



LSC TRANSPORTATION CONSULTANTS, INC.  
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## MEMORANDUM

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DATE: November 17, 2017

TO: Kari Parsons/Gilbert LaForce – El Paso County Planning and Community Development

FROM: Jeffrey C. Hodsdon - LSC Transportation Consultants, Inc.

SUBJECT: Settlers View Subdivision  
P-17-004 and SP-17-006  
Response to Comments Memorandum  
LSC #164720

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Following are the LSC Transportation Consultants, Inc. responses to the August 4, 2017 El Paso County Development Services Department comments regarding the February 28, 2017 Transportation Memorandum by LSC.

*Page 1: Submit a deviation request from the maximum length criteria for a cul-de-sac with the concurrent preliminary plan. The deviation must include a written endorsement from the Fire District.*

**LSC Response:** A deviation request is included with this resubmittal.

*Page 1: Add PCD Project No's: P-17-004 and SP-17-006.*

**LSC Response:** The project numbers have been added.

*Page 4: Identify the surfacing (paved?)*

**LSC Response:** This information has been added to the report.

*Page 4: Provide a summary for Silver Nell Drive.*

**LSC Response:** This information has been added to the report.



Development Services Department  
2880 International Circle  
Colorado Springs, Colorado 80910

Phone: 719.520.6300  
Fax: 719.520.6695  
Website www.elpasoco.com

# DEVIATION REVIEW AND DECISION FORM

Procedure # R-FM-051-07  
Issue Date: 12/31/07  
Revision Issued: 00/00/00

DSD FILE NO.:

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**General Property Information:**

Address of Subject Property (Street Number/Name): 4507 SILVER NELL DR COLORADO SPRINGS CO 80908-5307

Tax Schedule ID(s) #: 6100000463

Legal Description of Property: SW4NE4NE4 & NW4SE4NE4 & E2SW4NE4 SEC 23-11-66, EX 60.00 FT R/W TO COUNTY ALG ALL SEC LNS

Subdivision or Project Name: Settlers View

Section of ECM from Which Deviation is Sought: Section 2.3.8.A Roadway Terminations - Cul-de-Sacs  
Specific Criteria from Which a Deviation is Sought: Maximum Length of Cul-de-Sac - rural conditions

Proposed Nature and Extent of Deviation: Silver Nell Drive would have an interim/temporary cul-de-sac length of approximately 5,355 feet (from the Stepler Road intersection) with the extension south into this subdivision. This length would exceed the maximum cul-de-sac length of 1,600 feet specified for rural roads in the ECM. Thirty-two total lots with a minimum lot size of 2.5 acres would access this cul-de-sac (14 lots within this proposed subdivision, plus the 18 lots currently accessed from Silver Nell Drive (most within the Grandview Subdivision). However, only 30 of the 32 should be counted against the maximum allowable as the Land Development Code indicates, "A corner lot is not counted in the maximum number of lots on a dead-end road when the fire department determines that adequate emergency access is provided to the corner lot by an alternative road." Two of the lots would have emergency access onto Stepler Road -- the adjoining non-cul-de-sac roadway. The proposed length of Silver Nell Drive would result as this parcel currently has no other access until Settlers Ranch Road is extended through to the east to Stepler Road. Should the development of the Abert Ranch subdivision occur prior to the extension of Settlers Ranch Road, a secondary, emergency-vehicle-only access to Stepler Road would also be available via a temporary access easement to Stepler Road through Abert Ranch lots 9 and 10. Once the permanent second access via Settlers Ranch Road is established, the temporary, emergency-vehicle-only access through Abert Ranch subdivision to Stepler Road would be removed.

Reason for the Requested Deviation: The end of Silver Nell Drive is the only available access for this parcel until Settlers Ranch Road is extended to the east or until the proposed Abert Ranch subdivision is developed. With the development of Abert Ranch, a secondary, emergency-vehicle-only access to Stepler Road would also be available via a temporary access easement to Stepler Road through Abert Ranch lots 9 and 10. Once the permanent second access via Settlers Ranch Road is established, the temporary, emergency-vehicle-only access through Abert Ranch subdivision to Stepler Road would be removed.

**Applicant Information:**

Applicant: Hannigan & Associates  
Applicant is:  Owner  Consultant  Contractor  
Mailing Address: 19360 Spring Valley Road Monument State: CO Postal Code: 80132  
Telephone Number: 719-481-8292 Fax Number: 481-9071  
Email Address: hannigan.and.assoc@gmail.com



**Criteria for Approval:**

**PLEASE EXPLAIN HOW EACH OF THE FOLLOWING CRITERIA HAVE BEEN SATISFIED BY THIS REQUEST**

The request for a deviation is not based exclusively on financial considerations. The Settlers View Subdivision is a proposed rural residential subdivision with 2.5-acre lot sizes, and the proposed interim length of cul-de-sac is needed for site access until Settlers Ranch Road is extended through to the east to Stepler Road.

The deviation will achieve the intended result with a comparable or superior design and quality of improvement. The proposed roadway will meet County standards for rural residential roads. Also, please refer to the attached letter from the fire marshal. The letter indicates that Silver Nell Drive must conform to the requirements identified.

The deviation will not adversely affect safety or operations. The number of lots planned to be served by this cul-de-sac would be 32, resulting in a daily traffic volume of about 300 trips per day on the west end of the interim non-through street. This is a reasonable volume. Regarding emergency services, please refer to attached letter from the fire district. The fire district would be the authority on the ability to provide emergency services to residents on the proposed cul-de-sac. Please refer to the attached letter from the fire marshal. The letter indicates that Silver Nell Drive must conform to the requirements identified. There is an existing cul-de-sac at the end of Silver Nell Drive that could remain in place in the interim to be utilized as an emergency vehicle turnaround at what would be about 4,200 feet from the start of the non-through-street (at the Silver Nell intersection with Stepler). Also, two of the 32 lots on this cul-de-sac would have emergency access onto adjoining Stepler Road -- the non-cul-de-sac roadway such as corner lots would have side-frontage on Stepler Road.

The deviation will not adversely affect maintenance and its associated cost. The deviation will not affect maintenance as the street will be built to County standards and a standard cul-de-sac bulb will be constructed.

The deviation will not adversely affect aesthetic appearance. The deviation will not affect aesthetic appearance as the subdivision street infrastructure will be built to County standards.

**Owner, Applicant and Engineer Declaration:**

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

\_\_\_\_\_  
Signature of owner (or authorized representative)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of applicant (if different from owner)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Engineer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Engineer's Seal



**Review and Recommendation:**  
**APPROVED by the ECM Administrator**

\_\_\_\_\_ Date \_\_\_\_\_

This request has been determined to have met the criteria for approval. A deviation from Section \_\_\_\_\_ of ECM is hereby granted based on the justification provided. Comments:

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\_\_\_\_\_. Additional comments or information are attached.

**DENIED by the ECM Administrator**

\_\_\_\_\_ Date \_\_\_\_\_

This request has been determined not to have met criteria for approval. A deviation from Section \_\_\_\_\_ of ECM is hereby denied. Comments:

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\_\_\_\_\_. Additional comments or information are attached.



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Settlers View Subdivision  
Updated Transportation Memorandum  
PCD Project Nos.: P-17-004 and SP-17-006  
(LSC #164720)  
November 17, 2017

**Traffic Engineer's Statement**

This 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.

\_\_\_\_\_  
Jeffrey C. Hodsdon, P.E., #31684



\_\_\_\_\_  
Date

**Developer's Statement**

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

\_\_\_\_\_

\_\_\_\_\_  
Date



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November 17, 2017

Mr. Jerry Hannigan  
Jerome W. Hannigan and Associates, Inc.  
19360 Spring Valley Road  
Monument, CO 80132

RE: Settlers View Subdivision  
El Paso County, CO  
EPC Project Nos.: P-17-004 & SP-17-006  
Updated Transportation Memorandum  
LSC #164720

Dear Jerry:

LSC Transportation Consultants, Inc. has prepared this transportation memorandum for the proposed Settlers View subdivision. The site is located generally northwest of the intersection of Hodgen Road and Stepler Road in El Paso County, Colorado. The site's location is shown in Figure 1. Site access would be through adjacent subdivisions as the site is not directly adjacent to Stepler Road. This analysis has been prepared in conjunction with the proposed Abert Estates subdivision, which is adjacent to Settlers View. LSC has prepared a separate traffic report for Abert Estates.

## REPORT CONTENTS

The report contains the following:

- Existing roadway and traffic conditions in the vicinity of the site, including the intersection lane geometries, traffic controls, posted speed limits, functional classifications, intersection spacing and alignment, etc.
- Existing peak-hour turning movement traffic counts and/or estimates of future background traffic volumes at the intersections of:
  - Stepler Road at Silver Nell Drive
  - Stepler Road at Settler's Ranch Road (future)
- Description of the proposed land use.
- Estimates of the average weekday and peak-hour vehicle-trips to be generated by the site.
- Projected site-generated traffic volumes on roadways and intersections to provide access to the site.
- Analysis of the resulting traffic impacts from the site including the development's relative average daily traffic volume impacts and intersection level of service analysis.
- Findings and recommendations.

## **LAND USE AND ACCESS**

### **Site Land Use and Access**

Settlers View is a proposed single-family residential subdivision consisting of 14 lots, each a minimum of 2.5 acres. The location of the site is shown in Figure 1. Figure 1 also shows the proposed adjacent Abert Ranch site. The existing Grandview subdivision is located to the north of the Settlers View and Abert Ranch sites and the eastern portion of Settlers Ranch is located to the south. The Settlers View site plan/subdivision plat is shown in Figure 2.

Site access to Stepler Road would be via a proposed extension of Silver Nell Drive. Future access is also planned through Abert Ranch to the planned future extension of Settlers Ranch Road via the planned Abert Ranch Drive. Settlers Ranch Road will ultimately connect to Stepler Road and will provide the secondary access for the Settlers View subdivision.

In the interim, with the development of the Abert Ranch subdivision, but prior to the completion of Settlers Ranch Road, a secondary, emergency-vehicle-only access to Stepler Road would also be available via a temporary access easement to Stepler Road through Abert Ranch lots 9 and 10. Once the permanent second access via Settlers Ranch Road is established, the temporary, emergency-vehicle-only access through Abert Ranch subdivision to Stepler Road would be removed.

### **Adjacent Subdivisions – Existing and Proposed**

#### Abert Ranch

Abert Ranch is a proposed single-family residential subdivision consisting of 10 lots, each a minimum of 2.5 acres. Site access to Stepler Road would initially be through the Settlers View subdivision and the extension of Silver Nell Drive. A second access would be available via the proposed future Settlers Ranch Road once constructed by the developer of Settlers Ranch.

#### Settlers Ranch

Settlers Ranch is located south and southeast of the site. Filing 1 to the southwest has been developed. The Settlers Ranch Road extension to Stepler Road will be added with future Filing 2. This future road connection will provide secondary access to both Abert Ranch and this site (via the proposed Abert Ranch subdivision roads).

#### Grandview

Grandview is located to the north of the Settlers View and Abert Ranch sites. It is partially developed, but Silver Nell Drive through Grandview has been completed and provides access to Stepler Road. Silver Nell Drive will provide the initial access to both the Settlers View and Abert Ranch subdivisions.



## EXISTING ROADWAY AND TRAFFIC CONDITIONS

### Area Roadways

Major roadways in the vicinity of the site are summarized below:

**State Highway (SH) 83** extends from Colorado Springs north to Parker and areas of southeast Denver. In the vicinity of the site, SH 83 is classified as a Regional Highway (R-A). At this location, SH 83 is a two-lane rural highway with two- to four-foot shoulders and a speed limit of 60 miles per hour (mph). The intersection with Hodgen Road is signalized.

**Hodgen Road** is a two-lane paved Rural Minor Arterial that extends east from the intersection of Roller Coaster Road/Baptist Road to Eastonville Road. The speed limit on Hodgen Road is generally 55 mph east of SH 83.

**Walker Road/SH 105.** Highway 105 west of SH 83 is a Principal Arterial, while Walker Road east of SH 83 is a Collector roadway. Both are currently two-lane roadways, but the *Major Transportation Corridors Plan (MTCP)* shows a future four-lane cross section on SH 105 west of SH 83. The intersection with SH 83 is unsignalized.

**Steppler Road** is currently identified as a local roadway in the *El Paso County Road System - 2014* inventory document. The *Major Transportation Corridors Plan (MTCP)* classifies Steppler as a Collector. Steppler extends north from Hodgen Road to Walker Road. The roadway is a 24-foot-wide paved road between Hodgen and 300 feet north of Silver Nell Drive and gravel north of that point. The posted speed limit on Steppler Road is 30 mph.

**Silver Nell Drive** is a paved Rural Local roadway extending west from Steppler Road through the Grandview subdivision. The current length from Steppler to the current terminus is about 4,200 feet. Silver Nell Drive is proposed to be extended south into this proposed subdivision and east into the adjacent proposed Abert Ranch subdivision to a T-intersection with the proposed Abert Ranch Drive.

**Abert Ranch Drive** is a proposed paved Rural Local roadway within the proposed adjacent Abert Ranch subdivision. The roadway is shown to extend north from the planned Settlers Ranch Road through a planned intersection with the future extension of Silver Nell Drive to its planned terminus as a cul-de-sac.

### Traffic Volumes

Turning movement counts were conducted on Tuesday, August 30, 2016 from 4:00 to 6:00 p.m. and on September 1, 2016 from 6:30 to 8:30 a.m. at the intersection of Steppler Road at Silver Nell Drive. Count reports are attached. Based on these count data, existing morning and evening weekday peak-hour traffic volumes at this intersection are shown in Figure 3. Estimates of the average daily traffic volumes on Steppler Road based on these peak-hour counts are also shown in Figure 3.

**Level of Service**

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 1 shows the level of service delay ranges for signalized and unsignalized intersections.

**Table 1: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	V/C <sup>(1)</sup>	Average Control Delay (seconds per vehicle) <sup>(2)</sup>
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more

(1) Source: *Transportation Research Circular 212*  
 (2) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F regardless of the projected average control delay per vehicle.

The intersection of Stepler Road at Silver Nell Drive has been analyzed in Synchro to determine the current level of service using the unsignalized method of analysis procedures from the *Highway Capacity Manual, 2010 Edition*. The level of service is A.

**TRIP GENERATION**

Estimates of the vehicle-trips projected to be generated by Settlers View have been made using the nationally published trip generation rates from *Trip Generation, 9<sup>th</sup> Edition, 2012* by the Institute of Transportation Engineers (ITE). Land use code 210 – Single-Family Detached Housing was categorized using the *Trip Generation Manual, 9<sup>th</sup> Edition, 2012* by the Institute of Transportation Engineers (ITE) and used for trip generation estimates. The proposed Settlers View subdivision is projected to generate about 133 total vehicle-trips on the average weekday during a 24-hour period, with about half entering the site and half exiting the site during the evening peak hour. The peak-hour trip generation is also summarized. A detailed trip generation estimate for the development, including ITE rates for the proposed land use, is presented in Table 6 (attached).

**Trip Distribution and Assignment**

Distribution of the site-generated vehicle-trips to the study area streets and intersections is a necessary component in determining the site’s traffic impacts. Figure 4 shows the directional distribution estimate for the site-generated trips. The figure shows the percentages of the site-generated vehicle-trips projected to be oriented to and from the site’s major approaches. Estimates

were based on the following factors: the proposed land use and access plan, the area street system, and anticipated area future development.

**Site-Generated Traffic**

When the directional distribution percentages (from Figure 4) were applied to the trip generation estimates (from Table 6), the site-generated traffic volumes on the adjacent streets were determined. Figure 5 shows the projected site-generated traffic volumes.

**EXISTING VS. EXISTING PLUS SITE-GENERATED TRAFFIC/LOS**

**Traffic Volumes**

Figure 7 shows the sum of the existing weekday traffic volumes (from Figure 3) and site-generated weekday traffic volumes (from Figure 4). The existing plus site-generated trips identify the site’s short-term traffic impacts assuming buildout of all three aforementioned subdivisions.

**Levels of Service**

Morning Peak Hour

All approaches at the intersections of Stepler Road at Silver Nell Drive currently operate at and are projected to remain at LOS A during the morning peak hour upon site buildout. A summary of projected 2040 background plus site-generated LOS and control delays during the morning peak hour is shown in Table 2.

**Table 2: Projected Peak-Hour LOS and Control Delays by Intersection (2016 a.m.)**

Intersection	Traffic Control*	Scenario	NBL	EBL
<b>LOS</b>				
Stepler Road @ Silver Nell Dr	TWSC	Existing	A	A
		Existing + Site (short-term)	A	A
<b>Control Delay (seconds)</b>				
Stepler Road @ Silver Nell Dr	TWSC	Existing	7.3	8.5
		Existing + Site (short-term)	7.3	8.6
* TWSC = two-way stop sign-control				

Evening Peak Hour

All approaches at the intersections of Stepler Road at Silver Nell Drive currently operate at and are projected to remain at LOS A during the evening peak hour upon site buildout. A summary of projected 2040 background plus site-generated LOS and control delays during the morning peak hour is shown in Table 3.

**Table 3: Projected Peak-Hour LOS and Control Delays by Intersection (2016 p.m.)**

Intersection	Traffic Control*	Scenario	NBL	EBL
<b>LOS</b>				
Steppler Road @ Silver Nell Dr	TWSC	Existing	A	A
		Existing + Site (short-term)	A	A
<b>Control Delay (seconds)</b>				
Steppler Road @ Silver Nell Dr	TWSC	Existing	7.3	8.4
		Existing + Site (short-term)	7.3	8.5

\* TWSC = two-way stop sign-control

**2040 BACKGROUND VS. 2040 TOTAL TRAFFIC/LOS**

**Traffic Volumes**

Figure 8 shows the projected 2040 background traffic volumes based on existing turning movement counts (from Figure 3), the historic growth rate, and projected future development. Projected 2040 background plus site-generated weekday traffic volumes are shown in Figure 9.

**Levels of Service**

Morning Peak Hour

All approaches at the intersections of Steppler Road/Silver Nell Drive and Steppler Road/Settlers Ranch Road are projected to operate at LOS A during the 2040 morning peak hour with and without considering site-generated trips. A summary of projected 2040 background plus site-generated LOS and control delays during the morning peak hour is shown in Table 4.

**Table 4: Projected Peak-Hour LOS and Control Delays by Intersection (2040 a.m.)**

Intersection	Traffic Control*	Scenario	NBL	EBL
<b>LOS</b>				
Steppler Road @ Silver Nell Dr	TWSC	2040 Background	A	A
		2040 Background + Site	A	A
Steppler Road @ Settler's Ranch Rd	TWSC	2040 Background	A	A
		2040 Background + Site	A	A
<b>Control Delay (seconds)</b>				
Steppler Road @ Silver Nell Dr	TWSC	2040 Background	7.3	8.5
		2040 Background + Site	7.3	8.6
Steppler Road @ Settlers Ranch Rd	TWSC	2040 Background	7.3	8.6
		2040 Background + Site	7.3	8.7

\* TWSC = two-way stop sign-control

Evening Peak Hour

All approaches at the intersections of Stepler Road/Silver Nell Drive and Stepler Road/Settlers Ranch Road are projected to operate at LOS A during the 2040 morning peak hour with and without considering site-generated trips. A summary of projected 2040 background plus site-generated LOS and control delays during the evening peak hour is shown in Table 5.

**Table 5: Projected Peak-Hour LOS and Control Delays by Intersection (2040 p.m.)**

Intersection	Traffic Control*	Scenario	NBL	EBL
<b>LOS</b>				
Stepler Road @ Silver Nell Dr	TWSC	2040 Background	A	A
		2040 Background + Site	A	A
Stepler Road @ Settler's Ranch Rd	TWSC	2040 Background	A	A
		2040 Background + Site	A	A
<b>Control Delay (seconds)</b>				
Stepler Road @ Silver Nell Dr	TWSC	2040 Background	7.3	8.6
		2040 Background + Site	7.3	8.6
Stepler Road @ Settler's Ranch Rd	TWSC	2040 Background	7.3	8.6
		2040 Background + Site	7.3	8.7
* TWSC = two-way stop sign-control				

**CONCLUSIONS AND RECOMMENDATIONS**

**Trip Generation**

The proposed Settlers View subdivision is projected to generate about 133 new vehicle-trips on the average weekday with about half entering and half exiting the site. The projected morning **peak-hour** trip generation for the site (total “driveway” trips) is 3 entering and 8 exiting trips. The projected evening **peak-hour** trip generation for the site (total “driveway” trips) is 9 entering and 5 exiting trips.

**Level of Service Analysis**

Levels of service at the intersections analyzed are projected to be A. Please refer to the Level of Service sections above for detailed findings and results of the intersection level of service analysis.

**Auxiliary Turn Lanes**

Neither Silver Nell/Stepler nor Settlers Ranch Road/Stepler will exceed *Engineering Criteria Manual* thresholds requiring auxiliary left- and right-turn lanes.

**Street Classification**

The streets within this proposed subdivision should be classified as Rural Local streets.

### **Secondary Access Phasing**

This report contains a description of the phasing of secondary access. Please refer to the Site Land Use and Access section of this report for details.

### **County Road Improvement Fee Program**

This project will need to participate in the County Road Improvement Fee Program.

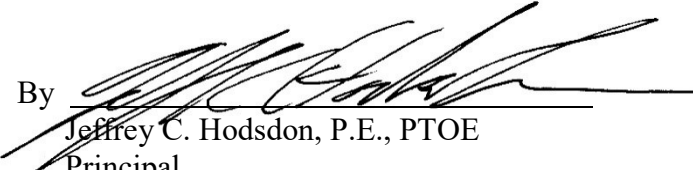
\* \* \*

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By

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

JCH/JAB:bjwb

Enclosures: Table 6  
Figure 1-Figure 9  
Appendix Figures 1-3  
Traffic Count Reports  
Level of Service Reports

**Table 6: Trip Generation Estimate and Comparison**

Lots	ITE Land Use Code	Land Use Description	Value	Units	Trip Generation Rates <sup>(1)</sup>					Total Trips Generated									
					Average Weekday Traffic	A.M.		P.M.		Average Weekday Traffic	A.M.		P.M.						
						In	Out	In	Out		In	Out	In	Out					
<b>Abert Ranch Only</b>																			
1-10	210	Single-Family Detached Housing	10	DU <sup>(2)</sup>	9.52	0.19	0.56	0.63	0.37	95	2	6	6	4					
<b>Settler's View Only</b>																			
1-14	210	Single-Family Detached Housing	14	DU	9.52	0.19	0.56	0.63	0.37	133	3	8	9	5					
<b>Total</b>										<b>228</b>	<b>5</b>	<b>14</b>	<b>15</b>	<b>9</b>					

(1) Source: "Trip Generation, 9th Edition, 2012" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling units

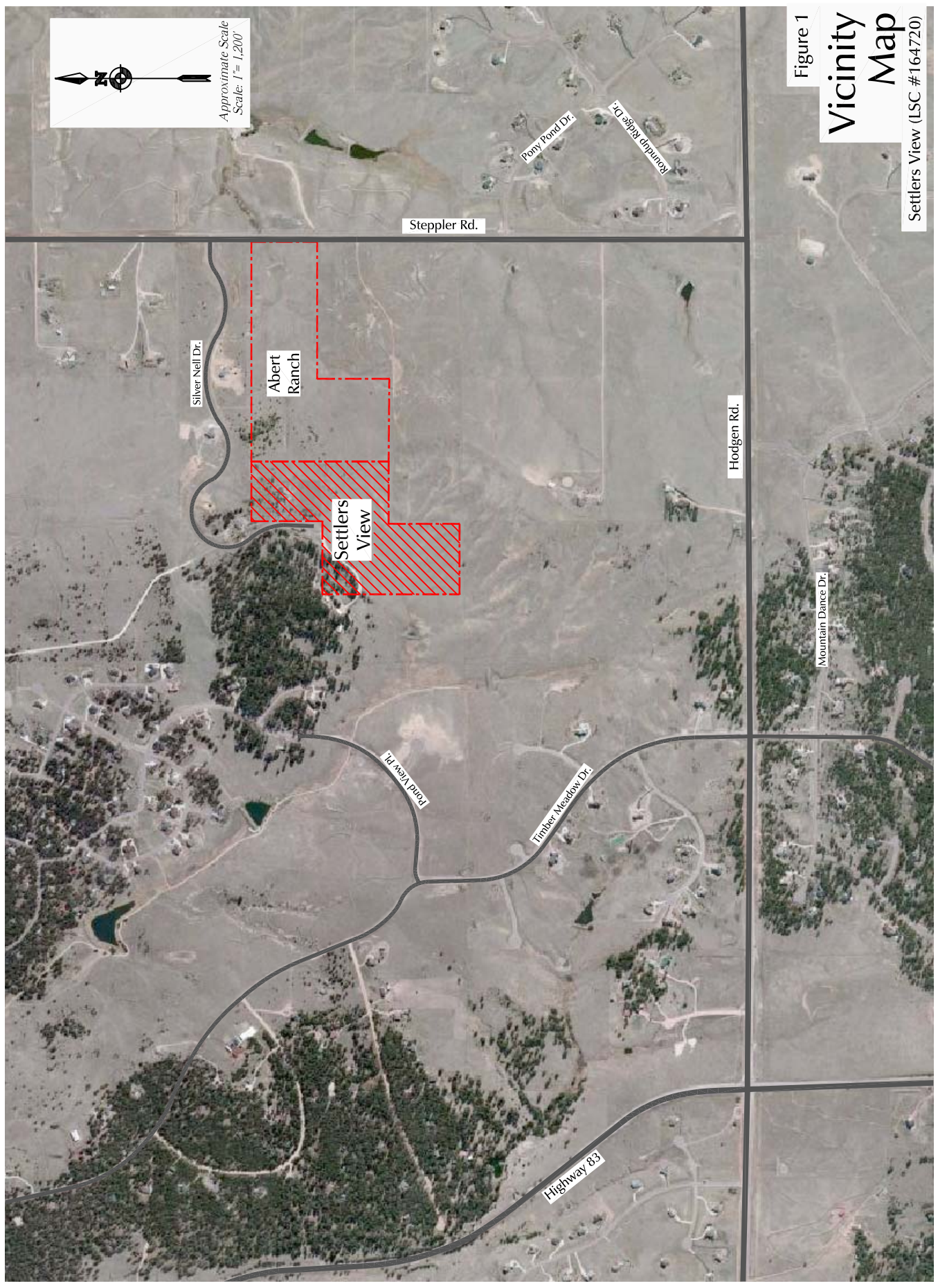
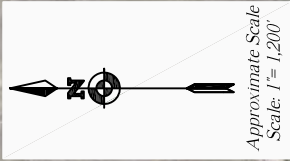


Figure 1

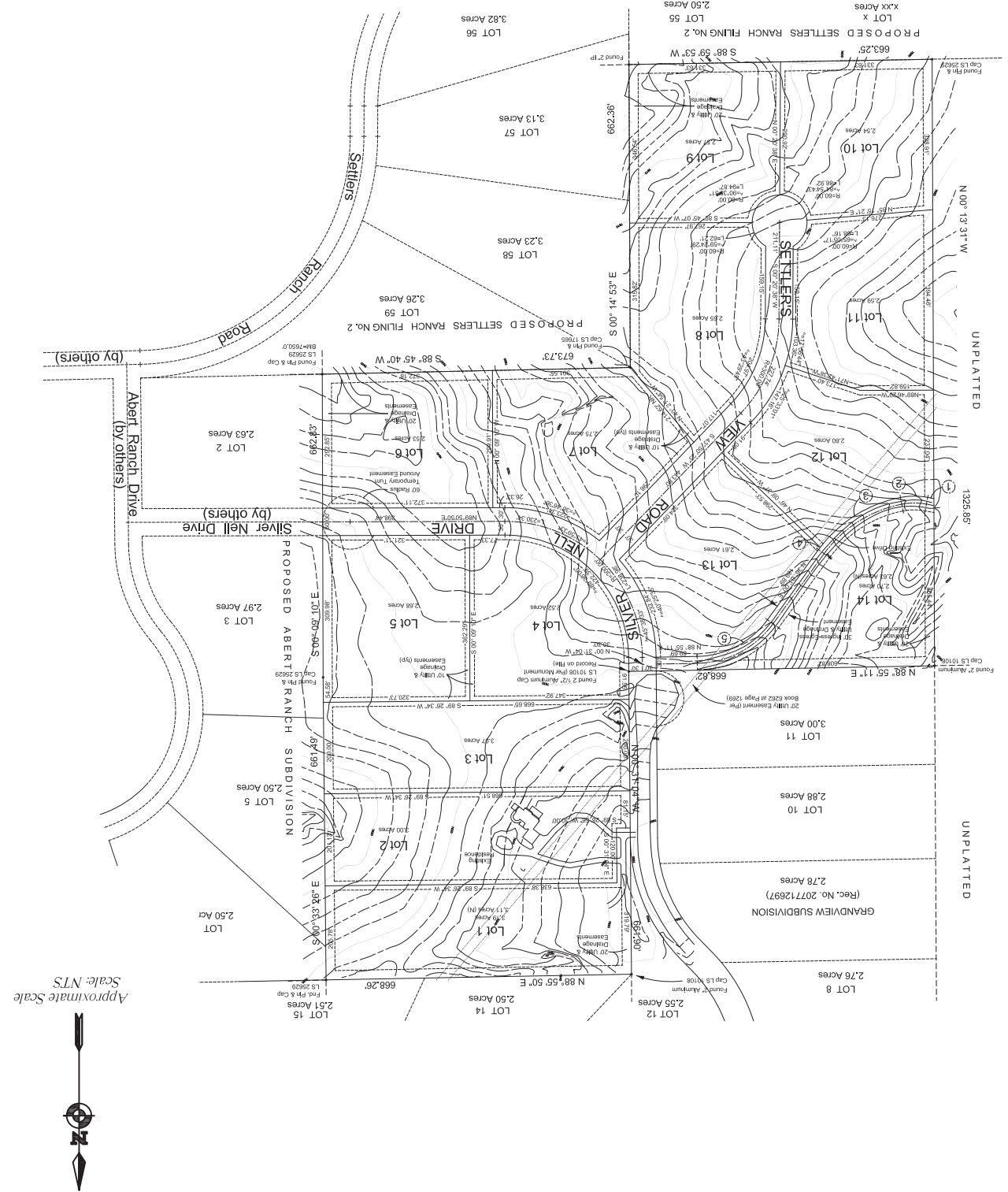
# Vicinity Map

Settlers View (LSC #164720)



# Settlers View Site Plan

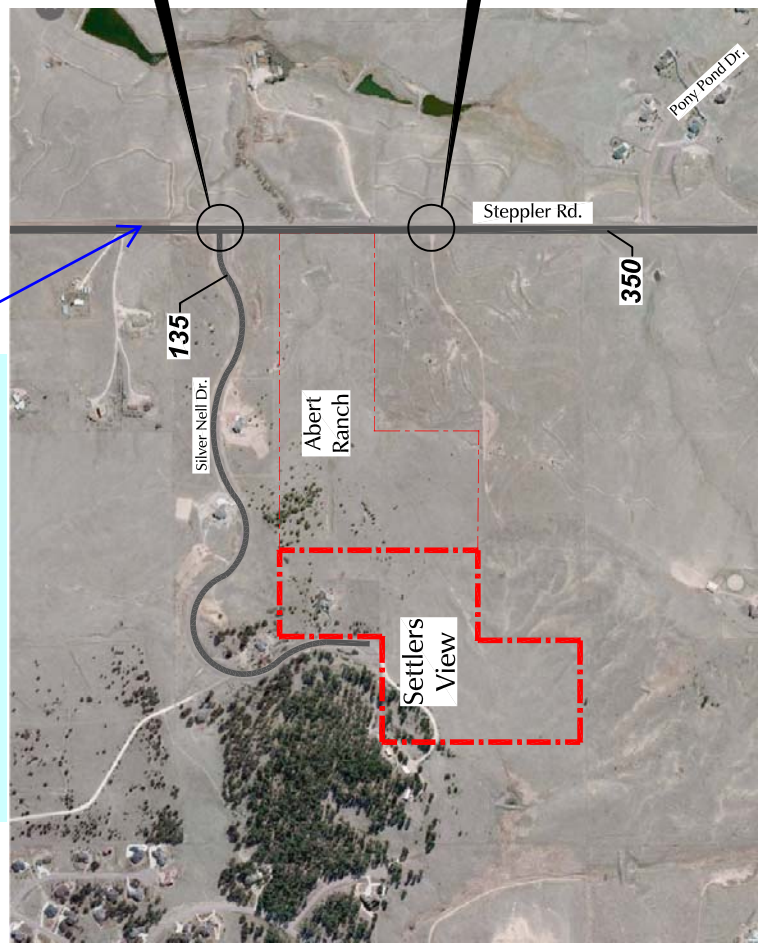
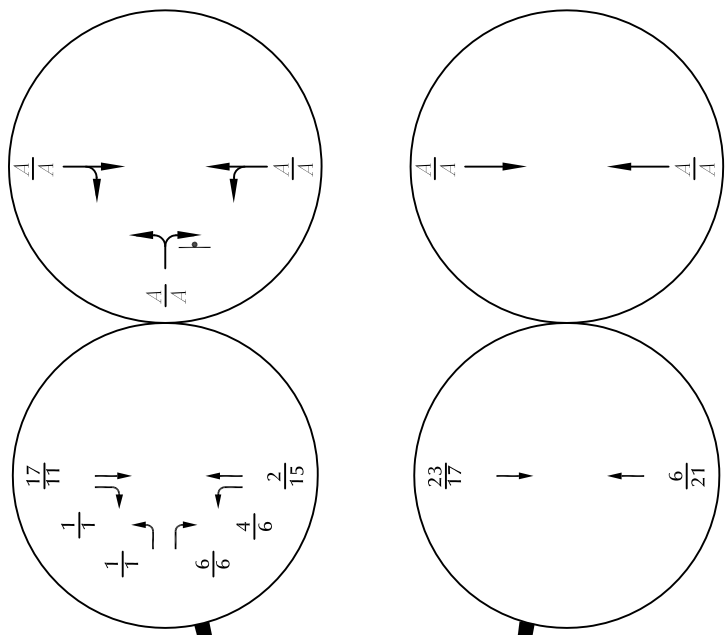
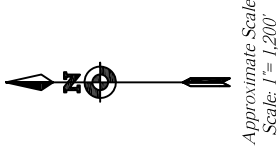
Figure 2



Approximate Scale  
Scale: N.T.S.



Note the ADT north of Silver Nell Dr. for Figures 3, 7, 8, and 9.



LEGEND:

† = Stop Sign

$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
 PM Individual Movement Peak-Hour Level of Service

XXX = Average Weekday Traffic (vehicles per day)  
 Estimates by LSC



Figure 3

# Existing Traffic, Lane Geometry, Traffic Control & Level of Service

Settlers View (LSC #164720)

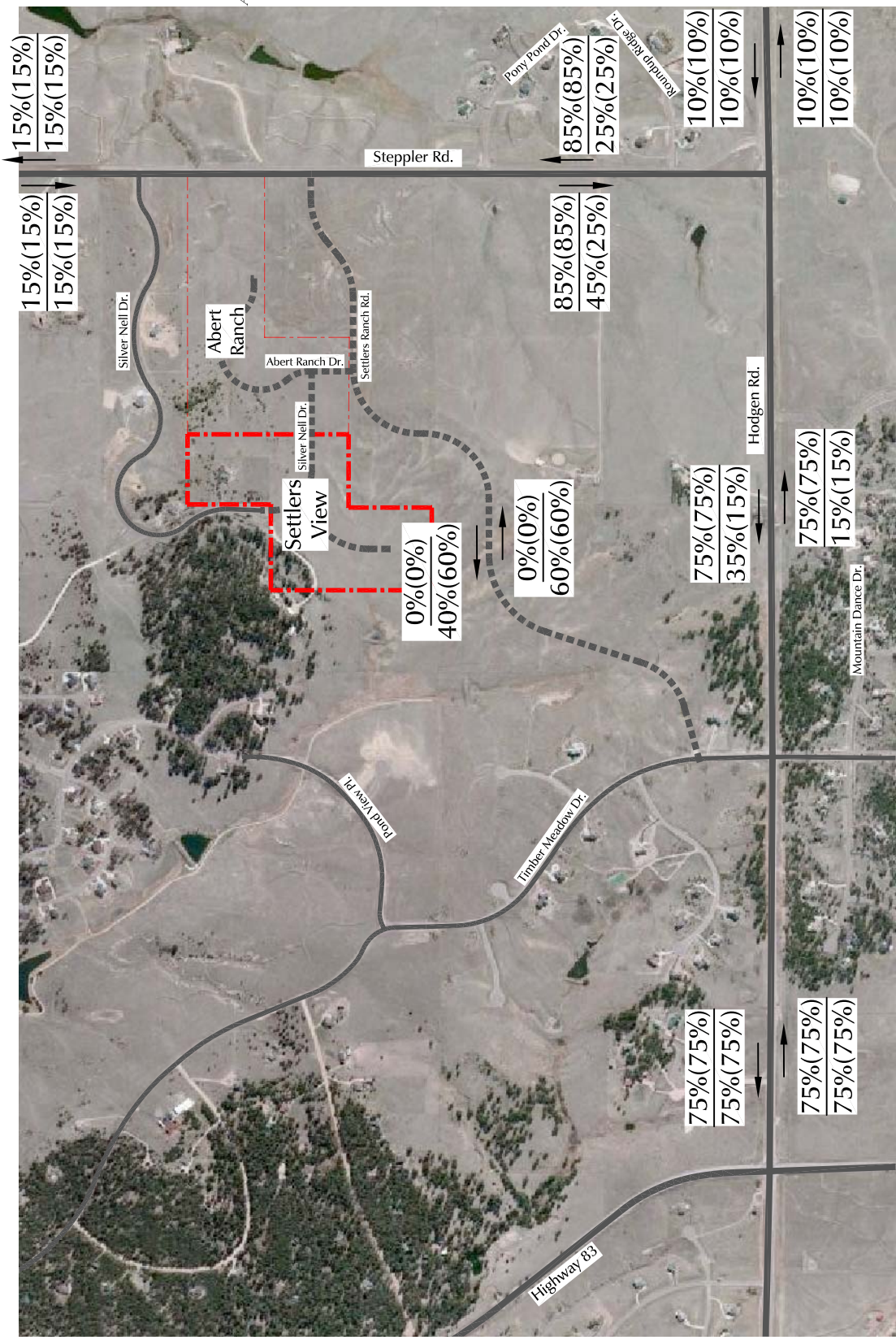
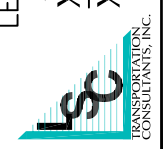


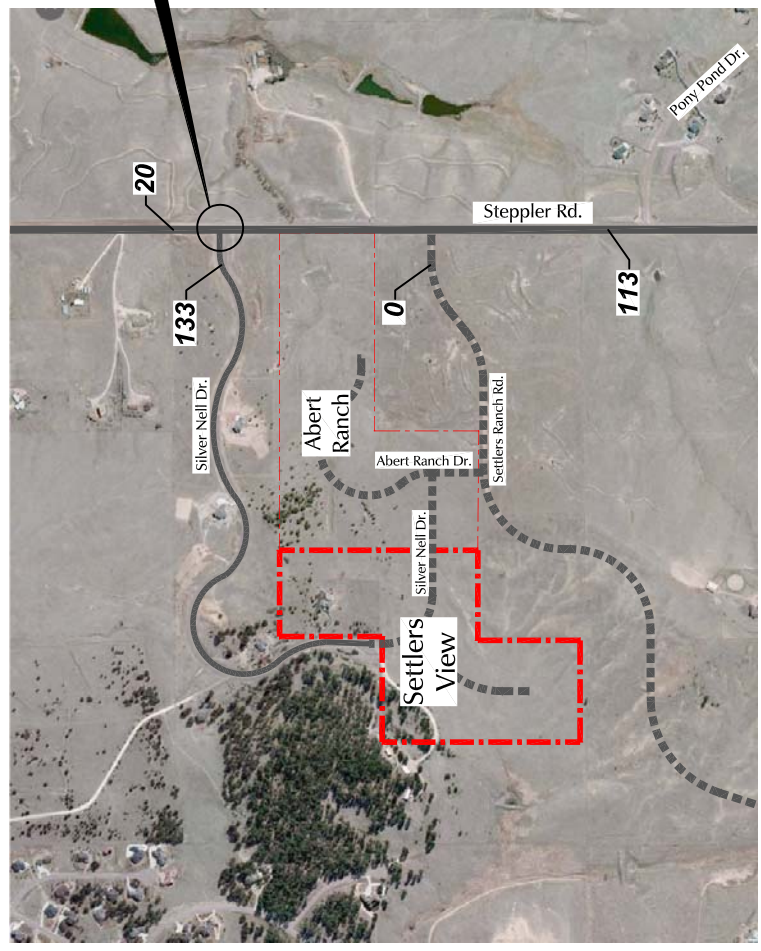
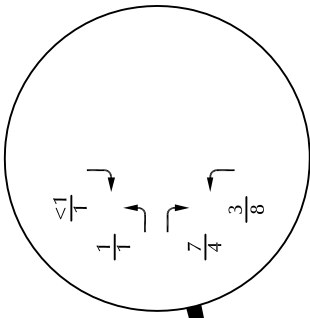
Figure 4  
**Directional Distribution  
of Site-Generated Traffic**  
Settlers View (LSC #164720)

LEGEND:  
 $\overleftarrow{X\%(X\%)}$  = Short-Term Directional Distribution AM(PM)  
 $\overrightarrow{X\%(X\%)}$  = Long-Term Directional Distribution AM(PM)





Approximate Scale  
Scale: 1" = 1,200'



LEGEND:

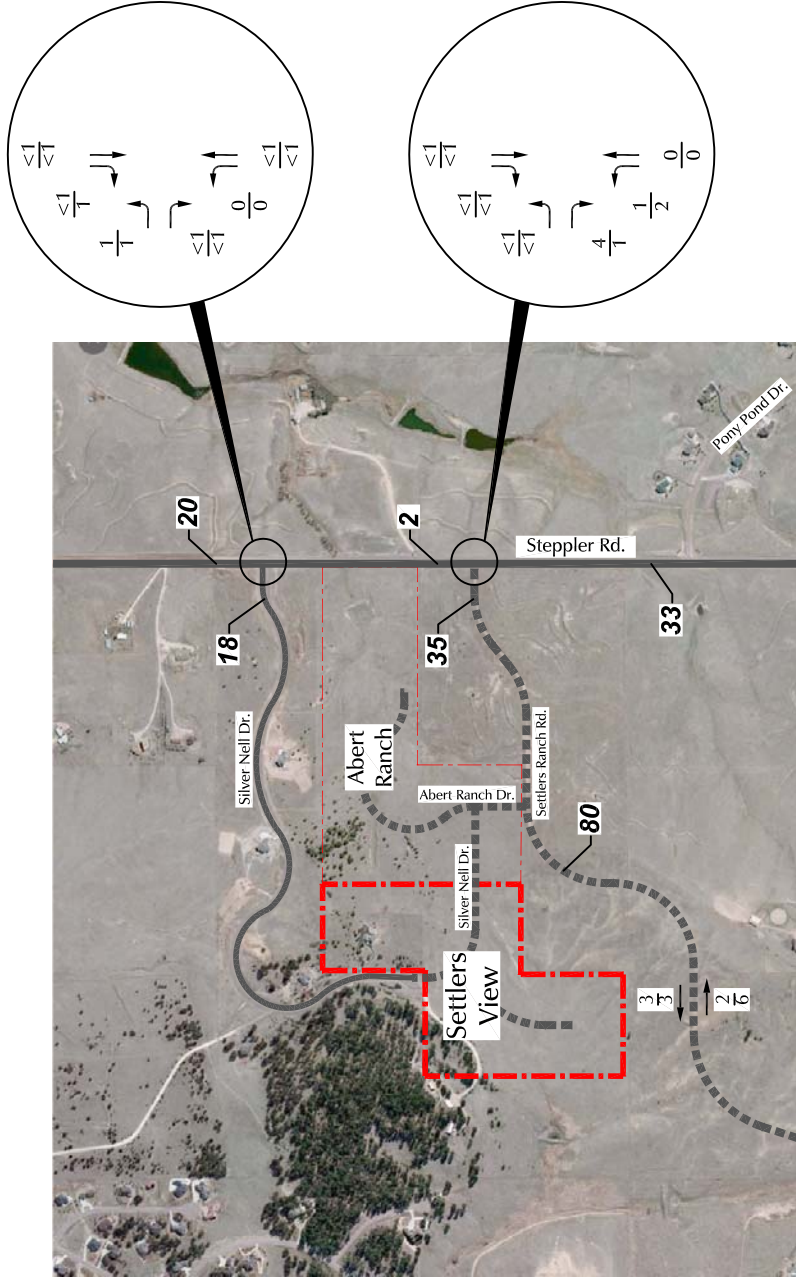
- XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
- XX = PM Weekday Peak-Hour Traffic (vehicles per hour)
- XXX = Average Weekday Traffic (vehicles per day)



Figure 5  
**Short-Term Assignment  
of Site-Generated Traffic**  
Settlers View (LSC #164720)



Approximate Scale  
Scale: 1" = 1,200'



LEGEND:

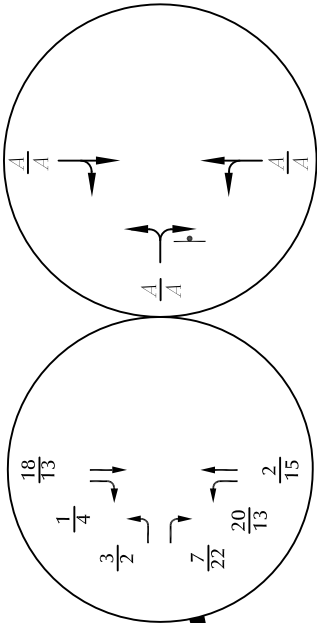
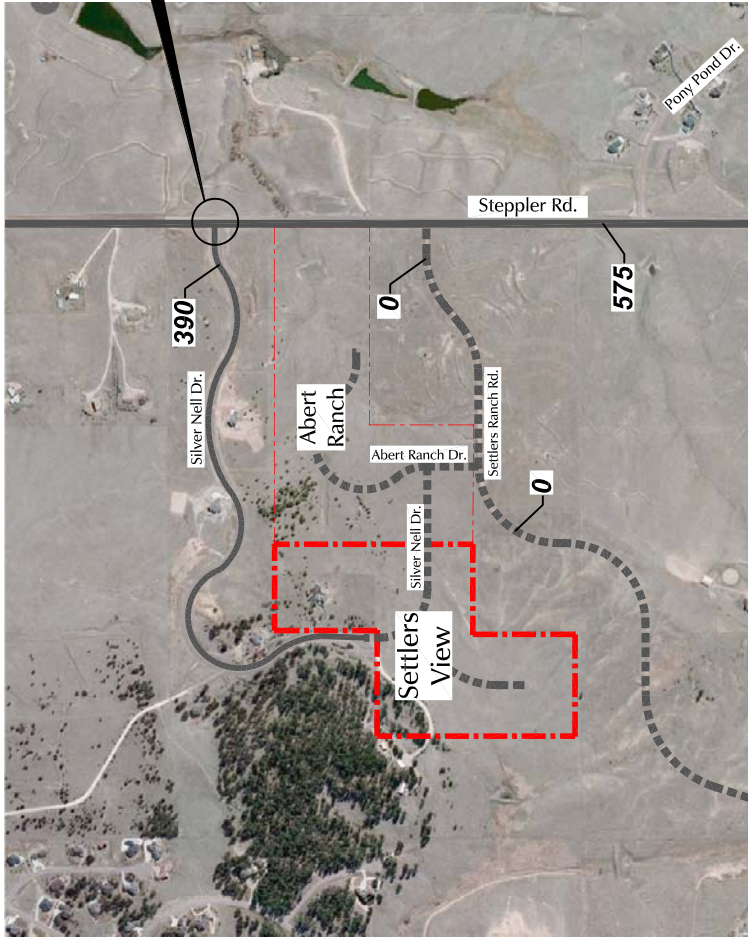
- XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
- XX = PM Weekday Peak-Hour Traffic (vehicles per hour)
- XXX = Average Weekday Traffic (vehicles per day)



Figure 6

# Long-Term Assignment of Site-Generated Traffic

Settlers View (LSC #164720)



Approximate Scale  
Scale: 1" = 1,200'

**LEGEND:**

† = Stop Sign

$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)

PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service

PM Individual Movement Peak-Hour Level of Service

XXX = Average Weekday Traffic (vehicles per day)

\* Includes buildout of the site plus Abert Ranch plus Grandview but not Settlers Ranch. Assumes Settlers Ranch Road not built adjacent to Abert Ranch east of Abert Ranch.

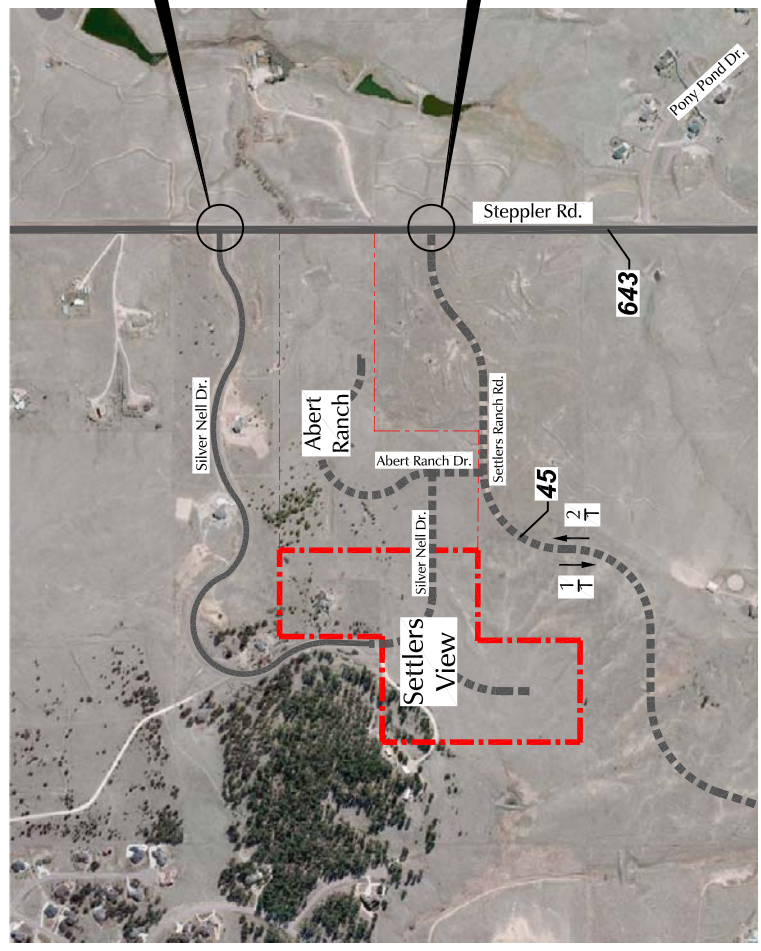
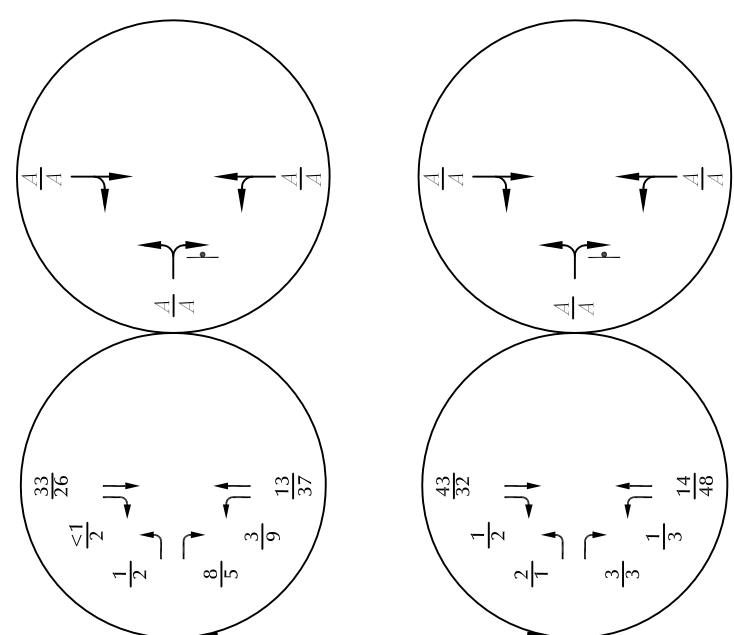
Figure 7

# Short-Term Total Traffic\*, Lane Geometry, Traffic Control & Level of Service

Settlers View (LSC #164720)



Approximate Scale  
Scale: 1" = 1,200'



\* Not including Settlers Ranch or Abert Ranch.

LEGEND:

- † = Stop Sign
- $\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{XX}{XX}$  = PM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service
- $\frac{A}{B}$  = PM Individual Movement Peak-Hour Level of Service
- XXX = Average Weekday Traffic (vehicles per day)

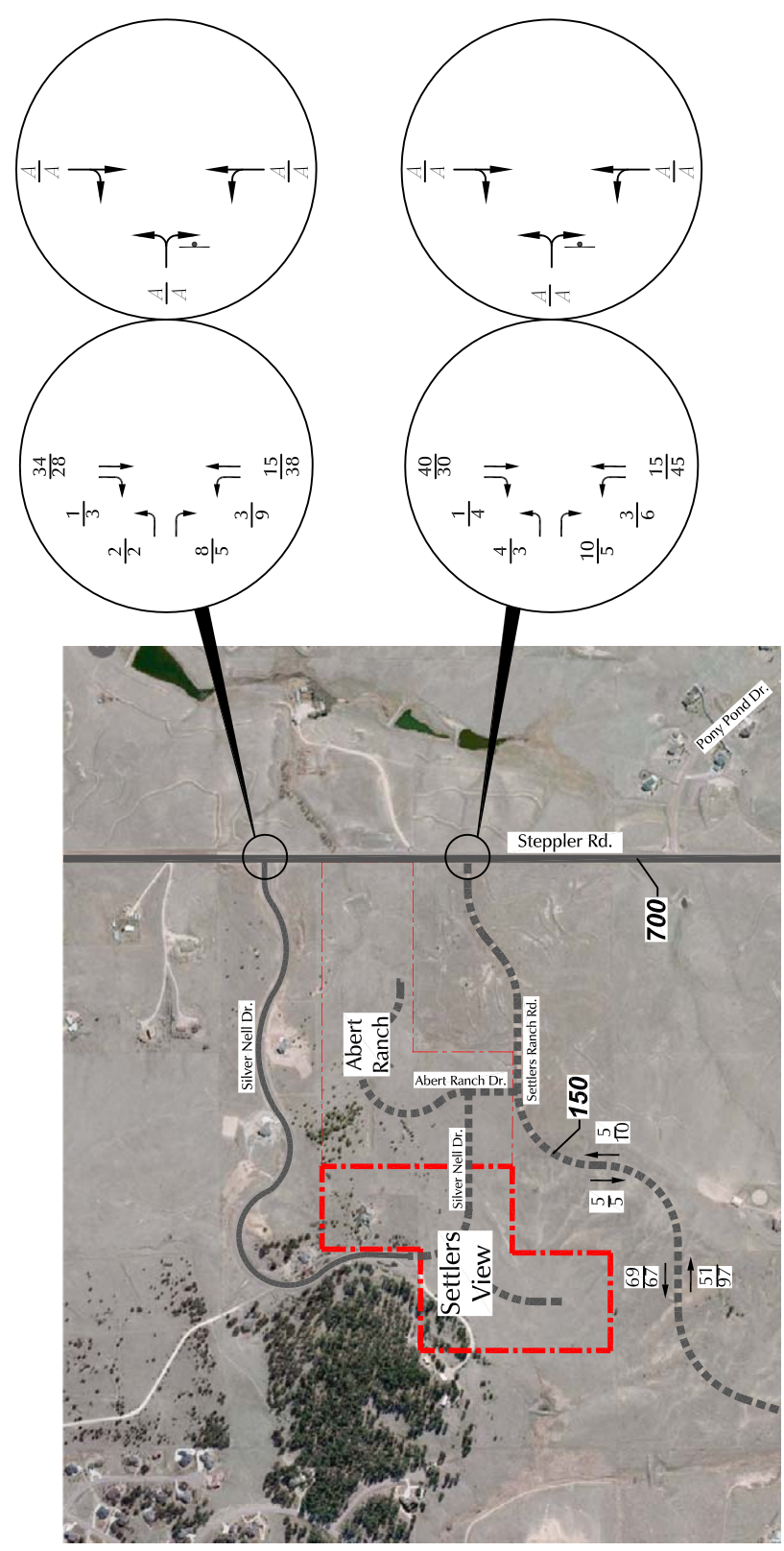
Figure 8

# Year 2040 Background Traffic, Lane Geometry, Traffic Control & Level of Service\*

Settlers View (LSC #164720)



Approximate Scale  
Scale: 1" = 1,200'



LEGEND:

- † = Stop Sign
- $\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
PM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
PM Individual Movement Peak-Hour Level of Service
- XXX = Average Weekday Traffic (vehicles per day)

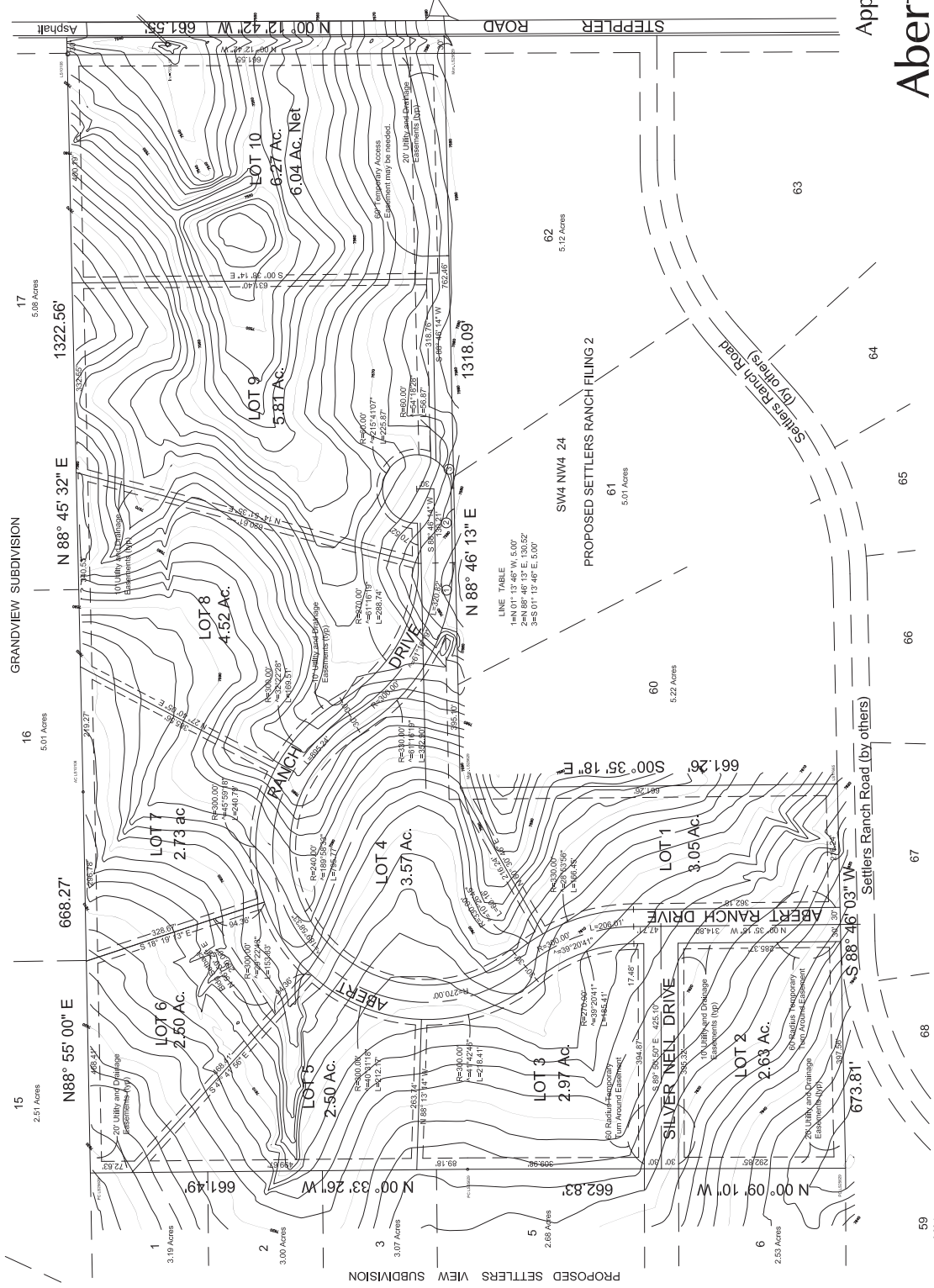


Figure 9  
Year 2040 Total Traffic, Lane  
Geometry, Traffic Control & Level of Service  
Settlers View (LSC #164720)





Approximate Scale  
Scale: NTS



# Appendix Figure 1

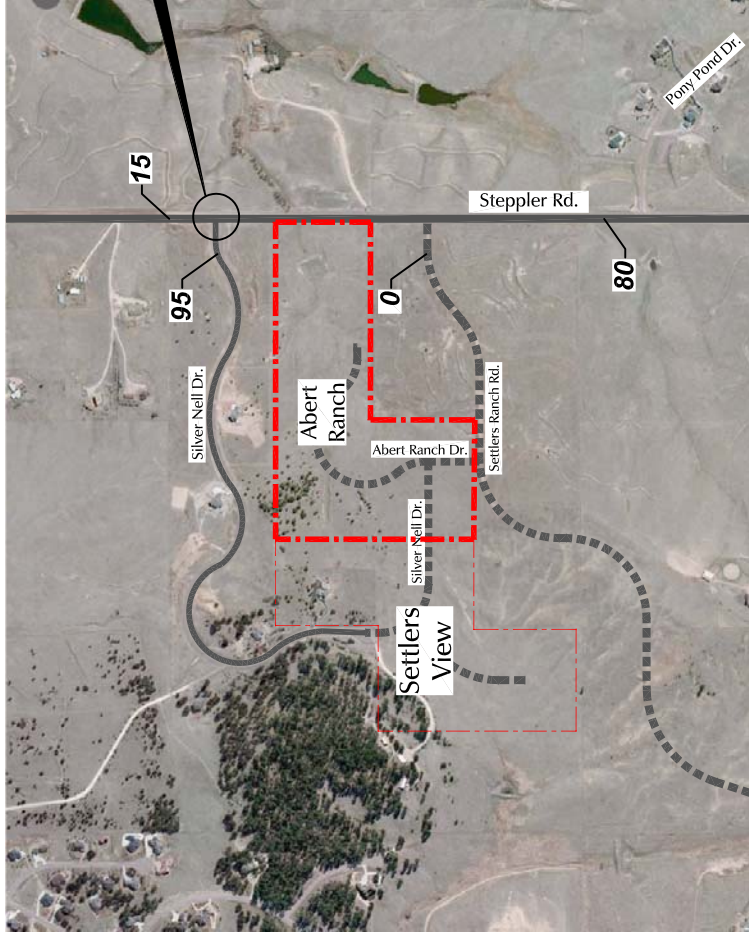
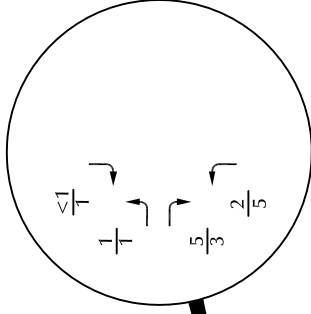
## Abert Ranch Site Plan

Settlers View (LSC #164720)





Approximate Scale  
Scale: 1" = 1,200'



# Appendix Figure 2

## Abert Ranch Background Traffic

Settlers View (LSC #164720)

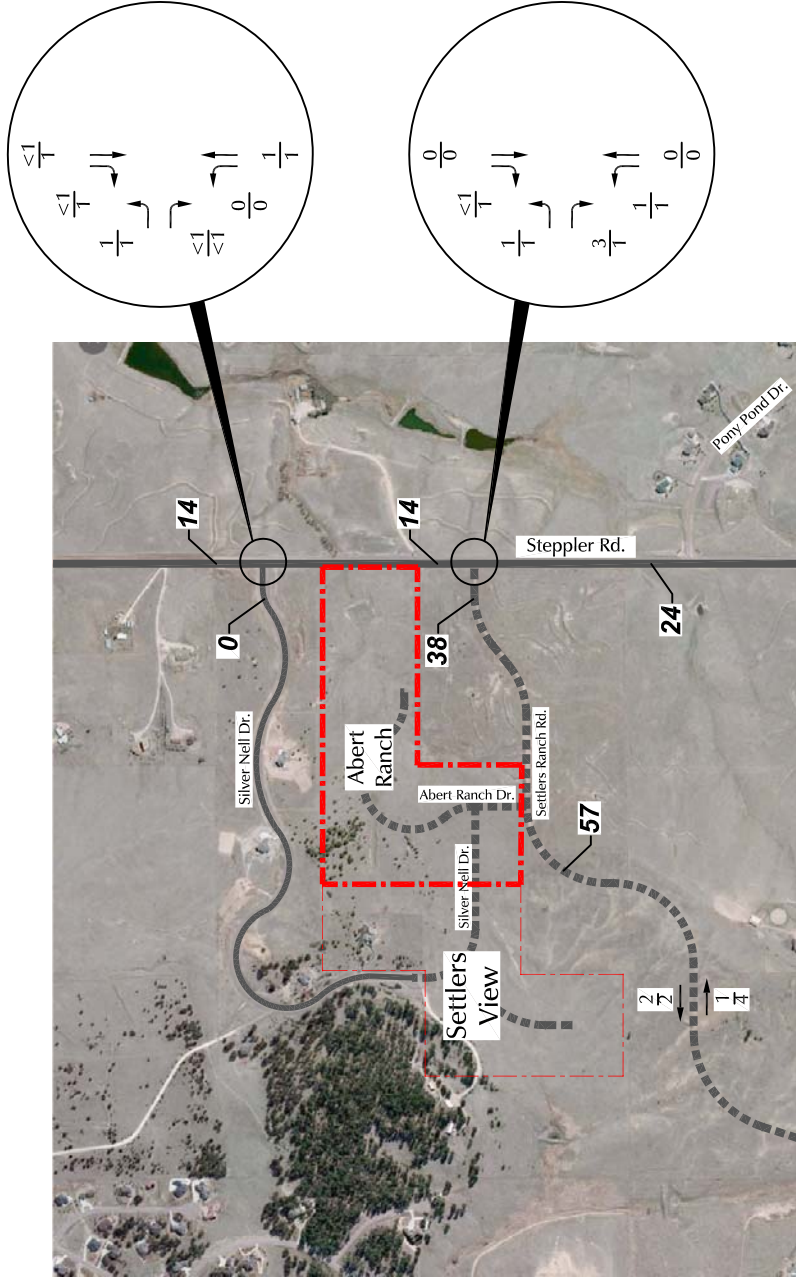
### LEGEND:

- XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
- XX = PM Weekday Peak-Hour Traffic (vehicles per hour)
- XXX = Average Weekday Traffic (vehicles per day)





Approximate Scale  
Scale: 1" = 1,200'



Appendix Figure 3  
**Long-Term Assignment  
of Site-Generated Traffic**  
Settlers View (LSC #164720)

**LEGEND:**  
 XX = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 XX = PM Weekday Peak-Hour Traffic (vehicles per hour)  
 XXX = Average Weekday Traffic (vehicles per day)



LSC Transportation Consultants, Inc.  
**545 E. Pikes Peak Ave., #210**

LSC Transportation Consultants, Inc. **Colorado Springs, CO 80903** Name : Stepler Rd - Silver Nell Dr AM  
 (719) 633-2868 Site Code : 00164720  
 Start Date : 09/01/2016  
 Page No : 1

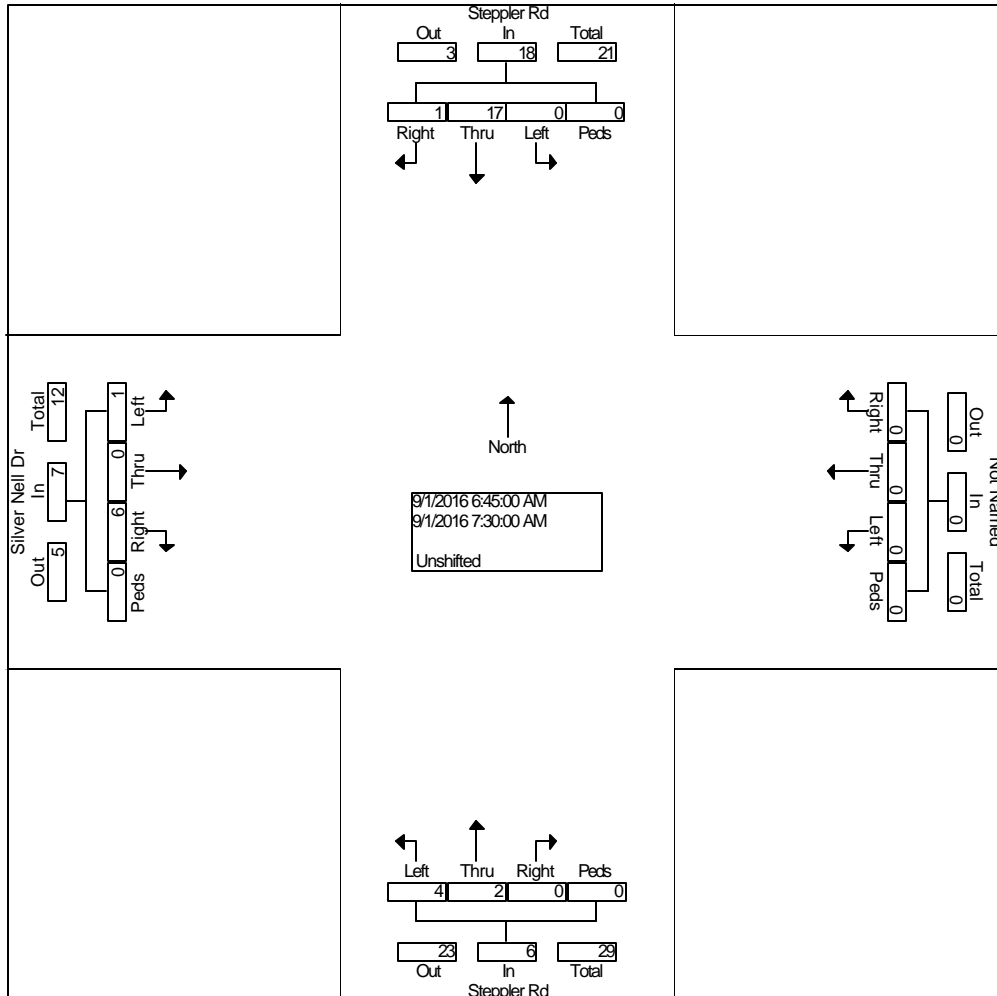
Groups Printed- Unshifted

Start Time	Stepler Rd From North				From East				Stepler Rd From South				Silver Nell Dr 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	
06:30 AM	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	4
06:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4
Total	0	4	0	0	0	0	0	0	0	1	0	0	2	0	1	0	8
07:00 AM	1	4	0	0	0	0	0	0	0	1	1	0	2	0	1	0	10
07:15 AM	0	5	0	0	0	0	0	0	0	1	2	0	1	0	0	0	9
07:30 AM	0	5	0	0	0	0	0	0	0	0	1	0	2	0	0	0	8
07:45 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
Total	1	16	0	0	0	0	0	0	0	2	5	0	5	0	1	0	30
08:00 AM	0	0	0	0	0	0	0	0	0	3	1	0	1	0	2	0	7
08:15 AM	0	1	0	0	0	0	0	0	0	4	0	0	1	0	1	0	7
Grand Total	1	21	0	0	0	0	0	0	0	10	6	0	9	0	5	0	52
Apprch %	4.5	95.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.5	37.5	0.0	64.3	0.0	35.7	0.0	
Total %	1.9	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.2	11.5	0.0	17.3	0.0	9.6	0.0	

LSC Transportation Consultants, Inc.  
 545 E. Pikes Peak Ave., #210  
 Colorado Springs, CO 80903  
 (719) 633-2868

Name : Stepler Rd - Silver Nell Dr AM  
 Site Code : 00164720  
 Start Date : 09/01/2016  
 Page No : 2

Start Time	Stepler Rd From North					From East					Stepler Rd From South					Silver Nell Dr From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	06:45 AM																				
Volume	1	17	0	0	18	0	0	0	0	0	0	2	4	0	6	6	0	1	0	7	31
Percent	5.6	94.4	0.0	0.0		0.0	0.0	0.0	0.0		0.0	33.3	66.7	0.0		85.7	0.0	14.3	0.0		
07:00 Volume	1	4	0	0	5	0	0	0	0	0	0	1	1	0	2	2	0	1	0	3	10
Peak Factor																					
High Int.	07:00 AM																				
Volume	1	4	0	0	5	0	0	0	0	0	0	1	2	0	3	2	0	1	0	3	0.775
Peak Factor	0.90										0.50					0.58					
	0										0					3					



LSC Transportation Consultants, Inc.  
**545 E. Pikes Peak Ave., #210**

LSC Transportation Consultants, Inc. **Colorado Springs, CO 80903** Site Name : Stepler Rd - Silver Nell Dr PM  
 (719) 633-2868 Site Code : 00164720  
 Start Date : 08/30/2016  
 Page No : 1

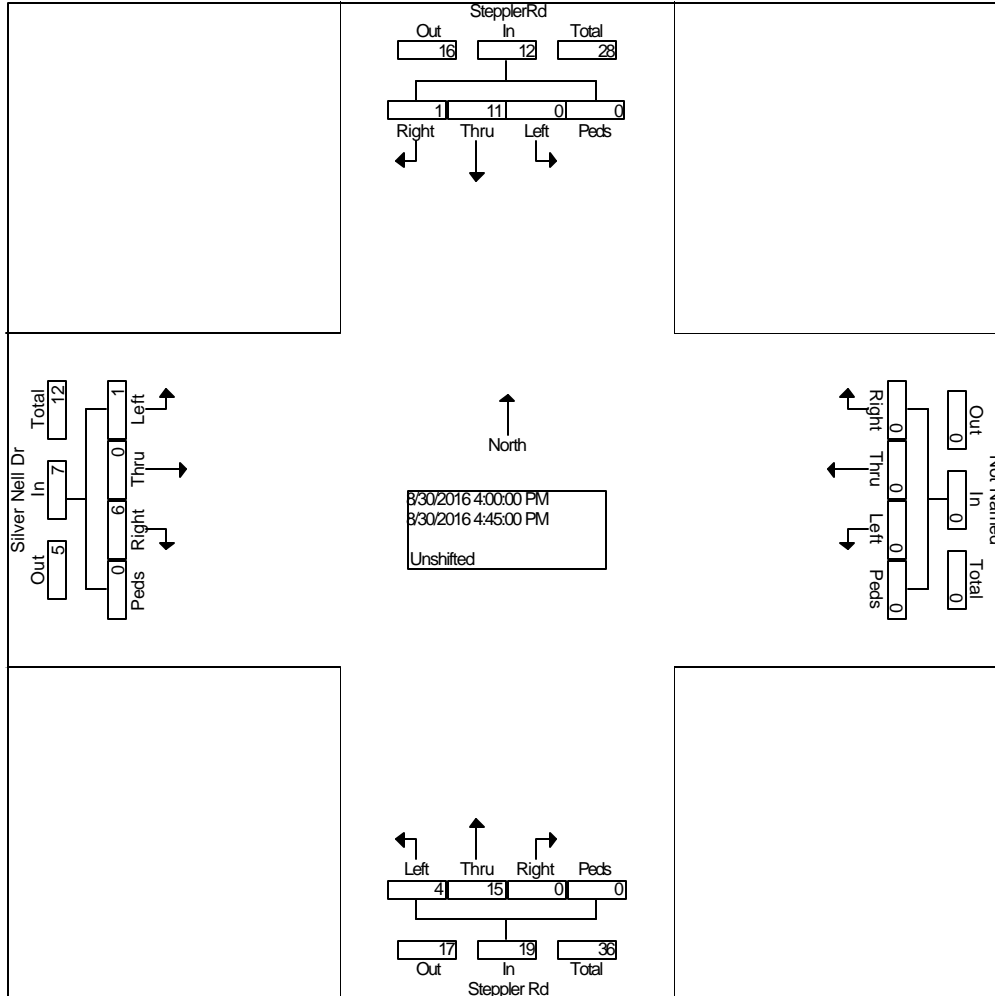
Groups Printed- Unshifted

Start Time	SteplerRd From North				From East				Stepler Rd From South				Silver Nell Dr 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
04:00 PM	1	4	0	0	0	0	0	0	0	3	1	0	2	0	0	0	11
04:15 PM	0	1	0	0	0	0	0	0	0	7	1	0	1	0	0	0	10
04:30 PM	0	4	0	0	0	0	0	0	0	2	1	0	2	0	1	0	10
04:45 PM	0	2	0	0	0	0	0	0	0	3	1	0	1	0	0	0	7
Total	1	11	0	0	0	0	0	0	0	15	4	0	6	0	1	0	38
05:00 PM	0	1	0	0	0	0	0	0	0	3	1	0	1	0	1	0	7
05:15 PM	0	3	0	0	0	0	0	0	0	2	3	0	1	0	0	0	9
05:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
05:45 PM	0	2	0	0	0	0	0	0	0	3	1	0	1	0	1	0	8
Total	0	6	0	0	0	0	0	0	0	12	5	0	3	0	2	0	28
Grand Total	1	17	0	0	0	0	0	0	0	27	9	0	9	0	3	0	66
Apprch %	5.6	94.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	25.0	0.0	75.0	0.0	25.0	0.0	
Total %	1.5	25.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.9	13.6	0.0	13.6	0.0	4.5	0.0	

LSC Transportation Consultants, Inc.  
 545 E. Pikes Peak Ave., #210  
 Colorado Springs, CO 80903  
 (719) 633-2868

Project Name : Stepler Rd - Silver Nell Dr PM  
 Site Code : 00164720  
 Start Date : 08/30/2016  
 Page No : 2

Start Time	SteplerRd From North					From East					Stepler Rd From South					Silver Nell Dr From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:00 PM																				
Volume	1	11	0	0	12	0	0	0	0	0	0	15	4	0	19	6	0	1	0	7	38
Percent	8.3	91.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	78.9	21.1	0.0		85.7	0.0	14.3	0.0		
04:00 Volume	1	4	0	0	5	0	0	0	0	0	0	3	1	0	4	2	0	0	0	2	11
Peak Factor																					
High Int.	04:00 PM																				
Volume	1	4	0	0	5	3:45:00 PM					04:15 PM					04:30 PM					0.864
Peak Factor	0.60										0.59					0.58					3
Factor	0										4					3					



**Intersection**

Int Delay, s/veh 2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	4	2	17	1
Future Vol, veh/h	1	6	4	2	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	7	4	2	18	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	30	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	11	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	984	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1059	1596	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1047	-	-
HCM Lane V/C Ratio	0.003	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



**Intersection**

Int Delay, s/veh 2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	6	15	11	1
Future Vol, veh/h	1	6	6	15	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	7	7	16	12	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	41	12	13	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	29	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	970	1069	1606	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	994	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	966	1069	1606	-	-	-
Mov Cap-2 Maneuver	966	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	990	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1053	-	-
HCM Lane V/C Ratio	0.004	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	3	7	20	2	17	1
Future Vol, veh/h	3	7	20	2	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	22	2	18	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	65	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	941	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	928	1059	1596	-	-	-
Mov Cap-2 Maneuver	928	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	962	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	6.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1016	-	-
HCM Lane V/C Ratio	0.014	-	0.011	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	22	13	15	11	4
Future Vol, veh/h	2	22	13	15	11	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	24	14	16	12	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	59	14	16	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	948	1066	1602	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	939	1066	1602	-	-	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1054	-	-
HCM Lane V/C Ratio	0.009	-	0.025	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	8	3	13	33	0
Future Vol, veh/h	1	8	3	13	33	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	9	3	14	36	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	57	36	36	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	950	1037	1575	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	948	1037	1575	-	-	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1575	-	1026	-	-
HCM Lane V/C Ratio	0.002	-	0.01	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	3	1	14	40	1
Future Vol, veh/h	2	3	1	14	40	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	3	1	15	43	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	61	44	45	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	945	1026	1563	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	944	1026	1563	-	-	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1005	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1563	-	992	-	-
HCM Lane V/C Ratio	0.001	-	0.005	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	9	37	26	2
Future Vol, veh/h	1	5	9	37	26	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	10	40	28	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	89	29	30	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	912	1046	1583	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	907	1046	1583	-	-	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1583	-	1020	-	-
HCM Lane V/C Ratio	0.006	-	0.006	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	3	45	29	2
Future Vol, veh/h	1	3	3	45	29	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	3	49	32	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	88	33	34	0	- 0
Stage 1	33	-	-	-	- -
Stage 2	55	-	-	-	- -
Critical Hdwy	6.42	6.22	4.12	-	- -
Critical Hdwy Stg 1	5.42	-	-	-	- -
Critical Hdwy Stg 2	5.42	-	-	-	- -
Follow-up Hdwy	3.518	3.318	2.218	-	- -
Pot Cap-1 Maneuver	913	1041	1578	-	- -
Stage 1	989	-	-	-	- -
Stage 2	968	-	-	-	- -
Platoon blocked, %				-	- -
Mov Cap-1 Maneuver	911	1041	1578	-	- -
Mov Cap-2 Maneuver	911	-	-	-	- -
Stage 1	989	-	-	-	- -
Stage 2	966	-	-	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1578	-	1005	-	-
HCM Lane V/C Ratio	0.002	-	0.004	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	8	3	15	34	1
Future Vol, veh/h	2	8	3	15	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	9	3	16	37	1

Major/Minor	Minor2	Major1		Major2
Conflicting Flow All	60	37	38	0
Stage 1	37	-	-	-
Stage 2	23	-	-	-
Critical Hdwy	6.42	6.22	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	947	1035	1572	-
Stage 1	985	-	-	-
Stage 2	1000	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	945	1035	1572	-
Mov Cap-2 Maneuver	945	-	-	-
Stage 1	985	-	-	-
Stage 2	998	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	1016	-	-
HCM Lane V/C Ratio	0.002	-	0.011	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



**Intersection**

Int Delay, s/veh 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	3	15	40	1
Future Vol, veh/h	4	10	3	15	40	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	11	3	16	43	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	67	44	45	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	938	1026	1563	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	936	1026	1563	-	-	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1563	-	999	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	5	9	38	28	3
Future Vol, veh/h	2	5	9	38	28	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	5	10	41	30	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	93	32	34	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	907	1042	1578	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	902	1042	1578	-	-	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1578	-	998	-	-
HCM Lane V/C Ratio	0.006	-	0.008	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

**Intersection**

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	5	6	45	30	4
Future Vol, veh/h	3	5	6	45	30	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	5	7	49	33	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	97	35	37	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	902	1038	1574	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	897	1038	1574	-	-	-
Mov Cap-2 Maneuver	897	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1574	-	980	-	-
HCM Lane V/C Ratio	0.004	-	0.009	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-