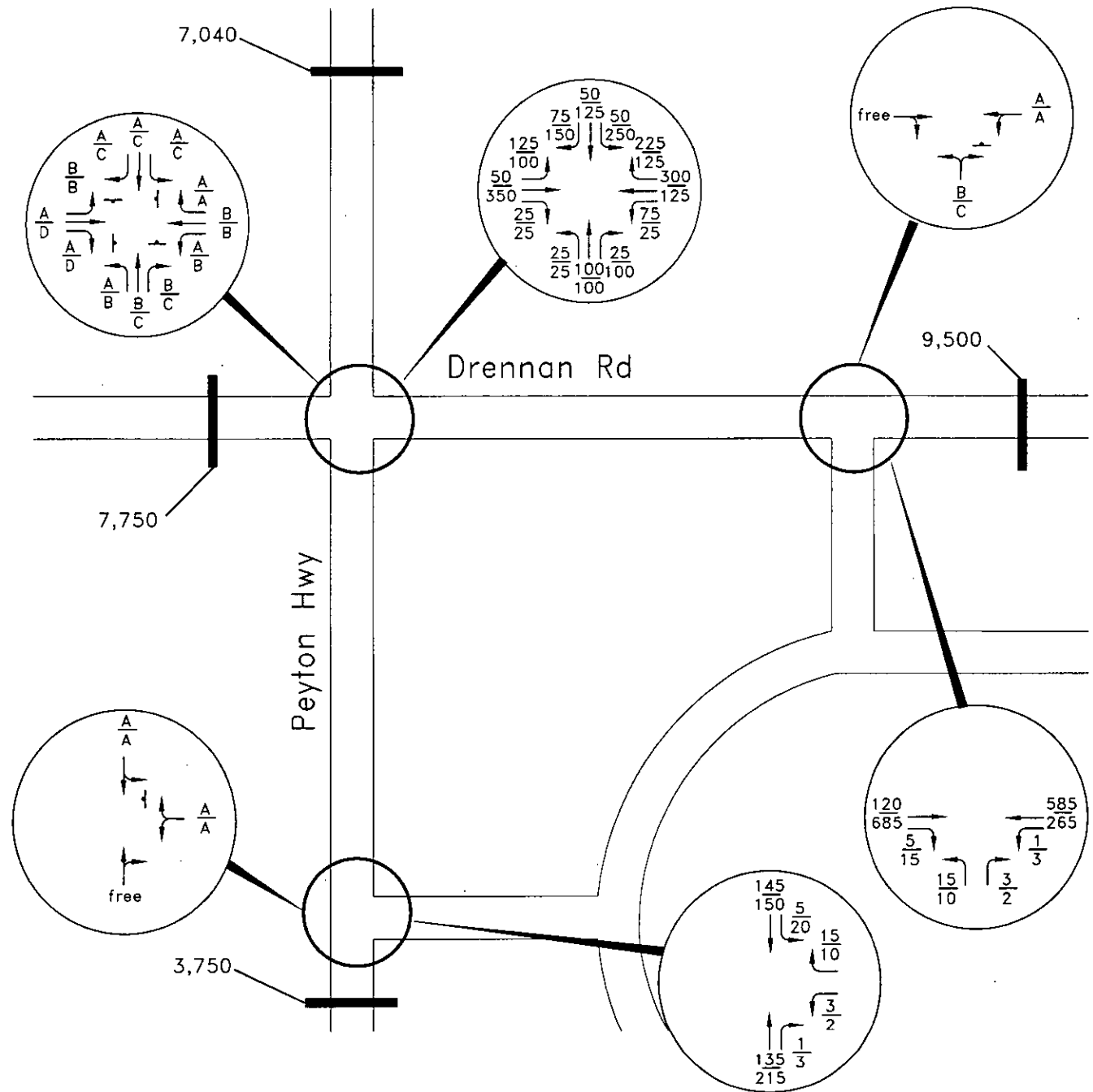
† -Stop sign



2017 Phases 1 & 2 Total Traffic,  
Lane Geometry, Traffic Control & LOS  
Silverado Ranch

Figure 11  
LSC # 066510



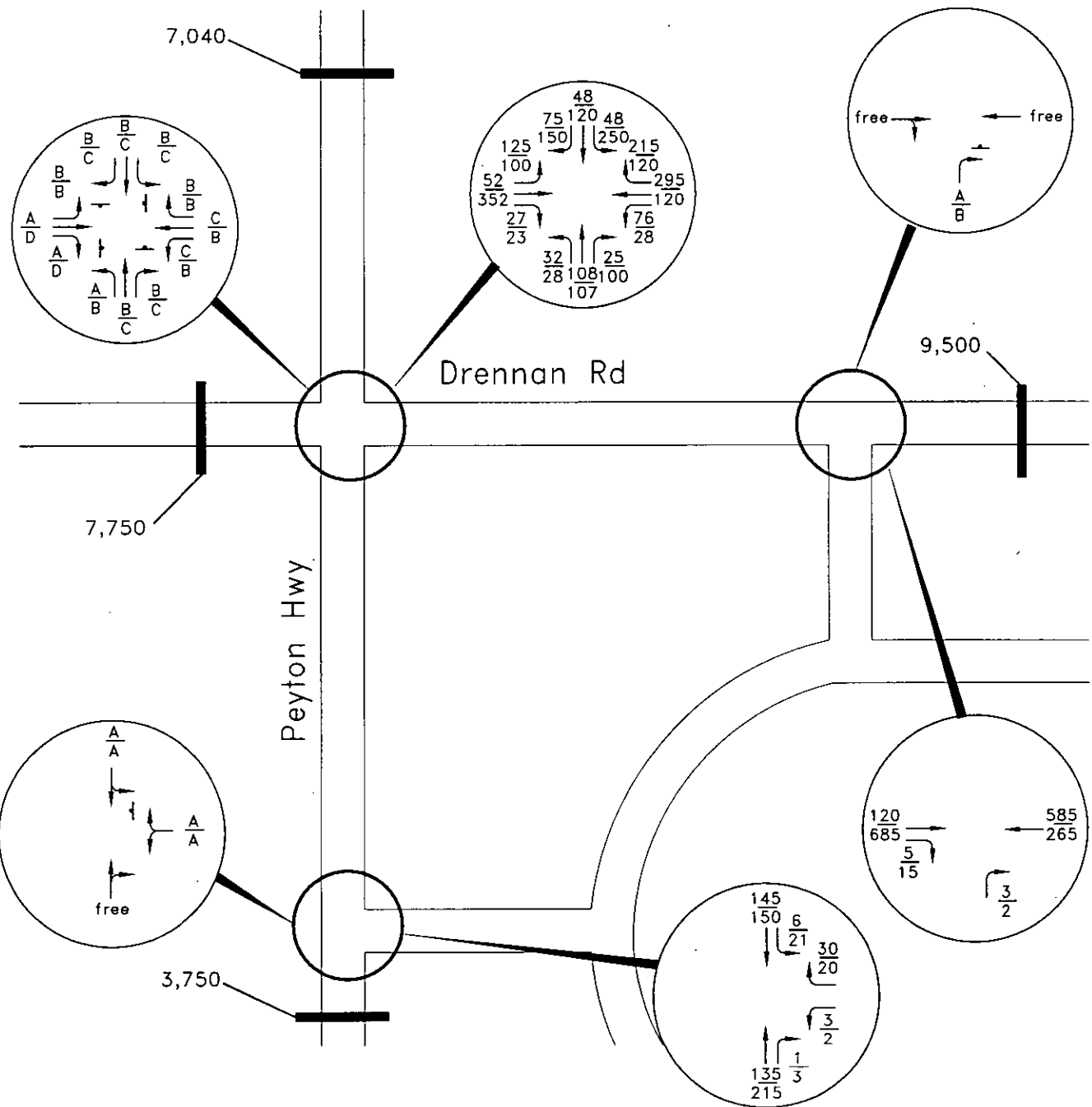


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**2030 Total Traffic,  
Lane Geometry, Traffic Control & LOS  
Silverado Ranch**

**Figure 12  
LSC # 066510**





**2030 Total Traffic, Lane Geometry, Traffic Control & LOS**  
**Assuming Right-in/Right-out Access on Drennan Road Figure 13**  
 Silverado Ranch LSC # 066510

LSC Transportation Consultants, Inc.

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Colorado Springs, CO 80903

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Colorado Springs, CO 80903

Phone (719) 633-2868

E-mail: lsc@lscs.com

File Name : PEYTO~#1

Site Code : 00720061

Start Date : 07/20/2006

Page No : 1

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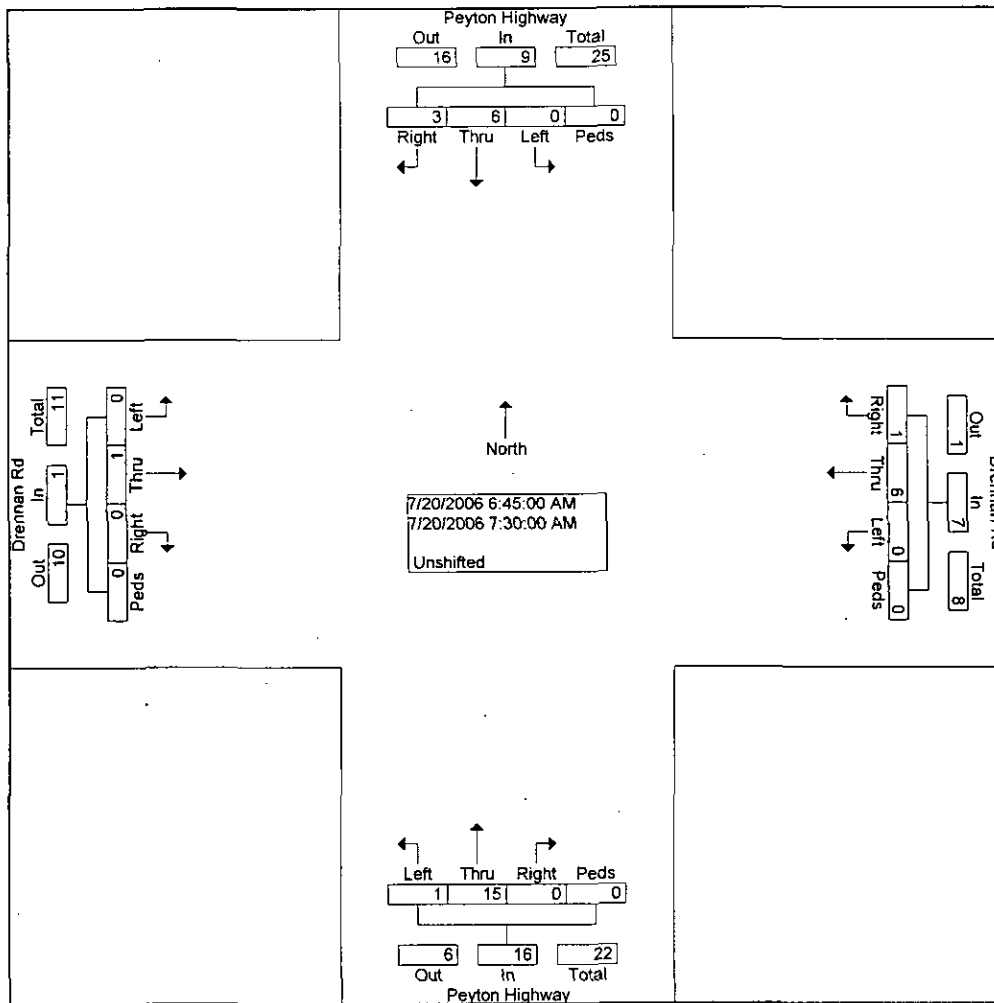
Start Time	Peyton Highway From North				Drennan Rd From East				Peyton Highway From South				Drennan Rd From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	2	1	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	8
06:45 AM	1	1	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	8
Total	3	2	0	0	0	4	0	0	0	7	0	0	0	0	0	0	0	16
07:00 AM	1	2	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	10
07:15 AM	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	4
07:30 AM	1	2	0	0	1	1	0	0	0	5	0	0	0	0	1	0	0	11
07:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4
Total	2	8	0	0	1	4	0	0	0	11	1	0	0	0	2	0	0	29
08:00 AM	1	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	6
08:15 AM	0	0	1	0	0	3	0	0	0	2	0	0	0	0	0	0	0	6
Grand Total	6	12	1	0	1	11	0	0	0	23	1	0	0	0	2	0	0	57
Apprch %	31.6	63.2	5.3	0.0	8.3	91.7	0.0	0.0	0.0	95.8	4.2	0.0	0.0	100.0	0.0	0.0	0.0	
Total %	10.5	21.1	1.8	0.0	1.8	19.3	0.0	0.0	0.0	40.4	1.8	0.0	0.0	3.5	0.0	0.0	0.0	



LSC Transportation Consultants, Inc.  
 516 N. Tejon St.  
 Colorado Springs, CO 80903

File Name : PEYTO~#1  
 Site Code : 00720061  
 Start Date : 07/20/2006  
 Page No : 2

Start Time	Peyton Highway From North					Drennan Rd From East					Peyton Highway From South					Drennan Rd From West					Int. Total
	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersecti on	06:45 AM																				
Volume	3	6	0	0	9	1	6	0	0	7	0	15	1	0	16	0	1	0	0	1	33
Percent	33.	66.	0.0	0.0		14.	85.	0.0	0.0		0.0	93.	6.3	0.0		0.0	100.	0.0	0.0		
	3	7				3	7					8					0				
07:30 Volume	1	2	0	0	3	1	1	0	0	2	0	5	0	0	5	0	1	0	0	1	11
Peak Factor	0.750																				
High Int. Volume	07:00 AM					06:45 AM					07:00 AM					07:30 AM					
Peak Factor	1	2	0	0	3	0	2	0	0	2	0	6	0	0	6	0	1	0	0	1	0.25
	0.75					0.87					0.66					0					



LSC Transportation Consultants, Inc.  
 516 N. Tejon St.  
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File Name : PEYTO~%H  
 Site Code : 00719062  
 Start Date : 07/19/2006  
 Page No : 1

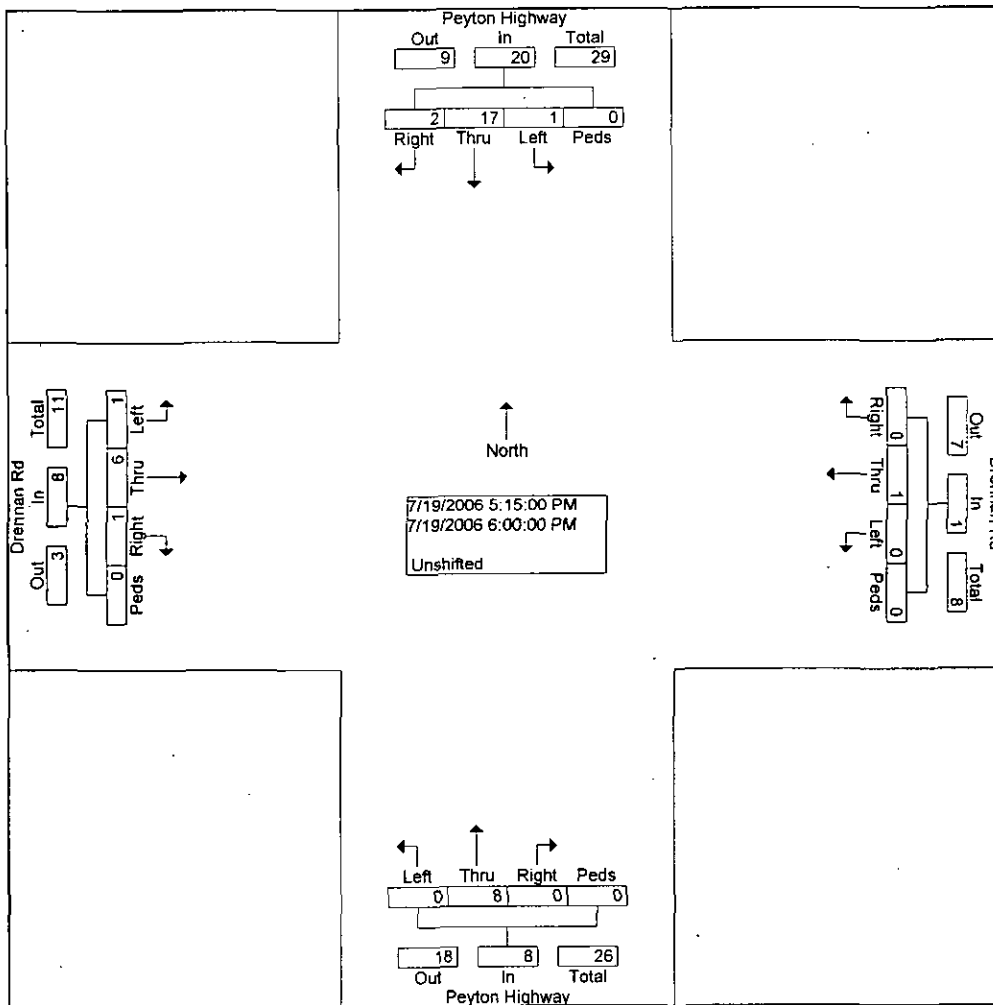
Groups Printed- Unshifted

Start Time	Peyton Highway From North				Drennan Rd. From East				Peyton Highway From South				Drennan Rd From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	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	1.0	
04:15 PM	0	4	0	0	0	2	0	0	1	1	0	0	0	1	1	0	0	10
04:30 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
04:45 PM	1	1	1	0	0	1	0	0	0	4	0	0	0	0	0	0	0	8
Total	1	10	2	0	0	3	0	0	1	5	0	0	0	1	1	0	0	24
05:00 PM	1	2	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	8
05:15 PM	1	6	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	10
05:30 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	5
05:45 PM	0	1	1	0	0	0	0	0	0	3	0	0	0	2	0	0	0	7
Total	2	11	1	0	0	0	0	0	0	9	0	0	0	6	1	0	0	30
06:00 PM	1	8	0	0	0	1	0	0	0	1	0	0	1	2	1	0	0	15
*** BREAK ***																		
Grand Total	4	29	3	0	0	4	0	0	1	15	0	0	1	9	3	0	0	69
Apprch %	11.1	80.6	8.3	0.0	0.0	100.0	0.0	0.0	6.3	93.8	0.0	0.0	7.7	69.2	23.1	0.0	0.0	
Total %	5.8	42.0	4.3	0.0	0.0	5.8	0.0	0.0	1.4	21.7	0.0	0.0	1.4	13.0	4.3	0.0	0.0	

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 Colorado Springs, CO 80903

File Name : PEYTO~%H  
 Site Code : 00719062  
 Start Date : 07/19/2006  
 Page No : 2

Start Time	Peyton Highway From North					Drennan Rd From East					Peyton Highway From South					Drennan Rd From West					Int. Total
	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	Rig ht	Thru	Left	Pe ds	App. Total	
Peak Hour From 04:15 PM to 06:15 PM - Peak 1 of 1																					
Intersecti on	05:15 PM																				
Volume	2	17	1	0	20	0	1	0	0	1	0	8	0	0	8	1	6	1	0	8	37
Percent	10.	85.	5.0	0.0		0.0	100	0.0	0.0		0.0	100	0.0	0.0		12.	75.	12.	0.0		
	0	0					0					0				5	0	5			
06:00 Volume	1	8	0	0	9	0	1	0	0	1	0	1	0	0	1	1	2	1	0	4	15
Peak Factor																					0.617
High Int. Volume	06:00 PM					06:00 PM					05:45 PM					06:00 PM					
Peak Factor	1	8	0	0	9	0	1	0	0	1	0	3	0	0	3	1	2	1	0	4	
	0.55					0.25					0.66					0.50					
	6					0					7					0					



# HCM Unsignalized Intersection Capacity Analysis

## 3: Drennan Road & Peyton Hwy

Existing  
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	1	0	0	6	1	1	15	0	0	6	3
Peak Hour Factor	0.25	0.25	0.25	0.87	0.87	0.87	0.66	0.66	0.66	0.75	0.75	0.75
Hourly flow rate (vph)	0	4	0	0	7	1	2	23	0	0	8	4
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	40	36	10	38	38	23	12			23		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40	36	10	38	38	23	12			23		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF, (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	99	100	100			100		
cM, capacity (veh/h)	956	856	1071	963	854	1054	1607			1593		
Direction, Lane #	EB, 1	WB, 1	NB, 1	SB, 1								
Volume Total	4	8	24	12								
Volume Left	0	0	2	0								
Volume Right	0	1	0	4								
cSH	856	878	1607	1593								
Volume to Capacity	0.00	0.01	0.00	0.00								
Queue Length 95th (ft)	0	1	0	0								
Control Delay (s)	9.2	9.1	0.5	0.0								
Lane LOS	A	A	A									
Approach Delay (s)	9.2	9.1	0.5	0.0								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay				2.5								
Intersection Capacity Utilization				13.3%								
ICU Level of Service				A								
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

Existing  
 PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	1	6	1	0	1	0	0	8	0	1	17	2
Peak Hour Factor	0.50	0.50	0.50	0.25	0.25	0.25	0.66	0.66	0.66	0.55	0.55	0.55
Hourly flow rate (vph)	2	12	2	0	4	0	0	12	0	2	31	4
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	50	48	33	56	50	12	35			12		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	48	33	56	50	12	35			12		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	100	100	100			100		
cM capacity (veh/h)	945	842	1041	928	840	1068	1577			1607		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	4	12	36
Volume Left	2	0	0	2
Volume Right	2	0	0	4
cSH	875	840	1577	1607
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.2	9.3	0.0	0.4
Lane LOS	A	A		A
Approach Delay (s)	9.2	9.3	0.0	0.4
Approach LOS	A	A		

Intersection Summary	
Average Delay	2.9
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2010 Background  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	1	0	0	7	1	1	17	0	0	7	3
Peak Hour Factor	0.25	0.25	0.25	0.87	0.87	0.87	0.66	0.66	0.66	0.75	0.75	0.75
Hourly flow rate (vph)	0	4	0	0	8	1	2	26	0	0	9	4
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	45	40	11	42	42	26	13			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45	40	11	42	42	26	13			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	99	100	100			100		
cM capacity (veh/h)	948	851	1070	957	849	1050	1605			1588		

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	9	27	13
Volume Left	0	0	2	0
Volume Right	0	1	0	4
cSH	851	870	1605	1588
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	9.2	9.2	0.4	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	9.2	0.4	0.0
Approach LOS	A	A		

Intersection Summary	
Average Delay	2.5
Intersection Capacity Utilization	13.3% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2010 Background  
 PM Peak



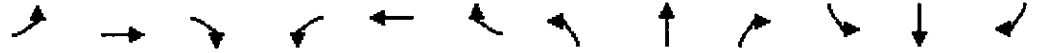
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	1	7	1	0	1	0	0	9	0	1	19	2
Peak Hour Factor	0.25	0.25	0.25	0.87	0.87	0.87	0.66	0.66	0.66	0.75	0.75	0.75
Hourly flow rate (vph)	4	28	4	0	1	0	0	14	0	1	25	3
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	44	43	27	61	44	14	28			14		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	44	43	27	61	44	14	28			14		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	100	100	100	100			100		
cM capacity (veh/h)	957	848	1049	907	847	1066	1585			1605		

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	1	14	29
Volume Left	4	0	0	1
Volume Right	4	0	0	3
cSH	878	847	1585	1605
Volume to Capacity	0.04	0.00	0.00	0.00
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	9.3	9.3	0.0	0.3
Lane LOS	A	A		A
Approach Delay (s)	9.3	9.3	0.0	0.3
Approach LOS	A	A		

Intersection Summary	
Average Delay	4.4
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2010 Phase 1 Total  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	⇄			⇄			⇄			⇄		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	0	1	1	0	8	3	3	2	0	1	9	3
Peak Hour Factor	0.25	0.25	0.25	0.87	0.87	0.87	0.66	0.66	0.66	0.75	0.75	0.75
Hourly flow rate (vph)	0	4	4	0	9	3	5	32	0	1	12	4
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	66	58	14	64	60	32	16			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	66	58	14	64	60	32	16			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	99	100	100			100		
cM capacity (veh/h)	914	830	1066	921	828	1042	1602			1580		

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	13	36	17
Volume Left	0	0	5	1
Volume Right	4	3	0	4
cSH	934	877	1602	1580
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	8.9	9.2	0.9	0.6
Lane LOS	A	A	A	A
Approach Delay (s)	8.9	9.2	0.9	0.6
Approach LOS	A	A		

Intersection Summary	
Average Delay	3.1
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15



HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2010 Phase 1 Total  
 PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	8	3	0	2	1	1	12	0	4	24	2
Peak Hour Factor	0.25	0.25	0.25	0.87	0.87	0.87	0.66	0.66	0.66	0.75	0.75	0.75
Hourly flow rate (vph)	4	32	12	0	2	1	2	18	0	5	32	3
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	68	65	33	93	67	18	35			18		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	68	65	33	93	67	18	35			18		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	96	99	100	100	100	100			100		
cM capacity (veh/h)	919	822	1040	851	821	1060	1577			1599		

Direction, Lane #	EB1	WB1	NB1	SB1
Volume Total	48	3	20	40
Volume Left	4	0	2	5
Volume Right	12	1	0	3
cSH	876	887	1577	1599
Volume to Capacity	0.05	0.00	0.00	0.00
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	9.3	9.1	0.6	1.0
Lane LOS	A	A	A	A
Approach Delay (s)	9.3	9.1	0.6	1.0
Approach LOS	A	A		

Intersection Summary	
Average Delay	4.8
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

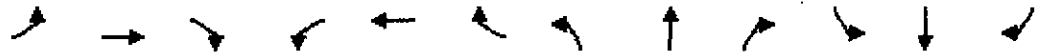
2017 Background  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign/Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	1	2	1	1	8	2	2	21	1	1	8	4
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)	1	2	1	1	9	2	2	23	1	1	9	4
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	45	41	11	43	43	23	13			24		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45	41	11	43	43	23	13			24		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
fF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	99	100	100			100		
cM capacity (veh/h)	946	849	1070	956	847	1053	1605			1591		
Direction Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	12	26	14								
Volume Left	1	1	2	1								
Volume Right	1	2	1	4								
cSH	920	888	1605	1591								
Volume to Capacity	0.00	0.01	0.00	0.00								
Queue Length 95th (ft)	0	1	0	0								
Control Delay (s)	8.9	9.1	0.6	0.6								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.9	9.1	0.6	0.6								
Approach LOS	A	A										
Intersection Summary												
Average Delay				3.0								
Intersection Capacity Utilization				13.3%								
Analysis Period (min)				15								
ICU Level of Service	A											

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2017 Background  
 PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	2	8	2	1	2	1	1	11	1	2	24	3
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	9	2	1	2	1	1	12	1	2	26	3
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	48	47	28	53	48	12	29			13		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48	47	28	53	48	12	29			13		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	100	100	100			100		
cM capacity (veh/h)	949	843	1048	934	841	1068	1584			1605		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	4	14	32
Volume Left	2	1	1	2
Volume Right	2	1	1	3
cSH	888	913	1584	1605
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.1	9.0	0.6	0.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.1	9.0	0.6	0.5
Approach LOS	A	A		

Intersection Summary	
Average Delay	2.9
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2017 Phases 1 & 2 Total  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	1	4	2	1	13	14	7	32	1	5	12	4
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)	1	4	2	1	14	15	8	35	1	5	13	4
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	84	77	15	81	79	35	17			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	84	77	15	81	79	35	17			36		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	98	99	100			100		
cM capacity (veh/h)	873	806	1064	896	805	1037	1600			1575		

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	30	43	23
Volume Left	1	1	8	5
Volume Right	2	15	1	4
cSH	877	910	1600	1575
Volume to Capacity	0.01	0.03	0.00	0.00
Queue Length 95th (ft)	1	3	0	0
Control Delay (s)	9.1	9.1	1.3	1.8
Lane LOS	A	A	A	A
Approach Delay (s)	9.1	9.1	1.3	1.8
Approach LOS	A	A		

Intersection Summary	
Average Delay	4.2
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2017 Phases 1 & 2 Total  
 PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	2	14	8	1	5	9	4	19	1	15	37	3
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	15	9	1	5	10	4	21	1	16	40	3
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	107	105	42	121	106	21	43			22		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	107	105	42	121	106	21	43			22		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	99	100	99	99	100			99		
cM capacity (veh/h)	851	775	1029	826	774	1056	1565			1594		

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	16	26	60
Volume Left	2	1	4	16
Volume Right	9	10	1	3
cSH	851	926	1565	1594
Volume to Capacity	0.03	0.02	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	9.4	9.0	1.2	2.0
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.0	1.2	2.0
Approach LOS	A	A		

Intersection Summary	
Average Delay	4.2
Intersection Capacity Utilization	14.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2030 Background  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	125	50	25	75	295	215	20	90	25	45	45	75
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)	136	54	27	82	321	234	22	98	27	49	49	82

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	217	636	147	179
Volume Left (vph)	136	82	22	49
Volume Right (vph)	27	234	27	82
Hadj (s)	0.08	-0.16	-0.05	-0.18
Departure Headway (s)	6.2	5.3	6.7	6.5
Degree Utilization, x	0.37	0.93	0.27	0.32
Capacity (veh/h)	553	677	507	525
Control Delay (s)	12.8	41.8	12.2	12.6
Approach Delay (s)	12.8	41.8	12.2	12.5
Approach LOS	B	E	B	B

Intersection Summary	
Delay	28.3
HCM Level of Service	D
Intersection Capacity Utilization	60.4%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2030 Background  
 PM Peak



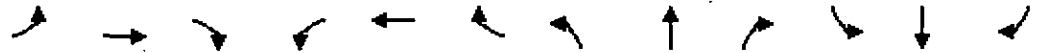
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	100	345	15	25	120	120	20	95	100	240	110	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	375	16	27	130	130	22	103	109	261	120	163

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	500	288	234	543
Volume Left (vph)	109	27	22	261
Volume Right (vph)	16	130	109	163
Hadj (s)	0.06	-0.22	-0.23	-0.05
Departure Headway (s)	7.8	8.2	8.4	7.7
Degree Utilization, x	1.08	0.65	0.55	1.16
Capacity (veh/h)	466	426	407	465
Control Delay (s)	92.8	25.4	21.2	118.6
Approach Delay (s)	92.8	25.4	21.2	118.6
Approach LOS	F	D	C	F

Intersection Summary	
Delay	78.6
HCM Level of Service	F
Intersection Capacity Utilization	93.4%
ICU Level of Service	F
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2030 Total  
 AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign/Control	Stop			Stop			Stop			Stop		
Volume (vph)	125	52	23	76	295	251	32	108	25	48	48	75
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)	136	57	25	83	321	273	35	117	27	52	52	82

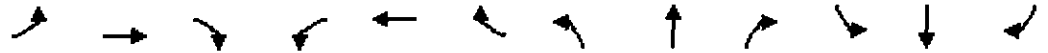
Direction/Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	217	676	179	186
Volume Left (vph)	136	83	35	52
Volume Right (vph)	25	273	27	82
Hadj (s)	0.09	-0.18	-0.02	-0.17
Departure Headway (s)	6.4	5.4	6.8	6.7
Degree Utilization, x	0.39	1.02	0.34	0.34
Capacity (veh/h)	534	648	503	512
Control Delay (s)	13.3	63.6	13.3	13.1
Approach Delay (s)	13.3	63.6	13.3	13.1
Approach LOS	B	F	B	B

Intersection Summary	
Delay	40.3
HCM Level of Service	E
Intersection Capacity Utilization	60.6%
ICU Level of Service	B
Analysis Period (min)	15



HCM Unsignalized Intersection Capacity Analysis  
 3: Drennan Road & Peyton Hwy

2030 Total  
 PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	100	352	23	28	120	120	28	107	100	250	120	150
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)	109	383	25	30	130	130	30	116	109	272	130	163

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	516	291	255	565
Volume Left (vph)	109	30	30	272
Volume Right (vph)	25	130	109	163
Hadj (s)	0.05	-0.21	-0.20	-0.04
Departure Headway (s)	7.9	8.3	8.5	7.8
Degree Utilization, x	1.14	0.67	0.60	1.23
Capacity (veh/h)	464	419	406	458
Control Delay (s)	112.2	26.9	23.7	146.3
Approach Delay (s)	112.2	26.9	23.7	146.3
Approach LOS	F	D	C	F

Intersection Summary	
Delay	94.9
HCM Level of Service	F
Intersection Capacity Utilization	96.6%
ICU Level of Service	F
Analysis Period (min)	15

# Movement Summary



## Peyton and Drennan

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>NB Peyton</b>										
32	L	22	1188	0.125	11.5	LOS B	21	1.20	38.3	28
32	T	98	1188	0.125	11.5	LOS B	21	1.20	38.3	28
32	R	27	1188	0.125	11.5	LOS B	21	1.20	38.3	28
<b>Approach</b>		<b>148</b>	<b>1188</b>	<b>0.125</b>	<b>11.5</b>	<b>LOS B</b>	<b>21</b>	<b>1.20</b>	<b>38.3</b>	<b>28</b>
<b>WB Drennan</b>										
22	L	82	1430	0.445	9.8	LOS A	95	1.19	34.9	121
22	T	321	1430	0.445	9.8	LOS A	95	1.19	34.9	121
22	R	234	1430	0.445	9.8	LOS A	95	1.19	34.9	121
<b>Approach</b>		<b>636</b>	<b>1430</b>	<b>0.445</b>	<b>9.8</b>	<b>LOS A</b>	<b>95</b>	<b>1.19</b>	<b>34.9</b>	<b>121</b>
<b>SB Peyton</b>										
42	L	49	993	0.181	13.4	LOS B	31	1.38	36.4	33
42	T	49	993	0.181	13.4	LOS B	31	1.38	36.4	33
42	R	82	993	0.181	13.4	LOS B	31	1.38	36.4	33
<b>Approach</b>		<b>180</b>	<b>993</b>	<b>0.181</b>	<b>13.4</b>	<b>LOS B</b>	<b>31</b>	<b>1.38</b>	<b>36.4</b>	<b>33</b>
<b>EB Drennan</b>										
12	L	136	1326	0.164	13.1	LOS B	28	1.26	33.9	47
12	T	54	1326	0.164	13.1	LOS B	28	1.26	33.9	47
12	R	27	1326	0.164	13.1	LOS B	28	1.26	33.9	47
<b>Approach</b>		<b>218</b>	<b>1326</b>	<b>0.164</b>	<b>13.1</b>	<b>LOS B</b>	<b>28</b>	<b>1.26</b>	<b>33.9</b>	<b>47</b>
<b>All Vehicles</b>		<b>1182</b>	<b>4938</b>	<b>0.445</b>	<b>11.2</b>	<b>LOS B</b>	<b>95</b>	<b>1.23</b>	<b>35.3</b>	<b>228</b>

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# Movement Summary

## Peyton and Drennan

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>NB Peyton</b>										
32	L	22	743	0.315	15.4	LOS B	59	1.61	35.8	43
32	T	103	743	0.315	15.4	LOS B	59	1.61	35.8	43
32	R	109	743	0.315	15.4	LOS B	59	1.61	35.8	43
<b>Approach</b>		<b>234</b>	<b>743</b>	<b>0.315</b>	<b>15.4</b>	<b>LOS B</b>	<b>59</b>	<b>1.61</b>	<b>35.8</b>	<b>43</b>
<b>WB Drennan</b>										
22	L	27	1258	0.231	9.5	LOS A	40	1.15	35.3	55
22	T	130	1258	0.231	9.5	LOS A	40	1.15	35.3	55
22	R	130	1258	0.231	9.5	LOS A	40	1.15	35.3	55
<b>Approach</b>		<b>290</b>	<b>1258</b>	<b>0.231</b>	<b>9.5</b>	<b>LOS A</b>	<b>40</b>	<b>1.15</b>	<b>35.3</b>	<b>55</b>
<b>SB Peyton</b>										
42	L	261	1625	0.334	13.1	LOS B	64	1.26	36.4	100
42	T	120	1625	0.334	13.1	LOS B	64	1.26	36.4	100
42	R	163	1625	0.334	13.1	LOS B	64	1.26	36.4	100
<b>Approach</b>		<b>543</b>	<b>1625</b>	<b>0.334</b>	<b>13.1</b>	<b>LOS B</b>	<b>64</b>	<b>1.26</b>	<b>36.4</b>	<b>100</b>
<b>EB Drennan</b>										
12	L	109	1086	0.461	11.0	LOS B	96	1.37	34.0	92
12	T	375	1086	0.461	11.0	LOS B	96	1.37	34.0	92
12	R	16	1086	0.461	11.0	LOS B	96	1.37	34.0	92
<b>Approach</b>		<b>501</b>	<b>1086</b>	<b>0.461</b>	<b>11.0</b>	<b>LOS B</b>	<b>96</b>	<b>1.37</b>	<b>34.0</b>	<b>92</b>
<b>All Vehicles</b>		<b>1568</b>	<b>4713</b>	<b>0.461</b>	<b>12.1</b>	<b>LOS B</b>	<b>96</b>	<b>1.33</b>	<b>35.3</b>	<b>290</b>

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# Movement Summary



## Peyton and Drennan

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>NB Peyton</b>										
32	L	27	1189	0.139	11.6	LOS B	23	1.21	38.2	31
32	T	109	1189	0.139	11.6	LOS B	23	1.21	38.2	31
32	R	27	1189	0.139	11.6	LOS B	23	1.21	38.2	31
<b>Approach</b>		<b>165</b>	<b>1189</b>	<b>0.139</b>	<b>11.6</b>	<b>LOS B</b>	<b>23</b>	<b>1.21</b>	<b>38.2</b>	<b>31</b>
<b>WB Drennan</b>										
22	L	82	1393	0.469	9.9	LOS A	102	1.22	34.8	125
22	T	326	1393	0.469	9.9	LOS A	102	1.22	34.8	125
22	R	245	1393	0.469	9.9	LOS A	102	1.22	34.8	125
<b>Approach</b>		<b>654</b>	<b>1393</b>	<b>0.470</b>	<b>9.9</b>	<b>LOS A</b>	<b>102</b>	<b>1.22</b>	<b>34.8</b>	<b>125</b>
<b>SB Peyton</b>										
42	L	54	984	0.193	13.6	LOS B	34	1.39	36.3	34
42	T	54	984	0.193	13.6	LOS B	34	1.39	36.3	34
42	R	82	984	0.193	13.6	LOS B	34	1.39	36.3	34
<b>Approach</b>		<b>190</b>	<b>984</b>	<b>0.193</b>	<b>13.6</b>	<b>LOS B</b>	<b>34</b>	<b>1.39</b>	<b>36.3</b>	<b>34</b>
<b>EB Drennan</b>										
12	L	136	1302	0.167	13.2	LOS B	28	1.26	33.8	47
12	T	54	1302	0.167	13.2	LOS B	28	1.26	33.8	47
12	R	27	1302	0.167	13.2	LOS B	28	1.26	33.8	47
<b>Approach</b>		<b>218</b>	<b>1302</b>	<b>0.167</b>	<b>13.2</b>	<b>LOS B</b>	<b>28</b>	<b>1.26</b>	<b>33.8</b>	<b>47</b>
<b>All Vehicles</b>		<b>1227</b>	<b>4867</b>	<b>0.469</b>	<b>11.3</b>	<b>LOS B</b>	<b>102</b>	<b>1.25</b>	<b>35.2</b>	<b>237</b>

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# Movement Summary



## Peyton and Drennan

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>NB Peyton</b>										
32	L	27	655	0.376	13.5	LOS B	62	1.64	32.5	44
32	T	109	655	0.376	13.5	LOS B	62	1.64	32.5	44
32	R	109	655	0.376	13.5	LOS B	62	1.64	32.5	44
<b>Approach</b>		<b>246</b>	<b>655</b>	<b>0.376</b>	<b>13.5</b>	<b>LOS B</b>	<b>62</b>	<b>1.64</b>	<b>32.5</b>	<b>44</b>
<b>WB Drennan</b>										
22	L	27	1144	0.262	8.8	LOS A	40	1.16	34.9	52
22	T	136	1144	0.262	8.8	LOS A	40	1.16	34.9	52
22	R	136	1144	0.262	8.8	LOS A	40	1.16	34.9	52
<b>Approach</b>		<b>300</b>	<b>1144</b>	<b>0.262</b>	<b>8.8</b>	<b>LOS A</b>	<b>40</b>	<b>1.16</b>	<b>34.9</b>	<b>52</b>
<b>SB Peyton</b>										
42	L	272	1579	0.361	11.3	LOS B	60	1.22	33.4	105
42	T	136	1579	0.361	11.3	LOS B	60	1.22	33.4	105
42	R	163	1579	0.361	11.3	LOS B	60	1.22	33.4	105
<b>Approach</b>		<b>570</b>	<b>1579</b>	<b>0.361</b>	<b>11.3</b>	<b>LOS B</b>	<b>60</b>	<b>1.22</b>	<b>33.4</b>	<b>105</b>
<b>EB Drennan</b>										
12	L	109	1061	0.488	11.0	LOS B	104	1.40	33.5	91
12	T	380	1061	0.488	11.0	LOS B	104	1.40	33.5	91
12	R	27	1061	0.488	11.0	LOS B	104	1.40	33.5	91
<b>Approach</b>		<b>518</b>	<b>1061</b>	<b>0.488</b>	<b>11.0</b>	<b>LOS B</b>	<b>104</b>	<b>1.40</b>	<b>33.5</b>	<b>91</b>
<b>All Vehicles</b>		<b>1634</b>	<b>4438</b>	<b>0.488</b>	<b>11.1</b>	<b>LOS B</b>	<b>104</b>	<b>1.33</b>	<b>33.6</b>	<b>293</b>

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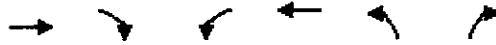
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HCM Unsignalized Intersection Capacity Analysis  
 8: Drennan Road & Site Access D

2010 Phase 1 Total  
 AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T		L		T	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	1	1	0	8	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	0	9	3	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			2	10	2	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2	10	2	
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)			1620	1010	1083	
Direction Lane # EB 1 WB 1 NB 1						
Volume Total	2	9	4			
Volume Left	0	0	3			
Volume Right	1	0	1			
cSH	1700	1620	1027			
Volume to Capacity	0.00	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	8.5			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	8.5			
Approach LOS	A					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 8: Drennan Road & Site Access D

2010 Phase 1 Total  
 PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖		↗		↘	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	8	4	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	4	1	1	2	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		14	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		14	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		100	100
cM capacity (veh/h)			1605		1004	1070
Direction Lane #	EB 1	WB 1	NB 1			
Volume Total	13	2	2			
Volume Left	0	1	2			
Volume Right	4	0	0			
cSH	1700	1605	1004			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	3.6	8.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.6	8.6			
Approach LOS		A	A			
<b>Intersection Summary</b>						
Average Delay			1.5			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Drennan Road & Site Access

2017 Phases 1 & 2 Total  
AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖		↗		↘	
Sign. Control	Free			Free		Stop
Grade	0%		0%		0%	
Volume (veh/h)	4	6	0	11	17	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	7	0	12	18	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			11		20	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		20	8
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		98	100
CM capacity (veh/h)			1608		998	1075
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	11	12	20			
Volume Left	0	0	18			
Volume Right	7	0	1			
cSH	1700	1608	1002			
Volume to Capacity	0.01	0.00	0.02			
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					
<b>Intersection Summary</b>						
Average Delay			4.0			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
 8: Drennan Road & Site Access

2017 Phases 1 & 2 Total  
 PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	11	19	1	4	11	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	21	1	4	12	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			33		29	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		29	22
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)			1579		985	1055

Direction Lane #	EB 1	WB 1	NB 1
Volume Total	33	5	13
Volume Left	0	1	12
Volume Right	21	0	1
cSH	1700	1579	991
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	1.5	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.5	8.7
Approach LOS		A	A

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

HCM Unsignalized Intersection Capacity Analysis  
6: Drennan Road & Site Access D

2030 Total  
AM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑		↑	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	120	5	0	585	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	5	0	636	0	3
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			136		769	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			136		769	133
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)			1448		369	916
<b>Direction, Lane #</b>						
	EB 1	WB 1	NB 1			
Volume Total	136	636	3			
Volume Left	0	0	0			
Volume Right	5	0	3			
cSH	1700	1700	916			
Volume to Capacity	0.08	0.37	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	8.9			
Lane LOS				A		
Approach Delay (s)	0.0	0.0	8.9			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	34.1%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 6: Drennan Road & Site Access D

2030 Total  
 PM Peak



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→		←		↗	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	685	15	0	265	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	745	16	0	288	0	2
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			761			753
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			761			753
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			100			99
cM capacity (veh/h)			851			410
Direction Lane #						
	EB 1	WB 1	NB 1			
Volume Total	761	288	2			
Volume Left	0	0	0			
Volume Right	16	0	2			
cSH	1700	1700	410			
Volume to Capacity	0.45	0.17	0.01			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	13.8			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	13.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			47.0%		ICU Level of Service A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 6: Site Access P & Peyton Hwy

2010 Phase 1 Total  
 AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑		↙	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	1	6	18	0	3	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	7	20	0	3	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	34	20			20	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	20			20	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	978	1058			1597	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	8	20	11			
Volume Left	1	0	3			
Volume Right	7	0	0			
cSH	1046	1700	1597			
Volume to Capacity	0.01	0.01	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.5	0.0	2.2			
Lane LOS	A		A			
Approach Delay (s)	8.5	0.0	2.2			
Approach LOS	A					
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			13.3%		ICU Level of Service A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 6: Site Access P & Peyton Hwy

2010 Phase 1 Total  
 PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↕	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	1	4	9	1	7	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	4	10	1	8	22
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	47	10			11	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	47	10			11	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF, (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	958	1071			1608	

Direction Lane #	WB 1	NB 1	SB 1
Volume Total	5	11	29
Volume Left	1	0	8
Volume Right	4	1	0
cSH	1046	1700	1608
Volume to Capacity	0.01	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.5	0.0	1.9
Lane LOS	A		A
Approach Delay (s)	8.5	0.0	1.9
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
 6: Site Access & Peyton Hwy

2017 Phases 1 & 2 Total  
 AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘ ↙		↑		↗ ↖	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	2	16	24	1	5	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	17	26	1	5	11
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	48	27			27	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	48	27			27	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	958	1049			1587	
Direction, Lane #	WB:1	NB:1	SB:1			
Volume Total	20	27	16			
Volume Left	2	0	5			
Volume Right	17	1	0			
cSH	1038	1700	1587			
Volume to Capacity	0.02	0.02	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.5	0.0	2.4			
Lane LOS	A		A			
Approach Delay (s)	8.5	0.0	2.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			3.3			
Intersection Capacity Utilization			15.0%	ICU Level of Service	A	
Analysis Period (min)			15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	1	11	13	2	19	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	12	14	2	21	29
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	86	15			16	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	15			16	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	904	1064			1601	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	16	50
Volume Left	1	0	21
Volume Right	12	2	0
cSH	1049	1700	1601
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	8.5	0.0	3.1
Lane LOS	A		A
Approach Delay (s)	8.5	0.0	3.1
Approach LOS	A		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
 8: Site Access P & Peyton Hwy

2030 Total  
 AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	3	30	135	1	6	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	33	147	1	7	158
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	318	147			148	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	147			148	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	672	900			1434	
Direction, Lane #	WB-1	NB-1	SB-1			
Volume Total	36	148	164			
Volume Left	3	0	7			
Volume Right	33	1	0			
cSH	873	1700	1434			
Volume to Capacity	0.04	0.09	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	9.3	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	9.3	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			22.5%	ICU Level of Service	A	
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
 8: Site Access P & Peyton Hwy

2030 Total  
 PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑		↙	
Sign. Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	2	20	215	3	21	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	22	234	3	23	163
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	444	235			237	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	444	235			237	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			98	
cM capacity (veh/h)	562	804			1330	

Direction Lane #	WB 1	NB 1	SB 1
Volume Total	24	237	186
Volume Left	2	0	23
Volume Right	22	3	0
cSH	773	1700	1330
Volume to Capacity	0.03	0.14	0.02
Queue Length 95th (ft)	2	0	1
Control Delay (s)	9.8	0.0	1.1
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	1.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		