LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

Homestead at Sterling Ranch Filing 2
Traffic Technical Memorandum
(LSC #184283)
June 10, 2019

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.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
6-13-19
PROFESSIONAL ENGINEER

Developer's Statement

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

6/13/19
Date

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June 13, 2019

Mr. Jim Morley
Morley-Bentley Investments, LLC
20 Boulder Crescent, 1st Floor
Colorado Springs, CO 80903

RE: Homestead at Sterling Ranch Filing 2
El Paso County, CO
Transportation Memorandum
LSC #184283

Dear Mr. Morley:

LSC Transportation Consultants, Inc. has prepared this Transportation Memorandum for Homestead at Sterling Ranch Filing 2. As shown on Figure 1, Sterling Ranch is located east of Vollmer Road near Lochwinnoch Lane between the future extensions of Marksheffel Road and Stapleton Drive in El Paso County, Colorado. This report is intended as a site-specific, final plat traffic report for the currently proposed filing.

REPORT CONTENTS

This report presents:

- A list of previous Sterling Ranch traffic reports and the context of this project
- A summary of the proposed land use and access plan
- The existing roadway and traffic conditions in the site's vicinity including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits
- Existing (2017) traffic volume data
- Estimates of projected short-term and intermediate-term traffic volumes
- The projected average weekday and peak-hour vehicle-trips to be generated by the proposed development
- The assignment of the projected site-generated traffic volumes to the area roadways
- The projected short-term total traffic volumes on the area roadways
- The projected levels of service at the key intersections in the vicinity of the site
- The recommended street classifications for the internal streets within the proposed development
- The project's obligation to the County roadway improvement fee program

PREVIOUS STERLING RANCH TRAFFIC REPORTS AND MEMORANDUM

LSC prepared a traffic impact study (TIS) for the entire Sterling Ranch development dated June 5, 2008. LSC also prepared a traffic impact analysis for the first phase of the Sterling Ranch development dated March 16, 2015; a memorandum for Phases 1-3 dated October 2, 2017; and a traffic impact analysis for the Sterling Ranch Phase 2 Preliminary Plan dated December 20, 2018. The following site-specific, final plat traffic reports have also been prepared:

- Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 dated December 19, 2017
- Sterling Ranch Filing No. 2 dated April 3, 2018
- Copper Chase at Sterling Ranch dated December 20, 2018
- Homestead at Sterling Ranch Filing No. 2 dated March 1, 2019

LAND USE AND ACCESS

Land Use

Figure 2 shows the location of the Sterling Ranch developments in the vicinity of the site that are either approved or currently under review. Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 have both been approved but no homes have been constructed in either filing. Applications to plat both Branding Iron at Sterling Ranch Filing No. 2 and Homestead at Sterling Ranch Filing No. 2 have been submitted and are currently in the review process. It is our understanding that Sterling Ranch Filing No. 2, Copper Chase at Sterling Ranch and Sterling Ranch Phase 2 are all currently on hold, however, for the purposes of this report these developments were assumed to occur in the intermediate-term future.

This site-specific, final traffic report is for The Homestead at Sterling Ranch Filing 2. The currently proposed filing is planned to include 104 lots for single-family homes. Four full-movement access points are proposed to Dines Boulevard and Wheatland Drive. The site plan is shown in Figure 3.

Access

Figure 4 shows the proposed short-term street connection plan. As shown on Figure 4 Dines Boulevard is planned to be constructed south from Vollmer Road to the future Sterling Ranch Road. A short, half section of Briargate Parkway is planned to be constructed between Vollmer Road and Wheatland Drive and Wheatland Drive is planned to be constructed south from Briargate Parkway adjacent to and through the Homestead at Sterling Ranch Filings 1 and 2 to the future intersection of Sterling Ranch Road. The section of Sterling Ranch Road between Dines Boulevard and Marksheffel Road and the section of Marksheffel Road between Vollmer Road and Sterling Ranch Road are **not** planned to be constructed in the short term. An emergency access

provide time frame

Dines Blvd?

has been?

road will be constructed southwest from the terminus of Dines Boulevard to Vollmer Road. The approved plans for this access road have been attached. See comment letter.

For the purposes of this report it was assumed that Marksheffel Road would be constructed from its current terminus just north of Woodmen Road to Vollmer Road in the intermediate-term future and that the emergency only access drive would be fully constructed and opened at that time. If areas of Sterling Ranch other than those identified on Figure 2 as "intermediate-term" are developed prior to this occurring or if other intermediate-term street connections are constructed this report may need to be revised.

this doesn't make sense

ROADWAY AND TRAFFIC CONDITIONS

The roadways in the site's vicinity are shown on Figure 1 and are described below.

Vollmer Road is currently a five-lane urban street within the City of Colorado Springs limits between Black Forest Road and Cowpoke Road; and a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. In the southbound direction, Vollmer Road has a posted speed limit of 45 miles per hour (mph). South of Cowpoke Road, Vollmer Road has a 40-mph posted speed limit. The 2040 El Paso County *Major Transportation Corridors Plan* (MTCP) and the Sterling Ranch master traffic study show Vollmer Road as a four-lane Urban Minor Arterial in the vicinity of the site. In the interim, auxiliary turn lanes will be completed on Vollmer Road as shown in the memos by LSC dated October 2, 2017 and February 2, 2019.

Marksheffel Road is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel Road is planned to ultimately be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a six-lane Principal Arterial through the site on the El Paso County MTCP.

Briargate Parkway is a six-lane, Principal Arterial that extends east from I-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned to ultimately extend to Towner Drive. With the Sterling Ranch Phase 1 development, Stapleton Road is planned to be constructed as a two-lane roadway between Vollmer Road and the proposed first site access intersection 750 feet east of Vollmer (Wheatland Drive). For this report of short-term conditions, it was assumed that only this section of Briargate Parkway would be constructed in the vicinity of the site.

Sterling Ranch Road is a planned Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and Stapleton Drive.

EXISTING (2017) TRAFFIC VOLUMES

Figure 5 shows the existing (2017) daily and peak-hour traffic volumes on Vollmer Road in the vicinity of the site. The traffic volumes are from the attached traffic counts conducted adjacent to the site in September 2017. Figure 5 also shows the average weekday traffic volumes on Vollmer Road based on 24-hour machine (tube) counts conducted in September 2017.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Background traffic includes the through traffic and the traffic generated by nearby developments, but assumes zero traffic generated by the site.

Figure 6 shows the projected short-term background traffic volumes. The short-term background volumes assume only the short-term street connections shown in Figure 4. The short-term background traffic includes the existing traffic volumes (from Figure 5) with increases in through traffic due to regional growth plus traffic estimated to be generated by buildout of the Homestead at Sterling Ranch Filings 1, Branding Iron at Sterling Ranch Filings 1 and 2, and the proposed Retreat at Timber Ridge development to be located generally northeast of the intersection of Vollmer Road and Poco Road.

Figure 7 shows the projected intermediate term background traffic volumes. These volumes assume Marksheffel Road has been extended northwest from Woodmen Road to Vollmer Road, Sterling Ranch Road has been constructed northeast from Marksheffel Road to Dines Boulevard, and Dines Boulevard has been completed between Sterling Ranch Road and Vollmer Road. The intermediate traffic volumes are based on the short-term background traffic volumes shown in Figure 6 with some changes in traffic patterns due to the new street connections plus traffic estimated to be generated by buildout of Sterling Ranch Filing 2, Copper Chase at Sterling Ranch and the residential portion of Sterling Ranch Phase 2.

TRIP GENERATION

The site-generated vehicle-trips were estimated using the nationally-published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 1 shows the current trip generation estimate.

As shown in Table 1, Homestead at Sterling Ranch is projected to generate about 982 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 19 vehicles would enter and 58 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 and 6:30 p.m., about 65 vehicles would enter and 38 vehicles would exit the site.

SHORT-TERM DIRECTIONAL DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is one of the most important factors in determining the site's traffic impacts. The specific short-term and intermediate-term distribution estimates are shown in Figure 8. The directional distribution estimates are based on the following factors: the location of the site with respect to the Colorado Springs metropolitan area, the planned access system for the site, the street and roadway system serving the site, and the land uses proposed for the site.

The short-term distribution estimate shown in Figure 8 assumes:

- Dines Boulevard has been constructed south of Vollmer Road to the southern-most access for the Branding Iron at Sterling Ranch Filing 1 (Kintla Court) only.
- No sections of Sterling Ranch Road have been constructed.
- Only the short section of Briargate Parkway between Vollmer Road and Wheatland Drive constructed in the vicinity of the site.
- The section Marksheffel Road east of Vollmer Road has **not** been constructed.

The intermediate-term distribution estimate shown in Figure 8 assumes:

- Marksheffel Road has been constructed between Woodmen Road and Vollmer Road, but not west of Vollmer Road.
- Sterling Ranch Road has been constructed between Marksheffel Road and Dines Boulevard, but not north of Dines Boulevard.
- The completion of Dines Boulevard between Sterling Ranch Road and Vollmer Road.
- Only the short section of Briargate Parkway between Vollmer Road and Wheatland Drive has been constructed in the vicinity of the site.

When the distribution percentages (from Figure 8) are applied to the trip generation estimates (from Table 1), the resulting site-generated traffic volumes can be determined. Figure 9 shows the short-term site-generated traffic volume estimate and Figure 10 shows the intermediate-term site-generated traffic volumes estimate.

TOTAL TRAFFIC

Figure 11 shows the projected short-term total traffic. The short-term total traffic volumes include short-term background traffic volumes (from Figure 6) plus the short-term site-generated traffic volumes (from Figure 9). The short-term total traffic volumes assume only the short-term street connections shown in Figure 4.

Figure 12 shows the projected intermediate-term total traffic. The intermediate-term total traffic volumes include intermediate-term background traffic volumes (from Figure 7) plus the intermediate-term site-generated traffic volumes (from Figure 10). The intermediate-term total traffic volumes assume buildout of the residential portion of the Sterling Ranch development located in the vicinity of Marksheffel Road and Sterling Ranch Road. Applications for these developments have been previously submitted, but it is our understanding that these projects are currently on hold. If the areas east of the currently proposed short-term Sterling Ranch filings are developed prior to those assumed in the intermediate-term, the analysis may need to be updated.

LONG-TERM TRAFFIC

Please refer to the master traffic report—the June 5, 2008 *Sterling Ranch Updated Traffic Impact Analysis* by LSC—for the long-term peak-hour traffic volume projections and level of service analysis. The original report is for the entire Sterling Ranch Sketch Plan.

PROJECTED INTERSECTION 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 represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 2 shows the level of service delay ranges.

Table 2

Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections Average Control Delay (seconds per vehicle)	Unsignalized Intersections Average Control Delay (seconds per vehicle)(1)
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

(1) 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

The key area intersection and site access points were analyzed to determine the projected levels of service for the short-term and intermediate-term background and total traffic volumes based on the unsignalized intersection analysis procedures from the *Highway Capacity Manual 6th Edition*. Figures 6, 7, 11, and 12 show the level of service analysis results. The level of service reports are attached.

The intersections of Dines/Vollmer and Briargate/Vollmer are projected to operate LOS B or better during the peak hours for all movements as stop-sign controlled intersections based on the projected short-term and intermediate-term total traffic volumes.

All of the site access points are projected to operate at a Level of Service A for all movements during the peak hours as stop sign-controlled intersections based on the projected intermediate-term total traffic volumes.

SUBDIVISION STREET CLASSIFICATIONS

Figure 13 shows the recommended street classifications for the internal streets within Homestead at Sterling Ranch Filing No. 2.

ROADWAY IMPROVEMENTS

Vollmer Road

Road improvements to Vollmer Road including auxiliary turn lanes as discussed in our October 2, 2017 transportation memorandum are required as part of the Subdivision Improvements Agreement (SIA) for Homestead at Sterling Ranch Filing No. 1 and Branding Iron at Sterling Ranch Filing No. 1. The applicant will be constructing an interim cross-section for Vollmer Road between Marksheffel Road and Briargate Parkway. The interim road improvement would widen the roadway to the east side. There would continue to be one through lane in each direction, but the interim road improvements would allow for southbound left-turn and northbound right-turn lanes at the Briargate Parkway/Vollmer, and Dines/Vollmer intersections. An escrow agreement requires a fair share contribution be deposited toward these improvements with each plat or replat within Sterling Ranch.

Dines Boulevard

Based on the projected intermediate-term total traffic volumes, the criteria contained in the El Paso County *Engineering Criteria Manual*, and the classification of Dines Boulevard as an Urban Collector, a northwest-bound right-turn deceleration lane would be required approaching Vollmer Road.

Based on the projected 2025 total traffic volumes, the criteria contained in the El Paso County *Engineering Criteria Manual* and the classification of Dines Boulevard as an Urban Collector,

Address for this plat specifically. Provide a table.

northbound left-turn lanes and southbound right-turn lanes would **not** be required approaching Cut Banks Drive and Wheatland Drive.

Wheatland Drive

Based on the projected 2025 total traffic volumes, the criteria contained in the El Paso County Engineering Criteria Manual and the classification of Wheatland Drive as an Urban Collector, a southbound left-turn lane and northbound right-turn lane would not be required approaching Niarada Way.

TRANSPORTATION IMPROVEMENT FEE PROGRAM

The applicant will be required to participate in the Countywide Transportation Improvement Fee Program. This project will annex into the 10 mil PID. Based on a per-lot upfront building permit fee of $1,221 per dwelling unit, the total building permit fee amount for the 104 lots would be $126,984.

* * * * *

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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH/KDF:ro/jas

Enclosures: Table 1
Figures 1-13
Traffic Count Reports
Level of Service Reports
Branding Iron at Sterling Ranch Fil. No. 1 Emergency Access Rd – Alt. Route Plan

Tables and Figures

TRANSPORTATION
CONSULTANTS, INC.

Table 1
Trip Generation Estimate
Homestead at Sterling Ranch Filing 2

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1]					Total External Trips Generated				
			Average Weekday Traffic	Morning Peak Hour		Evening Peak Hour		Average Weekday Traffic	Morning Peak Hour		Evening Peak Hour	
				In	Out	In	Out		In	Out	In	Out
210	Single-Family Detached Housing	104 DU[2]	9.44	0.19	0.56	0.62	0.37	982	19	58	65	38

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Approximate Scale
Scale: 1"= 3,000'

Figure 1

Vicinity Map

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

LSC TRANSPORTATION CONSULTANTS, INC.

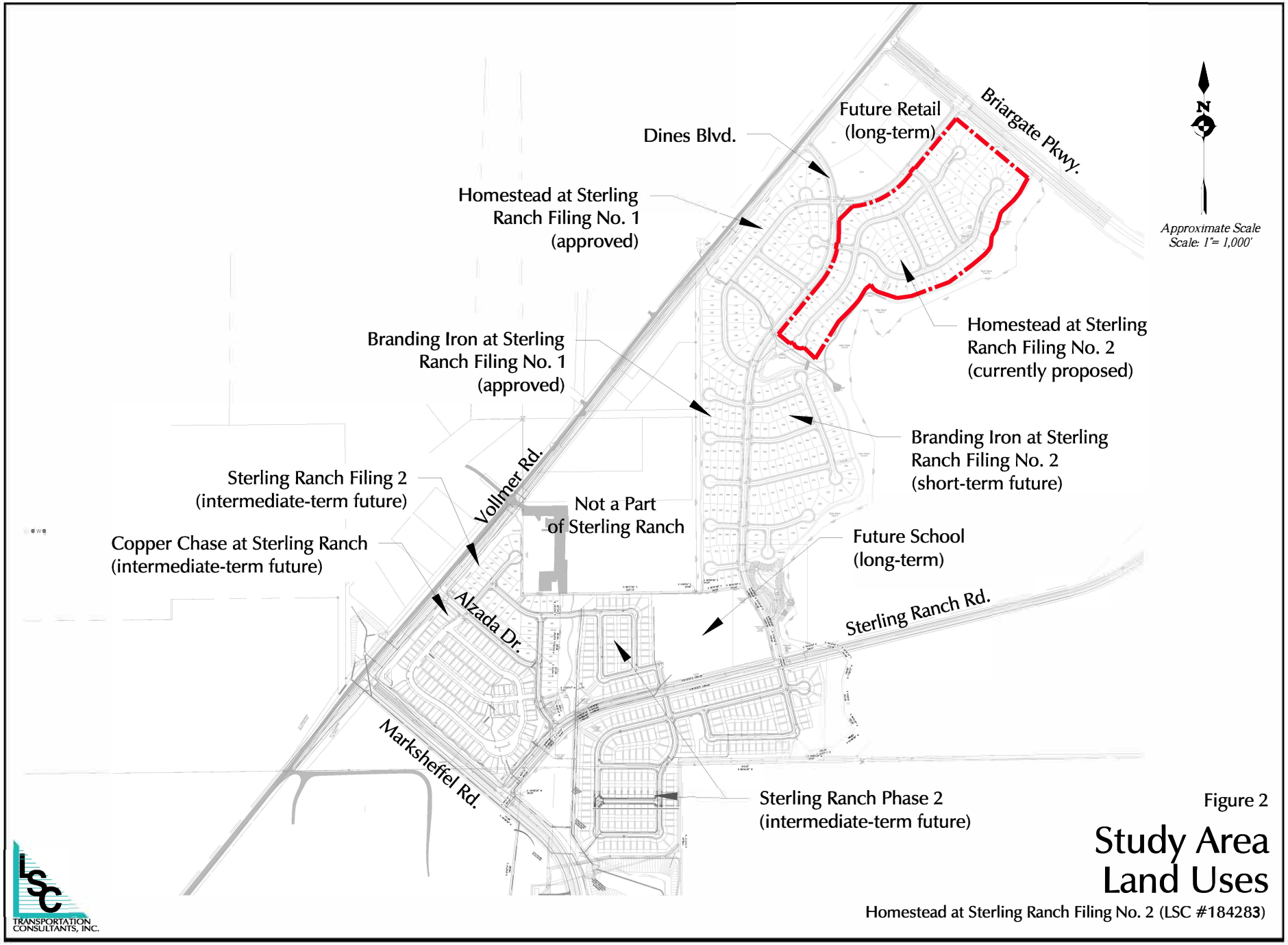
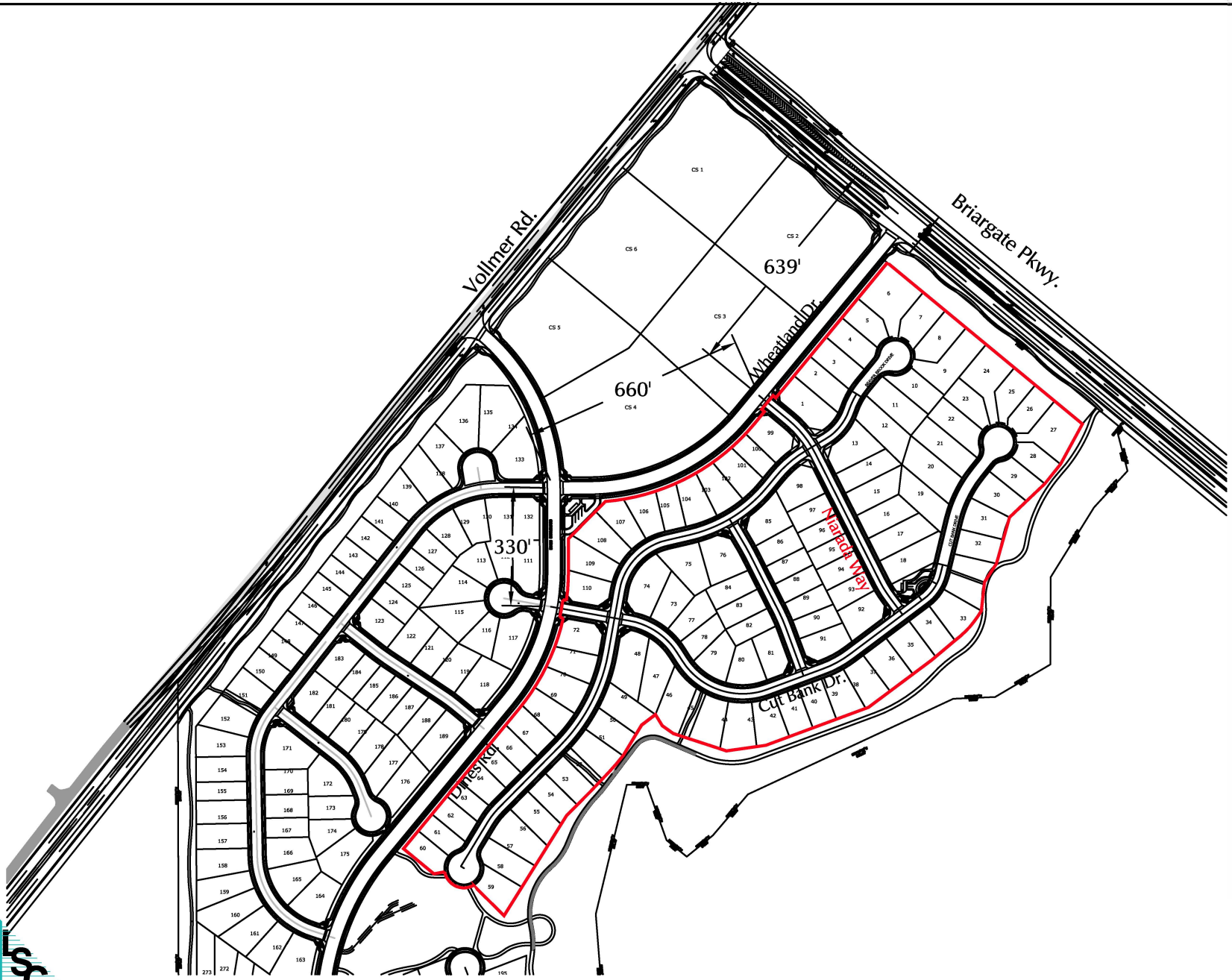


Figure 2

Study Area Land Uses

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 400'

Figure 3

Site Plan

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

LSC TRANSPORTATION CONSULTANTS, INC.

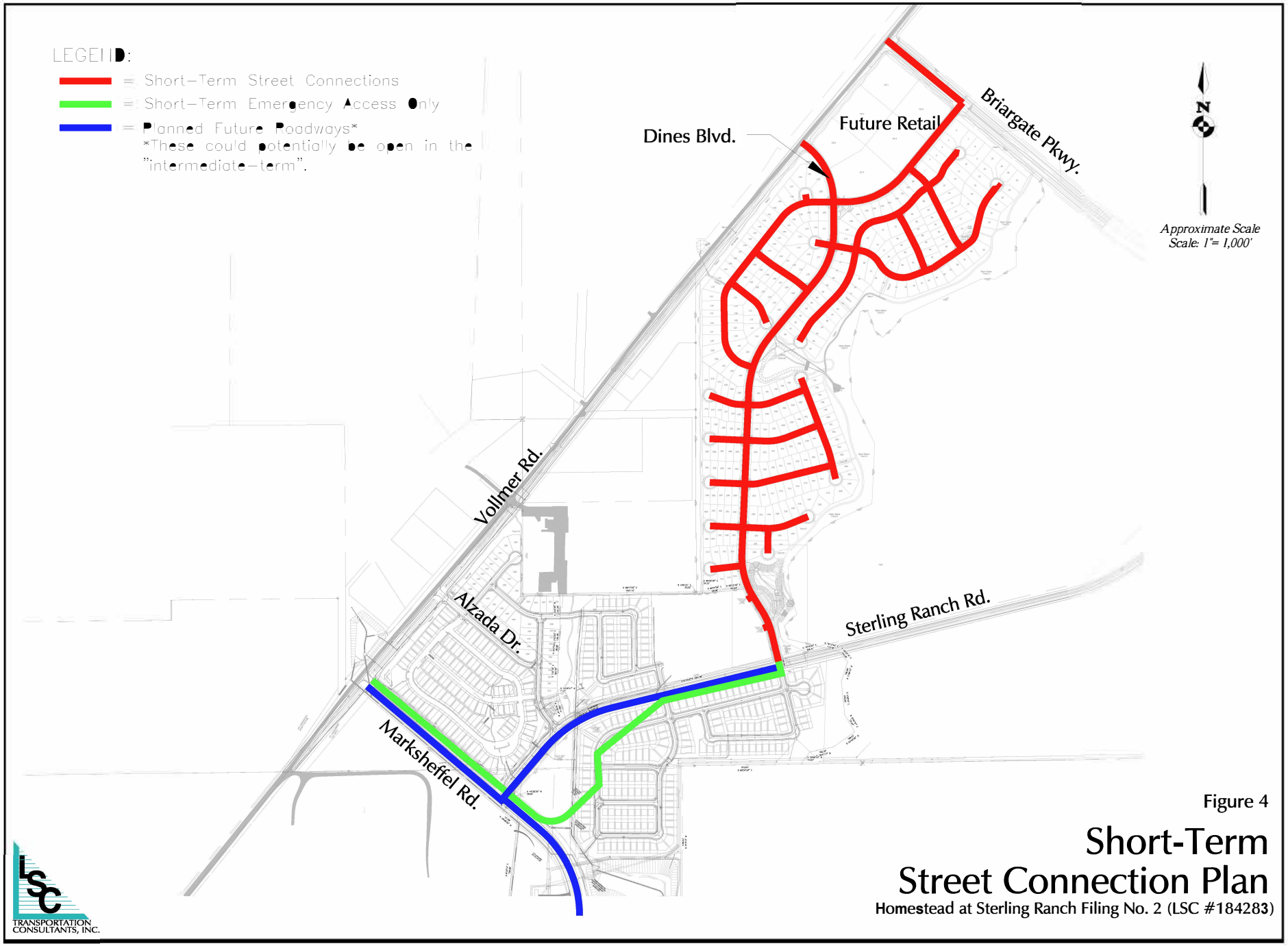
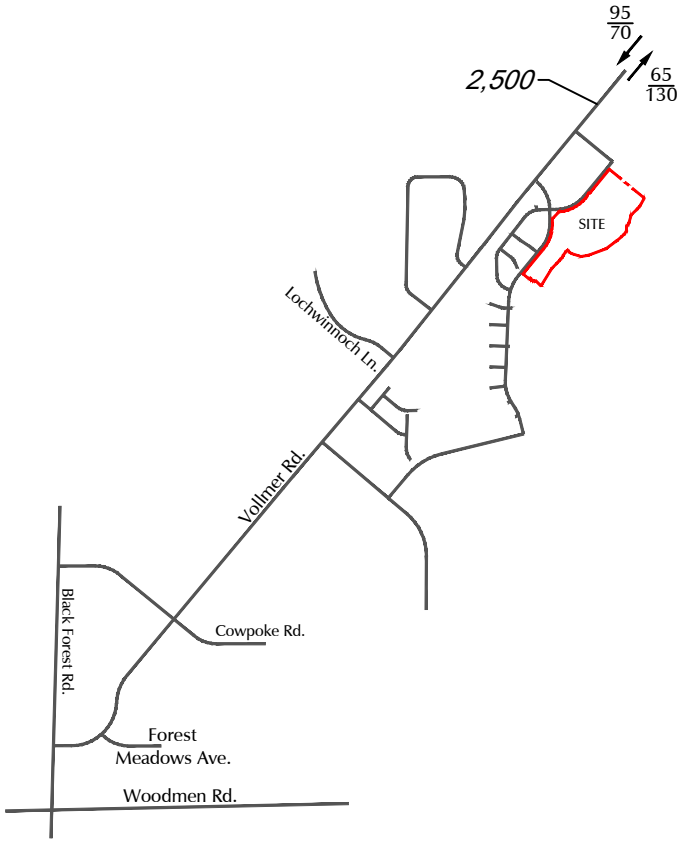


Figure 4

Short-Term Street Connection Plan

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 3,000'

LEGEND:

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

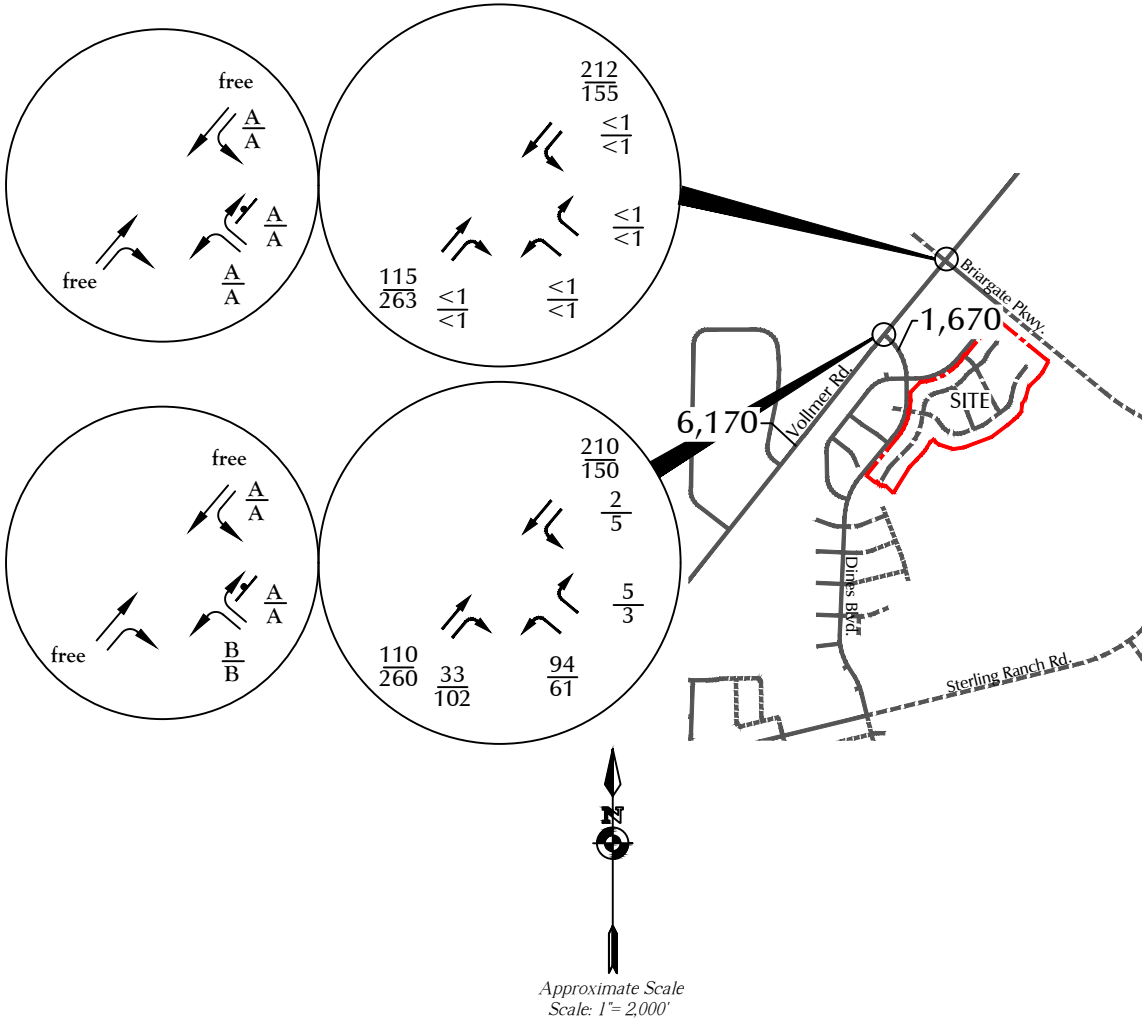
XXX = Average Weekday Traffic (vehicles per day) September 2017

TRANSPORTATION CONSULTANTS, INC.

Figure 5

Existing Traffic Volumes

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

$\frac{26}{31}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

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

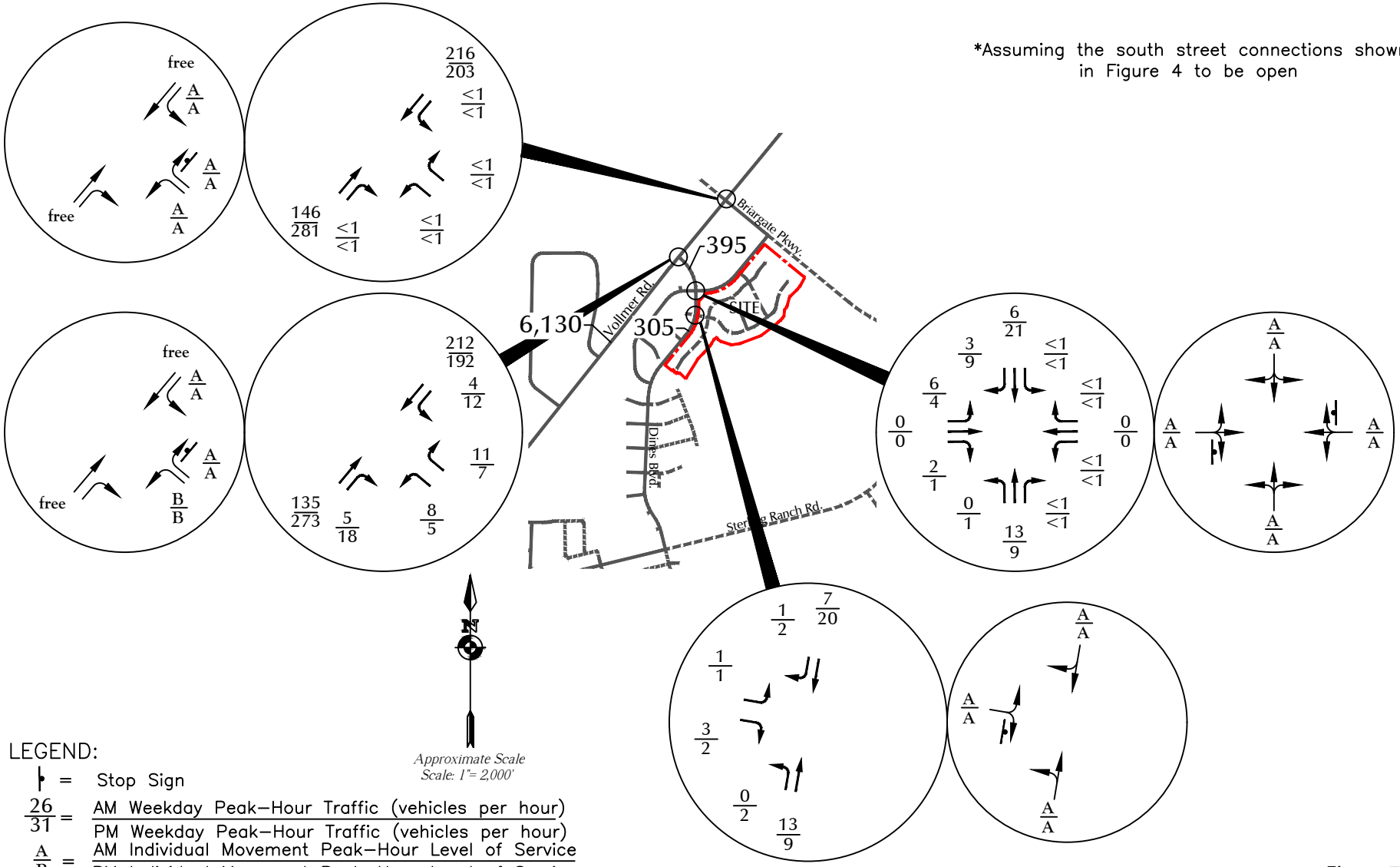
500 = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 6

Short-Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)



LEGEND:

= Stop Sign

$\frac{26}{31}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

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

500 = Average Weekday Traffic (vehicles per day)

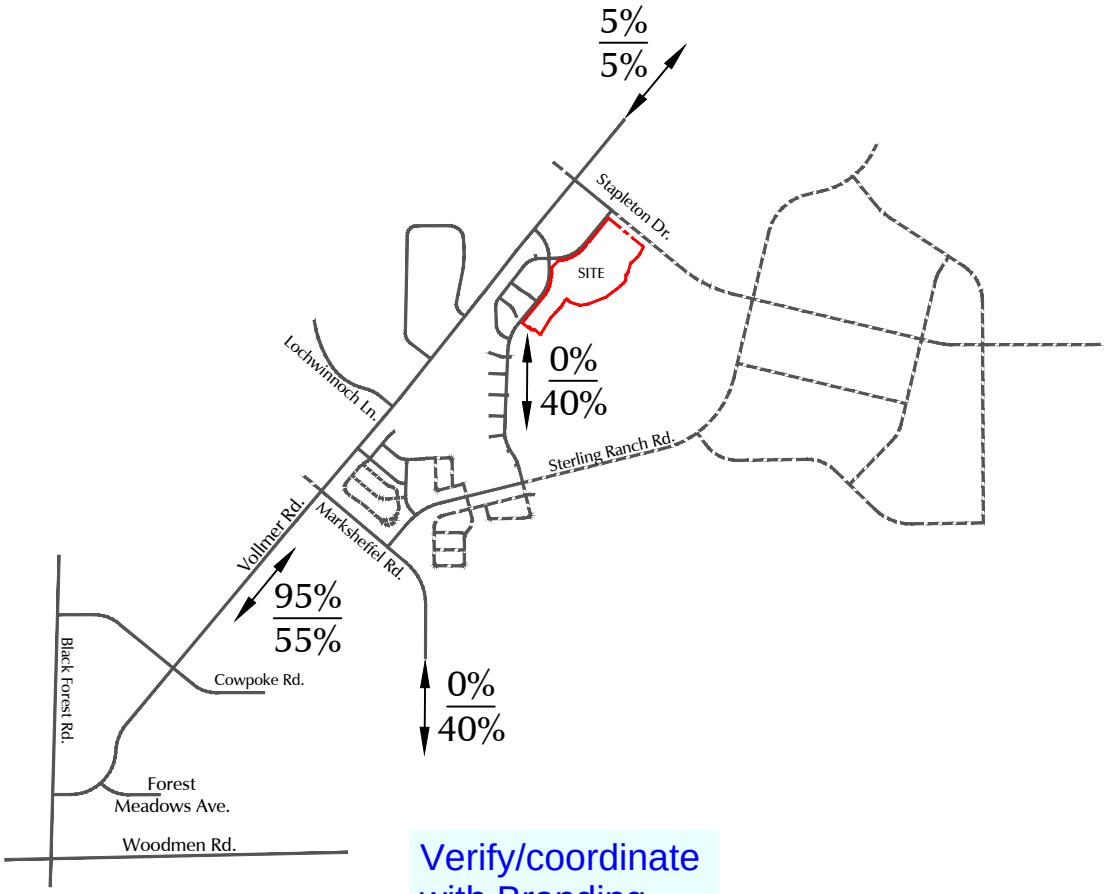
Figure 7

Intermediate-Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

*With South Street connections

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

TRANSPORTATION CONSULTANTS, INC.



N

Approximate Scale
Scale: 1"= 3,000'

Verify/coordinate with Branding Iron 2 TIS.

LEGEND:

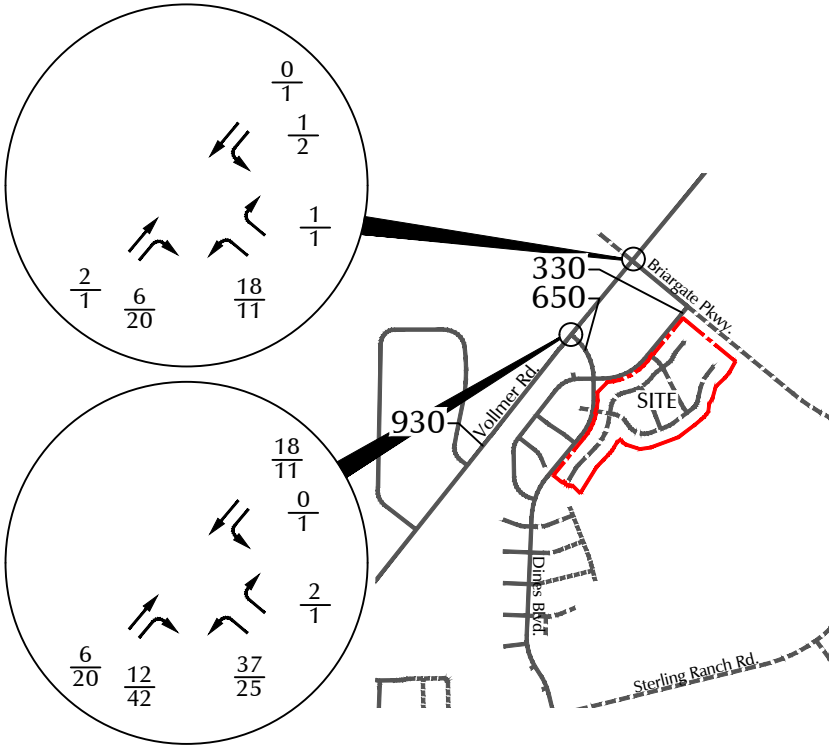
5%
5%
= Short–Term Percent Directional Distribution / Intermediate–term Percent Directional Distribution

TRANSPORTATION CONSULTANTS, INC.

Figure 8

Directional Distribution of Site-Generated Traffic

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)



LEGEND:

$\frac{26}{31}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

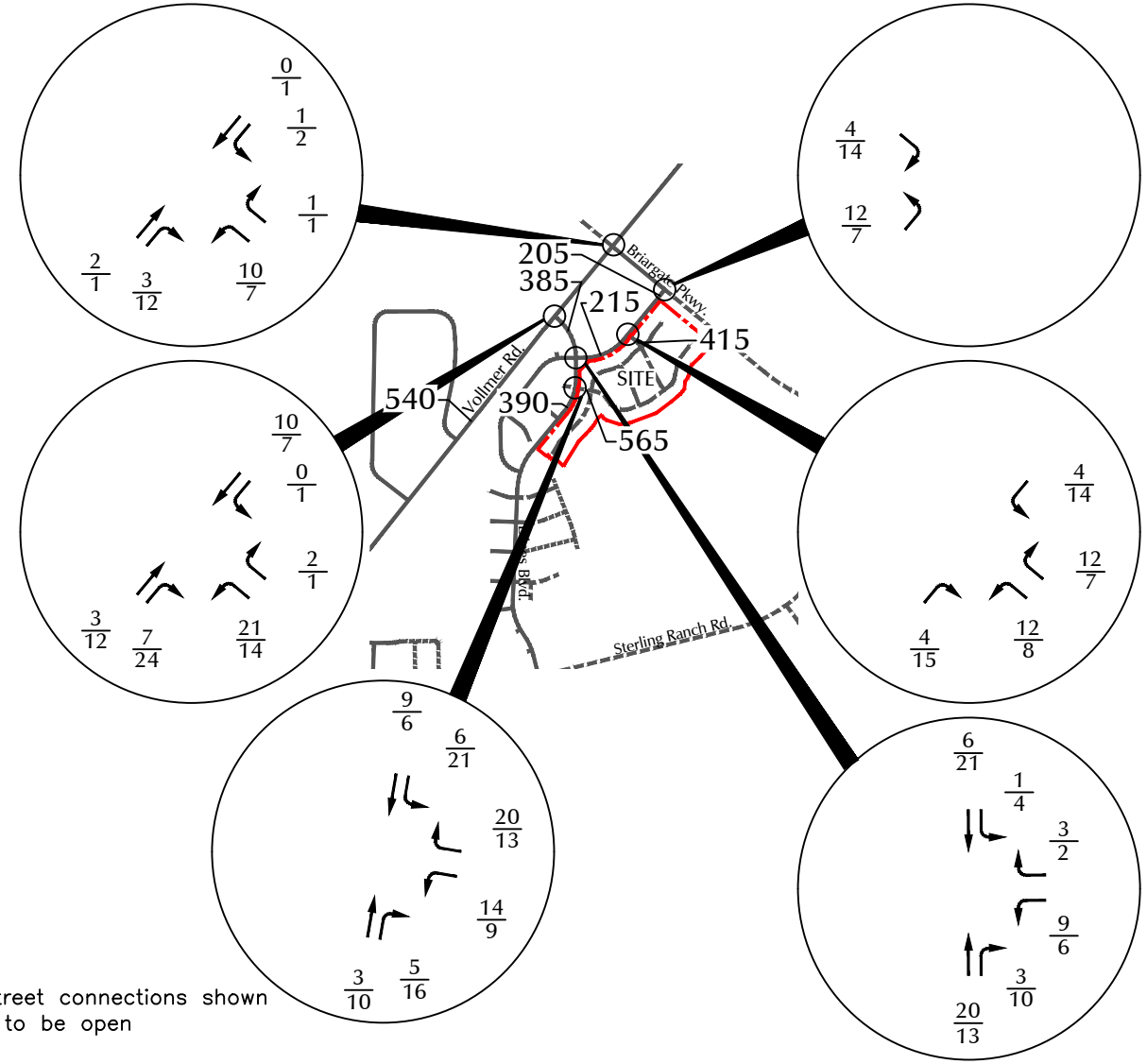
500 = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 9

Assignment of Short-Term Site-Generated Traffic

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)



*Assuming the south street connections shown in Figure 4 to be open

LEGEND:

$\frac{26}{31}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

500 = Average Weekday Traffic (vehicles per day)

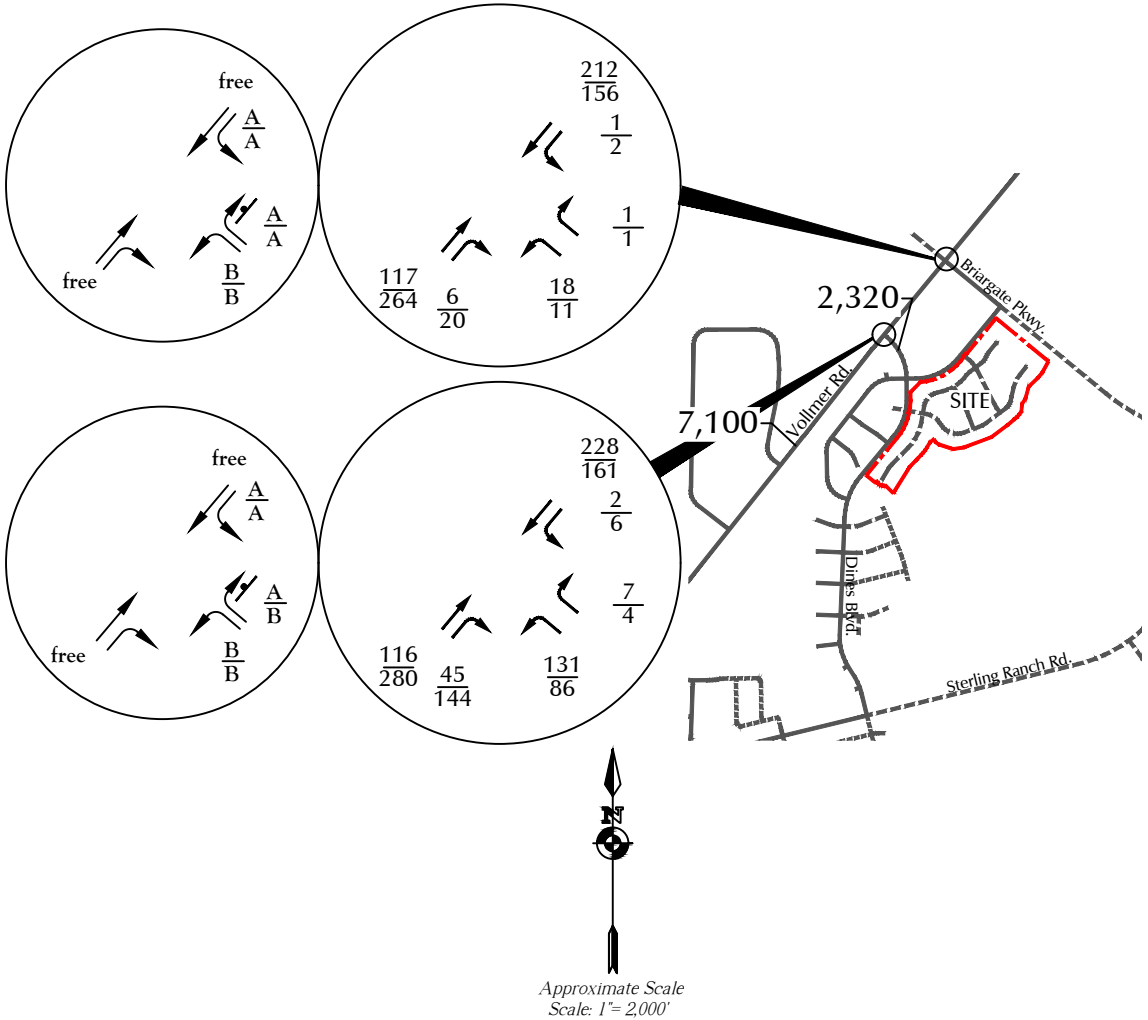
Figure 10

Assignment of Intermediate-Term Site-Generated Traffic

*With South Street connections

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

$\frac{26}{31}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

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

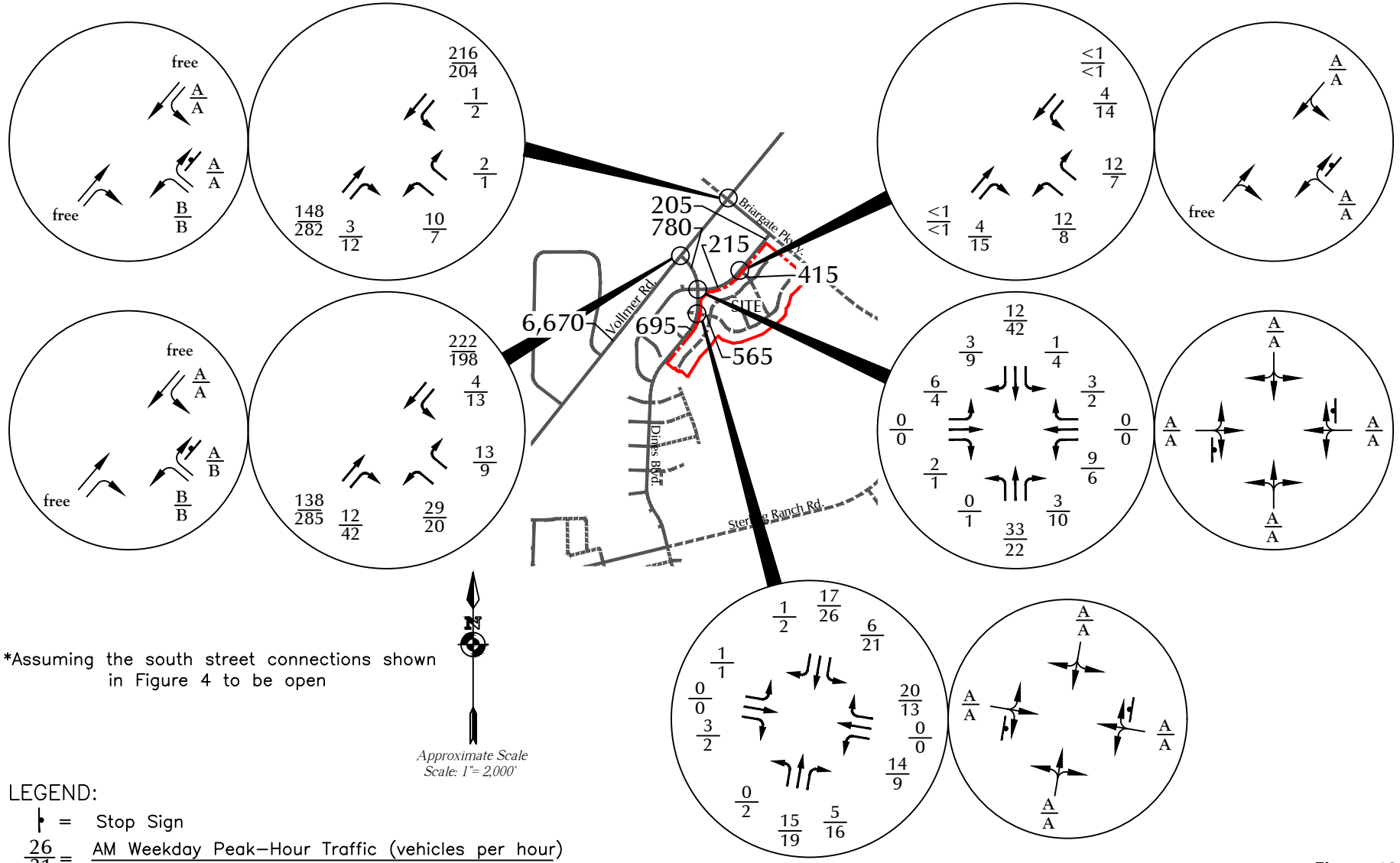
500 = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 11

Short-Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)



*Assuming the south street connections shown in Figure 4 to be open

Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

$\frac{26}{31}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

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

500 = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 12

Intermediate-Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

*With South Street connections

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

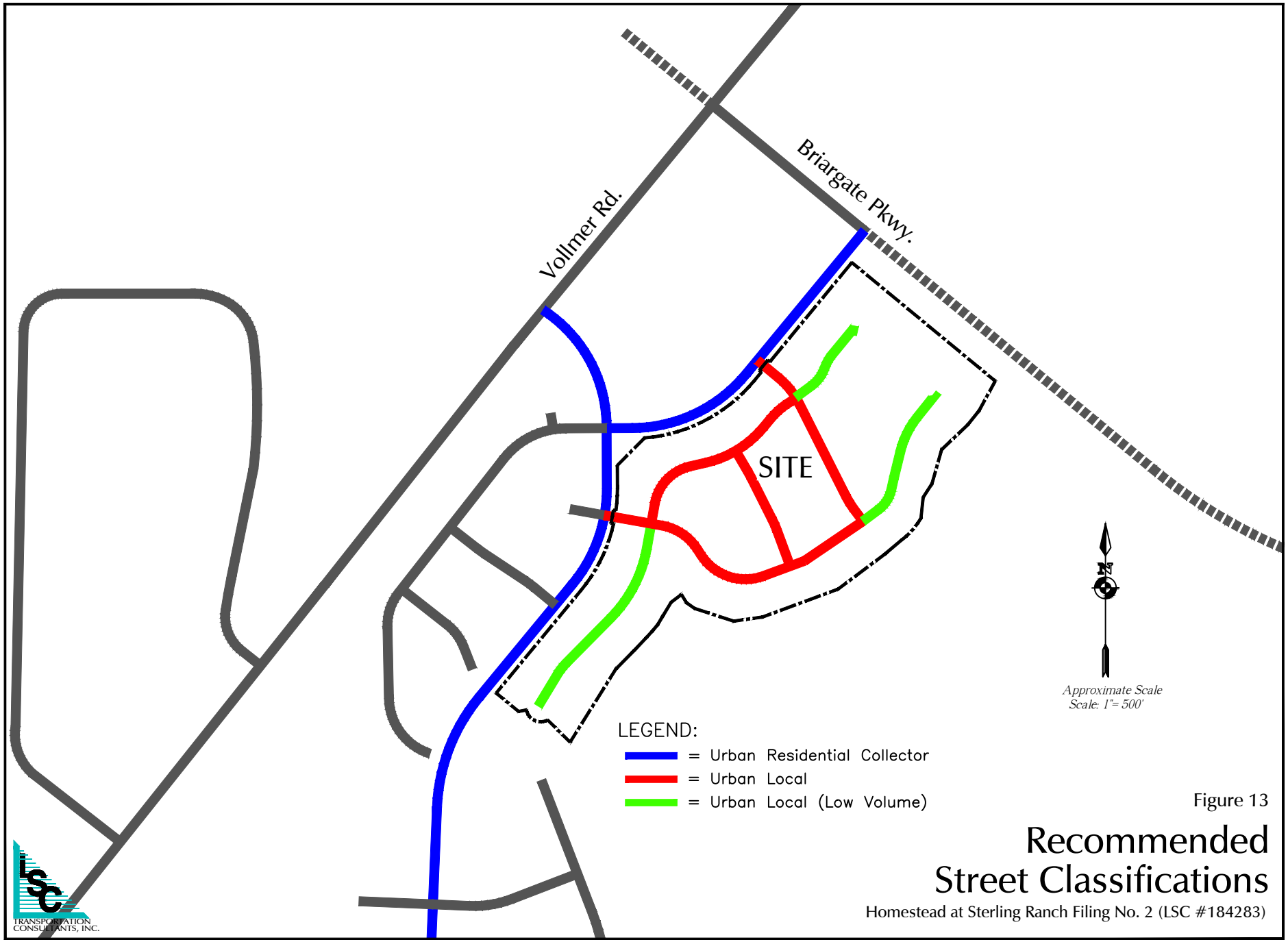


Figure 13

Recommended Street Classifications

Homestead at Sterling Ranch Filing No. 2 (LSC #184283)

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

COUNTER MEASURES INC.

1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Location: VOLLMER RD S/O POCO RD
City:
County: EL PASO
Direction: SOUTHBOUND-NORTHBOUND

Site Code: 092712
Station ID: 092712

Start	28-Sep-17	SB		NB		Combined		29-Sep	SB		NB		Combined	
Time	Thu	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Fri	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		0	25	1	16	1	41		*	*	*	*	*	*
12:15		0	12	0	25	0	37		*	*	*	*	*	*
12:30		1	12	1	26	2	38		*	*	*	*	*	*
12:45		0	18	0	18	0	36		*	*	*	*	*	*
01:00		0	24	0	16	0	40		*	*	*	*	*	*
01:15		0	16	0	23	0	39		*	*	*	*	*	*
01:30		0	25	2	29	2	54		*	*	*	*	*	*
01:45		0	17	0	20	0	37		*	*	*	*	*	*
02:00		1	21	0	34	1	55		*	*	*	*	*	*
02:15		0	22	2	23	2	45		*	*	*	*	*	*
02:30		0	21	1	28	1	49		*	*	*	*	*	*
02:45		0	14	0	37	0	51		*	*	*	*	*	*
03:00		0	40	0	28	0	68		*	*	*	*	*	*
03:15		0	15	1	27	1	42		*	*	*	*	*	*
03:30		0	24	2	30	2	54		*	*	*	*	*	*
03:45		3	18	0	31	3	49		*	*	*	*	*	*
04:00		1	19	1	25	2	44		*	*	*	*	*	*
04:15		3	18	1	30	4	48		*	*	*	*	*	*
04:30		0	30	0	25	0	55		*	*	*	*	*	*
04:45		6	18	0	30	6	48		*	*	*	*	*	*
05:00		7	19	4	32	11	51		*	*	*	*	*	*
05:15		4	13	0	28	4	41		*	*	*	*	*	*
05:30		19	15	3	30	22	45		*	*	*	*	*	*
05:45		5	16	2	30	7	46		*	*	*	*	*	*
06:00		20	12	6	37	26	49		*	*	*	*	*	*
06:15		16	14	6	18	22	32		*	*	*	*	*	*
06:30		27	16	9	33	36	49		*	*	*	*	*	*
06:45		18	20	4	12	22	32		*	*	*	*	*	*
07:00		14	4	16	15	30	19		*	*	*	*	*	*
07:15		27	2	14	16	41	18		*	*	*	*	*	*
07:30		22	6	12	19	34	25		*	*	*	*	*	*
07:45		16	4	21	16	37	20		*	*	*	*	*	*
08:00		20	4	12	21	32	25		*	*	*	*	*	*
08:15		26	3	16	14	42	17		*	*	*	*	*	*
08:30		23	5	14	15	37	20		*	*	*	*	*	*
08:45		16	5	18	14	34	19		*	*	*	*	*	*
09:00		34	4	27	17	61	21		*	*	*	*	*	*
09:15		19	7	11	4	30	11		*	*	*	*	*	*
09:30		16	6	12	13	28	19		*	*	*	*	*	*
09:45		18	4	12	6	30	10		*	*	*	*	*	*
10:00		21	3	10	7	31	10		*	*	*	*	*	*
10:15		18	4	28	1	46	5		*	*	*	*	*	*
10:30		28	0	15	2	43	2		*	*	*	*	*	*
10:45		28	1	16	1	44	2		*	*	*	*	*	*
11:00		21	1	13	1	34	2		*	*	*	*	*	*
11:15		13	0	18	1	31	1		*	*	*	*	*	*
11:30		15	1	14	3	29	4		*	*	*	*	*	*
11:45		14	0	20	3	34	3		*	*	*	*	*	*
Total		540	598	365	930	905	1528		0	0	0	0	0	0
Day Total		1138		1295		2433			0		0		0	
% Total		22.2%	24.6%	15.0%	38.2%				0.0%	0.0%	0.0%	0.0%		
Peak	-	08:15	02:15	08:15	05:15	08:15	02:45	-	-	-	-	-	-	-
Vol.	-	99	97	75	125	174	215	-	-	-	-	-	-	-
P.H.F.		0.728	0.606	0.694	0.845	0.713	0.790							

ADT	ADT 2,433	AADT 2,433

Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	94	5	110	33	2	210
Future Vol, veh/h	94	5	110	33	2	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	5	120	36	2	259

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	383	120	0	0	156	0
Stage 1	120	-	-	-	-	-
Stage 2	263	-	-	-	-	-
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	620	931	-	-	1424	-
Stage 1	905	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	619	931	-	-	1424	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	619	931	1424	-
HCM Lane V/C Ratio	-	-	0.165	0.006	0.002	-
HCM Control Delay (s)	-	-	12	8.9	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	3	260	102	5	150
Future Vol, veh/h	61	3	260	102	5	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	3	283	111	6	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	283	0	0	394	0
Stage 1	283	-	-	-	-	-
Stage 2	197	-	-	-	-	-
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	545	756	-	-	1165	-
Stage 1	765	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	542	756	-	-	1165	-
Mov Cap-2 Maneuver	542	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	542	756	1165	-
HCM Lane V/C Ratio	-	-	0.122	0.004	0.005	-
HCM Control Delay (s)	-	-	12.6	9.8	8.1	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	131	7	116	45	2	228
Future Vol, veh/h	131	7	116	45	2	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	142	8	126	49	2	281

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	411	126	0	0	175	0
Stage 1	126	-	-	-	-	-
Stage 2	285	-	-	-	-	-
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	597	924	-	-	1401	-
Stage 1	900	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	596	924	-	-	1401	-
Mov Cap-2 Maneuver	596	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	596	924	1401	-
HCM Lane V/C Ratio	-	-	0.239	0.008	0.002	-
HCM Control Delay (s)	-	-	12.9	8.9	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	1	117	6	1	212
Future Vol, veh/h	18	1	117	6	1	212
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	127	7	1	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	391	127	0	0	134	0
Stage 1	127	-	-	-	-	-
Stage 2	264	-	-	-	-	-
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	613	923	-	-	1451	-
Stage 1	899	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	612	923	-	-	1451	-
Mov Cap-2 Maneuver	612	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	612	923	1451	-
HCM Lane V/C Ratio	-	-	0.032	0.001	0.001	-
HCM Control Delay (s)	-	-	11.1	8.9	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	4	280	144	6	161
Future Vol, veh/h	86	4	280	144	6	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	4	304	157	7	199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	517	304	0	0	461	0
Stage 1	304	-	-	-	-	-
Stage 2	213	-	-	-	-	-
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	518	736	-	-	1100	-
Stage 1	748	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	515	736	-	-	1100	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	823	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	515	736	1100	-
HCM Lane V/C Ratio	-	-	0.182	0.006	0.007	-
HCM Control Delay (s)	-	-	13.5	9.9	8.3	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	1	264	20	2	156
Future Vol, veh/h	11	1	264	20	2	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	1	287	22	2	193

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	484	287	0	0	309	0
Stage 1	287	-	-	-	-	-
Stage 2	197	-	-	-	-	-
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	542	752	-	-	1252	-
Stage 1	762	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	752	-	-	1252	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	541	752	1252	-
HCM Lane V/C Ratio	-	-	0.022	0.001	0.002	-
HCM Control Delay (s)	-	-	11.8	9.8	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	11	135	5	4	212
Future Vol, veh/h	8	11	135	5	4	212
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	12	147	5	5	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	419	147	0	0	152	0
Stage 1	147	-	-	-	-	-
Stage 2	272	-	-	-	-	-
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	591	900	-	-	1429	-
Stage 1	880	-	-	-	-	-
Stage 2	774	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	589	900	-	-	1429	-
Mov Cap-2 Maneuver	589	-	-	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	589	900	1429	-
HCM Lane V/C Ratio	-	-	0.015	0.013	0.003	-
HCM Control Delay (s)	-	-	11.2	9.1	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	2	0	0	0	0	13	0	0	6	3
Future Vol, veh/h	6	0	2	0	0	0	0	13	0	0	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	2	0	0	0	0	14	0	0	7	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	23	23	9	24	24	14	10	0	-	-	-	0
Stage 1	9	9	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	10	10	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	989	870	1073	987	869	1066	1610	-	0	0	-	-
Stage 1	1012	888	-	1006	884	-	-	-	0	0	-	-
Stage 2	1006	884	-	1011	887	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	989	870	1073	985	869	1066	1610	-	-	-	-	-
Mov Cap-2 Maneuver	989	870	-	985	869	-	-	-	-	-	-	-
Stage 1	1012	888	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	1009	887	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1610	-	1009	-	-	-
HCM Lane V/C Ratio	-	-	0.009	-	-	-
HCM Control Delay (s)	0	-	8.6	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	0	12	7	1
Future Vol, veh/h	1	3	0	12	7	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	3	0	13	8	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	22	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	13	-	-	-	-	-
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	995	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1010	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1073	1611	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1611	-	1052	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	8.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	7	273	18	12	192
Future Vol, veh/h	5	7	273	18	12	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	8	297	20	15	237

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	564	297	0	0	317	0
Stage 1	297	-	-	-	-	-
Stage 2	267	-	-	-	-	-
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	487	742	-	-	1243	-
Stage 1	754	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	481	742	-	-	1243	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	481	742	1243	-
HCM Lane V/C Ratio	-	-	0.011	0.01	0.012	-
HCM Control Delay (s)	-	-	12.6	9.9	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	0	0	0	1	9	0	0	21	9
Future Vol, veh/h	4	0	1	0	0	0	1	9	0	0	21	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	1	0	0	0	1	10	0	0	23	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	40	40	28	41	45	10	33	0	-	-	-	0
Stage 1	28	28	-	12	12	-	-	-	-	-	-	-
Stage 2	12	12	-	29	33	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	964	852	1047	963	847	1071	1579	-	0	0	-	-
Stage 1	989	872	-	1009	886	-	-	-	0	0	-	-
Stage 2	1009	886	-	988	868	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	963	851	1047	961	846	1071	1579	-	-	-	-	-
Mov Cap-2 Maneuver	963	851	-	961	846	-	-	-	-	-	-	-
Stage 1	988	872	-	1008	885	-	-	-	-	-	-	-
Stage 2	1008	885	-	987	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	1579	-	979	-	-	-
HCM Lane V/C Ratio	0.001	-	0.006	-	-	-
HCM Control Delay (s)	7.3	0	8.7	0	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	2	0	0	0	2	9	0	0	20	2
Future Vol, veh/h	1	0	2	0	0	0	2	9	0	0	20	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	225	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	0	0	0	2	10	0	0	22	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	37	37	23	38	38	10	24	0	0	10	0	0
Stage 1	23	23	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	24	24	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	968	855	1054	967	854	1071	1591	-	-	1610	-	-
Stage 1	995	876	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	994	875	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	967	854	1054	964	853	1071	1591	-	-	1610	-	-
Mov Cap-2 Maneuver	967	854	-	964	853	-	-	-	-	-	-	-
Stage 1	994	876	-	1005	883	-	-	-	-	-	-	-
Stage 2	1005	883	-	992	875	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	0	1.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	1023	-	1610	-	-
HCM Lane V/C Ratio	0.001	-	-	0.003	-	-	-	-
HCM Control Delay (s)	7.3	-	-	8.5	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	13	138	12	4	222
Future Vol, veh/h	29	13	138	12	4	222
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	14	150	13	5	274

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	434	150	0	0	163	0
Stage 1	150	-	-	-	-	-
Stage 2	284	-	-	-	-	-
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	579	896	-	-	1416	-
Stage 1	878	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	896	-	-	1416	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	764	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	577	896	1416	-
HCM Lane V/C Ratio	-	-	0.055	0.016	0.003	-
HCM Control Delay (s)	-	-	11.6	9.1	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	2	148	3	1	216
Future Vol, veh/h	10	2	148	3	1	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	2	161	3	1	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	430	161	0	0	164	0
Stage 1	161	-	-	-	-	-
Stage 2	269	-	-	-	-	-
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	582	884	-	-	1414	-
Stage 1	868	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	581	884	-	-	1414	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	581	884	1414	-
HCM Lane V/C Ratio	-	-	0.019	0.002	0.001	-
HCM Control Delay (s)	-	-	11.3	9.1	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	4	4	0	12	12
Future Vol, veh/h	0	4	4	0	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	0	4	4	0	13	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	10	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	8	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1010	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1008	1082
Mov Cap-2 Maneuver	-	-	-	-	1008	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1015	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1044	-	-	1618	-
HCM Lane V/C Ratio	0.025	-	-	0.003	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	2	9	0	3	0	33	3	1	12	3
Future Vol, veh/h	6	0	2	9	0	3	0	33	3	1	12	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	2	10	0	3	0	36	3	1	13	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	56	56	15	56	56	38	16	0	0	39	0	0
Stage 1	17	17	-	38	38	-	-	-	-	-	-	-
Stage 2	39	39	-	18	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	941	835	1065	941	835	1034	1602	-	-	1571	-	-
Stage 1	1002	881	-	977	863	-	-	-	-	-	-	-
Stage 2	976	862	-	1001	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	937	834	1065	938	834	1034	1602	-	-	1571	-	-
Mov Cap-2 Maneuver	937	834	-	938	834	-	-	-	-	-	-	-
Stage 1	1002	880	-	977	863	-	-	-	-	-	-	-
Stage 2	973	862	-	998	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.8	0	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	966	960	1571	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.014	0.001	-	-
HCM Control Delay (s)	0	-	-	8.8	8.8	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	0	3	14	0	20	0	15	5	6	17	1
Future Vol, veh/h	1	0	3	14	0	20	0	15	5	6	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	15	0	22	0	16	5	7	18	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	63	54	19	53	52	19	19	0	0	21	0	0
Stage 1	33	33	-	19	19	-	-	-	-	-	-	-
Stage 2	30	21	-	34	33	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	932	837	1059	946	839	1059	1597	-	-	1595	-	-
Stage 1	983	868	-	1000	880	-	-	-	-	-	-	-
Stage 2	987	878	-	982	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	834	1059	940	836	1059	1597	-	-	1595	-	-
Mov Cap-2 Maneuver	910	834	-	940	836	-	-	-	-	-	-	-
Stage 1	983	865	-	1000	880	-	-	-	-	-	-	-
Stage 2	967	878	-	975	865	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	8.7	0	1.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	1017	1007	1595	-	-
HCM Lane V/C Ratio	-	-	-	0.004	0.037	0.004	-	-
HCM Control Delay (s)	0	-	-	8.6	8.7	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	9	285	42	13	198
Future Vol, veh/h	20	9	285	42	13	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	10	310	46	16	244

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	586	310	0	0	356	0
Stage 1	310	-	-	-	-	-
Stage 2	276	-	-	-	-	-
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	473	730	-	-	1203	-
Stage 1	744	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	467	730	-	-	1203	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	771	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	467	730	1203	-
HCM Lane V/C Ratio	-	-	0.047	0.013	0.013	-
HCM Control Delay (s)	-	-	13.1	10	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	1	282	12	2	204
Future Vol, veh/h	7	1	282	12	2	204
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	1	307	13	2	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	563	307	0	0	320	0
Stage 1	307	-	-	-	-	-
Stage 2	256	-	-	-	-	-
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	487	733	-	-	1240	-
Stage 1	746	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	486	733	-	-	1240	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	486	733	1240	-
HCM Lane V/C Ratio	-	-	0.016	0.001	0.002	-
HCM Control Delay (s)	-	-	12.5	9.9	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	15	14	0	8	7
Future Vol, veh/h	0	15	14	0	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	0	16	15	0	9	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	38	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	30	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	974	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	965	1074
Mov Cap-2 Maneuver	-	-	-	-	965	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1602	-
HCM Lane V/C Ratio	0.016	-	-	0.009	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	1	6	0	2	1	22	10	4	42	9
Future Vol, veh/h	4	0	1	6	0	2	1	22	10	4	42	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	1	7	0	2	1	24	11	4	46	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	92	96	51	92	96	30	56	0	0	35	0	0
Stage 1	59	59	-	32	32	-	-	-	-	-	-	-
Stage 2	33	37	-	60	64	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	892	794	1017	892	794	1044	1549	-	-	1576	-	-
Stage 1	953	846	-	984	868	-	-	-	-	-	-	-
Stage 2	983	864	-	951	842	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	791	1017	888	791	1044	1549	-	-	1576	-	-
Mov Cap-2 Maneuver	888	791	-	888	791	-	-	-	-	-	-	-
Stage 1	952	843	-	983	867	-	-	-	-	-	-	-
Stage 2	980	863	-	947	839	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.9	0.2	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1549	-	-	911	922	1576	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.009	0.003	-	-
HCM Control Delay (s)	7.3	0	-	9	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	0	2	9	0	13	2	19	16	21	26	2
Future Vol, veh/h	1	0	2	9	0	13	2	19	16	21	26	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	10	0	14	2	21	17	23	28	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	116	117	29	110	110	30	30	0	0	38	0	0
Stage 1	75	75	-	34	34	-	-	-	-	-	-	-
Stage 2	41	42	-	76	76	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	861	773	1046	868	780	1044	1583	-	-	1572	-	-
Stage 1	934	833	-	982	867	-	-	-	-	-	-	-
Stage 2	974	860	-	933	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	839	761	1046	856	768	1044	1583	-	-	1572	-	-
Mov Cap-2 Maneuver	839	761	-	856	768	-	-	-	-	-	-	-
Stage 1	933	821	-	981	866	-	-	-	-	-	-	-
Stage 2	960	859	-	917	820	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.9	0.4	3.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	967	958	1572	-	-
HCM Lane V/C Ratio	0.001	-	-	0.003	0.025	0.015	-	-
HCM Control Delay (s)	7.3	0	-	8.7	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Additional Attachments

Emergency Access Road - Alternative Route Plan

TRANSPORTATION
CONSULTANTS, INC.

BRANDING IRON AT STERLING RANCH FIL. NO. 1

BETWEEN VOLLMER ROAD - DINES BOULEVARD

COUNTY OF EL PASO, STATE OF COLORADO

EMERGENCY ACCESS RD - ALT. ROUTE PLAN

FEBRUARY 2019

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO PROVIDE THE TYPICAL CROSS SECTION AND SCHEMATIC ROUTE FOR A TEMPORARY FIRE ACCESS ROADWAY TO THE DEVELOPED PORTION OF THE SITE, THE PLAN IS NOT INTENDED TO SERVE AS A DETAILED CONSTRUCTION DRAWING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE ROADWAY, UPON CONSTRUCTION, MEETS THE REQUIREMENTS OF THE BLACK FOREST FIRE PROTECTION DISTRICT.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
4. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
5. ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS.
6. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.
7. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.

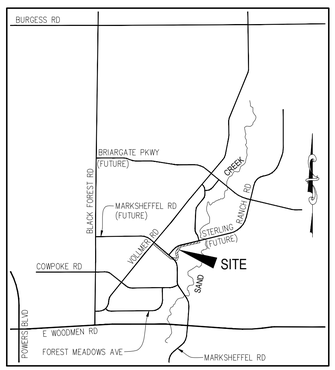
EMERGENCY ACCESS ROAD
ALT. ROUTE PLAN

EMERGENCY ACCESS ROAD
TYPICAL SECTION
SCALE: NTS

* DIRECTION OF DRAINAGE DEPENDANT UPON EXISTING LOCAL TOPOGRAPHY

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742	FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485	GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300	ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 495-2283
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460	(719) COMMUNICATIONS: (U.N.C.C.	QWEST COMMUNICATIONS LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769		



VICINITY MAP
N.T.S.

APPROVALS:

BLACK FOREST FIRE PROTECTION DISTRICT:

THIS DOCUMENT HAVE BEEN REVIEWED AND APPROVED.

FOR AND ON BEHALF OF THE BLACK FOREST FIRE PROTECTION DISTRICT — DATE

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE THIS SET OF CONSTRUCTION DOCUMENTS.

JAMES F. MORLEY — DATE
SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903
(719) 471-1742

STERLING RANCH METROPOLITAN DISTRICT:

THIS DOCUMENT HAVE BEEN REVIEWED AND APPROVED.

FOR AND ON BEHALF OF THE STERLING RANCH METRO DISTRIC — DATE

CONDITIONS:

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

BRANDING IRON AT STERLING RANCH FIL. NO. 1
EMERGENCY ACCESS RD - ALT ROUTE PLAN
PROJECT NO. 09-002 | DESIGNED BY: DM | DRAWN BY: JWP | CHECKED BY: VAS | SCALE: HORIZONTAL: N/A VERTICAL: N/A | DATE: 11/14/2018 | SHEET 2 OF 6 | SI02

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
DARIN L. MOFFETT, COLORADO P.E. NO. 38923

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION