Also see comment letter.

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Retreat at TimberRidge Filing No. 1
Traffic Memorandum
(LSC #194280)
March 22, 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
3-22-19
PROFESSIONAL ENGINEER

Developer's Statement

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

MAR 2 2 2019
Date

Engineering Review
05/20/2019 8:34:06 AM
dsdrice
JeffRice@elpasoco.com
(719) 520-7877
EPC Planning & Community
Development Department

SF-19-009

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March 22, 2019

Loren J. Moreland
Vice President / Project Manager
Classic Homes
6385 Corporate Drive, Suite 200
Colorado Springs, CO

RE: Retreat at TimberRidge Filing No. 1
El Paso County, CO
Traffic Technical Memorandum
LSC #194280

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this traffic technical memorandum for the Retreat at TimberRidge Filing No. 1. The Retreat at TimberRidge is located generally east of Vollmer Road and south of Arroya Lane in El Paso County, Colorado. LSC prepared a traffic impact study (TIS) for the entire Retreat at TimberRidge PUD development plan dated January 25, 2018 and a traffic memorandum that addressed phasing of that development dated June 29, 2018. The lot and street plan has not changed since completion of those reports. This memorandum is intended as a site-specific, final plat traffic report for the currently proposed filing.

REPORT CONTENTS

This report presents:

- A description of Retreat at TimberRidge filings that are currently under review, currently proposed, and planned for the future.
- The recommended street classifications for the internal streets within the currently proposed Retreat at TimberRidge Filing No. 1.
- Improvements needed with Retreat at TimberRidge Filing No. 1.
- The project's obligation to the County roadway improvement fee program.

LAND USE AND ACCESS

The Retreat at TimberRidge Preliminary Plan area includes the 203 lots for single-family homes located east of Vollmer Road and two lots for single-family homes located west of Vollmer Road and south of Arroya Lane. The June 2018 transportation memorandum included analysis of the PUD plan by phase.

Figure 1 from that report shows the phasing plan. No changes have been made to the PUD plan since completion of that memorandum. The current status of each phase is discussed below.

Filings Currently Under Review

The TimberRidge Estates Filing No. 1 (different from "Retreat at TimberRidge" Filing No. 1) is currently under review by El Paso County. This filing includes 10 lots for single-family homes located east of Vollmer Road and north of Arroya Lane. Access is to Arroya Lane only. The location of these lots is consistent with what was assumed for Phase 1 in the June 2018 transportation memorandum. LSC completed a transportation memorandum for this filing dated April 19, 2018.

A plan is also currently under review for two lots for single-family homes on the west side of Vollmer Road. These two lots were included in Phase 2 in the June 2018 transportation memorandum

Currently Proposed Filing No. 1

The Retreat at TimberRidge Filing 1 Filing No. 1 is currently proposed to include 70 lots for single-family homes. The location of the lots within this filing includes the remaining 11 lots assumed in Phase 2 in the June 2018 transportation memorandum plus the 59 lots assumed in Phase 3 of that memorandum. Access is proposed to an extension of Poco Road. North/south street segments to Arroya Lane will be constructed initially as gravel roads as part of this filing to provide a secondary emergency access.

one?

SUBDIVISION STREET CLASSIFICATIONS

Figure 2 from the June 2018 transportation memorandum showed the recommended street classifications for the internal streets within the Retreat at TimberRidge. The recommendations within the Filing No. 1 area are still valid.

ROADWAY IMPROVEMENTS

Table 3 from the June 2018 contained a summary of needed improvements for the entire TimberRidge PUD plan by phase. The currently proposed TimberRidge Filing No. 1 includes all of the lots identified in that memorandum as Phases 2 and 3 except for two lots located west of Vollmer Road which are currently under separate review. All recommendations in that table are still valid. The improvements specially needed with Phases 2 and 3 have been repeated below.

- Extend Poco Road to the east including the creek crossing.
- Construct a gravel road to provide secondary emergency access through the Phase 4 area to Arroya Lane (this gravel road would be replaced with the subdivision streets in Phase 4).

As identified in the 2018 memorandum, a northbound right-turn deceleration lane is not anticipated to be required on Vollmer Road approaching Poco Road until Phase 5. Based on the Filing No. 1 trip

Address what improvements need to be done to Vollmer Road to bring it up to standards around the proposed access and to the south (shoulders, widening...).

If there's any construction wouldn't it make sense to do the turn lane now?

generation and the distribution shown in the master TIS, the Filing-one-only northbound right turn volume would be 37 vehicles per hour during the afternoon peak hour.

ROADWAY IMPROVEMENT FEE PROGRAM

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Retreat at TimberRidge Filing No. 1 will join the ten-mil PID. The 2019 ten-mil PID building permit fee portion associated with this option is $1,221 per single-family dwelling unit. Based on 70 lots, the total building permit fee would be $85,470.

* * * * *

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

Enclosures: None

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EPC, EN
10/25/18

Retreat at Timber Ridge
Preliminary Plan
Traffic Impact Analysis

PCD File No: SP-18-002
(LSC #174030)
April 12, 2018

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.

Developer's Statement

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

John R. Martz

Date 4/12/18

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April 12, 2018

Mr. Peter Martz
Arroyo Investments
P.O. Box 50223
Colorado Springs, CO 80949

RE: Retreat at Timber Ridge
Preliminary Plan
El Paso County, Colorado
Transportation Memorandum
LSC #174030

Dear Mr. Peter:

LSC Transportation Consultants, Inc. has prepared this transportation memorandum to accompany the preliminary plan submittal for the Retreat at Timber Ridge residential development to be located generally east of Vollmer Road and south of Arroya Lane in El Paso County, Colorado. The site location is shown in Figure 1. LSC prepared a traffic impact study (TIS) for the entire Retreat at Timber Ridge PUD development plan dated January 25, 2018. A copy of this report is attached. The lot and street plan has not changed since completion of that report. This memorandum contains the following:

- The proposed land use and roadway improvement phasing.
- The projected average weekday and peak-hour vehicle-trips to be generated by the currently proposed preliminary plan land uses **by phase**.
- Recommendations for street functional classifications for roads and streets within the preliminary plan.
- The projected timing of the required roadway improvements and turn lane improvement on Vollmer Road.

SITE DEVELOPMENT AND LAND USE

Land Use

The currently proposed Retreat at Timber Ridge Preliminary Plan area includes the 203 lots for single-family homes located east of Vollmer Road and 2 lots for single family homes located west of Vollmer Road and south of Arroya Lane. The currently proposed preliminary plan does not include the area northwest of Vollmer Road/Arroya Lane. The lot layout, street network, and

access points from the plan shown in the January 2018 PUD TIS for this area have not changed; however, the phasing plan has changed. Figure 1 shows the currently proposed phasing plan.

As part of Phase 1, eighty feet of right-of-way will be dedicated for Arroya Lane; however, Arroya Lane will remain a gravel road until a later phase when the 200-average-daily-traffic threshold requiring paving is reached. The eighty-foot right-of-way is being dedicated to accommodate a future expansion of the roadway cross section if ever needed in the future. The storm sewer crossing under Arroya Lane will be built with Phase 1. The existing temporary turnaround on the east end of Arroya Lane will be moved to coincide with the intersection of Arroya/Nature Refuge Road. A 50-foot pavement apron will be constructed at the tie-in to Vollmer Road. Nature Refuge will be constructed as a gravel road with this phase.

Phases 2 and 3 are planned to be constructed concurrently. Poco Road will be extended east through the site including the creek crossing. The north/south street segments through Phase 4 will be constructed as a gravel road as part of Phases 2 and 3 to provide a secondary emergency access. This section will be upgraded to Urban Local standards with Phase 4. Phase 2 is also planned to include the construction of an interim access for the two lots west of Vollmer Road and south of Arroya Lane to Vollmer Road 440 feet south of the existing Arroya/Vollmer intersection. A deviation request for this interim access has been submitted and is currently under review.

Arroya will be upgraded to paved urban local roadway section, either the section from Vollmer to the Filing 5 access or the entire section from Vollmer to the temporary turnaround at Nature Refuge Road, depending on the timing of Phases 4 and 5 and the projected average daily traffic. (Once the average daily traffic exceeds 200 vehicles per day, upgrade would be required.)

DEVIATION REQUESTS

The following deviation request are either currently under review or are being e submitted with this preliminary plan application:

- Deviation to allow for a temporary access to the west side Vollmer Road south of Arroya Lane (currently under review)

- Deviation to permit Nature Refuge Drive to be a gravel road

- Deviation to permit delay of 50-foot paved apron on Nature Refuge Way until Arroya Lane is paved

- Deviation to permit an interim cul-de-sac length of greater than ¼ mile for the 10 lots on Nature Refuge Way

- Deviation to permit an emergency access as a second access for lots east of Sand Creek – Waiver of the LDC. More than 25 lots on a dead-end road (2nd access).

TRIP GENERATION

Estimates of the traffic volumes expected to be generated by the site by phase have been made using the nationally published trip generation rates found in *Trip Generation,10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 1 shows the results of the trip generation estimates.

TRIP ASSIGNMENT

Table 2 shows the projected average weekday traffic volumes on Poco Road and Arroya Lane just east of Vollmer Road following buildout of each phase of the preliminary plan. Table 2 also shows the projected short-term peak-hour entering and exiting traffic volumes at the intersections of Vollmer/Poco and Vollmer/Arroya for each phase. These volumes are based on the projected trip generation estimates shown in Table 1 and the short-term directional distribution estimate shown in Figure 7 from the *Retreat at Timber Ridge Updated Traffic Impact Analysis* dated January 25, 2018.

SHORT-TERM AND 2040 TOTAL TRAFFIC

Please refer to the *Retreat at Timber Ridge Updated Traffic Impact Analysis* dated January 25, 2018 for the short-term and 2040 total traffic volumes and level of service analysis. The 2040 total traffic volumes include traffic estimated to be generated by the parcel northwest of Vollmer Road/Arroya Lane; however, this parcel is not part of the currently proposed preliminary plan.

ROADWAY CLASSIFICATIONS

Figure 2 shows updated recommended street classifications for Vollmer Road and Arroya Lane adjacent to the site and for the internal streets within the Preliminary Plan area. The only change from the classifications shown in Figure 12 of the *Retreat at Timber Ridge Updated Traffic Impact Analysis* dated January 25, 2018 is that Arroya Lane is now shown as a Rural Local instead of a Minor Rural Collector.

ROADWAY IMPROVEMENT FEE PROGRAM

This project will be required to participate in the El Paso County Road Improvement Fee Program. The details will be identified with each final plat.

RECOMMENDED IMPROVEMENTS

- **Table 3** contains a summary of the needed improvements. This represents an updated version from the PUD traffic report - primarily due to the new phasing plan.

- **Vollmer Road:**
  - **Short Term:** As shown on Figure 10 of the TIS, the projected 2020 average weekday traffic volume on Vollmer Road just south of the site is 5,360 vehicles per day. This includes buildout of the currently proposed preliminary plan area and buildout of the Sterling Ranch parcel just south of the site. Currently, the MTCP indicates the capacity of existing Vollmer Road to be about 6,000 vehicles per day.

  - **Long Term:** The County MTCP shows a Vollmer Road upgrade between Poco Road and Shoup Road to a county-standard, two-lane Rural Minor Arterial. Traffic volume estimates indicate this improvement will not be needed in the short-term horizon. The 2040 MTCP indicates the Vollmer project will be needed by 2040. The 2040 MTCP shows the Vollmer upgrade "project" as Project ID U-12. The Retreat at Timber Ridge will dedicate right-of-way to accommodate the future upgrade to Rural Minor Arterial standards (As shown in the MTCP and the Fee Study); The applicant will be required to participate in the County Road Impact Fee program.

  - **Vollmer/Poco Intersection**: Based on the projected site-generated traffic volumes shown in Table 3, a northbound right-turn deceleration lane will likely be required on Vollmer Road approaching Poco Road with **Phase 5**. This assumes no development of the Sterling Ranch parcels located to the east of Retreat at Timber Ridge or just south of the site that will share this access point.

- **Arroya Lane:**
  - As part of Phase 1, 80 feet of right-of-way will be dedicated for Arroya Lane; however, Arroya Lane will remain a gravel road until a later phase when the 200-vehicle-per-day, average-daily-traffic threshold requiring paving is reached. The 80-foot right-of-way is being dedicated for purposes of accommodating a future expansion of the roadway cross section if ever needed in the future.

  - The storm sewer crossing under Arroya Lane will be built with Phase 1. Phase 1 improvements would involve grading and improving the roadway to an interim all-weather, gravel cross section acceptable to the County and the fire district and suitable for two-way traffic and emergency vehicles the from Vollmer to Nature Refuge Road.

- The existing temporary turnaround on the east end of Arroya Lane will be moved to coincide with the intersection of Arroya/Nature Refuge Road and a 50-foot apron will be constructed at the tie-in to Vollmer Road.

- Based on the projected average weekday traffic volumes shown in Table 2, Arroya Lane will need to be paved with Phase 4. Should Phase 5 precede Phase 4 it would only be necessary to pave between Vollmer Road and the Phase 5 access point.

- **Nature Refuge Road**: The applicant proposes to construct Nature Refuge Road as a permanent, County-standard Gravel road with Phase 1. Traffic volumes will remain under 200 ADT. A 50-foot paved apron at Arroya Lane would be constructed. The applicant proposes this improvement be delayed to coincide with the paving of Arroya Lane.

- As shown on Figure 10 of the TIS, all movements at the intersections of Poco/Vollmer and Arroya/Vollmer are projected to operate at LOS B or better during the peak hours based on the 2020 total traffic volumes assuming the existing cross section of Vollmer Road except for the addition of a northbound right-turn lane approaching Poco Road.

* * * * *

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:bjwb

Enclosures: Tables 1-3
Figures 1-2
Retreat at Timber Ridge Updated Traffic Impact Analysis dated January 25, 2018

Table 1
Trip Generation Estimate
Retreat at Timber Ridge Preliminary Plan

Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Trip Generation Rates [1] Morning Peak Hour In	Trip Generation Rates [1] Morning Peak Hour Out	Trip Generation Rates [1] Afternoon Peak Hour In	Trip Generation Rates [1] Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Total Trips Generated Morning Peak Hour In	Total Trips Generated Morning Peak Hour Out	Total Trips Generated Afternoon Peak Hour In	Total Trips Generated Afternoon Peak Hour Out
Currently Proposed Preliminary Plan													
1	210	Single-Family Detached Housing	10 DU[2]	9.44	0.19	0.56	0.62	0.37	94	2	6	6	4
2	210	Single-Family Detached Housing	13 DU	9.44	0.19	0.56	0.62	0.37	123	2	7	8	5
3	210	Single-Family Detached Housing	59 DU	9.44	0.19	0.56	0.62	0.37	557	11	33	37	22
4	210	Single-Family Detached Housing	33 DU	9.44	0.19	0.56	0.62	0.37	312	6	18	21	12
5	210	Single-Family Detached Housing	15 DU	9.44	0.19	0.56	0.62	0.37	142	3	8	9	5
6	210	Single-Family Detached Housing	75 DU	9.44	0.19	0.56	0.62	0.37	708	14	42	47	27
			205 DU						**1,935**	**38**	**114**	**128**	**75**
Future Filings (Part of the overall PUD but not a part of the currently proposed Preliminary Plan)													
	210	Single-Family Detached Housing	7 DU	9.44	0.19	0.56	0.62	0.37	66	1	4	4	3
		Total at Buildout of Retreat at Timber Ridge	212 DU	9.44	0.19	0.56	0.62	0.37	2,001	39	118	132	78

Notes:

(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 2
Short-Term Trip Assignment
Retreat at Timber Ridge Preliminary Plan

Phase	Weekday Traffic East of Vollmer (vehicles per day)		Morning Peak Hour (vehicles per hour)								Afternoon Peak Hour (vehicles per hour)							
			Entering Traffic				Exiting Traffic				Entering Traffic				Exiting Traffic			
			Poco Rd		Arroya Ln		Poco Rd		Arroya Ln		Poco Rd		Arroya Ln		Poco Rd		Arroya Ln	
	Poco	Arroya	NB RT	SB LT	NB RT	SB LT	WB LT	WB RT	WB LT	WB RT	NB RT	SB LT	NB RT	SB LT	WB LT	WB RT	WB LT	WB RT
Existing	0	30	0	0	1	0	0	0	2	0	0	0	2	0	0	0	1	0
1	0	124	0	0	3	0	0	0	7	1	0	0	7	1	0	0	4	1
2	123	124	2	0	3	0	5	1	7	1	6	1	7	1	3	1	4	1
3	680	124	11	1	3	0	33	6	7	1	37	6	7	1	22	3	4	1
4	858	**258**	14	1	5	0	43	6	12	3	49	7	13	4	29	4	7	2
5	905	**334**	15	1	6	0	47	6	15	4	**53**	7	16	5	31	4	9	3
6	1,587	**355**	28	4	4	2	82	11	13	6	**93**	12	14	7	55	7	10	4

Source: LSC Transportation Consultants, Inc.

Table 3
Roadway Improvements
Retreat at Timber Ridge
Preliminary Plan

Improvement	Timing	Responsibility[1]
Arroya Lane Initial/interim: Dedicate 80' of ROW or 40' half ROW where applicable; Construct a storm sewer crossing under Arroya Lane; regrade and improve the roadway to an interim all-weather, gravel cross section for two-way traffic and emergency vehicles suitable to the County and the fire district the from Vollmer to Nature Refuge Road; move the existing temporary turnaround on the east end of Arroya Lane to coincide with the intersection of Arroya/Nature Refuge Road and construct a 50-foot apron at the tie-in to Vollmer Road.	Phase 1	The Retreat at Timber Ridge
Upgrade **Arroya Lane** to a Rural Local cross section (paved). Along with this improvement, construct a 50-foot apron on **Nature Refuge Road** at the tie-in to Arroya Lane.	Once the average weekday traffic volume exeeds 200 vehicles per day. This is projected to occur with either Phase 4 or 5	The Retreat at Timber Ridge
Realign Arroya Lane at the intersection of Vollmer Road/Arroya Lane so Arroya intersects Vollmer at a right angle.	Phases 4 or 5	The Retreat at Timber Ridge
Extend Poco Road to the east including the creek crossing	Phases 2 and 3	The Retreat at Timber Ridge
Construct a gravel road to provide secondary emergency access through the Phase 4 area to Arroya Lane (this gravel road would be replaced with the subdivision streets in Phase 4).	Phases 2 and 3	The Retreat at Timber Ridge
Construct a northbound right-turn deceleration lane on Vollmer Road approaching Poco Road.	Design and installation with the applicable final plat(s) for The Retreat at Timber Ridge. This turn lane is projected to be required with Phase 5.	The Retreat at Timber Ridge
Potential improvement: Southbound left-turn lane at Arroyo	Evaluation with final plats. *Although the anticipated traffic counts do not warrant it, the County Engineer may require a southbound left-turn lane at Arroyo based on unanticipated traffic patterns* [from Staff Comments].	The Retreat at Timber Ridge and/or possible-but-not-currently-anticipated-future development with access via Arroya
Possible future **modern roundabout** intersection control at Poco/Vollmer as an alternative to the two-way, Stop-sign control (TWSC) shown in this TIS	Consideration of roundabout traffic control instead of TWSC could be addressed with the applicable final plat(s) for The Retreat at Timber Ridge and/or Sterling Ranch. Roundabouts would require signifcant circular right-of-way around the center of the intersection. Currently, additional right-of-way to accomodate a roundabout(s) is not available on the west side of Vollmer. Also, the southeast corner of the intersection is not part of this project and is not owned by this applicant. It is owned by Sterling Ranch. The consideration is that although the TIS shows better side-street level of service with the roundabout, the projected approach traffic volumes are not close to being equal on all the intersection approaches. The northbound and southbound through volumes are significantly higher than the eastbound and westbound volumes. The balance of approach volumes is an element to consider when evaluating a roundabout as a potential traffic control solution.	The Retreat at Timber Ridge and/or Sterling Ranch
As shown on the County MTCP: Vollmer Road upgrade between Poco Road and Shoup Road to a county-standard, two-lane Rural Minor Arterial.	Traffic volume estimates indicate this improvement will not be needed in the short term horizon. The 2040 MTCP indicates the Vollmer project will be needed by 2040. The 2040 MTCP shows the Vollmer upgrade "project" as Project ID U-12.	The Retreat at Timber Ridge will dedicate right-of-way to accommodate the future upgrade to Rural Minor Arterial standards (As shown in the MTCP and the Fee Study); The applicant will be requred to participate in the County Road Impact Fee program.
Upgrade Vollmer Road between future Stapleton Drive and Poco Road to an Urban Minor Arterial cross section (five lanes)	Future MTCP Project ID U-12 (Note: MTCP indicates two-lane Rural Minor Arterial.)	(Sterling Ranch Metro District) MTCP Master-Planned MTCP Project ID U-12
Upgrade Vollmer Road generally between the south boundary of Sterling Ranch and future Stapleton Drive to an Urban Minor Arterial cross section (five lanes)	Designed MTCP Project ID C-13	Sterling Ranch Metro District
Upgrade Vollmer Road generally between Cowpoke Road and the south boundary of Sterling Ranch to an Urban Minor Arterial cross section (five lanes)	Designed MTCP Project ID C-13	Woodmen Heights Metro District
Construct section of Stapleton Road half section between Vollmer Road and the first Sterling Ranch access point	With development of Phase 1 of Sterling Ranch - Designed MTCP Project ID N-5	Sterling Ranch Metro District
Construct a northbound right-turn deceleration lane on Vollmer Road approaching Stapleton Road	With development of Phase 1 of Sterling Ranch - Designed MTCP Project ID C-13	Sterling Ranch Metro District
Construct Briargate Parkway (four-lane Principal Arterial) between Black Forest Road and Vollmer Road.	Future - TBD TBD with PPRTA[2] Corridor Study	TBD with PPRTA[2] Corridor Study MTCP Project N-5
Construct Stapleton Drive between Vollmer Road and Towner	Future TBD with PPRTA[2] Corridor Study	TBD with PPRTA[2] Corridor Study MTCP Project N-5
Southbound left-turn lanes on Vollmer Road approaching Burgess Road	Existing Deficiency	Existing Deficiency - Others (This development will not add volume to this turning movement.)
Northbound left-turn lane at Burgess/Vollmer	Projections indicate after 2020 but prior to 2040 the turning volume threshold warranting the turn lane (25 northbound left turns per hour) would be exceeded.	Based on the revised PUD plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12.
Northbound right-turn lane at Burgess/Vollmer	Projections indicate by 2020 the turning volume threshold warranting the turn lane (50 northbound right turns per hour) would be exceeded.	Based on the revised PUD plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12.
Future traffic signal at Stapleton/Vollmer	Once warrants are met; analysis to be included with final plat traffic reports; projections indicate by 2040 the intersection would be signalilzed.	Escrow a fair-share amount toward the cost the signal (to be determined with final plats). Once the signal is constructed, a portion of the escrow amount used to fund the installation of the signal may have become creditable under the Fee Program (if this signal is added to the fee program list of signals eligible for credit (County signals not currently programmed in Fee Program).

Notes:

(1) Preliminary concept of responsibility; the actual construction responsibility would be determined through subdivision applications and cost recovery if applicable agreements.

(2) PPRTA = Pikes Peak Rural Transportation Authority.

Source: LSC Transportation Consultants, Inc. (date:4-11-18)

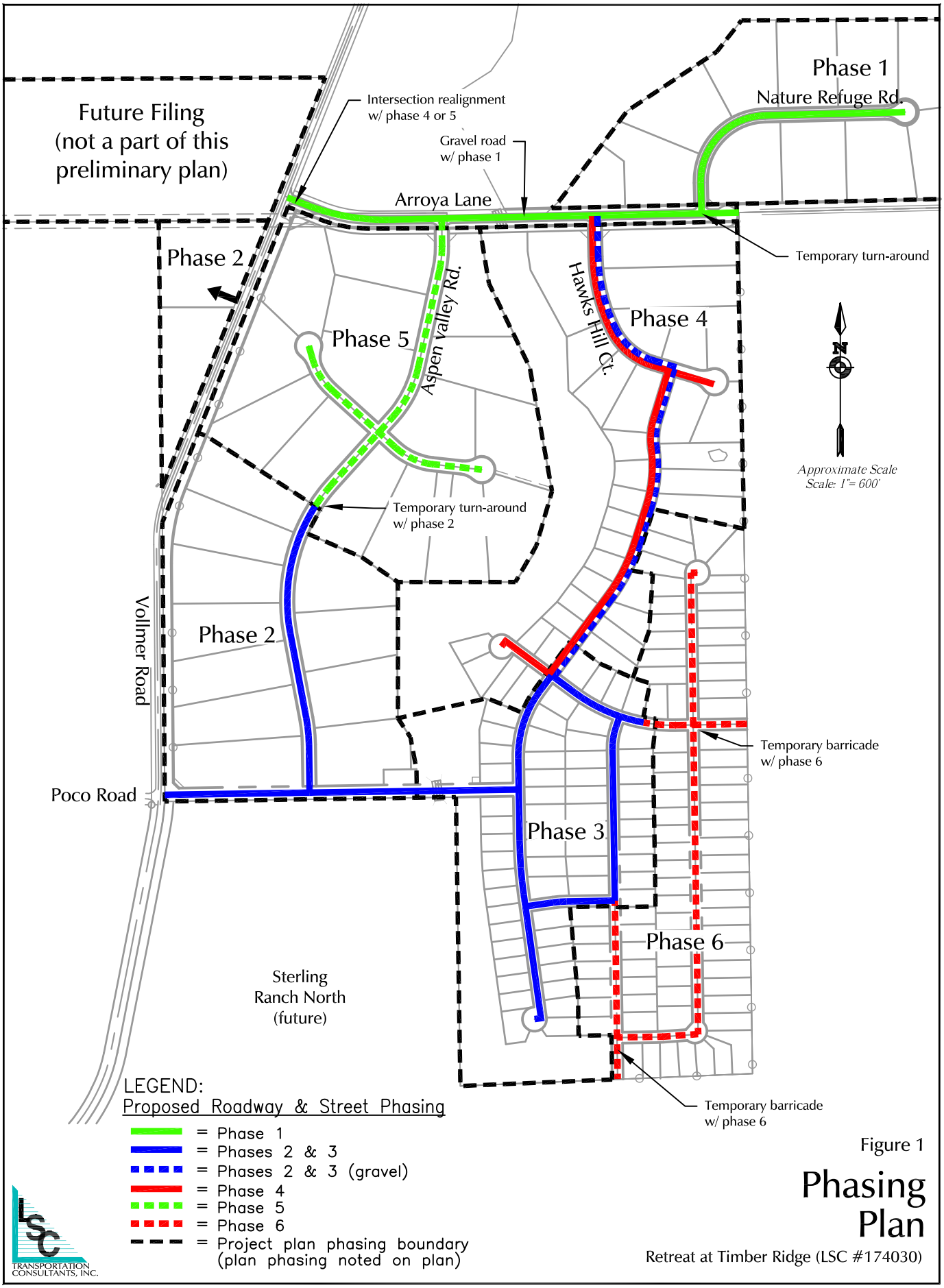
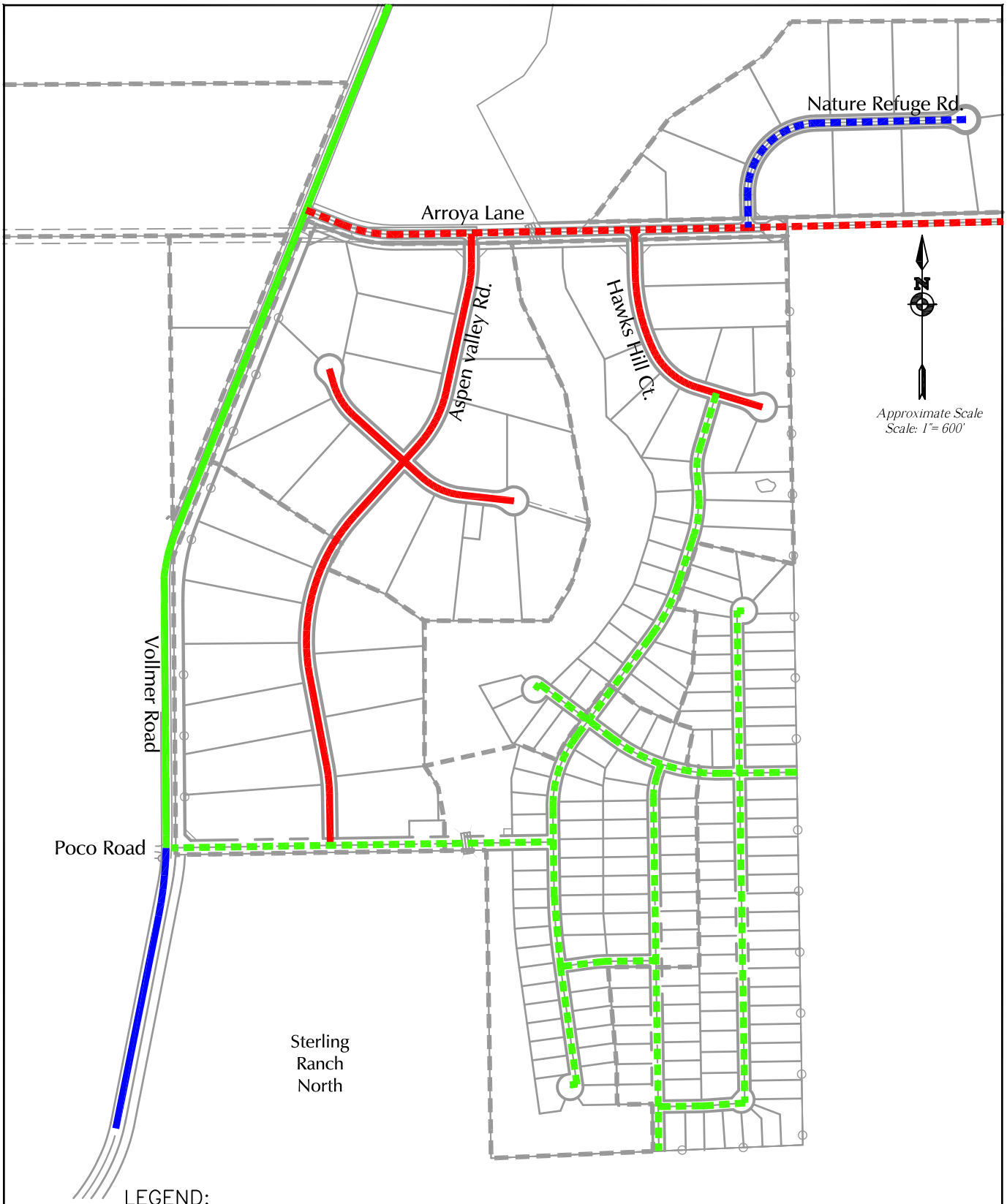


Figure 1

Phasing Plan

Retreat at Timber Ridge (LSC #174030)



TRANSPORTATION CONSULTANTS, INC.

Figure 2

Recommended Classifications

Retreat at Timber Ridge (LSC #174030)

Note (4-12-18): This PUD report has been included for reference. The more recent Preliminary Plan report addresses phasing and other updates to match the Preliminary Plan.

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Retreat at Timber Ridge
Updated Traffic Impact Analysis
PCD File No: PUD-17-003
(LSC #174030)
January 25, 2018

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
PROFESSIONAL ENGINEER

1-25-18

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.

1/25/18

Date

LSC TRANSPORTATION CONSULTANTS, INC.
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January 25, 2018

Mr. Peter Martz
Arroyo Investments
P.O. Box 50223
Colorado Springs, CO 80949

RE: Retreat at Timber Ridge
Updated Traffic Impact Analysis
El Paso County, CO
LSC #174030

Dear Peter:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Retreat at Timber Ridge residential development to be located generally east of Vollmer Road and south of Arroya Lane in El Paso County, Colorado. Figure 1 shows the site location.

REPORT CONTENTS

The report contains the following:

- 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, etc.
- The existing traffic volumes on the area roadways.
- 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 total traffic volumes on the area roadways.
- The projected levels of service at the site access points and the key adjacent intersections.
- The resulting traffic impacts.
- Recommendations for roadway improvements.

SITE LAND USE

The site is located generally east of Vollmer Road and south of Arroya Lane. There are existing single-family homes west and north of the site. The vacant parcels south and east of the site are part of the planned Sterling Ranch development. These parcels are planned to be developed for single-family homes.

The site is planned to be developed with 212 lots for single-family homes. Nine of these lots are located west of Vollmer Road and 10 of these lots are located north of Arroya Lane. The site plan is shown in Figure 2.

Access for the lots east of Vollmer Road is proposed to Vollmer Road aligning with Poco Road and to Arroya Lane. Three full-movement access points are proposed to Arroya Lane. The spacing of the proposed Arroya Lane access points is shown in Figure 2. A deviation request for the location of these access points has been approved. The site plan also shows future connections through the Sterling Ranch development east and south of the site.

An interim access for the two lots west of Vollmer Road and south of Arroya Lane is planned to Vollmer Road 440 feet south of the **existing** Arroya/Vollmer intersection (which is planned to be realigned 110 feet to the north). A deviation request for this interim access has been submitted. Once Tract A, which is located west of Vollmer Road and north of Arroya Lane, is developed this interim access would be closed and the two lots south of Arroya and the seven lots planned for Tract A would have access somewhere to the north. This report assumes access for these lots will be to Vollmer Road aligning with Arroya Lane.

EXISTING ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The roadways in the study area are shown on Figure 1 and are described below.

- **Vollmer Road** is a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. Vollmer Road has a posted speed limit of 45 miles per hour (mph). It is currently a five-lane urban street within the City of Colorado Springs limits between Black Forest Road and Cowpoke Road The 2040 El Paso County *Major Transportation Corridors Plan (MTCP)* shows Vollmer Road as a two-lane Rural Minor Arterial adjacent to the site.

- **Burgess Road** is a two-lane Rural Minor Arterial that extends east from Milam Road to Goodson Road. The posted speed limit on Burgess Road in the vicinity of Vollmer Road is 45 mph.

- **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 Vollmer Road. The County MTCP shows Briargate/Stapleton east of Black Forest Road as a four-lane Principal Arterial.

- **Stapleton Drive** is shown as a four-lane Principal Arterial on the El Paso County *MTCP*. Stapleton Drive currently extends east from just west of Towner Drive across Eastonville Road to Curtis Road. Stapleton Drive is planned to be extended west to connect to Briargate Parkway in the future.

Existing Traffic Conditions

Figure 3 shows the current morning and afternoon peak-hour traffic volumes at the intersections of Vollmer Road/Poco Road and Vollmer Road/Burgess Road based on counts conducted by LSC in February, March, and June 2017. The traffic count reports are attached.

Existing Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A 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 1 shows the level of service delay ranges.

Table 1
Intersection Levels of Service Delay Ranges

	Signalized Intersections		Unsignalized Intersections
Level of Service	Average Control Delay (seconds per vehicle)	V/C[1]	Average Control Delay (seconds per vehicle)[2]
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 intersections of Vollmer Road/Poco Road and Vollmer Road/Burgess Road were analyzed to determine the existing levels of service based on the unsignalized method of analysis procedures found in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figure 3 shows the level of service analysis results. The level of service (LOS) reports are attached.

As shown on the figure, all movements the intersection of Vollmer/Poco are currently operating at a level of service A during the peak hours. All movements at the intersection of Vollmer/Burgess are currently operating at LOS C or better during the peak hours.

SIGHT DISTANCE

Figure 4 shows the sight distance analysis for the Arroya Lane access points. The analysis is based on a design speed of 40 miles per hour.

SHORT-TERM (2020) 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 and resulting site-generated traffic volumes. Background traffic includes increases in the through traffic and the traffic generated by adjacent and nearby developments, but assumes zero traffic generated by the site. Figure 5 shows the background traffic for the short term (Year 2020). The short-term background traffic volumes are based on some growth in existing through volumes on Vollmer Road shown in Figure 3, plus the addition of traffic generated by Phase 1 of the Sterling Ranch development located just east of Vollmer Road and south of the future Stapleton Drive, and traffic generated by Sterling Ranch North located east of Vollmer Road between the future Stapleton Drive and future extension of Poco Road. The short-term background volumes

assume Stapleton Drive and Briargate Parkway will not be constructed in the vicinity of the site in the short term other than the short segment needed for access for Phase 1 of Sterling Ranch.

2040 BACKGROUND TRAFFIC

Figure 6 shows the background traffic volumes for the year 2040. The 2040 background traffic volume estimates were based on 2040 volume projections in the *El Paso County Major Transportation Corridors Plan (MTCP)* and previous work completed in the area by LSC, including the *Sterling Ranch Updated Traffic Impact Analysis* by LSC dated June 5, 2008. The 2040 background traffic includes buildout of the Sterling Ranch development including the future connections to the Sterling Ranch parcels east of the Retreat at Timber Ridge Site. The 2040 background traffic also assumes a Stapleton Drive extension to the west to Vollmer Road and a Briargate Parkway extension east to Vollmer Road.

TRIP GENERATION

Estimates of the traffic volumes expected to be generated by the existing and proposed land uses within the study area were made using the nationally published trip generation rates found in *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the trip generation estimates.

At buildout the site is projected to generate about 2,001 new external vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 39 vehicles would enter and 118 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 131 vehicles would enter and 78 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The estimated directional distribution of the site-generated traffic volumes on the adjacent roadways is an important factor in determining the site's traffic impacts. Figure 7 shows the short-term and long-term directional distribution estimates for the site-generated traffic. The estimates have been based on the following factors: the site's location with respect to the City of Colorado Springs metropolitan area and other developed areas; the site's proposed land use; the site's proposed access points; the roadway system serving the site; and the existing traffic counts. The short-term directional distribution estimates assume the proposed future extensions of Stapleton Drive and Briargate Parkway will not be constructed in the vicinity of the site in the short term other than the short segments needed for access for Phase 1 of Sterling Ranch. The long-term directional distribution estimate assumes buildout of the future street network including a Stapleton Drive extension to the west to Vollmer Road and a Briargate Parkway extension east to Vollmer Road. The long-term distribution estimate also assumes the future connections on the east side of the site will connect to a new north/south collector street through the Sterling Ranch parcel just east of the site.

When the distribution percentages (from Figure 7) were applied to the trip generation estimates (from Table 2), the site-generated traffic volumes on the area roadways were determined. Figure 8 shows the

short-term site-generated traffic volumes for Phases A through D only. The short-term site-generated traffic volumes do not include estimates of traffic projected to be generated by future development of the seven lots planned for Tract A located west of Vollmer Road and north of Arroya Lane. Access for the two lots west of Vollmer Road and south of Arroya Lane was assumed at the proposed interim location 440 feet south of the existing Arroya/Vollmer intersection. Figure 9 shows the long-term buildout site-generated traffic volumes. The long-term site-generated traffic volumes assume the interim access has been closed and access for the nine lots located west of Vollmer Road aligning with Arroya Lane.

SHORT-TERM TOTAL TRAFFIC

Figure 10 shows the short-term total traffic volumes at the access points and key intersections in the vicinity of the site. The volumes are the sum of the short-term background traffic volumes from Figure 5, plus the short-term site-generated traffic volumes from Figure 8.

Figure 10 also shows the lane geometry, traffic control, and level of service at the site access points and key intersections based on the short-term total volumes.

2040 TOTAL TRAFFIC

Figure 11 shows the 2040 total traffic volumes at the site access points and key intersections in the vicinity of the site. The volumes are the sum of the 2040 background traffic volumes from Figure 6, plus the long-term site-generated traffic volumes from Figure 9.

Figure 11 also shows the lane geometry, traffic control, and level of service at the key intersections based on the 2040 total volumes.

PROJECTED LEVELS OF SERVICE

Intersection Levels of Service

The site access point intersections and other key area intersections have been analyzed to determine the projected levels of service based on the short-term and 2040 total traffic volumes. The intersections were analyzed based on the unsignalized method of analysis procedures found in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The intersection of Vollmer/ Briargate/Stapleton was analyzed as a signalized intersection for the projected long-term conditions using Synchro. The level of service reports are attached. Figures 5, 6, 10, and 11 show the level of service analysis results.

The intersections of Vollmer/Poco and Vollmer/Arroya and the proposed site access point to Vollmer just south of Arroya are projected to operate at a satisfactory level of service (satisfactory according to the County standards, which is LOS D or better) as stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.

All movements at the intersection of Vollmer/Burgess are projected to operate at LOS D or better based on the projected 2020 total traffic volumes. By 2040 the eastbound and westbound approaches at this

intersection are projected to operate at LOS F during the afternoon peak hour based on both background and total traffic volumes assuming the current two-way stop-sign control (TWSC). If this intersection were converted to all-way, stop-sign control (AWSC) all movements are projected to operate at LOS C or better.

The intersection of Vollmer/Stapleton is projected to operate at a satisfactory level of service (LOS D or better) as a stop-sign-controlled intersection based on the short-term total traffic. This analysis assumes Stapleton Road has only been extended east of Vollmer Road to serve the planned Phase 1 development of Sterling Ranch. By 2040, it was assumed that Briargate Road would be extended east to Vollmer Road and Stapleton Drive would be extended east to connect to its current terminus. It was also assumed that the intersection of Vollmer/Briargate/Stapleton would be signal controlled by 2040. This intersection is projected to operate at an overall satisfactory level of service (LOS D or better) as a signalized intersection.

Modern Roundabout Option

The levels of service assuming modern roundabout traffic control at the Poco/Vollmer intersection would be A overall and for all intersection approaches during the peak hours based on the projected 2040 total traffic volumes. The roundabout level of service reports are attached.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 2,001 new external vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about 39 vehicles would enter and 118 vehicles would exit the site. During the afternoon peak hour about 131 vehicles would enter and 78 vehicles would exit the site.

Projected Levels of Service

2. The intersections of Vollmer/Poco and Vollmer/Arroya and the site access point to Vollmer Road just south of Arroya are projected to operate at a satisfactory level of service (LOS D or better) as stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.

3. All movements at the intersection of Vollmer/Burgess are projected to operate at LOS D or better based on the projected 2020 total traffic volumes. By 2040, the eastbound and westbound approaches at this intersection are projected to operate at LOS F during the afternoon peak hour based on both background and total traffic volumes assuming the current two-way stop-sign control (TWSC). If this intersection were converted to all-way, stop-sign control (AWSC) all movements are projected to operate at LOS C or better.

4. The intersection of Vollmer/Stapleton is projected to operate at a satisfactory level of service (LOS D or better) as a stop-sign-controlled intersection based on the short-term total traffic. This intersection is projected to operate at an overall satisfactory level of service (LOS D or better) as a signalized intersection in 2040.

Improvements

5. A summary of the needed improvements is shown in Table 3.

Recommended Auxiliary Turn Lane Improvements at the Site Access Points

6. Based on the criteria contained in the *El Paso County Engineering Criteria Manual*, the classification of Vollmer Road as a Minor Arterial, and the projected short-term site-generated traffic volumes, a northbound right-turn deceleration lane will be required on Vollmer Road approaching the Poco Road intersection. Based on a 45-mph posted speed limit (50-mph design speed), this deceleration lane should be 235 feet long plus a 200-foot taper. Depending on the timing of Sterling Ranch to the south, the anticipated Vollmer improvement adjacent to Sterling Ranch, and associated transitions to the rural road cross section, the right turn could potentially be incorporated into that transition section.

7. Based on the criteria contained in the *El Paso County Engineering Criteria Manual*, the classification of Vollmer Road as a Minor Arterial, and the projected 2040 total traffic volumes, a northbound right-turn deceleration lane will **not** be required on Vollmer Road approaching the Arroya Lane intersection.

8. Based on the criteria contained in the *El Paso County Engineering Criteria Manual*, the classification of Vollmer Road as a Minor Arterial, and the projected 2040 total traffic volumes, southbound left-turn lanes will **not** be required on Vollmer Road approaching both the Arroya Lane intersection and the Poco Road intersection.

9. Based on the criteria contained in the *El Paso County Engineering Criteria Manual*, the classification of Arroya Lane as a Minor Collector, and the projected 2040 total traffic volumes no auxiliary turn lanes would be required on Arroya Lane approaching the three site access points.

10. Actual timing of installation of these turn lanes can be determined with the final plats.

11. Modern Roundabout Option: Modern roundabout intersection control could be considered as an alternative to two-way, Stop-sign control (TWSC) at Poco/Vollmer. The levels of service assuming modern roundabout traffic control at the Poco/Vollmer intersection would be A overall and for all intersection approaches. This would represent significantly lower delay on the side-street approaches during peak periods, but would introduce some minimal delay for north/south through traffic on Vollmer.

    Roundabouts would require significant circular right-of-way around the center of the intersection. Currently, additional right-of-way to accommodate a roundabout(s) is not available on the west side of Vollmer. The consideration is that although the TIS shows better side-street level of service with the roundabout, the projected approach traffic volumes are not close to being equal on all the intersection approaches. The northbound and southbound through volumes are significantly higher than the eastbound and westbound volumes. The balance of approach volumes is an element to consider when evaluating a roundabout as a potential traffic control solution.

Off-Site Auxiliary Turn Lane Evaluation

12. Based on the criteria contained in the El Paso County Engineering Criteria Manual, the classification of Vollmer Road as a Minor Arterial, and the existing plus buildout site-generated, 2020 background, and 2020 total traffic volumes, northbound right-turn volume will exceed the turning volume thresholds requiring a northbound right-turn lane on Vollmer Road at the Burgess Road intersection. Based on the revised PUD plan with lower trip generation, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent; however, the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Program and the MTCP Project ID is U-12.

13. Based on the criteria contained in the *El Paso County Engineering Criteria Manual*, the classification of Vollmer Road as a Minor Arterial, and the existing traffic volumes, the minimum turning volume threshold for a southbound left-turn lane is currently exceeded on Vollmer Road approaching Burgess Road. This project will not add any left turning volume to this turning movement.

14. Based on the criteria contained in the El Paso County Engineering Criteria Manual, the classification of Vollmer Road as a Minor Arterial, and the 2040 background traffic volumes, the northbound left-turn volume would exceed the turning volume thresholds requiring a northbound left-turn lane on Vollmer Road at the Burgess Road intersection. Based on the revised PUD plan with lower trip generation, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Program and the MTCP Project ID is U-12.

El Paso County Roadway Improvement Fee Program

15. This project will be required to participate in the El Paso County Road Impact Fee Program.

Street Classification

16. Figure 12 shows the recommended street classifications for Vollmer Road adjacent to the site and the internal streets based on the projected 2040 traffic volumes shown in Figure 10.

Deviations

17. County deviation forms for the proposed intersection spacing along Arroya Lane to Vollmer have been approved.

18. A county deviation request form has been submitted for the interim access to Vollmer Road for lots R-11 and R-12.

* * * * *

Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:bjwb

Enclosures: Tables 2 and 3
Figures 1-12
Traffic Count Reports
Level of Service Reports

Table 2
Trip Generation Estimate
Retreat at Timber Ridge

Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Trip Generation Rates [1] Morning Peak Hour In	Trip Generation Rates [1] Morning Peak Hour Out	Trip Generation Rates [1] Afternoon Peak Hour In	Trip Generation Rates [1] Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Total Trips Generated Morning Peak Hour In	Total Trips Generated Morning Peak Hour Out	Total Trips Generated Afternoon Peak Hour In	Total Trips Generated Afternoon Peak Hour Out
A	210	Single-Family Detached Housing	12 DU[2]	9.44	0.19	0.56	0.62	0.37	113	2	7	7	4
B	210	Single-Family Detached Housing	29 DU	9.44	0.19	0.56	0.62	0.37	274	5	16	18	11
C	210	Single-Family Detached Housing	19 DU	9.44	0.19	0.56	0.62	0.37	179	4	11	12	7
D	210	Single-Family Detached Housing	145 DU	9.44	0.19	0.56	0.62	0.37	1,369	27	80	90	53
		Phase A-D	**205 DU**						**1,935**	**38**	**114**	**127**	**75**
E	210	Single-Family Detached Housing	7 DU	9.44	0.19	0.56	0.62	0.37	66	1	4	4	3
		Buildout	**212 DU**						**2,001**	**39**	**118**	**131**	**78**
				20182									

Notes:

(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Note (4-12-18): The Preliminary Plan Report presents and updated version to match the Preliminary Plan.

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Table 3
Roadway Improvements
Retreat at Timber Ridge

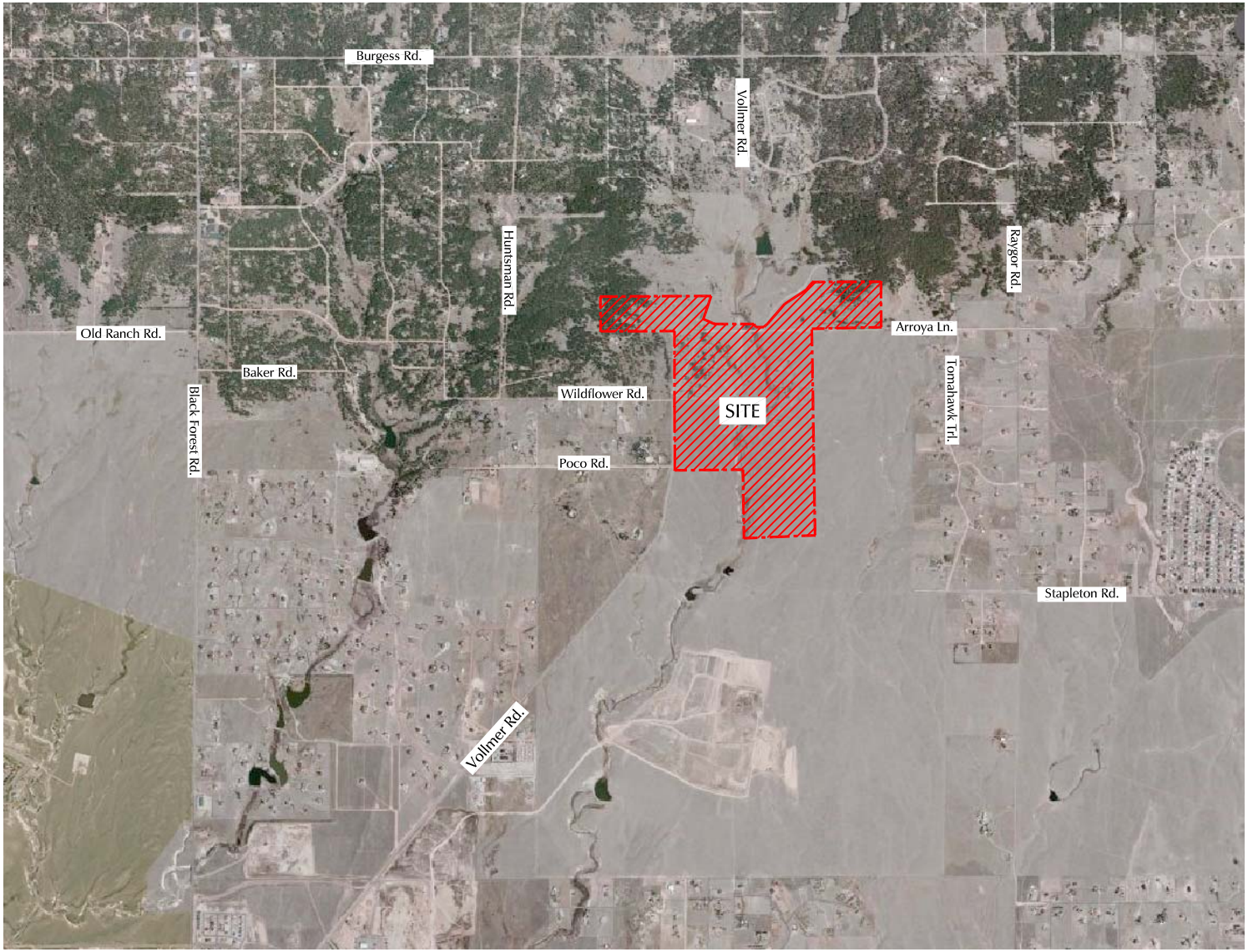
Improvement	Timing	Responsibility[1]
Construct a northbound right-turn deceleration lane on Vollmer Road approaching Poco Road.	Design and installation with the applicable final plat(s) for The Retreat at Timber Ridge.	The Retreat at Timber Ridge
Potential improvement: Southbound left-turn lane at Arroyo	Evaluation with final plats. *Although the anticipated traffic counts do not warrant it, the County Engineer may require a southbound left-turn lane at Arroyo based on unanticipated traffic patterns* [from Staff Comments].	The Retreat at Timber Ridge and/or possible-but-not-currently-anticipated-future development with access via Arroya
Possible future **modern roundabout** intersection control at Poco/Vollmer as an alternative to the two-way, Stop-sign control (TWSC) shown in this TIS	Consideration of roundabout traffic control instead of TWSC could be addressed with the applicable final plat(s) for The Retreat at Timber Ridge and/or Sterling Ranch. Roundabouts would require signifcant circular right-of-way around the center of the intersection. Currently, additional right-of-way to accomodate a roundabout(s) is not available on the west side of Vollmer. Also, the southeast corner of the intersection is not part of this project and is not owned by this applicant. It is owned by Sterling Ranch. The consideration is that although the TIS shows better side-street level of service with the roundabout, the projected approach traffic volumes are not close to being equal on all the intersection approaches. The northbound and southbound through volumes are significantly higher than the eastbound and westbound volumes. The balance of approach volumes is an element to consider when evaluating a roundabout as a potential traffic control solution.	The Retreat at Timber Ridge and/or Sterling Ranch
Upgrade Vollmer Road between future Stapleton Drive and Poco Road to an Urban Minor Arterial cross section (five lanes)	Future MTCP Project ID U-12 (Note: MTCP indicates two-lane Rural Minor Arterial.)	(Sterling Ranch Metro District) MTCP Master-Planned MTCP Project ID U-12
Upgrade Vollmer Road generally between the south boundary of Sterling Ranch and future Stapleton Drive to an Urban Minor Arterial cross section (five lanes)	Designed MTCP Project ID C-13	Sterling Ranch Metro District
Upgrade Vollmer Road generally between Cowpoke Road and the south boundary of Sterling Ranch to an Urban Minor Arterial cross section (five lanes)	Designed MTCP Project ID C-13	Woodmen Heights Metro District
Construct section of Stapleton Road half section between Vollmer Road and the first Sterling Ranch access point	With development of Phase 1 of Sterling Ranch - Designed MTCP Project ID N-5	Sterling Ranch Metro District
Construct a northbound right-turn deceleration lane on Vollmer Road approaching Stapleton Road	With development of Phase 1 of Sterling Ranch - Designed MTCP Project ID C-13	Sterling Ranch Metro District
Construct Briargate Parkway (four-lane Principal Arterial) between Black Forest Road and Vollmer Road.	Future - TBD TBD with PPRTA[2] Corridor Study	TBD with PPRTA[2] Corridor Study MTCP Project N-5
Construct Stapleton Drive between Vollmer Road and Towner	Future TBD with PPRTA[2] Corridor Study	TBD with PPRTA[2] Corridor Study MTCP Project N-5
Southbound left-turn lanes on Vollmer Road approaching Burgess Road	Existing Deficiency	Existing Deficiency - Others (This development will not add volume to this turning movement.)
Northbound left-turn lane at Burgess/Vollmer	Projections indicate after 2020 but prior to 2040 the turning volume threshold warranting the turn lane (25 northbound left turns per hour) would be exceeded.	Based on the revised PUD plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12.
Northbound right-turn lane at Burgess/Vollmer	Projections indicate by 2020 the turning volume threshold warranting the turn lane (50 northbound right turns per hour) would be exceeded.	Based on the revised PUD plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both directions of travel) south of the intersection is more than 10 percent, however the turn lane thresholds are shown to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12.
Future traffic signal at Stapleton/Vollmer	Once warrants are met; analysis to be included with final plat traffic reports; projections indicate by 2040 the intersection would be signalilzed.	Escrow a fair-share amount toward the cost the signal (to be determined with final plats). Once the signal is constructed, a portion of the escrow amount used to fund the installation of the signal may have become creditable under the Fee Program (if this signal is added to the fee program list of signals eligible for credit (County signals not currently programmed in Fee Program).

Notes:

(1) Preliminary concept of responsibility; the actual construction responsibility would be determined through subdivision applications and cost recovery if applicable agreements.

(2) PPRTA = Pikes Peak Rural Transportation Authority.

Source: LSC Transportation Consultants, Inc.



N

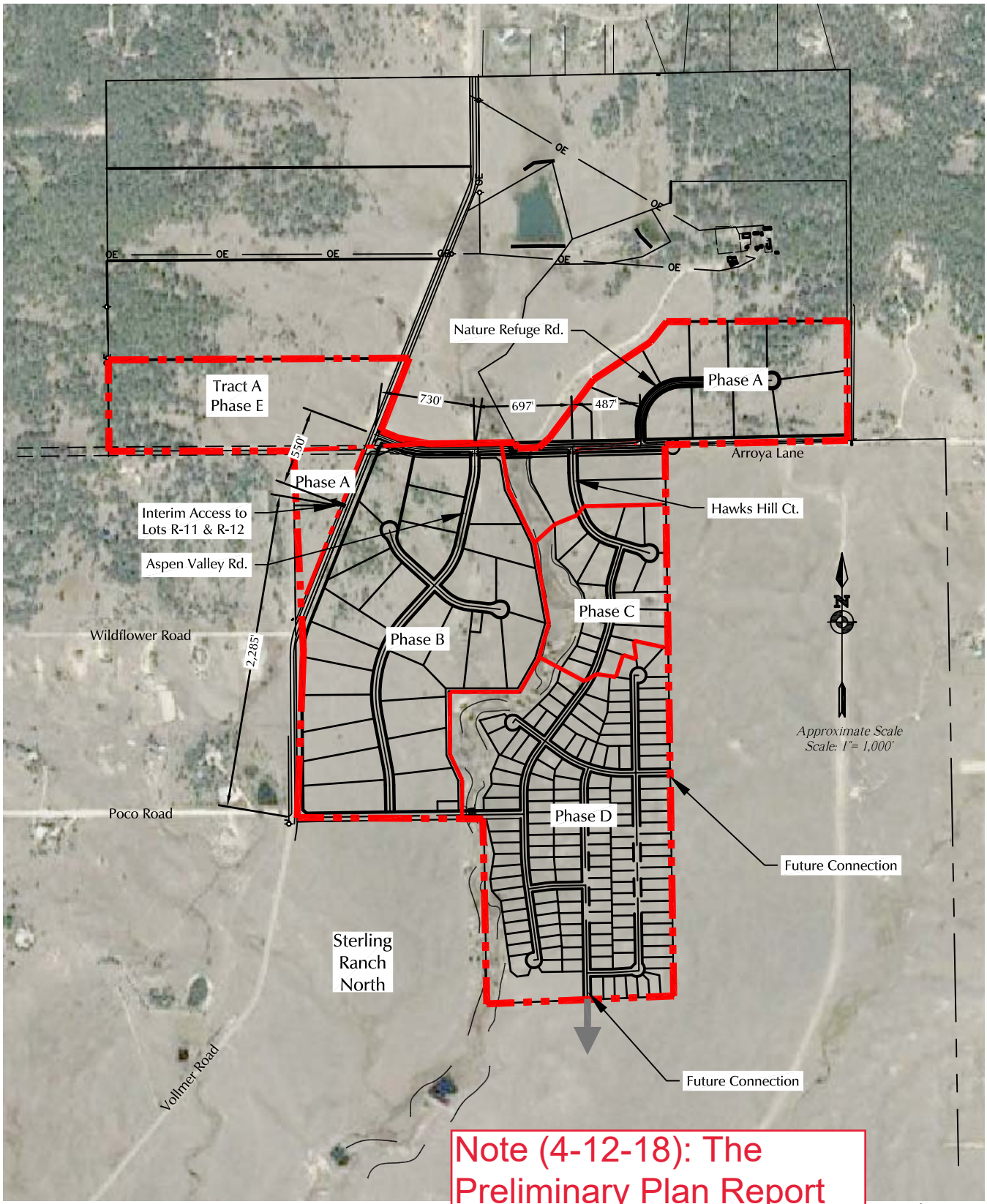
Approximate Scale
Scale: 1"= 3,000'

TRANSPORTATION CONSULTANTS, INC.

Figure 1

Vicinity Map

Retreat at Timber Ridge (LSC #174030)



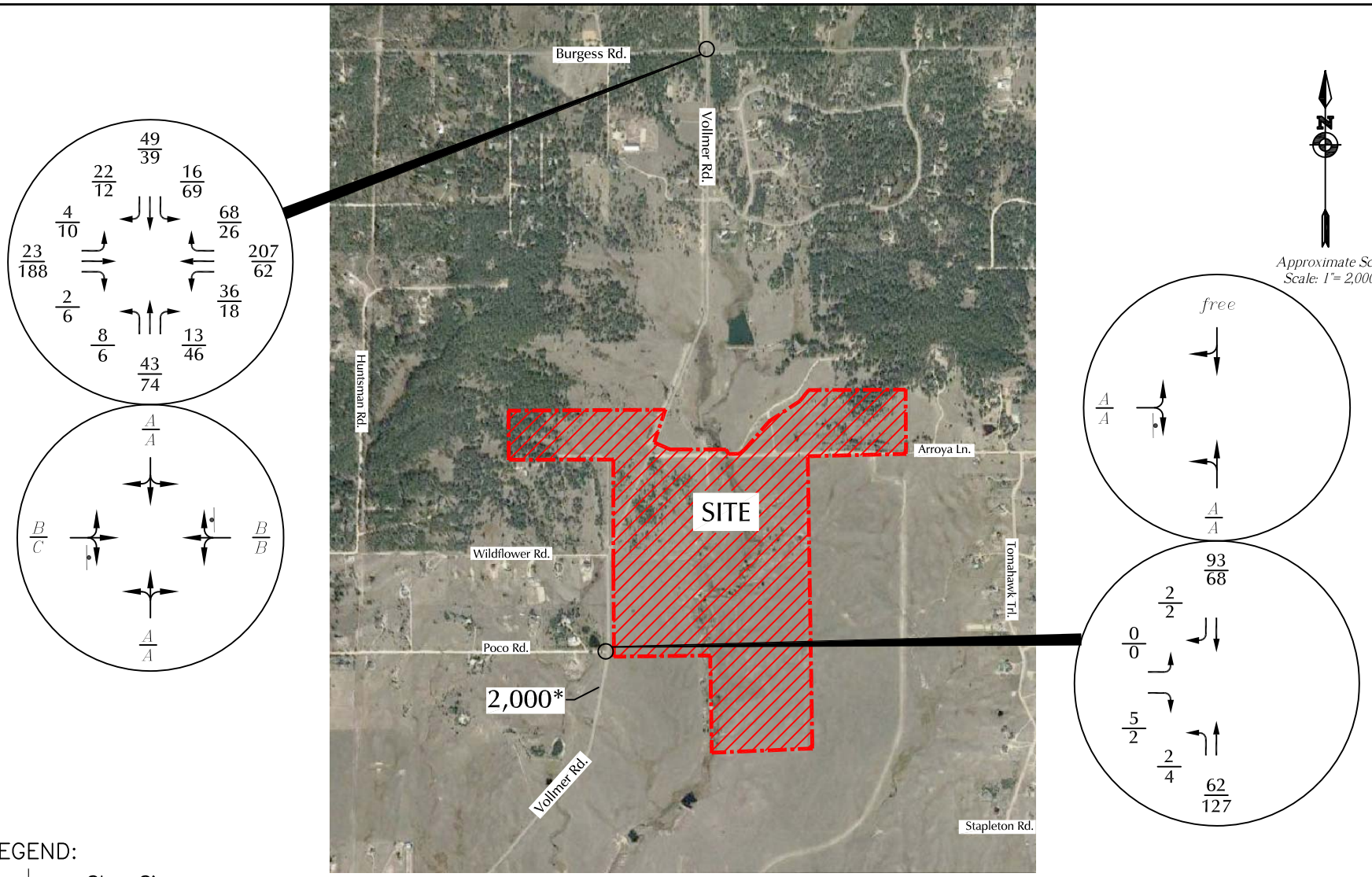
Note (4-12-18): The Preliminary Plan Report shows updated phasing to match the Preliminary Plan.

Figure 2

Site Plan

(LSC #174030)

TRANSPORTATION CONSULTANTS, INC.



LEGEND:

⊢ = Stop Sign

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$ Based on counts by LSC Feb & June 2017

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

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

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Figure 3

Existing Traffic, Lane Geometry, Traffic Control and Level of Service

Retreat at Timber Ridge (LSC #174030)

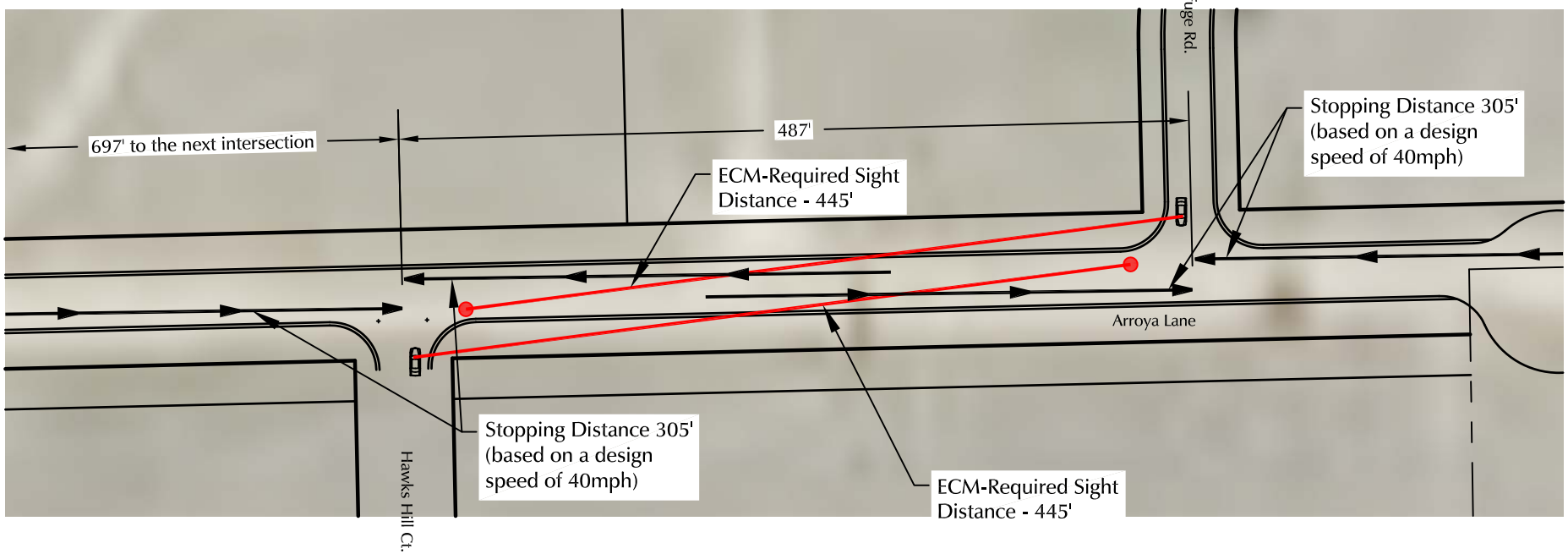
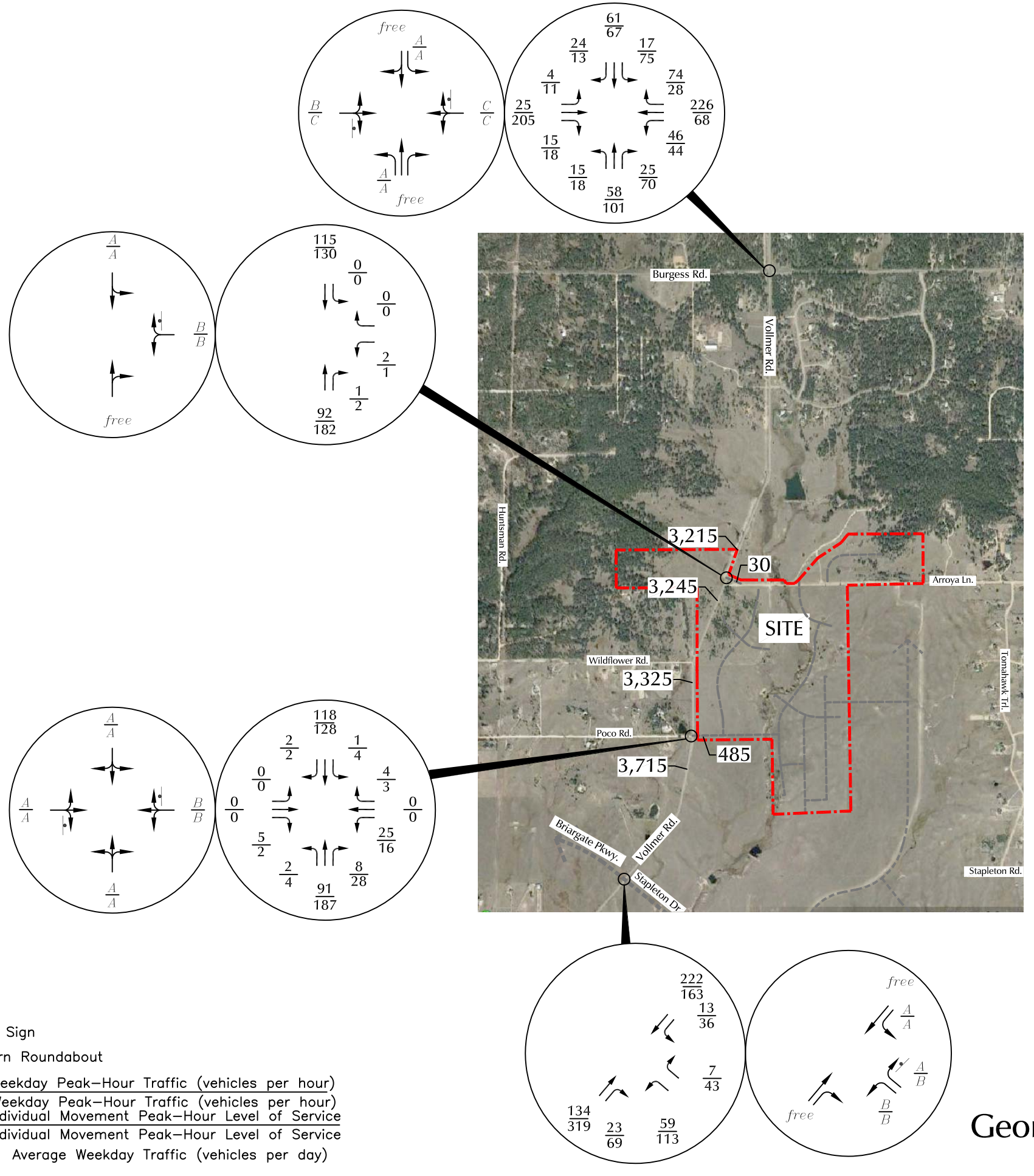


Figure 4

Intersection Sight Distance

Retreat at Timber Ridge (LSC #174030)



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

= Modern Roundabout

XX/XX = AM Weekday Peak–Hour Traffic (vehicles per hour) / PM Weekday Peak–Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak–Hour Level of Service / PM Individual Movement Peak–Hour Level of Service

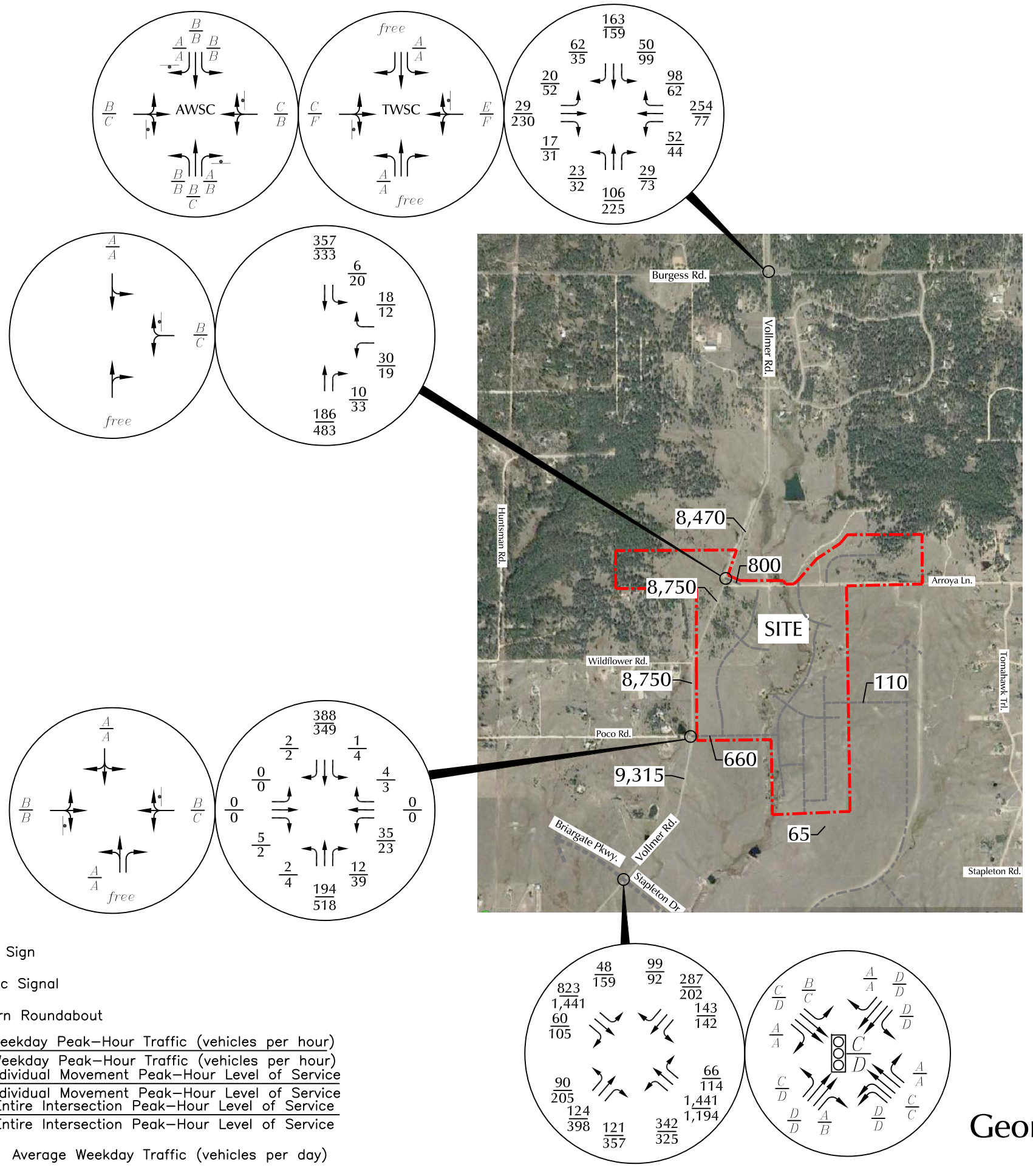
XXX = Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 5

Year 2020 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Retreat at Timber Ridge (LSC #174030)



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

= Traffic Signal

= Modern Roundabout

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

C/D = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

XXX = Average Weekday Traffic (vehicles per day)

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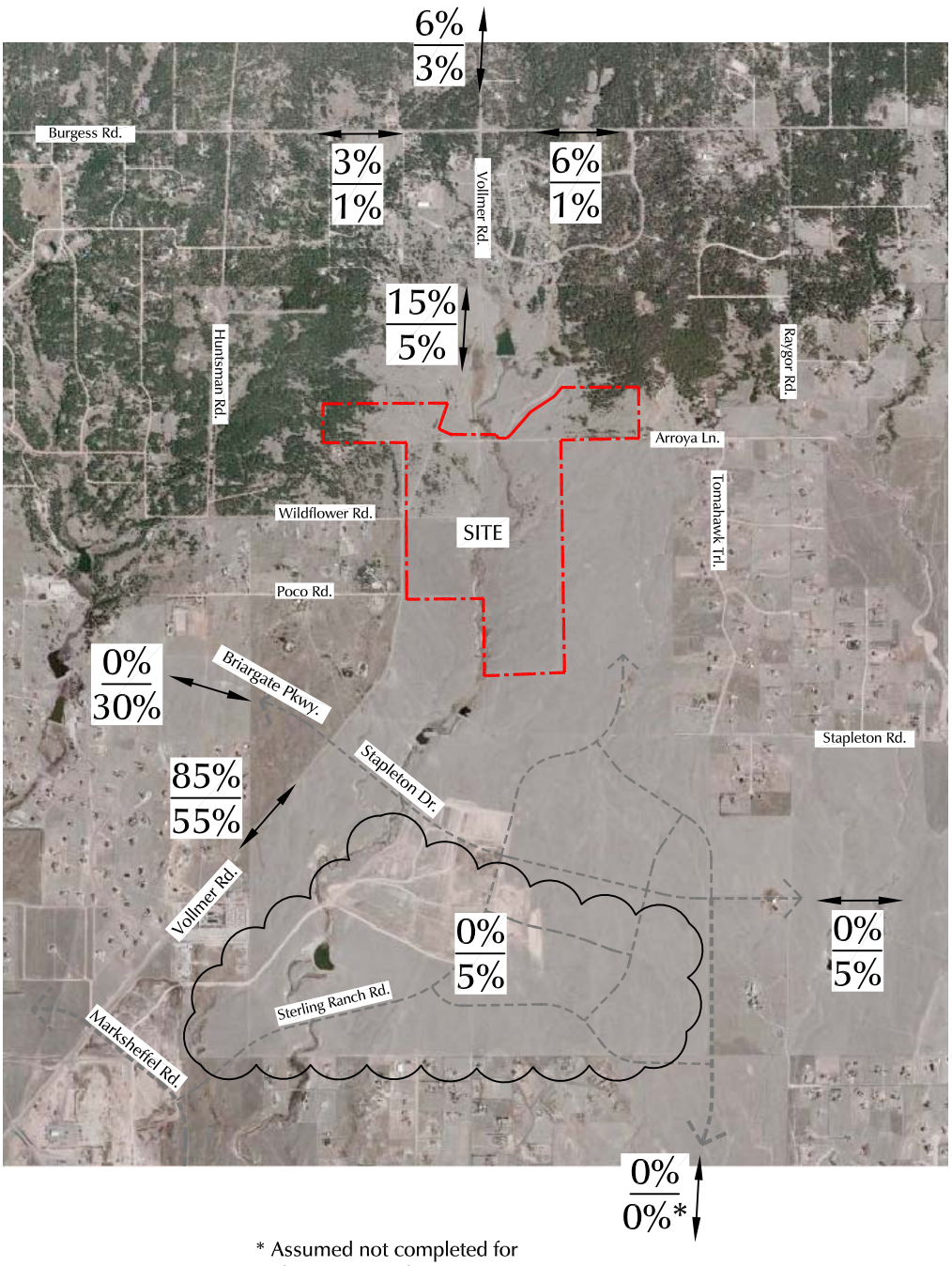
Figure 6

Year 2040 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Retreat at Timber Ridge (LSC #174030)



* Assumed not completed for long-term analysis.

Approximate Scale
Scale: 1"= 3,000'

LEGEND:

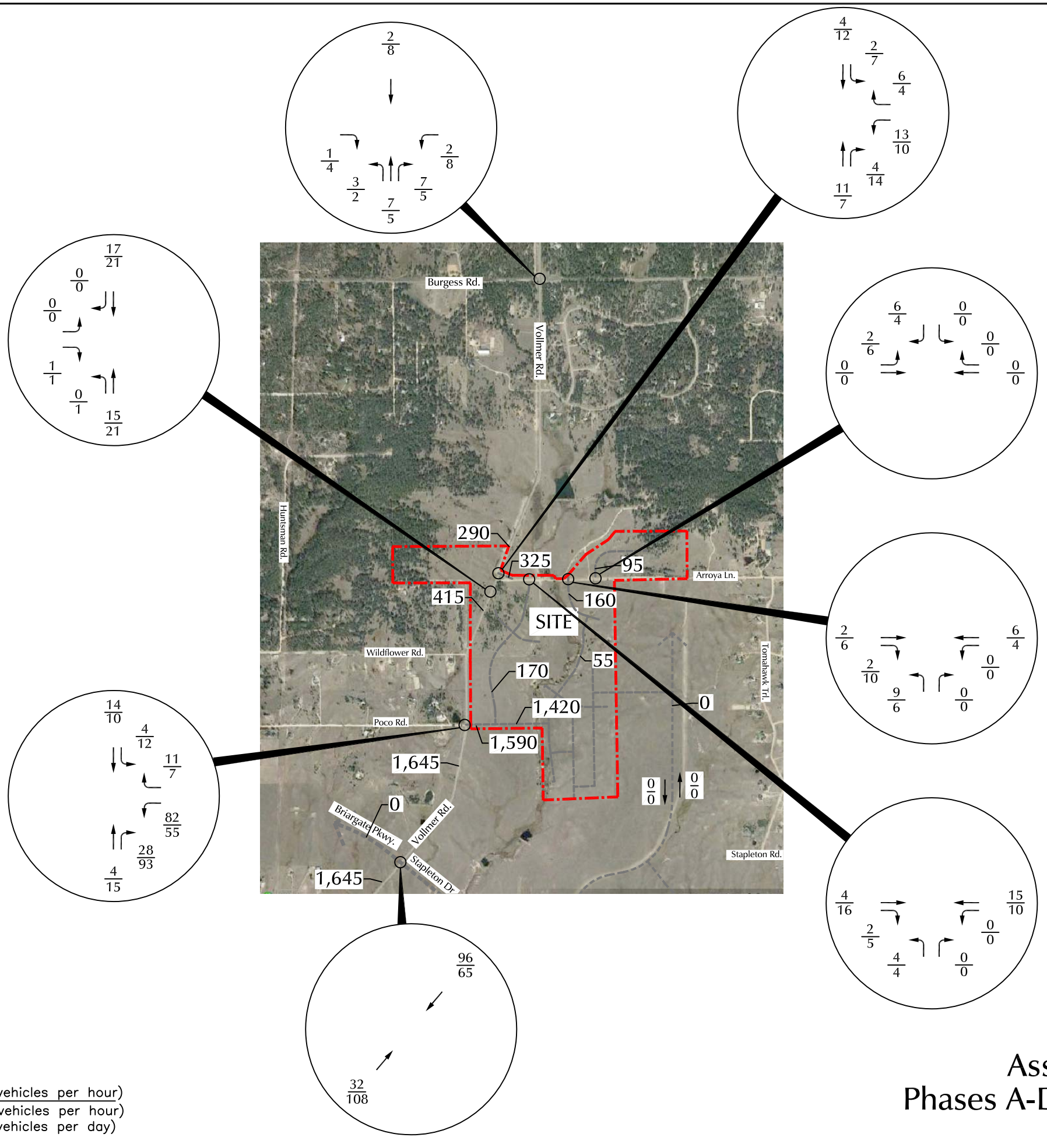
XX%/XX% = Short–Term Percent Directional Distribution / Long–Term Percent Directional Distribution

Figure 7

Directional Distribution of Site-Generated Traffic

Retreat at Timber Ridge (LSC #174030)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

XX/XX = AM Weekday Peak–Hour Traffic (vehicles per hour) / PM Weekday Peak–Hour Traffic (vehicles per hour)

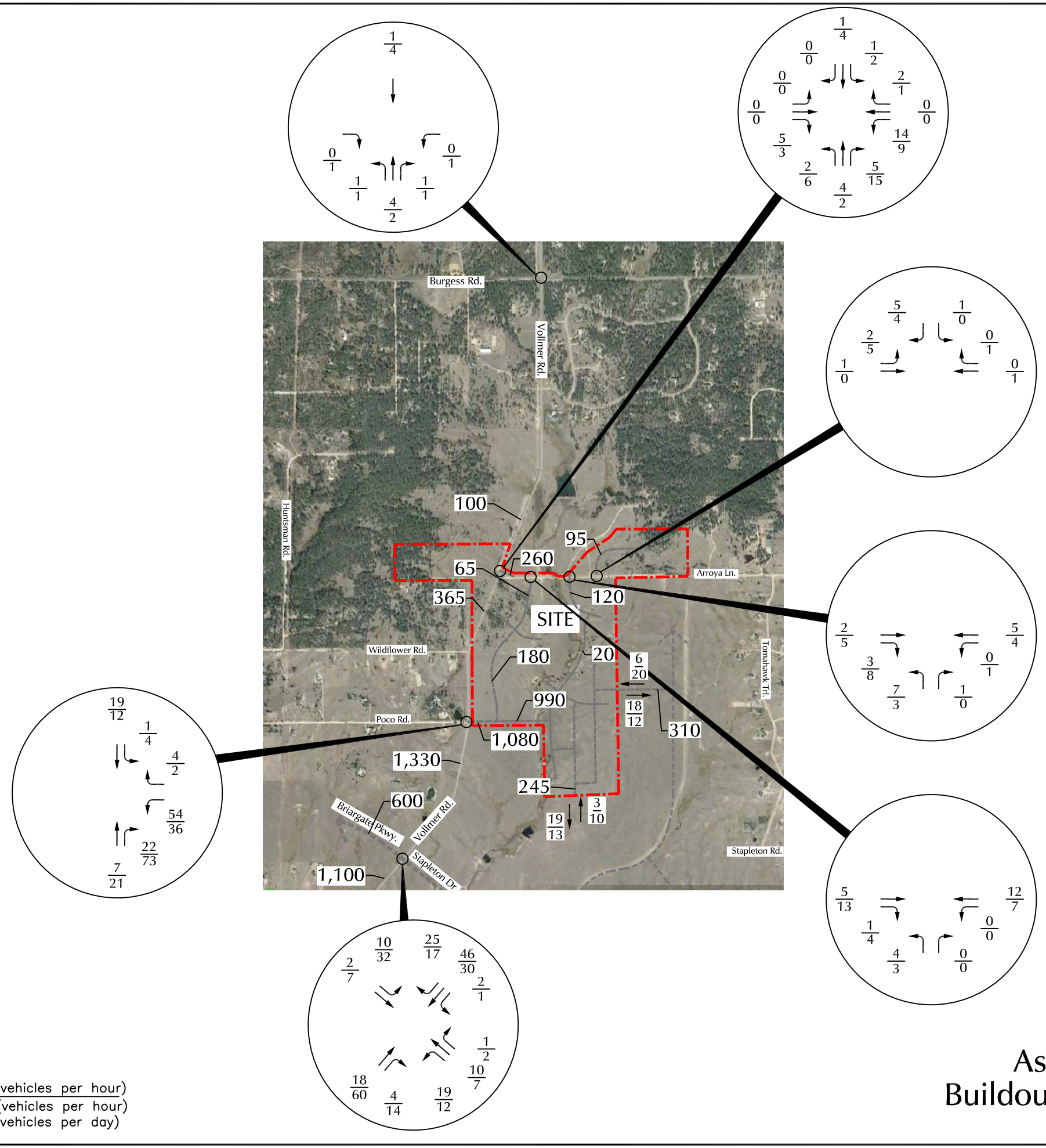
XXX = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 8

Assignment of Short-Term Phases A-D Site-Generated Traffic

Retreat at Timber Ridge (LSC #174030)



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

XX/XX = AM Weekday Peak–Hour Traffic (vehicles per hour) / PM Weekday Peak–Hour Traffic (vehicles per hour)

XXX = Average Weekday Traffic (vehicles per day)

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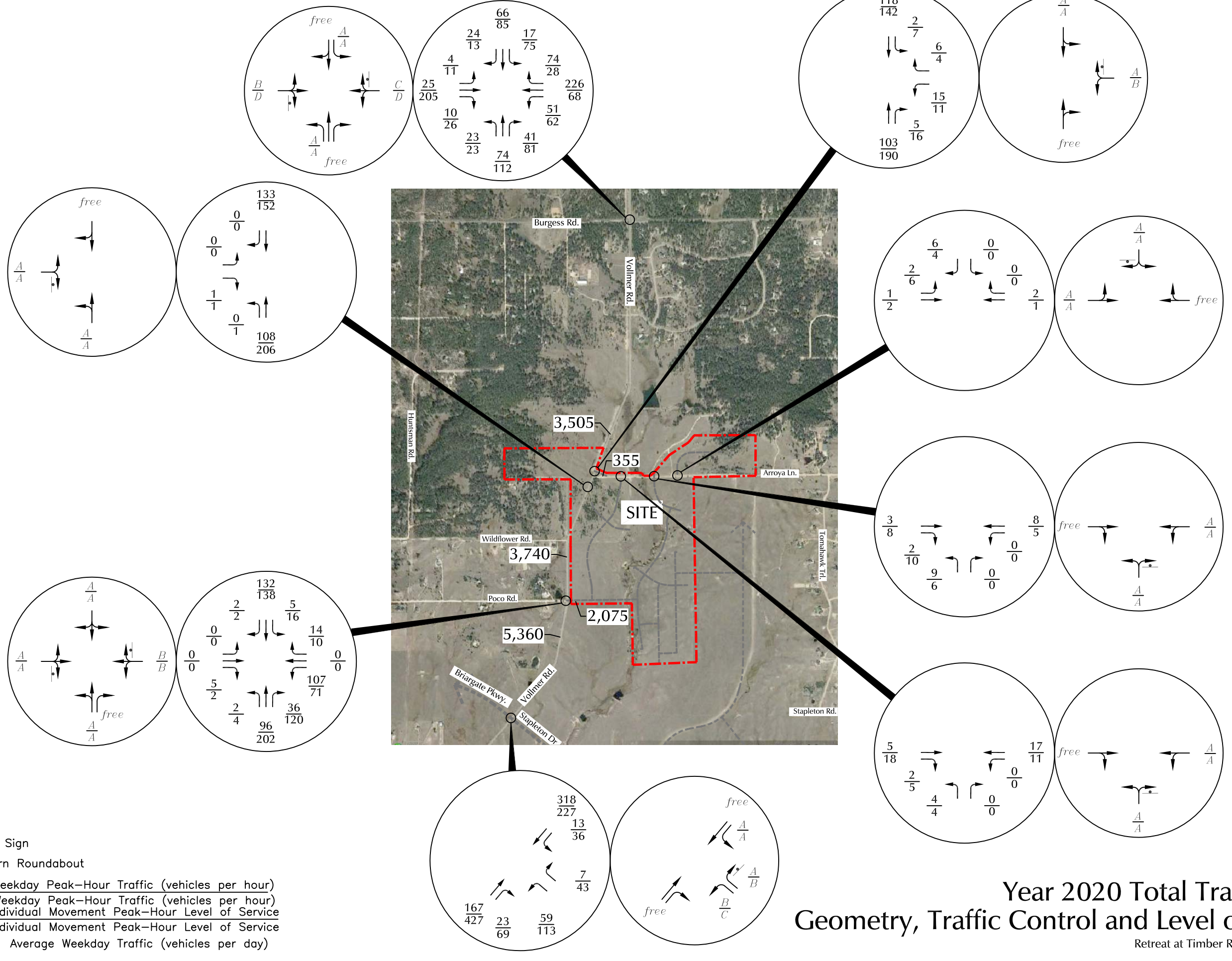
Figure 9

Assignment of Long-Term Buildout Site-Generated Traffic

Retreat at Timber Ridge (LSC #174030)



LEGEND:

= Stop Sign

= Modern Roundabout

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

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

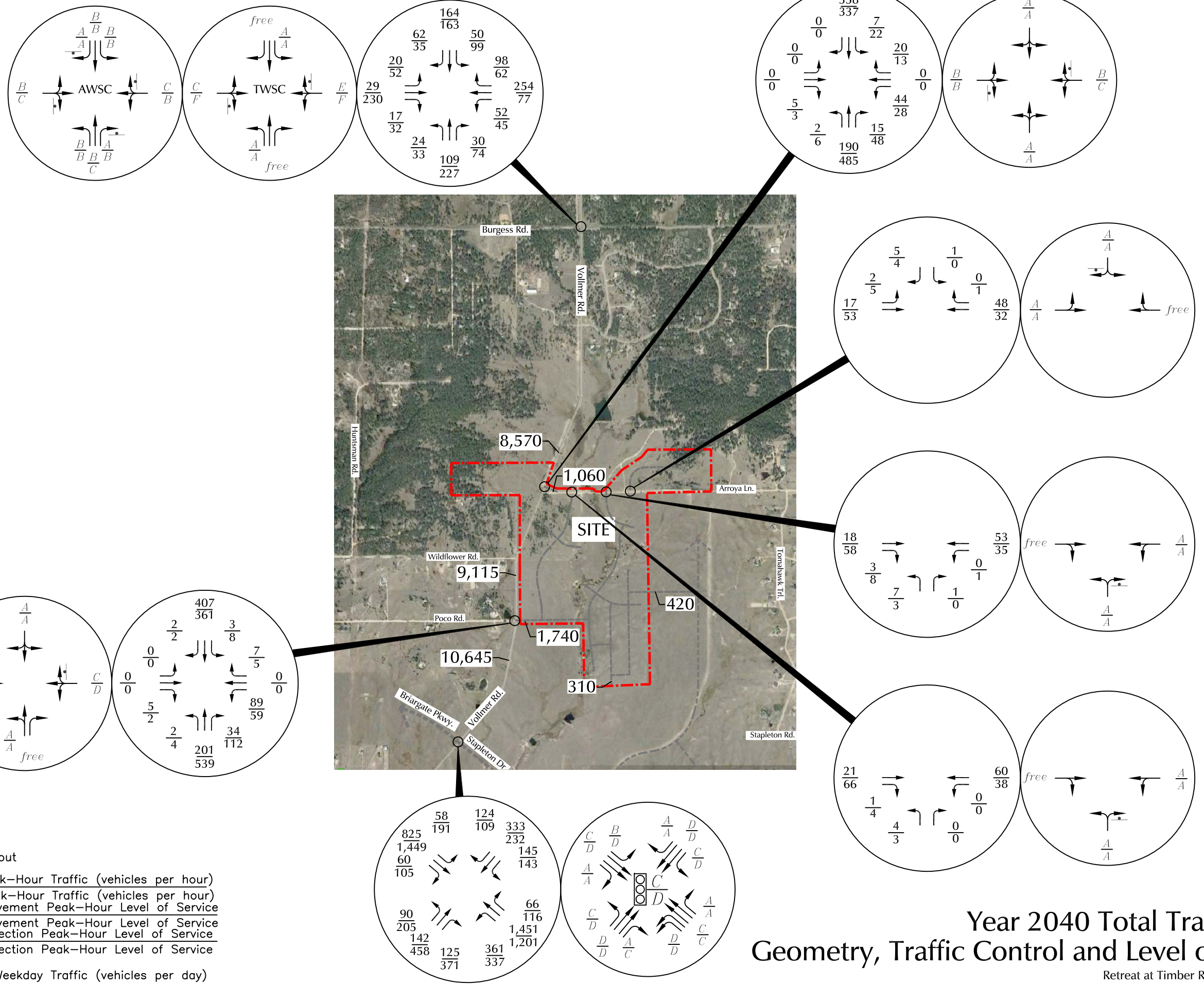
XXX = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 10

Year 2020 Total Traffic, Lane Geometry, Traffic Control and Level of Service

Retreat at Timber Ridge (LSC #174030)



LEGEND:

- = Stop Sign
- = Traffic Signal
- = Modern Roundabout
- $\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$
- $\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$
- $\frac{C}{D}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$
- *XXX* = Average Weekday Traffic (vehicles per day)

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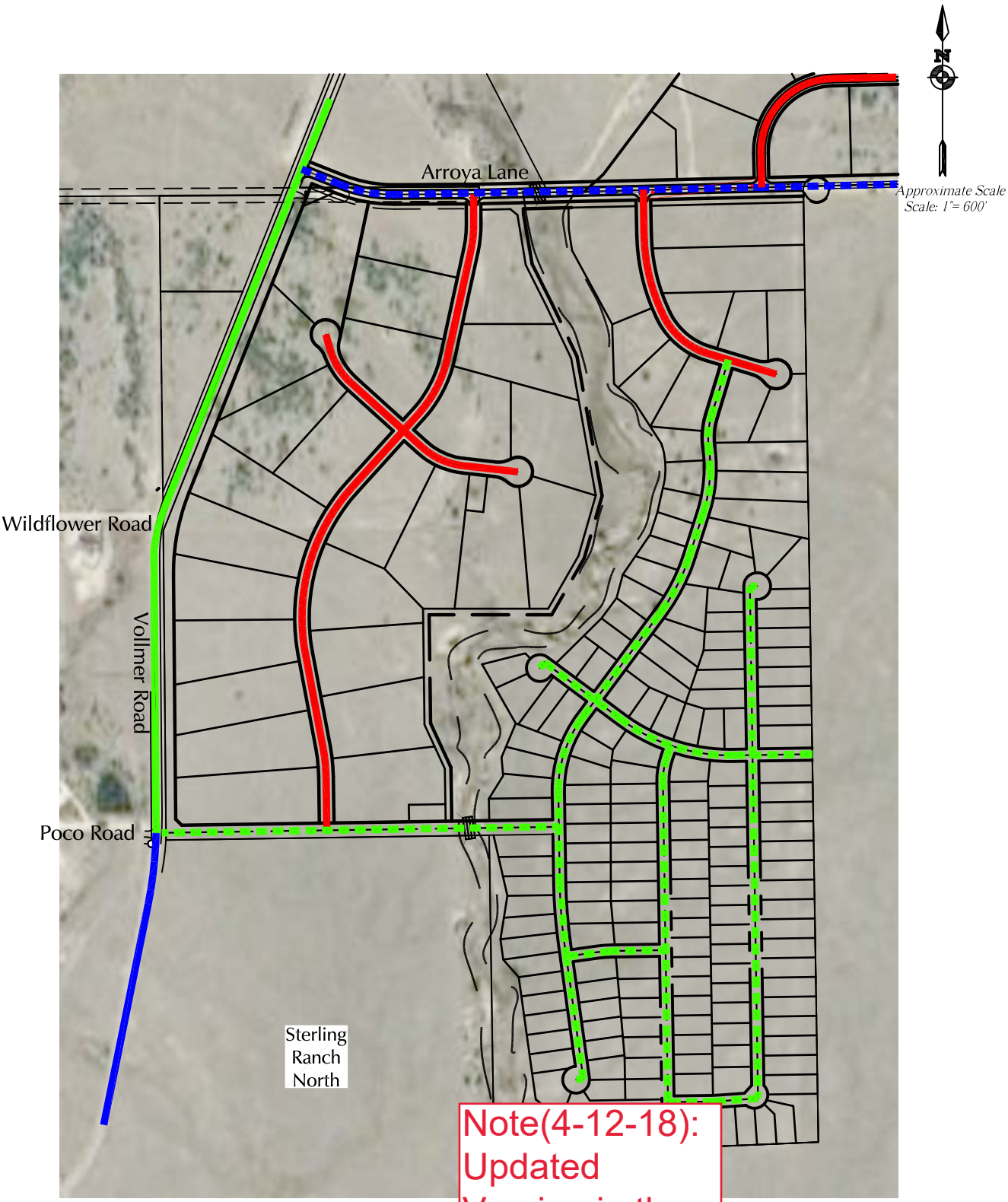
Figure 11

Year 2040 Total Traffic, Lane Geometry, Traffic Control and Level of Service

Retreat at Timber Ridge (LSC #174030)



Note(4-12-18): Updated Version in the Preliminary Plan Report

LEGEND:

= 4–Lane Urban Minor Arterial
= 2–Lane Rural Minor Arterial
= 2–Lane Rural Minor Collector
= Rural Local
= Urban Local

TRANSPORTATION CONSULTANTS, INC.

Figure 12

Recommended Classifications

Trails at Timber Ridge (LSC #174030)

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

LSC Transportation Consultants, Inc.

File Name : Vollmer Rd - Poco Rd AM
Site Code : 00174030
Start Date : 02/09/2017
Page No : 1

Groups Printed- Unshifted

	Vollmer Rd From North				From East				Vollmer Rd From South				Poco Rd From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	26	0	0	0	0	0	0	0	9	1	0	1	0	1	0	38
06:45 AM	0	23	0	0	0	0	0	0	0	3	4	0	0	0	0	0	30
Total	0	49	0	0	0	0	0	0	0	12	5	0	1	0	1	0	68
07:00 AM	0	21	0	0	0	0	0	0	0	11	3	0	1	0	0	0	36
07:15 AM	1	25	0	0	0	0	0	0	0	12	0	0	3	0	0	0	41
07:30 AM	0	22	0	0	0	0	0	0	0	20	0	0	1	0	0	0	43
07:45 AM	1	22	0	0	0	0	0	0	0	15	0	0	2	0	0	0	40
Total	2	90	0	0	0	0	0	0	0	58	3	0	7	0	0	0	160
08:00 AM	0	20	0	0	0	0	0	0	0	8	0	0	2	0	0	0	30
08:15 AM	1	29	0	0	0	0	0	0	0	19	2	0	0	0	0	0	51
Grand Total	3	188	0	0	0	0	0	0	0	97	10	0	10	0	1	0	309
Apprch %	1.6	98.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.7	9.3	0.0	90.9	0.0	9.1	0.0	
Total %	1.0	60.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.4	3.2	0.0	3.2	0.0	0.3	0.0	

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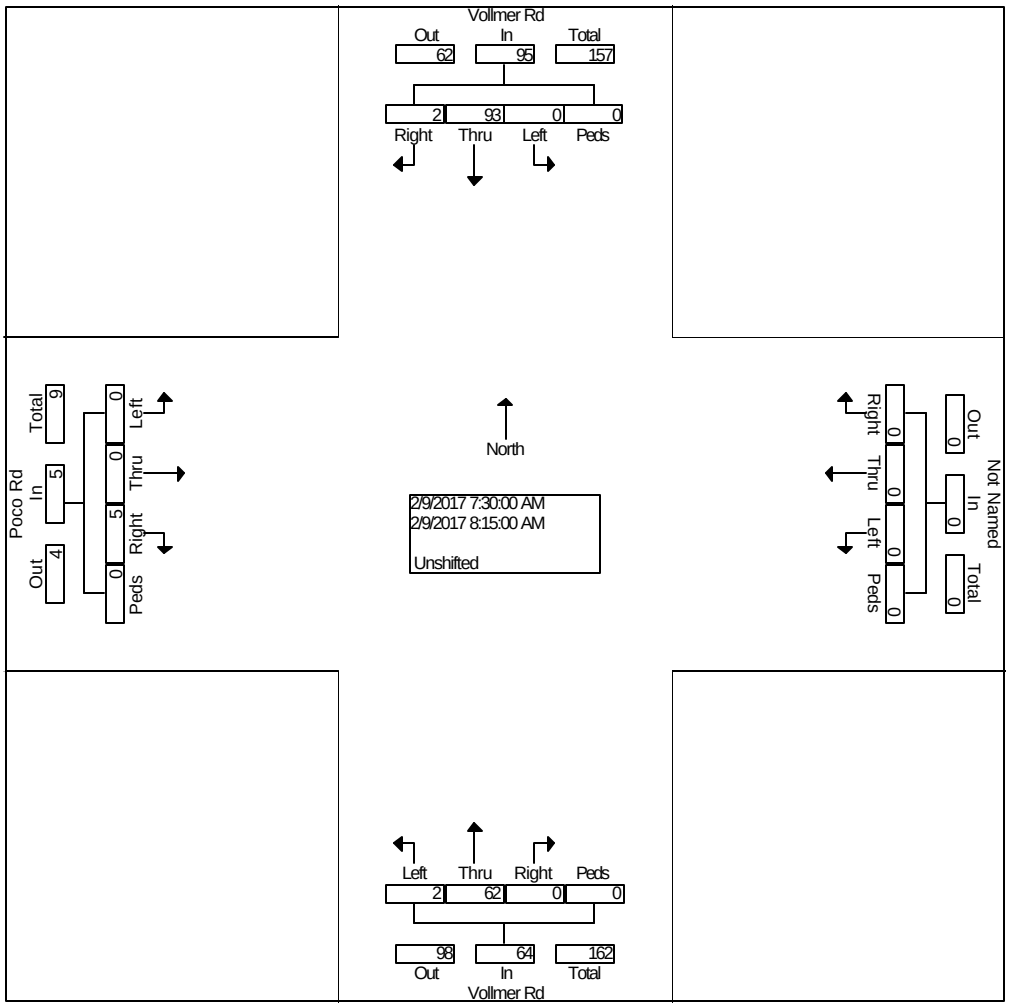
Site Code : 00174030
Start Date : 02/09/2017

	Vollmer Rd From North					From East					Vollmer Rd From South					Poco Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	2	93	0	0	95	0	0	0	0	0	0	62	2	0	64	5	0	0	0	5	164
Percent	2.1	97.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	96.9	3.1	0.0		100.0	0.0	0.0	0.0		
08:15 Volume	1	29	0	0	30	0	0	0	0	0	0	19	2	0	21	0	0	0	0	0	51
Peak Factor																					0.804
High Int.	08:15 AM					6:15:00 AM					08:15 AM					07:45 AM					
Volume	1	29	0	0	30	0	0	0	0	0	0	19	2	0	21	2	0	0	0	2	
Peak Factor					0.792										0.762					0.625	



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

LSC Transportation Consultants, Inc.

File Name : Vollmer Rd - Poco Rd PM
Site Code : 00174030
Start Date : 02/08/2017
Page No : 1

Groups Printed- Unshifted

	Vollmer Rd From North				From East				Vollmer Rd From South				Poco Rd From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	20	0	0	0	0	0	0	0	28	1	0	0	0	1	0	50
04:15 PM	1	14	0	0	0	0	0	0	0	20	0	0	0	0	0	0	35
04:30 PM	0	19	0	0	0	0	0	0	0	36	1	0	0	0	0	0	56
04:45 PM	0	13	0	0	0	0	0	0	0	36	1	0	2	0	0	0	52
Total	1	66	0	0	0	0	0	0	0	120	3	0	2	0	1	0	193
05:00 PM	1	22	0	0	0	0	0	0	0	35	2	0	0	0	0	0	60
05:15 PM	0	10	0	0	0	0	0	0	0	22	1	0	0	0	0	0	33
05:30 PM	0	15	0	0	0	0	0	0	0	38	1	0	1	0	0	0	55
05:45 PM	0	12	0	0	0	0	0	0	0	26	2	0	1	0	0	0	41
Total	1	59	0	0	0	0	0	0	0	121	6	0	2	0	0	0	189
Grand Total	2	125	0	0	0	0	0	0	0	241	9	0	4	0	1	0	382
Apprch %	1.6	98.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.4	3.6	0.0	80.0	0.0	20.0	0.0	
Total %	0.5	32.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.1	2.4	0.0	1.0	0.0	0.3	0.0	

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545 E. Pikes Peak Ave., #210
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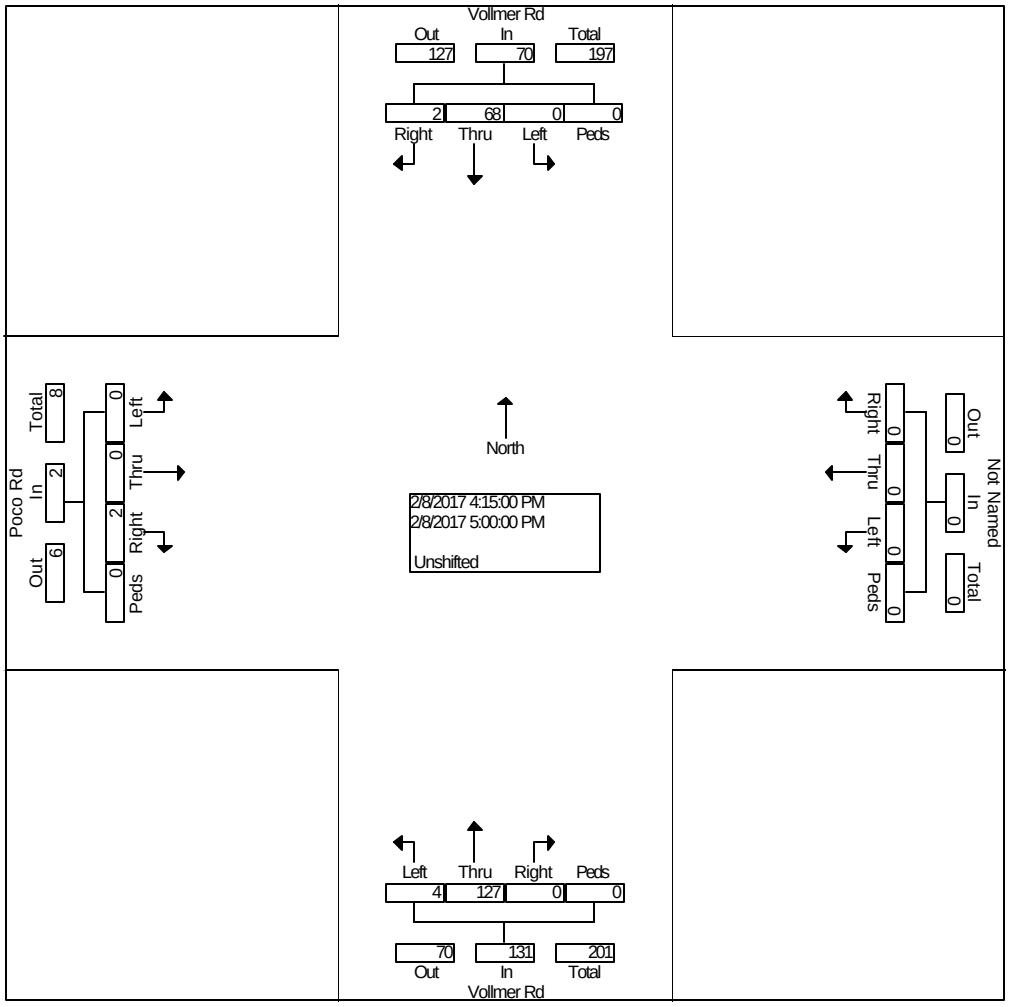
File Name : Vollmer Rd - Poco Rd PM
Site Code : 00174030
Start Date : 02/08/2017
Page No : 2

	Vollmer Rd From North					From East					Vollmer Rd From South					Poco Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	2	68	0	0	70	0	0	0	0	0	0	127	4	0	131	2	0	0	0	2	203
Percent	2.9	97.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	96.9	3.1	0.0		100.0	0.0	0.0	0.0		
05:00 Volume	1	22	0	0	23	0	0	0	0	0	0	35	2	0	37	0	0	0	0	0	60
Peak Factor																					0.846
High Int.	05:00 PM					3:45:00 PM					04:30 PM					04:45 PM					
Volume	1	22	0	0	23	0	0	0	0	0	0	36	1	0	37	2	0	0	0	2	
Peak Factor					0.761										0.885					0.250	



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Vollmer Rd - Burgess Rd AM
Site Code : 00174030
Start Date : 06/13/2017
Page No : 1

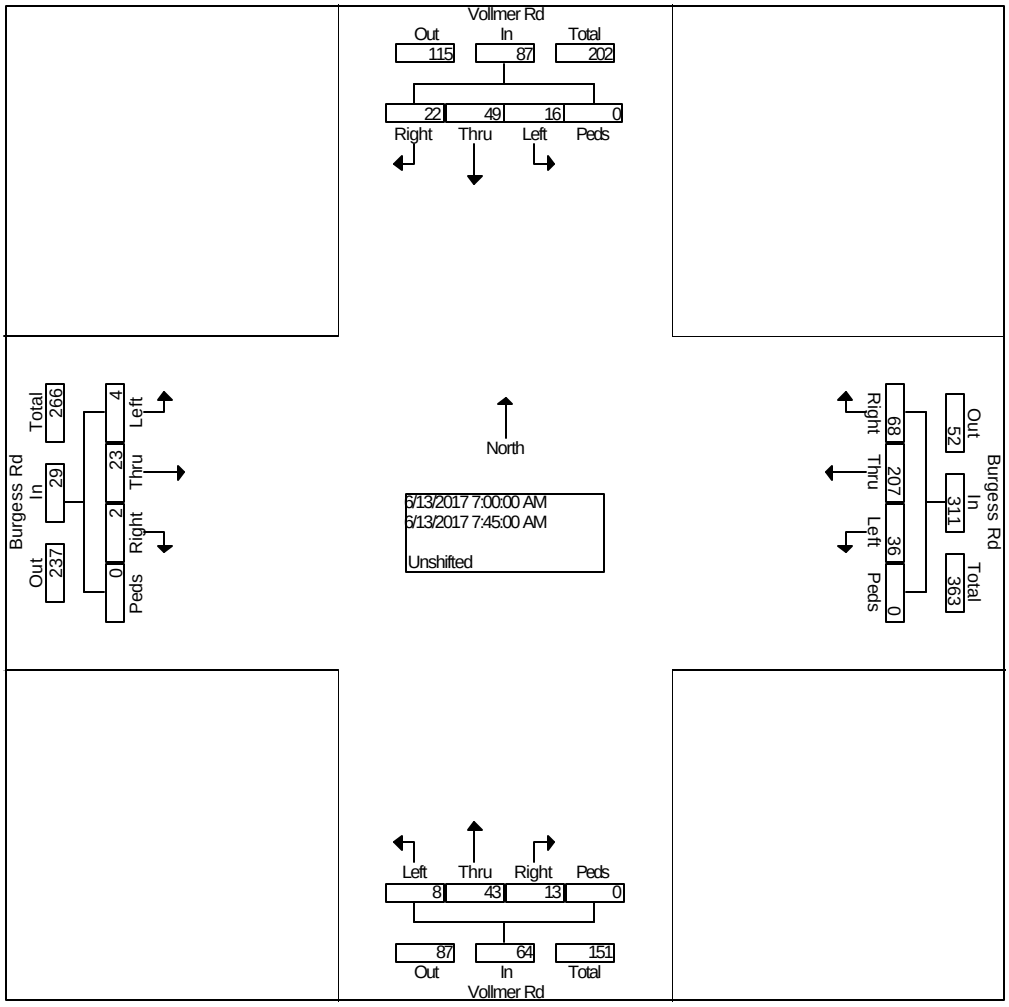
Groups Printed- Unshifted

	Vollmer Rd From North				Burgess Rd From East				Vollmer Rd From South				Burgess Rd From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	2	15	6	0	13	39	5	0	1	1	0	0	0	7	1	0	90
06:45 AM	1	5	2	0	9	39	7	0	4	5	1	0	0	5	0	0	78
Total	3	20	8	0	22	78	12	0	5	6	1	0	0	12	1	0	168
07:00 AM	7	18	2	0	17	51	12	0	6	13	2	0	0	7	0	0	135
07:15 AM	6	7	4	0	21	52	8	0	1	6	2	0	0	2	0	0	109
07:30 AM	2	12	4	0	17	60	11	0	6	12	1	0	1	5	2	0	133
07:45 AM	7	12	6	0	13	44	5	0	0	12	3	0	1	9	2	0	114
Total	22	49	16	0	68	207	36	0	13	43	8	0	2	23	4	0	491
08:00 AM	2	14	7	0	9	30	7	0	5	5	1	0	0	6	1	0	87
08:15 AM	3	6	10	0	9	38	9	0	7	6	2	0	1	9	1	0	101
Grand Total	30	89	41	0	108	353	64	0	30	60	12	0	3	50	7	0	847
Apprch %	18.8	55.6	25.6	0.0	20.6	67.2	12.2	0.0	29.4	58.8	11.8	0.0	5.0	83.3	11.7	0.0	
Total %	3.5	10.5	4.8	0.0	12.8	41.7	7.6	0.0	3.5	7.1	1.4	0.0	0.4	5.9	0.8	0.0	

Counts by LSC

File Name : Vollmer Rd - Burgess Rd AM
Site Code : 00174030
Start Date : 06/13/2017
Page No : 2

	Vollmer Rd From North					Burgess Rd From East					Vollmer Rd From South					Burgess Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	22	49	16	0	87	68	207	36	0	311	13	43	8	0	64	2	23	4	0	29	491
Percent	25.3	56.3	18.4	0.0		21.9	66.6	11.6	0.0		20.3	67.2	12.5	0.0		6.9	79.3	13.8	0.0		
07:00 Volume	7	18	2	0	27	17	51	12	0	80	6	13	2	0	21	0	7	0	0	7	135
Peak Factor																					0.909
High Int.	07:00 AM					07:30 AM					07:00 AM					07:45 AM					
Volume	7	18	2	0	27	17	60	11	0	88	6	13	2	0	21	1	9	2	0	12	
Peak Factor					0.806					0.884					0.762					0.604	



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Vollmer Rd - Burgess Rd PM
Site Code : 00174030
Start Date : 06/08/2017
Page No : 1

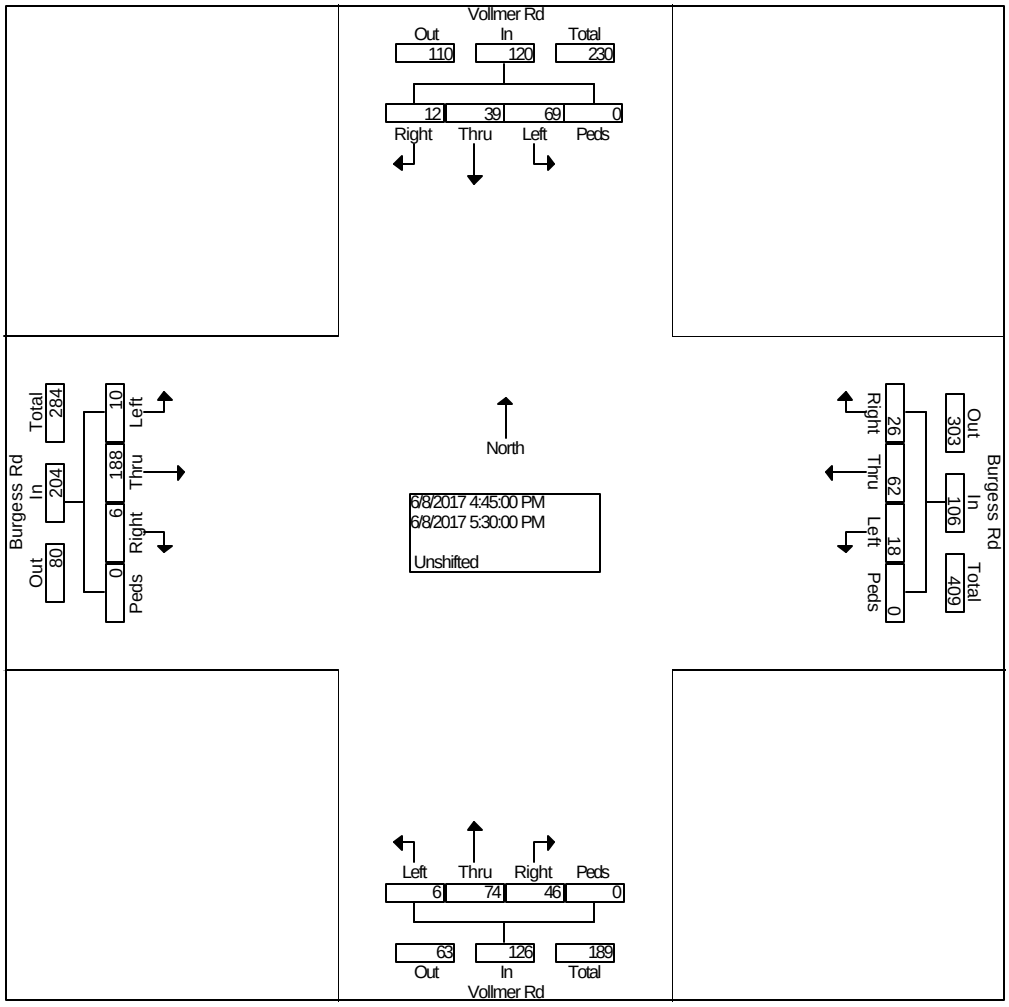
Groups Printed- Unshifted

	Vollmer Rd From North				Burgess Rd From East				Vollmer Rd From South				Burgess Rd From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	2	11	13	0	10	15	11	0	13	9	4	0	2	27	2	0	119
04:15 PM	0	11	19	0	4	22	5	0	17	8	1	0	3	36	1	0	127
04:30 PM	5	11	11	0	11	19	7	0	9	17	0	0	0	29	3	0	122
04:45 PM	4	9	28	0	5	18	7	0	14	20	2	0	0	43	3	0	153
Total	11	42	71	0	30	74	30	0	53	54	7	0	5	135	9	0	521
05:00 PM	1	8	15	0	7	10	7	0	9	17	0	0	2	40	2	0	118
05:15 PM	5	8	8	0	7	17	2	0	13	21	2	0	2	56	1	0	142
05:30 PM	2	14	18	0	7	17	2	0	10	16	2	0	2	49	4	0	143
05:45 PM	3	6	11	0	9	14	8	0	17	15	0	0	1	42	2	0	128
Total	11	36	52	0	30	58	19	0	49	69	4	0	7	187	9	0	531
Grand Total	22	78	123	0	60	132	49	0	102	123	11	0	12	322	18	0	1052
Apprch %	9.9	35.0	55.2	0.0	24.9	54.8	20.3	0.0	43.2	52.1	4.7	0.0	3.4	91.5	5.1	0.0	
Total %	2.1	7.4	11.7	0.0	5.7	12.5	4.7	0.0	9.7	11.7	1.0	0.0	1.1	30.6	1.7	0.0	

Counts by LSC

File Name : Vollmer Rd - Burgess Rd PM
Site Code : 00174030
Start Date : 06/08/2017
Page No : 2

	Vollmer Rd From North					Burgess Rd From East					Vollmer Rd From South					Burgess Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	12	39	69	0	120	26	62	18	0	106	46	74	6	0	126	6	188	10	0	204	556
Percent	10.0	32.5	57.5	0.0		24.5	58.5	17.0	0.0		36.5	58.7	4.8	0.0		2.9	92.2	4.9	0.0		
04:45 Volume	4	9	28	0	41	5	18	7	0	30	14	20	2	0	36	0	43	3	0	46	153
Peak Factor																					0.908
High Int.	04:45 PM					04:45 PM					04:45 PM					05:15 PM					
Volume	4	9	28	0	41	5	18	7	0	30	14	20	2	0	36	2	56	1	0	59	
Peak Factor					0.732					0.883					0.875					0.864	



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	2	62	93	2
Future Vol, veh/h	0	5	2	62	93	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	100	100	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	3	82	118	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	208	120	121	0	-	0
Stage 1	120	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	780	931	1467	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	778	931	1467	-	-	-
Mov Cap-2 Maneuver	778	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1467	-	931	-	-
HCM Lane V/C Ratio	0.002	-	0.005	-	-
HCM Control Delay (s)	7.5	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	23	2	36	207	68	8	43	13	16	49	22
Future Vol, veh/h	4	23	2	36	207	68	8	43	13	16	49	22
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	100	100	100	97	97	97	76	76	76	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	23	2	37	213	70	11	57	17	20	60	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	343	210	74	214	215	66	87	0	0	74	0	0
Stage 1	114	114	-	88	88	-	-	-	-	-	-	-
Stage 2	229	96	-	126	127	-	-	-	-	-	-	-
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	611	687	988	743	683	998	1509	-	-	1526	-	-
Stage 1	891	801	-	920	822	-	-	-	-	-	-	-
Stage 2	774	815	-	878	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	421	672	988	710	668	998	1509	-	-	1526	-	-
Mov Cap-2 Maneuver	421	672	-	710	668	-	-	-	-	-	-	-
Stage 1	884	790	-	913	815	-	-	-	-	-	-	-
Stage 2	527	808	-	839	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	13.8	0.9	1.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	634	725	1526	-	-
HCM Lane V/C Ratio	0.007	-	-	0.046	0.442	0.013	-	-
HCM Control Delay (s)	7.4	0	-	11	13.8	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2.3	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	127	68	2
Future Vol, veh/h	0	2	4	127	68	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	89	89	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	4	143	89	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	242	91	92	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	151	-	-	-	-	-
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	746	967	1503	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	744	967	1503	-	-	-
Mov Cap-2 Maneuver	744	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	967	-	-
HCM Lane V/C Ratio	0.003	-	0.002	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	188	6	18	62	26	6	74	46	69	39	12
Future Vol, veh/h	10	188	6	18	62	26	6	74	46	69	39	12
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	100	100	100	88	88	88	88	88	88	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	188	6	20	70	30	7	84	52	95	53	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	425	401	61	472	383	110	69	0	0	136	0	0
Stage 1	251	251	-	124	124	-	-	-	-	-	-	-
Stage 2	174	150	-	348	259	-	-	-	-	-	-	-
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	540	538	1004	502	550	943	1532	-	-	1448	-	-
Stage 1	753	699	-	880	793	-	-	-	-	-	-	-
Stage 2	828	773	-	668	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	442	499	1004	334	510	943	1532	-	-	1448	-	-
Mov Cap-2 Maneuver	442	499	-	334	510	-	-	-	-	-	-	-
Stage 1	749	651	-	876	789	-	-	-	-	-	-	-
Stage 2	727	769	-	440	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	14	0.4	4.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1532	-	-	503	522	1448	-	-
HCM Lane V/C Ratio	0.004	-	-	0.406	0.231	0.065	-	-
HCM Control Delay (s)	7.4	0	-	17	14	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.9	0.2	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	7	134	23	13	222
Future Vol, veh/h	59	7	134	23	13	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	0	0	-	235	260	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	76	92	92	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	8	176	25	14	281

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	485	176	0	0	201	0
Stage 1	176	-	-	-	-	-
Stage 2	309	-	-	-	-	-
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	541	867	-	-	1371	-
Stage 1	855	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	536	867	-	-	1371	-
Mov Cap-2 Maneuver	536	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	745	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	536	867	1371	-
HCM Lane V/C Ratio	-	-	0.12	0.009	0.01	-
HCM Control Delay (s)	-	-	12.6	9.2	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	5	25	0	4	2	91	8	1	118	2
Future Vol, veh/h	0	0	5	25	0	4	2	91	8	1	118	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	100	100	100	92	92	92	76	76	92	92	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	27	0	4	3	120	9	1	149	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	286	288	151	286	285	125	152	0	0	129	0	0
Stage 1	153	153	-	131	131	-	-	-	-	-	-	-
Stage 2	133	135	-	155	154	-	-	-	-	-	-	-
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	666	622	895	666	624	926	1429	-	-	1457	-	-
Stage 1	849	771	-	873	788	-	-	-	-	-	-	-
Stage 2	870	785	-	847	770	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	661	620	895	661	622	926	1429	-	-	1457	-	-
Mov Cap-2 Maneuver	661	620	-	661	622	-	-	-	-	-	-	-
Stage 1	847	770	-	871	786	-	-	-	-	-	-	-
Stage 2	864	783	-	841	769	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	10.5	0.2	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1429	-	-	895	688	1457	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.046	0.001	-	-
HCM Control Delay (s)	7.5	0	-	9	10.5	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	2	93	117	0
Future Vol, veh/h	0	5	2	93	117	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	76	79	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	2	122	148	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	274	148	148	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	126	-	-	-	-	-
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	716	899	1434	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	715	899	1434	-	-	-
Mov Cap-2 Maneuver	715	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1434	-	899	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	92	1	0	115
Future Vol, veh/h	2	0	92	1	0	115
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	76	92	92	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	121	1	0	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	268	122	0	0	122	0
Stage 1	122	-	-	-	-	-
Stage 2	146	-	-	-	-	-
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	721	929	-	-	1465	-
Stage 1	903	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	929	-	-	1465	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	881	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	721	1465	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	-	-	10	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	25	7	46	226	74	15	58	25	17	61	24
Future Vol, veh/h	4	25	7	46	226	74	15	58	25	17	61	24
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	97	97	97	76	76	76	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	25	7	47	233	76	20	76	33	21	75	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	419	281	90	264	263	76	105	0	0	109	0	0
Stage 1	132	132	-	116	116	-	-	-	-	-	-	-
Stage 2	287	149	-	148	147	-	-	-	-	-	-	-
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	544	627	968	689	642	985	1486	-	-	1481	-	-
Stage 1	871	787	-	889	800	-	-	-	-	-	-	-
Stage 2	720	774	-	855	775	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	349	610	968	649	625	985	1486	-	-	1481	-	-
Mov Cap-2 Maneuver	349	610	-	649	625	-	-	-	-	-	-	-
Stage 1	860	776	-	877	790	-	-	-	-	-	-	-
Stage 2	462	764	-	810	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	15.9	1.1	1.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1486	-	-	603	682	1481	-	-
HCM Lane V/C Ratio	0.013	-	-	0.06	0.523	0.014	-	-
HCM Control Delay (s)	7.5	-	-	11.3	15.9	7.5	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	3.1	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	43	319	69	36	163
Future Vol, veh/h	113	43	319	69	36	163
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	0	-	235	260	-
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	123	47	347	75	39	177

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	602	347	0	0	422	0
Stage 1	347	-	-	-	-	-
Stage 2	255	-	-	-	-	-
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	463	696	-	-	1137	-
Stage 1	716	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	447	696	-	-	1137	-
Mov Cap-2 Maneuver	532	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	788	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	532	696	1137	-
HCM Lane V/C Ratio	-	-	0.231	0.067	0.034	-
HCM Control Delay (s)	-	-	13.8	10.5	8.3	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	16	0	3	4	187	28	4	128	2
Future Vol, veh/h	0	0	2	16	0	3	4	187	28	4	128	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	100	100	100	92	92	92	89	89	92	92	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	17	0	3	4	210	30	4	168	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	413	426	170	412	412	225	171	0	0	240	0	0
Stage 1	178	178	-	233	233	-	-	-	-	-	-	-
Stage 2	235	248	-	179	179	-	-	-	-	-	-	-
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	549	520	874	550	530	814	1406	-	-	1327	-	-
Stage 1	824	752	-	770	712	-	-	-	-	-	-	-
Stage 2	768	701	-	823	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	544	517	874	546	527	814	1406	-	-	1327	-	-
Mov Cap-2 Maneuver	544	517	-	546	527	-	-	-	-	-	-	-
Stage 1	822	750	-	768	710	-	-	-	-	-	-	-
Stage 2	763	699	-	819	749	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	11.5	0.1	0.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1406	-	-	874	576	1327	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.036	0.003	-	-
HCM Control Delay (s)	7.6	0	-	9.1	11.5	7.7	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	5	184	131	0
Future Vol, veh/h	0	3	5	184	131	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	89	76	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	5	207	172	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	389	172	172	0	-	0
Stage 1	172	-	-	-	-	-
Stage 2	217	-	-	-	-	-
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	615	872	1405	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	613	872	1405	-	-	-
Mov Cap-2 Maneuver	613	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1405	-	872	-	-
HCM Lane V/C Ratio	0.004	-	0.004	-	-
HCM Control Delay (s)	7.6	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	182	2	0	130
Future Vol, veh/h	1	0	182	2	0	130
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	89	92	92	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	204	2	0	171

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	376	205	0	0	206	0
Stage 1	205	-	-	-	-	-
Stage 2	171	-	-	-	-	-
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	625	836	-	-	1365	-
Stage 1	829	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	625	836	-	-	1365	-
Mov Cap-2 Maneuver	625	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	859	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	625	1365	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	205	17	44	68	28	18	101	70	75	67	13
Future Vol, veh/h	11	205	17	44	68	28	18	101	70	75	67	13
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	88	88	88	88	88	88	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	205	17	50	77	32	20	115	80	103	92	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	557	542	101	573	471	115	110	0	0	195	0	0
Stage 1	307	307	-	155	155	-	-	-	-	-	-	-
Stage 2	250	235	-	418	316	-	-	-	-	-	-	-
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	441	447	954	430	491	937	1480	-	-	1378	-	-
Stage 1	703	661	-	847	769	-	-	-	-	-	-	-
Stage 2	754	710	-	612	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	346	408	954	240	448	937	1480	-	-	1378	-	-
Mov Cap-2 Maneuver	346	408	-	240	448	-	-	-	-	-	-	-
Stage 1	693	611	-	835	758	-	-	-	-	-	-	-
Stage 2	645	700	-	370	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.6	20.8	0.7	3.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1480	-	-	422	384	1378	-	-
HCM Lane V/C Ratio	0.014	-	-	0.552	0.414	0.075	-	-
HCM Control Delay (s)	7.5	-	-	23.6	20.8	7.8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.3	2	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	7	167	23	13	318
Future Vol, veh/h	59	7	167	23	13	318
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	0	-	235	260	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	76	92	92	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	8	220	25	14	403

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	651	220	0	0	245	0
Stage 1	220	-	-	-	-	-
Stage 2	431	-	-	-	-	-
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	433	820	-	-	1321	-
Stage 1	817	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	428	820	-	-	1321	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	428	820	1321	-
HCM Lane V/C Ratio	-	-	0.15	0.009	0.011	-
HCM Control Delay (s)	-	-	14.9	9.4	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	5	107	0	14	2	96	36	5	132	2
Future Vol, veh/h	0	0	5	107	0	14	2	96	36	5	132	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	-	-	-	-	-	-	-	-	235	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	92	92	92	76	76	92	92	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	116	0	15	3	126	39	5	167	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	338	350	169	313	312	126	170	0	0	165	0	0
Stage 1	179	179	-	132	132	-	-	-	-	-	-	-
Stage 2	159	171	-	181	180	-	-	-	-	-	-	-
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	616	574	875	640	603	924	1407	-	-	1413	-	-
Stage 1	823	751	-	871	787	-	-	-	-	-	-	-
Stage 2	843	757	-	821	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	603	571	875	634	599	924	1407	-	-	1413	-	-
Mov Cap-2 Maneuver	603	571	-	634	599	-	-	-	-	-	-	-
Stage 1	821	748	-	869	785	-	-	-	-	-	-	-
Stage 2	827	755	-	813	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	11.8	0.1	0.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1407	-	-	875	658	1413	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.2	0.004	-	-
HCM Control Delay (s)	7.6	0	-	9.1	11.8	7.6	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	6	103	5	2	118
Future Vol, veh/h	15	6	103	5	2	118
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	76	92	92	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	7	136	5	2	149

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	292	139	0	0	141	0
Stage 1	139	-	-	-	-	-
Stage 2	153	-	-	-	-	-
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	699	909	-	-	1442	-
Stage 1	888	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	698	909	-	-	1442	-
Mov Cap-2 Maneuver	698	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	875	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	748	1442	-
HCM Lane V/C Ratio	-	-	0.031	0.002	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	2	0	17	4	0
Future Vol, veh/h	5	2	0	17	4	0
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	5	2	0	18	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	24	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	18	-
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	-	-	1614	-	992	1077
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	992	1077
Mov Cap-2 Maneuver	-	-	-	-	992	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1005	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	992	-	-	1614	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	2	0	8	9	0
Future Vol, veh/h	3	2	0	8	9	0
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	0	8	9	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	5	0	12	4
Stage 1	-	-	-	-	4	-
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	-	-	1616	-	1008	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1616	-	1008	1080
Mov Cap-2 Maneuver	-	-	-	-	1008	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1015	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1008	-	-	1616	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	2	0	0	6
Future Vol, veh/h	2	1	2	0	0	6
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	2	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2	0	-	0	7	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	5	-
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	1620	-	-	-	1014	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1018	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1620	-	-	-	1013	1082
Mov Cap-2 Maneuver	-	-	-	-	1013	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1018	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	1082
HCM Lane V/C Ratio	0.001	-	-	-	0.006
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	25	10	51	226	74	23	74	41	17	66	24
Future Vol, veh/h	4	25	10	51	226	74	23	74	41	17	66	24
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	97	97	97	76	76	76	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	25	10	53	233	76	30	97	54	21	81	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	349	96	313	310	97	111	0	0	151	0	0
Stage 1	138	138	-	157	157	-	-	-	-	-	-	-
Stage 2	339	211	-	156	153	-	-	-	-	-	-	-
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	498	575	960	640	605	959	1479	-	-	1430	-	-
Stage 1	865	782	-	845	768	-	-	-	-	-	-	-
Stage 2	676	728	-	846	771	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	308	555	960	595	584	959	1479	-	-	1430	-	-
Mov Cap-2 Maneuver	308	555	-	595	584	-	-	-	-	-	-	-
Stage 1	848	770	-	828	753	-	-	-	-	-	-	-
Stage 2	421	713	-	798	759	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	17.8	1.2	1.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1479	-	-	570	638	1430	-	-
HCM Lane V/C Ratio	0.02	-	-	0.068	0.567	0.015	-	-
HCM Control Delay (s)	7.5	-	-	11.8	17.8	7.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	3.6	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	108	133	0
Future Vol, veh/h	0	1	0	108	133	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	0	1	0	117	145	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	262	145	145	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	117	-	-	-	-	-
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	727	902	1437	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	727	902	1437	-	-	-
Mov Cap-2 Maneuver	727	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	908	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1437	-	902	-	-
HCM Lane V/C Ratio	-	-	0.001	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	113	43	427	69	36	227
Future Vol, veh/h	113	43	427	69	36	227
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	0	-	235	260	-
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	123	47	464	75	39	247

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	789	464	0	0	539	0
Stage 1	464	-	-	-	-	-
Stage 2	325	-	-	-	-	-
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	359	598	-	-	1029	-
Stage 1	633	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	598	-	-	1029	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	732	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	345	598	1029	-
HCM Lane V/C Ratio	-	-	0.356	0.078	0.038	-
HCM Control Delay (s)	-	-	21.1	11.5	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.3	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	2	71	0	10	4	202	120	16	138	2
Future Vol, veh/h	0	0	2	71	0	10	4	202	120	16	138	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	-	-	-	-	-	-	-	-	235	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	92	92	92	89	89	92	92	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	77	0	11	4	227	130	17	182	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	524	583	184	454	454	227	185	0	0	357	0	0
Stage 1	218	218	-	235	235	-	-	-	-	-	-	-
Stage 2	306	365	-	219	219	-	-	-	-	-	-	-
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	464	424	858	516	502	812	1390	-	-	1202	-	-
Stage 1	784	723	-	768	710	-	-	-	-	-	-	-
Stage 2	704	623	-	783	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	451	416	858	507	492	812	1390	-	-	1202	-	-
Mov Cap-2 Maneuver	451	416	-	507	492	-	-	-	-	-	-	-
Stage 1	781	711	-	765	707	-	-	-	-	-	-	-
Stage 2	692	621	-	769	710	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	13.1	0.1	0.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1390	-	-	858	532	1202	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.165	0.014	-	-
HCM Control Delay (s)	7.6	0	-	9.2	13.1	8	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	4	190	16	7	142
Future Vol, veh/h	11	4	190	16	7	142
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	89	92	92	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	4	213	17	8	187

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	425	222	0	0	230	0
Stage 1	222	-	-	-	-	-
Stage 2	203	-	-	-	-	-
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	586	818	-	-	1338	-
Stage 1	815	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	582	818	-	-	1338	-
Mov Cap-2 Maneuver	582	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1338	-
HCM Lane V/C Ratio	-	-	0.026	0.006	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	5	0	11	4	0
Future Vol, veh/h	18	5	0	11	4	0
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	20	5	0	12	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	25	0	35	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	12	-
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	-	-	1589	-	978	1054
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1589	-	978	1054
Mov Cap-2 Maneuver	-	-	-	-	978	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	1011	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1589	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	10	0	5	6	0
Future Vol, veh/h	8	10	0	5	6	0
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	9	11	0	5	7	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	20	0	20	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	5	-
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	-	-	1596	-	997	1065
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1018	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1596	-	997	1065
Mov Cap-2 Maneuver	-	-	-	-	997	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1018	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	997	-	-	1596	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	2	1	0	0	4
Future Vol, veh/h	6	2	1	0	0	4
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	7	2	1	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	17	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	16	-
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	1622	-	-	-	1001	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	997	1084
Mov Cap-2 Maneuver	-	-	-	-	997	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.004	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	14.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	205	26	62	68	28	23	112	81	75	85	13
Future Vol, veh/h	11	205	26	62	68	28	23	112	81	75	85	13
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	88	88	88	88	88	88	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	205	26	70	77	32	26	127	92	103	116	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	611	602	125	626	519	127	134	0	0	219	0	0
Stage 1	331	331	-	179	179	-	-	-	-	-	-	-
Stage 2	280	271	-	447	340	-	-	-	-	-	-	-
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	406	414	926	397	461	923	1451	-	-	1350	-	-
Stage 1	682	645	-	823	751	-	-	-	-	-	-	-
Stage 2	727	685	-	591	639	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	313	375	926	205	418	923	1451	-	-	1350	-	-
Mov Cap-2 Maneuver	313	375	-	205	418	-	-	-	-	-	-	-
Stage 1	670	596	-	808	737	-	-	-	-	-	-	-
Stage 2	617	673	-	348	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.2	29.9	0.8	3.4
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	397	319	1350	-	-
HCM Lane V/C Ratio	0.018	-	-	0.61	0.563	0.076	-	-
HCM Control Delay (s)	7.5	-	-	27.2	29.9	7.9	-	-
HCM Lane LOS	A	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.9	3.3	0.2	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	1	206	152	0
Future Vol, veh/h	0	1	1	206	152	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	0	1	1	224	165	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	391	165	165	0	-	0
Stage 1	165	-	-	-	-	-
Stage 2	226	-	-	-	-	-
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	879	1413	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	612	879	1413	-	-	-
Mov Cap-2 Maneuver	612	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1413	-	879	-	-
HCM Lane V/C Ratio	0.001	-	0.001	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	823	60	342	1441	66	90	124	121	143	287	99
Future Volume (vph)	48	823	60	342	1441	66	90	124	121	143	287	99
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	53.0	53.0	22.0	65.0	65.0	15.0	32.0	32.0	13.0	30.0	30.0
Total Split (%)	8.3%	44.2%	44.2%	18.3%	54.2%	54.2%	12.5%	26.7%	26.7%	10.8%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	42.9	37.6	37.6	15.0	50.4	50.4	23.2	14.4	14.4	23.4	17.4	17.4
Actuated g/C Ratio	0.45	0.39	0.39	0.16	0.52	0.52	0.24	0.15	0.15	0.24	0.18	0.18
v/c Ratio	0.30	0.63	0.09	0.67	0.82	0.08	0.31	0.25	0.35	0.46	0.47	0.25
Control Delay	15.0	25.9	0.2	48.0	24.5	1.0	31.9	39.7	6.4	35.5	42.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	25.9	0.2	48.0	24.5	1.0	31.9	39.7	6.4	35.5	42.5	3.3
LOS	B	C	A	D	C	A	C	D	A	D	D	A
Approach Delay		23.7			28.0			25.6			33.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Vollmer Rd & Stapleton Dr

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	5	35	0	4	2	194	12	1	388	2
Future Vol, veh/h	0	0	5	35	0	4	2	194	12	1	388	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	37	0	4	2	204	13	1	408	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	628	632	409	622	620	204	410	0	0	217	0	0
Stage 1	411	411	-	208	208	-	-	-	-	-	-	-
Stage 2	217	221	-	414	412	-	-	-	-	-	-	-
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	395	398	642	399	404	837	1149	-	-	1353	-	-
Stage 1	618	595	-	794	730	-	-	-	-	-	-	-
Stage 2	785	720	-	616	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	392	397	642	395	403	837	1149	-	-	1353	-	-
Mov Cap-2 Maneuver	392	397	-	395	403	-	-	-	-	-	-	-
Stage 1	617	594	-	792	729	-	-	-	-	-	-	-
Stage 2	779	719	-	610	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	14.5	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1149	-	-	642	418	1353	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.098	0.001	-	-
HCM Control Delay (s)	8.1	0	-	10.7	14.5	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	18	186	10	6	357
Future Vol, veh/h	30	18	186	10	6	357
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	-	-	235	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	19	196	11	6	376

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	584	196	0	0	207	0
Stage 1	196	-	-	-	-	-
Stage 2	388	-	-	-	-	-
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	474	845	-	-	1364	-
Stage 1	837	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	471	845	-	-	1364	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1364	-
HCM Lane V/C Ratio	-	-	0.089	0.005	-
HCM Control Delay (s)	-	-	12	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	19.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	29	17	52	254	98	23	106	29	50	163	62
Future Vol, veh/h	20	29	17	52	254	98	23	106	29	50	163	62
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	31	18	55	267	103	24	112	31	53	172	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	672	502	205	495	503	112	237	0	0	143	0	0
Stage 1	311	311	-	160	160	-	-	-	-	-	-	-
Stage 2	361	191	-	335	343	-	-	-	-	-	-	-
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	370	471	836	485	471	941	1330	-	-	1440	-	-
Stage 1	699	658	-	842	766	-	-	-	-	-	-	-
Stage 2	657	742	-	679	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	166	446	836	431	446	941	1330	-	-	1440	-	-
Mov Cap-2 Maneuver	166	446	-	431	446	-	-	-	-	-	-	-
Stage 1	686	634	-	827	752	-	-	-	-	-	-	-
Stage 2	370	729	-	609	613	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.3	38.5	1.1	1.4
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1330	-	-	321	509	1440	-	-
HCM Lane V/C Ratio	0.018	-	-	0.216	0.835	0.037	-	-
HCM Control Delay (s)	7.8	-	-	19.3	38.5	7.6	-	-
HCM Lane LOS	A	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	8.4	0.1	-	-

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	29	17	52	254	98	23	106	29	50	163	62
Future Vol, veh/h	20	29	17	52	254	98	23	106	29	50	163	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	31	18	55	267	103	24	112	31	53	172	65
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	10.2	20.3	10.5	11
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	30%	13%	100%	0%	0%
Vol Thru, %	0%	100%	0%	44%	63%	0%	100%	0%
Vol Right, %	0%	0%	100%	26%	24%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	106	29	66	404	50	163	62
LT Vol	23	0	0	20	52	50	0	0
Through Vol	0	106	0	29	254	0	163	0
RT Vol	0	0	29	17	98	0	0	62
Lane Flow Rate	24	112	31	69	425	53	172	65
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.048	0.204	0.05	0.125	0.686	0.101	0.305	0.103
Departure Headway (Hd)	7.101	6.588	5.87	6.472	5.809	6.901	6.389	5.672
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	543	607	552	621	518	561	630
Service Time	4.863	4.349	3.631	4.237	3.551	4.655	4.143	3.426
HCM Lane V/C Ratio	0.048	0.206	0.051	0.125	0.684	0.102	0.307	0.103
HCM Control Delay	10.2	11	8.9	10.2	20.3	10.4	11.9	9.1
HCM Lane LOS	B	B	A	B	C	B	B	A
HCM 95th-tile Q	0.2	0.8	0.2	0.4	5.4	0.3	1.3	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	1441	105	325	1194	114	205	398	357	142	202	92
Future Volume (vph)	159	1441	105	325	1194	114	205	398	357	142	202	92
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	50.0	50.0	28.0	58.0	58.0	22.0	28.0	28.0	14.0	20.0	20.0
Total Split (%)	16.7%	41.7%	41.7%	23.3%	48.3%	48.3%	18.3%	23.3%	23.3%	11.7%	16.7%	16.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	59.3	48.0	48.0	16.4	53.2	53.2	32.4	19.2	19.2	22.0	13.1	13.1
Actuated g/C Ratio	0.53	0.43	0.43	0.15	0.47	0.47	0.29	0.17	0.17	0.20	0.12	0.12
v/c Ratio	0.63	0.97	0.14	0.68	0.75	0.14	0.62	0.70	0.72	0.64	0.52	0.27
Control Delay	28.8	50.7	0.4	53.3	28.9	1.7	40.7	50.9	18.0	46.5	52.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	50.7	0.4	53.3	28.9	1.7	40.7	50.9	18.0	46.5	52.3	1.8
LOS	C	D	A	D	C	A	D	D	B	D	D	A
Approach Delay		45.4			31.9			36.5			39.8	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.6	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 8: Vollmer Rd & Stapleton Dr

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	2	23	0	3	4	518	39	4	349	2
Future Vol, veh/h	0	0	2	23	0	3	4	518	39	4	349	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	24	0	3	4	545	41	4	367	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	951	970	368	930	930	545	369	0	0	586	0	0
Stage 1	376	376	-	553	553	-	-	-	-	-	-	-
Stage 2	575	594	-	377	377	-	-	-	-	-	-	-
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	240	253	677	248	267	538	1190	-	-	989	-	-
Stage 1	645	616	-	517	514	-	-	-	-	-	-	-
Stage 2	503	493	-	644	616	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	237	250	677	245	264	538	1190	-	-	989	-	-
Mov Cap-2 Maneuver	237	250	-	245	264	-	-	-	-	-	-	-
Stage 1	642	613	-	514	511	-	-	-	-	-	-	-
Stage 2	498	491	-	639	613	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	20.4	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1190	-	-	677	261	989	-	-
HCM Lane V/C Ratio	0.004	-	-	0.003	0.105	0.004	-	-
HCM Control Delay (s)	8	0	-	10.3	20.4	8.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	12	483	33	20	333
Future Vol, veh/h	19	12	483	33	20	333
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	-	-	235	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	13	508	35	21	351

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	901	508	0	0	543	0
Stage 1	508	-	-	-	-	-
Stage 2	393	-	-	-	-	-
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	309	565	-	-	1026	-
Stage 1	604	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	565	-	-	1026	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	367	1026	-
HCM Lane V/C Ratio	-	-	0.089	0.021	-
HCM Control Delay (s)	-	-	15.8	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	58.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	230	31	44	77	62	32	225	73	99	159	35
Future Vol, veh/h	52	230	31	44	77	62	32	225	73	99	159	35
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	245	33	47	82	66	34	239	78	105	169	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	783	188	844	723	239	206	0	0	317	0	0
Stage 1	398	398	-	307	307	-	-	-	-	-	-	-
Stage 2	420	385	-	537	416	-	-	-	-	-	-	-
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	295	325	854	283	352	800	1365	-	-	1243	-	-
Stage 1	628	603	-	703	661	-	-	-	-	-	-	-
Stage 2	611	611	-	528	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	290	854	74	314	800	1365	-	-	1243	-	-
Mov Cap-2 Maneuver	199	290	-	74	314	-	-	-	-	-	-	-
Stage 1	612	552	-	685	644	-	-	-	-	-	-	-
Stage 2	477	596	-	259	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	142.2	107.6	0.7	2.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1365	-	-	287	199	1243	-	-
HCM Lane V/C Ratio	0.025	-	-	1.16	0.978	0.085	-	-
HCM Control Delay (s)	7.7	-	-	142.2	107.6	8.2	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	14.4	8.3	0.3	-	-

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	230	31	44	77	62	32	225	73	99	159	35
Future Vol, veh/h	52	230	31	44	77	62	32	225	73	99	159	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	245	33	47	82	66	34	239	78	105	169	37
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	21.7	14.5	14.4	12.9
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	17%	24%	100%	0%	0%
Vol Thru, %	0%	100%	0%	73%	42%	0%	100%	0%
Vol Right, %	0%	0%	100%	10%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	225	73	313	183	99	159	35
LT Vol	32	0	0	52	44	99	0	0
Through Vol	0	225	0	230	77	0	159	0
RT Vol	0	0	73	31	62	0	0	35
Lane Flow Rate	34	239	78	333	195	105	169	37
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.072	0.475	0.138	0.646	0.389	0.226	0.339	0.067
Departure Headway (Hd)	7.66	7.144	6.42	6.986	7.2	7.736	7.218	6.494
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	467	505	558	516	498	463	497	551
Service Time	5.41	4.893	4.169	4.729	4.952	5.487	4.969	4.245
HCM Lane V/C Ratio	0.073	0.473	0.14	0.645	0.392	0.227	0.34	0.067
HCM Control Delay	11	16.2	10.2	21.7	14.5	12.7	13.7	9.7
HCM Lane LOS	B	C	B	C	B	B	B	A
HCM 95th-tile Q	0.2	2.5	0.5	4.6	1.8	0.9	1.5	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	825	60	361	1451	66	90	142	125	145	333	124
Future Volume (vph)	58	825	60	361	1451	66	90	142	125	145	333	124
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	53.0	53.0	22.0	65.0	65.0	15.0	30.0	30.0	15.0	30.0	30.0
Total Split (%)	8.3%	44.2%	44.2%	18.3%	54.2%	54.2%	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	43.4	38.2	38.2	15.5	51.5	51.5	23.4	14.5	14.5	26.4	19.0	19.0
Actuated g/C Ratio	0.44	0.39	0.39	0.16	0.52	0.52	0.24	0.15	0.15	0.27	0.19	0.19
v/c Ratio	0.37	0.64	0.09	0.71	0.83	0.08	0.33	0.29	0.36	0.44	0.52	0.31
Control Delay	17.7	27.2	0.2	50.5	26.0	1.0	32.0	41.2	7.3	33.8	42.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	27.2	0.2	50.5	26.0	1.0	32.0	41.2	7.3	33.8	42.9	6.2
LOS	B	C	A	D	C	A	C	D	A	C	D	A
Approach Delay		24.9			29.8			27.0			33.1	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Vollmer Rd & Stapleton Dr

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	5	89	0	7	2	201	34	3	407	2
Future Vol, veh/h	0	0	5	89	0	7	2	201	34	3	407	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	94	0	7	2	212	36	3	428	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	687	429	654	652	212	430	0	0	248	0	0
Stage 1	435	435	-	216	216	-	-	-	-	-	-	-
Stage 2	238	252	-	438	436	-	-	-	-	-	-	-
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	369	370	626	380	387	828	1129	-	-	1318	-	-
Stage 1	600	580	-	786	724	-	-	-	-	-	-	-
Stage 2	765	698	-	597	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	364	368	626	375	385	828	1129	-	-	1318	-	-
Mov Cap-2 Maneuver	364	368	-	375	385	-	-	-	-	-	-	-
Stage 1	599	578	-	784	723	-	-	-	-	-	-	-
Stage 2	757	697	-	590	578	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	17.4	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1129	-	-	626	391	1318	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.258	0.002	-	-
HCM Control Delay (s)	8.2	0	-	10.8	17.4	7.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1	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	0	0	5	44	0	20	2	190	15	7	358	0
Future Vol, veh/h	0	0	5	44	0	20	2	190	15	7	358	0
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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	46	0	21	2	200	16	7	377	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	614	611	377	606	603	208	377	0	0	216	0	0
Stage 1	391	391	-	212	212	-	-	-	-	-	-	-
Stage 2	223	220	-	394	391	-	-	-	-	-	-	-
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	404	409	670	409	413	832	1181	-	-	1354	-	-
Stage 1	633	607	-	790	727	-	-	-	-	-	-	-
Stage 2	780	721	-	631	607	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	391	405	670	403	409	832	1181	-	-	1354	-	-
Mov Cap-2 Maneuver	391	405	-	403	409	-	-	-	-	-	-	-
Stage 1	632	603	-	788	726	-	-	-	-	-	-	-
Stage 2	759	720	-	622	603	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	13.7	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1181	-	-	670	480	1354	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.14	0.005	-	-
HCM Control Delay (s)	8.1	0	-	10.4	13.7	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	21	1	0	60	4	0
Future Vol, veh/h	21	1	0	60	4	0
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	1	0	63	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	23	0	86	23
Stage 1	-	-	-	-	23	-
Stage 2	-	-	-	-	63	-
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	-	-	1592	-	915	1054
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1592	-	915	1054
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	915	-	-	1592	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	3	0	53	7	1
Future Vol, veh/h	18	3	0	53	7	1
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	3	0	56	7	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	77	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	56	-
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	-	-	1593	-	926	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	967	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	926	1056
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	940	-	-	1593	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	17	48	0	1	5
Future Vol, veh/h	2	17	48	0	1	5
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	18	51	0	1	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	51	0	-	0	73	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	22	-
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	1555	-	-	-	931	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	930	1017
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	1001
HCM Lane V/C Ratio	0.001	-	-	-	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	19.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	29	17	52	254	98	24	109	30	50	164	62
Future Vol, veh/h	20	29	17	52	254	98	24	109	30	50	164	62
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	31	18	55	267	103	25	115	32	53	173	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	678	509	206	501	509	115	238	0	0	147	0	0
Stage 1	312	312	-	165	165	-	-	-	-	-	-	-
Stage 2	366	197	-	336	344	-	-	-	-	-	-	-
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	366	467	835	480	467	937	1329	-	-	1435	-	-
Stage 1	699	658	-	837	762	-	-	-	-	-	-	-
Stage 2	653	738	-	678	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	162	441	835	426	441	937	1329	-	-	1435	-	-
Mov Cap-2 Maneuver	162	441	-	426	441	-	-	-	-	-	-	-
Stage 1	686	634	-	821	748	-	-	-	-	-	-	-
Stage 2	366	724	-	608	613	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	40.1	1.1	1.4
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1329	-	-	315	503	1435	-	-
HCM Lane V/C Ratio	0.019	-	-	0.221	0.845	0.037	-	-
HCM Control Delay (s)	7.8	-	-	19.6	40.1	7.6	-	-
HCM Lane LOS	A	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	8.7	0.1	-	-

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	29	17	52	254	98	24	109	30	50	164	62
Future Vol, veh/h	20	29	17	52	254	98	24	109	30	50	164	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	31	18	55	267	103	25	115	32	53	173	65
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	10.2	20.5	10.6	11.1
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	30%	13%	100%	0%	0%
Vol Thru, %	0%	100%	0%	44%	63%	0%	100%	0%
Vol Right, %	0%	0%	100%	26%	24%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	109	30	66	404	50	164	62
LT Vol	24	0	0	20	52	50	0	0
Through Vol	0	109	0	29	254	0	164	0
RT Vol	0	0	30	17	98	0	0	62
Lane Flow Rate	25	115	32	69	425	53	173	65
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.05	0.21	0.052	0.125	0.688	0.101	0.307	0.103
Departure Headway (Hd)	7.107	6.594	5.875	6.495	5.826	6.912	6.4	5.684
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	543	607	550	621	517	559	628
Service Time	4.869	4.356	3.637	4.261	3.569	4.67	4.158	3.44
HCM Lane V/C Ratio	0.05	0.212	0.053	0.125	0.684	0.103	0.309	0.104
HCM Control Delay	10.2	11.1	9	10.2	20.5	10.5	12	9.1
HCM Lane LOS	B	B	A	B	C	B	B	A
HCM 95th-tile Q	0.2	0.8	0.2	0.4	5.4	0.3	1.3	0.3

Intersection	
Intersection Delay, s/veh	5.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	5	101	247	429
Demand Flow Rate, veh/h	5	103	252	437
Vehicles Circulating, veh/h	531	215	3	98
Vehicles Exiting, veh/h	4	40	533	220
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	4.1	4.2	6.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	5	103	252	437
Cap Entry Lane, veh/h	803	1108	1376	1249
Entry HV Adj Factor	1.000	0.981	0.979	0.981
Flow Entry, veh/h	5	101	247	429
Cap Entry, veh/h	803	1087	1347	1224
V/C Ratio	0.006	0.093	0.183	0.350
Control Delay, s/veh	4.5	4.1	4.2	6.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	1449	105	337	1201	116	205	458	371	143	232	109
Future Volume (vph)	191	1449	105	337	1201	116	205	458	371	143	232	109
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	52.0	52.0	27.0	59.0	59.0	21.0	27.0	27.0	14.0	20.0	20.0
Total Split (%)	16.7%	43.3%	43.3%	22.5%	49.2%	49.2%	17.5%	22.5%	22.5%	11.7%	16.7%	16.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	62.1	49.5	49.5	17.2	54.1	54.1	33.6	20.2	20.2	23.7	14.7	14.7
Actuated g/C Ratio	0.54	0.43	0.43	0.15	0.47	0.47	0.29	0.17	0.17	0.20	0.13	0.13
v/c Ratio	0.74	0.98	0.14	0.70	0.77	0.15	0.65	0.76	0.77	0.70	0.54	0.31
Control Delay	39.2	52.4	0.4	54.8	30.2	1.8	43.2	54.4	24.2	52.3	53.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	52.4	0.4	54.8	30.2	1.8	43.2	54.4	24.2	52.3	53.2	2.1
LOS	D	D	A	D	C	A	D	D	C	D	D	A
Approach Delay		47.7			33.2			41.2			41.4	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.8	Intersection LOS: D
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 8: Vollmer Rd & Stapleton Dr

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	2	59	0	5	4	539	112	8	361	2
Future Vol, veh/h	0	0	2	59	0	5	4	539	112	8	361	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	62	0	5	4	567	118	8	380	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1034	1090	381	973	973	567	382	0	0	685	0	0
Stage 1	397	397	-	575	575	-	-	-	-	-	-	-
Stage 2	637	693	-	398	398	-	-	-	-	-	-	-
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	210	215	666	231	252	523	1176	-	-	908	-	-
Stage 1	629	603	-	503	503	-	-	-	-	-	-	-
Stage 2	465	445	-	628	603	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	205	211	666	227	248	523	1176	-	-	908	-	-
Mov Cap-2 Maneuver	205	211	-	227	248	-	-	-	-	-	-	-
Stage 1	625	596	-	500	500	-	-	-	-	-	-	-
Stage 2	458	442	-	619	596	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	26	0	0.2
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1176	-	-	666	238	908	-	-
HCM Lane V/C Ratio	0.004	-	-	0.003	0.283	0.009	-	-
HCM Control Delay (s)	8.1	0	-	10.4	26	9	0	-
HCM Lane LOS	A	A	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.1	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	0	0	3	28	0	13	6	485	48	22	337	0
Future Vol, veh/h	0	0	3	28	0	13	6	485	48	22	337	0
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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	29	0	14	6	511	51	23	355	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	957	975	355	952	950	537	355	0	0	562	0	0
Stage 1	401	401	-	549	549	-	-	-	-	-	-	-
Stage 2	556	574	-	403	401	-	-	-	-	-	-	-
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	237	251	689	239	260	544	1204	-	-	1009	-	-
Stage 1	626	601	-	520	516	-	-	-	-	-	-	-
Stage 2	515	503	-	624	601	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	242	689	232	251	544	1204	-	-	1009	-	-
Mov Cap-2 Maneuver	225	242	-	232	251	-	-	-	-	-	-	-
Stage 1	622	584	-	516	512	-	-	-	-	-	-	-
Stage 2	499	499	-	604	584	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	19.9	0.1	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1204	-	-	689	284	1009	-	-
HCM Lane V/C Ratio	0.005	-	-	0.005	0.152	0.023	-	-
HCM Control Delay (s)	8	0	-	10.2	19.9	8.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	4	0	38	3	0
Future Vol, veh/h	66	4	0	38	3	0
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	4	0	40	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	73	0	111	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	40	-
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	-	-	1527	-	886	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1527	-	886	991
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	886	-	-	1527	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	8	1	35	3	0
Future Vol, veh/h	58	8	1	35	3	0
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	8	1	37	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	69	0	104	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	39	-
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	-	-	1532	-	894	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1532	-	893	999
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	893	-	-	1532	-
HCM Lane V/C Ratio	0.004	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	53	32	1	0	4
Future Vol, veh/h	5	53	32	1	0	4
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	56	34	1	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	35	0	-	0	101	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	66	-
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	1576	-	-	-	898	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1576	-	-	-	895	1038
Mov Cap-2 Maneuver	-	-	-	-	895	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1576	-	-	-	1038
HCM Lane V/C Ratio	0.003	-	-	-	0.004
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	62.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	230	32	45	77	62	33	227	74	99	163	35
Future Vol, veh/h	52	230	32	45	77	62	33	227	74	99	163	35
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	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	245	34	48	82	66	35	241	79	105	173	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	827	792	192	852	731	241	210	0	0	320	0	0
Stage 1	402	402	-	311	311	-	-	-	-	-	-	-
Stage 2	425	390	-	541	420	-	-	-	-	-	-	-
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	291	322	850	280	349	798	1361	-	-	1240	-	-
Stage 1	625	600	-	699	658	-	-	-	-	-	-	-
Stage 2	607	608	-	525	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	287	850	70	311	798	1361	-	-	1240	-	-
Mov Cap-2 Maneuver	196	287	-	70	311	-	-	-	-	-	-	-
Stage 1	609	549	-	681	641	-	-	-	-	-	-	-
Stage 2	473	592	-	256	539	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	148.3	124.7	0.8	2.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1361	-	-	284	190	1240	-	-
HCM Lane V/C Ratio	0.026	-	-	1.176	1.03	0.085	-	-
HCM Control Delay (s)	7.7	-	-	148.3	124.7	8.2	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	14.7	8.9	0.3	-	-

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	230	32	45	77	62	33	227	74	99	163	35
Future Vol, veh/h	52	230	32	45	77	62	33	227	74	99	163	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	245	34	48	82	66	35	241	79	105	173	37
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	22	14.7	14.5	13
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	17%	24%	100%	0%	0%
Vol Thru, %	0%	100%	0%	73%	42%	0%	100%	0%
Vol Right, %	0%	0%	100%	10%	34%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	33	227	74	314	184	99	163	35
LT Vol	33	0	0	52	45	99	0	0
Through Vol	0	227	0	230	77	0	163	0
RT Vol	0	0	74	32	62	0	0	35
Lane Flow Rate	35	241	79	334	196	105	173	37
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.075	0.481	0.141	0.651	0.394	0.227	0.349	0.067
Departure Headway (Hd)	7.689	7.172	6.448	7.019	7.242	7.764	7.246	6.522
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	502	555	514	497	462	496	548
Service Time	5.443	4.926	4.201	4.765	4.996	5.52	5.002	4.278
HCM Lane V/C Ratio	0.075	0.48	0.142	0.65	0.394	0.227	0.349	0.068
HCM Control Delay	11.1	16.4	10.3	22	14.7	12.8	13.9	9.7
HCM Lane LOS	B	C	B	C	B	B	B	A
HCM 95th-tile Q	0.2	2.6	0.5	4.6	1.9	0.9	1.5	0.2

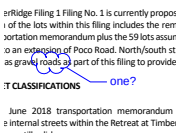
Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	2	67	689	390
Demand Flow Rate, veh/h	2	68	702	398
Vehicles Circulating, veh/h	459	582	8	67
Vehicles Exiting, veh/h	6	128	453	583
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	5.7	8.0	5.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	2	68	702	398
Cap Entry Lane, veh/h	864	762	1369	1289
Entry HV Adj Factor	1.000	0.985	0.981	0.981
Flow Entry, veh/h	2	67	689	390
Cap Entry, veh/h	864	751	1343	1264
V/C Ratio	0.002	0.089	0.513	0.309
Control Delay, s/veh	4.2	5.7	8.0	5.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	3	1

Markup Summary

dsdrice (6)



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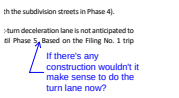

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If there's any construction wouldn't it make sense to do the turn lane now?

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Address what improvements need to be done to Vollmer Road to bring it up to standards around the proposed access and to the south (shoulders, widening...).

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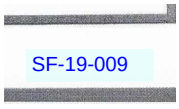
Also see comment letter.



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SF-19-009

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