LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
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Judge Orr RV Park
Letter of Amendment
Updated
PPR-16-040
LSC #164650

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.

_____ _____

Date

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July 25, 2018

Mr. Bill Guman, RLA, ASLA
William Guman & Associates, Ltd.
731 North Weber Street, Suite 10
Colorado Springs, CO 80903

RE: Judge Orr RV Park
El Paso County, CO
Letter of Amendment
UPDATED
LSC #164650

Dear Mr. Guman,

LSC Transportation Consultants, Inc. has prepared this updated Letter of Amendment to the previously completed traffic report for Meadowlake Commons (prepared by Springs Engineers in 2008 when the property was zoned to PUD). This report addresses the proposed Judge Orr RV Park to be located northeast of the intersection of Judge Orr Road and Cessna Drive in El Paso County, Colorado. The proposed RV park and storage site is a forty-acre portion of the former Meadowlake Commons PUD site.

REPORT CONTENTS

The report contains the following:

- Existing street and traffic conditions adjacent to the site including intersection lane geometries, traffic controls, posted speed limits, street classifications, etc.
- Existing peak-hour turning movement traffic counts at the intersection of Judge Orr Road/Cessna Drive and estimates of future background traffic volumes.
- Description of the proposed land uses.
- Estimates of the average weekday and peak-hour vehicle-trips to be generated by the site.
- Assigned site-generated projected traffic volumes to and the access point intersection.
- Resulting traffic impacts from the site.
- Findings and recommendations.

LAND USE AND ACCESS

The proposed Judge Orr RV Park site is located northeast of the intersection of Judge Orr Road and Cessna Drive in El Paso County, Colorado. US Highway 24 intersects with Judge Orr Road approximately 0.4 miles west of the proposed site. The 39.9-acre RV park development is planned to contain 120 recreational vehicle camp sites at buildout. RV/vehicle storage is also proposed. Figure 1 provides a visual of the site relative to the nearby roadway network.

Access is proposed to Judge Orr Road via two new access driveways, one which would align with the existing Cessna Drive/Judge Orr Road intersection and the second (emergency access only) located approximately 1,000 feet to the east. No apparent sight distance restrictions at the proposed site access points were evident at the time of the field visit.

The PUD Commercial development to the west will share access to Judge Orr Road (aligning with Cessna Drive) with this RV Park site.

Proposed site land uses were categorized using the *Trip Generation Manual, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). The following ITE land use codes were used for trip generation estimates for the proposed site:

- Mini Warehouse – 151
- Campground/RV Park – 416
- RV/Vehicle Storage – (No ITE category) Trip generation rates developed by LSC based on actual 2018 counts at area RV Storage Facilities.

A diagram of the site relative to the remainder of the former overall Meadowlake Commons PUD is attached in Figure 2. Also attached is a Phasing exhibit.

Include a narrative regarding the future road along the northern property line and note that the site plan has provided future road easement to accomodate the Stapleton Rd AMP

ROAD AND TRAFFIC CONDITIONS

Area Roads

Figure 1 shows the roads in the vicinity of the site. The major roads are identified below followed by a brief description of each:

US Highway 24 extends northeast from Colorado Springs through unincorporated El Paso County and is classified as a four-lane Expressway in the *El Paso County 2040 Major Transportation Corridors Plan (MTCP)*. The intersection of US 24/Judge Orr Road is signalized, with protected-permitted left-turn phases for eastbound left-turning vehicles on US 24. Both the eastbound and westbound approaches on Judge Orr Road are single-lane approaches with split phasing.

Judge Orr Road is currently classified as a two-lane Minor Arterial in El Paso County's 2040 *MTCP.* The preserved corridors plan shows a four-lane minor arterial. Judge Orr Road extends west approximately 0.7 miles to the intersection of Eastonville Road/Meridian Ranch Boulevard, and

east to North Davenport Road. There are currently no turn lanes at existing driveways along Judge Orr Road within the study area limits. Adjacent to the site, the posted speed limit is 45 mph.

Cessna Drive is the two-lane entrance to Meadow Lake Airport. The Cessna Drive intersection with Judge Orr Road is stop sign-controlled.

Traffic Volumes

Turning movement counts were conducted from 4:00 to 6:00 p.m. on Tuesday, August 11, 2016 and from 6:30 to 8:30 a.m. on Tuesday, August 16, 2016 at the intersection of Judge Orr Road/ Cessna Drive. Existing evening weekday peak-hour traffic volumes at this intersection are shown in Figure 3. Count reports are attached. Figure 3 also shows the estimates of peak-hour traffic adjacent to the site and the estimates (based on factored peak-hour counts) of the average daily traffic volumes on Judge Orr Road.

TRIP GENERATION

Estimates of the vehicle-trips projected to be generated by the proposed development have been made using the nationally published trip generation rates from *Trip Generation, 9th Edition, 2012* by the Institute of Transportation Engineers (ITE). Land use category/code 814 – Variety Store and corresponding trip generation rates from the *Trip Generation Manual, 9th Edition, 2012* by the Institute of Transportation Engineers (ITE) have been used to develop the trip generation estimates.

Driveway Trips

Table 1 presents a summary of the estimated site trip generation for Phase 1 and site buildout. The detailed trip generation estimate for the development, including ITE rates for the proposed land use, is presented in Table 6.

Table 1: Estimated Site Vehicle-Trip Generation

Analysis Period	In	Out	Total
Phase 1			
A.M. Peak Hour	13	12	25
P.M. Peak Hour	18	17	35
Daily 24-Hour	71	71	142
Buildout			
A.M. Peak Hour	18	22	40
P.M. Peak Hour	30	24	54
Daily 24-Hour	110	110	219

Phase 1

Only 48 of the 120 planned campground sites are scheduled to be developed for Phase 1. All 431 proposed RV/vehicle storage spaces and 77 mini warehouse storage units are scheduled to be constructed during Phase 1. During Phase 1 only, the proposed site is projected to generate about 142 total vehicle-trips on the average weekday during a 24-hour period. During the morning peak hour, approximately 13 vehicles would enter and 12 vehicles would exit the site. During the evening peak hour, approximately 18 vehicles would enter and 17 vehicles would exit the site.

Buildout

During the long-term buildout analysis period, the remaining 72 of the 120 total planned campground sites will have been constructed. All 431 proposed RV/vehicle storage spaces and 77 mini warehouse storage units are scheduled to have already been constructed during Phase 1. During the long-term buildout phase, the proposed site is projected to generate about 219 total vehicle-trips on the average weekday during a 24-hour period. During the morning peak hour, approximately 18 vehicles would enter and 22 vehicles would exit the site. During the evening peak hour, approximately 30 vehicles would enter and 24 vehicles would exit the site.

TRIP GENERATION COMPARISON

Previously Approved Land Use

Judge Orr RV Park is located in the 39.9-acre southeast portion of the previously approved Meadowlake Commons Zoning and Conceptual Plan (ZCP), which was approved on September 21, 2010. The southeast portion of the concept plan, which will be replaced by the RV park, showed 18.71 acres of proposed retail/office land use and 3.81 acres of proposed retail/ restaurant land use.

Trip Generation Estimate and Comparison

The previously completed traffic report (prepared by Springs Engineers in 2008 when the property was zoned to PUD) contained vehicle-trip estimates for the entire Meadowlake Commons development. In order to provide an accurate trip generation comparison between the previously approved land uses and the proposed RV park, only trips generated from the 39.9-acre southeast portion of the Meadowlake Commons ZCP were considered. Springs Engineers estimated that the previous retail/office and retail/restaurant land uses would generate 6,331 vehicle-trips on an average weekday, with 142 total trips during the morning peak hour and 550 total trips during the afternoon peak hour. Table 2 compares the change in trip generation estimates from the previously-approved site plan with estimates for Phase 1 and after long-term site buildout.

Table 2: Change in Trip Generation Estimates by Site Plan

Scenario	Avg Weekday Traffic	A.M.			P.M.		
		In	Out	Total	In	Out	Total
Phase 1							
Previously-Approved Land Use	6331	89	53	142	264	286	550
Phase 1	142	13	12	25	18	17	35
Change in Trip Generation	**-6189**	**-76**	**-41**	**-117**	**-246**	**-269**	**-515**
Buildout							
Previously-Approved Land Use	6331	89	53	142	264	286	550
Buildout	219	18	22	40	30	24	54
Change in Trip Generation	**-6112**	**-71**	**-31**	**-102**	**-234**	**-262**	**-496**

Phase 1

During the morning peak hour of Phase 1, approximately 76 and 41 fewer vehicles are projected to enter and exit the site compared the previously-approved site plan. About 246 and 269 fewer vehicles are projected to enter and exit the site during the evening peak hour, respectively, based on the most recently-approved site layout. The site is expected to generate about 6,189 fewer daily vehicle-trips during Phase 1 than the estimate of 6,331 "new" trips for the land uses shown on the approved Meadowlake Commons ZCP for the southeast 39.9-acre parcel. A detailed summary of this trip generation comparison is attached in Table 6.

Buildout

During the morning peak hour after site buildout, approximately 71 and 31 fewer vehicles are projected to enter and exit the site compared to the previously-approved site plan. Approximately 2341 and 262 fewer vehicles would enter and exit the site, respectively, upon total site buildout than were estimated based on the existing and approved land uses. The site is expected to generate about 6,112 fewer daily vehicle-trips during Phase 1 than the estimate of 6,331 "new" non-pass-by trips for the land uses shown on the approved Meadowlake Commons ZCP for the southeast 39.9-acre parcel.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip Directional Distribution

An estimate of the directional distribution of site-generated vehicle-trips to the study area roads and intersections is a necessary component in determining the site's traffic impacts. Figure 4 shows the directional distribution estimate for the site-generated trips during Phase 1, while Figure 5 shows this distribution for the buildout phase. The figure shows the percentages of the site-generated vehicle-trips projected to be oriented to and from the site's major approaches. Estimates were based on the following factors: existing area development, the area roadway system, and the site's proposed land use.

Also provide a short-range horizon Phase 2 (buildout) analysis in the event Phase 2 occurs prior to any development on the adjacent proposed PUD.

Phase 1

Phase 1 site-generated traffic volumes at the intersection of the proposed site access intersection with Judge Orr/Cessna have been calculated by applying the directional distribution percentages estimated by LSC (also from Figure 4) to the trip generation estimates (from Table 1). Figure 4 shows the projected Phase 1 site-generated traffic volumes for the weekday afternoon and evening peak hours.

Figure 6 shows the sum of the existing 2017 traffic volumes (from Figure 3) and Phase 1 site-generated peak-hour traffic volumes (shown in Figure 4). These volumes represent the projected short-term total traffic following Phase 1.

Buildout

Long-term site-generated traffic volumes at the intersection of the proposed site access intersection with Judge Orr/Cessna have been calculated by applying the directional distribution percentages estimated by LSC (also from Figure 5) to the trip generation estimates (from Table 1). Figure 5 shows the projected Phase 1 site-generated traffic volumes for the weekday afternoon and evening peak hours.

Include the trip generation calculation for the preliminary estimates for the adjacent PUD commercial.

FUTURE BACKGROUND TRAFFIC ESTIMATES

Figure 7 shows the projected 2040 background traffic volumes at the site access int
2040 background/baseline through traffic volumes on Judge Orr Road a
approximately a 3 percent/year annual growth rate. The background traffic includes preliminary estimates of traffic to be generated by the adjacent PUD commercial/business park site and an estimate of other traffic generated by potential future development to the north and east of this site. The Stapleton Corridor study preferred access control concept was used as the basis for the area future road system. The area background traffic estimates indicate a rough estimate of approximately 6,000 vehicles per day on the north/south access road north of Cessna Drive (along the west side of the site). This volume may vary considerably depending on area land uses, trip generation intensity, timing of development and actual road connections.

FUTURE TOTAL TRAFFIC

Figure 8 shows the sum of the projected 2040 traffic volumes (from Figure 7) and buildout site-generated peak-hour traffic volumes (shown in Figure 5). These volumes represent the projected short-term total traffic following site buildout completion.

LEVEL OF SERVICE ANALYSIS

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

delay. LOS F indicates a high level of congestion or delay. Table 3 shows the level of service delay ranges for signalized and unsignalized intersections.

Table 3: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds/vehicle)	V/C (1)	Average Control Delay (seconds/vehicle) (2)
A	≤ 10.0	< 0.60	≤ 10.0
B	10.1 – 20.0	0.60 – 0.69	10.1 – 15.0
C	20.1 – 35.0	0.70 – 0.79	15.1 – 25.0
D	35.1 – 55.0	0.80 – 0.89	25.1 – 35.0
E	55.1 – 80.0	0.90 – 0.99	35.1 – 50.0
F	≥ 80.1	≥ 1.00	≥ 50.1

(1) Source: *Transportation Research Circular 212*
(2) For unsignalized intersections, if V/C is > 1.00, then LOS is LOS F regardless of the projected average control delay per vehicle.

The proposed access intersection on Judge Orr Drive has been analyzed to determine the projected control delay and corresponding levels of service and for the key turning movements. As the intersection is/will be two-way stop-sign controlled (TWSC), traffic on the southbound and northbound approaches incur delay given the stop-sign control.

Morning Peak Hour

A summary of current and projected 2040 traffic conditions during the morning peak hour—both with and without considering site-generated traffic—is shown in Table 4. LOS and control delays during the morning peak hour are shown in this table. Detailed Synchro reports are attached.

Table 4: Level of Service Comparison by Scenario (Morning Peak)

Analysis Period	EB*	SB L/R
LOS		
2017 Existing	-	-
2017 Existing + Site (Phase 1)	A	A
2040 Background	A	F
2040 Background + Site (Buildout)	A	F

* Phase 1 - Shared EB left/through/right turn lane
Buildout - Separate EB left turn lane

The eastbound left-turning movement at the proposed site access intersection with Judge Orr currently operates at LOS A and is projected to remain at LOS A for all short- and long-term morning peak-hour traffic conditions, with or without development.
The southbound left-turning movement currently operates at LOS A but is projected to operate at LOS F during the long-term morning peak-hour, with or without this development (background and total volumes). Despite the LOS F projection, the volume-to-capacity (v/c) ratio for this turning movement is projected to be no higher than 0.57 during the long-term, regardless of site buildout.

Evening Peak Hour

A summary of current and projected 2040 background traffic conditions during the evening peak hour—both with and without considering site-generated traffic—is shown in Table 5. LOS and control delays during the weekday evening peak hour are shown in this table. Detailed Synchro reports are attached.

Table 5: Level of Service Comparison by Scenario (Weekday P.M. Peak)

Analysis Period	EB*	SB L/R
LOS		
2017 Existing	-	-
2017 Existing + Site (Phase 1)	A	A
2040 Background	A	E
2040 Background + Site (Buildout)	A	F
* Phase 1 - Shared EB left/through/right turn lane Buildout - Separate EB left turn lane		

The eastbound left- and southbound left-turning movements at this intersection are projected to operate at LOS A for all short-term evening traffic conditions upon site buildout. During the long-term, the eastbound left-turning movement is projected to remain at LOS A, with or without development. The southbound left-turning movement is projected to operate at LOS E or worse during the long-term evening peak hour, with or without site buildout. However, the v/c ratio for the southbound approach is projected to be no worse than 0.60 in either scenario.

PROPOSED ENTRY ROAD INFRASTRUCTURE

The entry drive shown on the site plan would extend north from the existing Judge Orr Road/Cessna Drive intersection and would serve as the access to this site as well as the commercial PUD site immediately adjacent to the west. As requested by staff, this report contains estimates of potential future traffic volumes which may be generated by area parcels to the north and east if this north/south access road is added to the roadway plan shown on the Stapleton Corridor Study. Estimates by LSC as described in the "Background Traffic" section indicate volumes in the Urban Collector range of ADT.

The plan also shows a modern roundabout at the south access to the RV park and the planned north south access road. Preliminary AutoTurn analysis and fastest path exhibits are attached. Based on the preliminary analysis, some modifications to the geometric elements of the roundabout will be needed. The inscribed diameter of the roundabout is comparable to recent roundabouts completed in the County. Some design modifications can be made at the construction drawing stage – including the center island width, circulating width, splitter island and approach lane dimensions, entry angles, truck apron width, striping/signing and other detailed elements as needed.

FINDINGS AND CONCLUSIONS

This will be a condition of approval.

- Significantly fewer vehicle-trips would be generated by the proposed Judge Orr RV Park than if the site were developed per the approved Zoning Conceptual Plan.

- The eastbound left-turning movement at the site access/Cessna Drive intersection is projected to continue to operate at a satisfactory level of service based on the projected existing plus site-generated and 2040 total traffic volumes.

- The southbound left-turning movement is projected to operate at LOS E or worse during all long-term traffic scenarios, with or without site buildout. However, the volume-to-capacity for the southbound approach is not projected to exceed 0.60 during any of those long-term scenarios.

- Based on the buildout trip generation and traffic analysis included in this report, the Engineering Criteria Manual threshold for an eastbound left turn lane on Judge Orr Road would be met. However, although this report includes a Phase 1 analysis for the storage plus 48 RV campsites. The requirement for the eastbound left turn lane would not be triggered with the first phase. Once the first phase is completed and after the RV park and storage facility open, actual traffic data could be collected. Based upon actual trip generation and turning movement data, the future need for a left turn lane at buildout could be reevaluated.

- The proposed access drive is projected to have the potential to carry traffic volumes in the Urban Collector ADT range. The road and proposed roundabout should be designed to accommodate RVs and multi-unit trucks. The inscribed diameter of the roundabout is comparable to recent roundabouts completed in the County which have been designed to accommodate multi-unit trucks. Preliminary analysis indicates some design modifications will be needed at the construction drawing stage.

- This project will be required to participate in the El Paso County Road Improvement Fee Program. For the RV Park land use, the most applicable established fee program land use category is Hotel/ Motel. However, ITE peak-hour trip generation rates used in this report reflect lower peak-hour trip generation per unit when compared to ITE peak-hour rates for hotel/motel. Per fee program guidelines, an independent study would be needed to utilize a land use category/unit rate other than those shown in the “Road Impact Fee Schedule.”

* * * * *

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:JAB

Enclosures: Table 6
Figure 1 – Figure 8
Traffic Count Reports
Level of Service Reports
AutoTurn Exhibits
Site Plan Exhibit

Provide a recommendation regarding the roadway classification for the proposed Cessna Rd extension to the north. The intent is to dedicate this road to the County in the future when the applicant subdivides this and the adjacent property to the west. For the County to accept this road, it must be built to county standards. With the roadway classification recommendation, ensure intersection spacing meets the ECM criteria.

The applicant will be required to submit street construction plans for the street and cul-de-sac being constructed with this application. Staff is especially concerned that the entry approach lanes to the Roundabout from the east as shown on the site plan will not meet the roundabout design standards. Detailed analysis of the roundabout design must be provided with the construction plans at this stage since it could have significant impact to the overall site layout and the developers intent to dedicate the road for County ownership/maintenance in the future.

Table 6: Detailed Trip Generation Estimate

ITE Code	ITE Description	Value	Units	Trip Generation Rates [1] Avg Weekday Traffic	A.M. In	A.M. Out	P.M. In	P.M. Out	Driveway Trips Generated Avg Weekday Traffic	A.M. In	A.M. Out	P.M. In	P.M. Out
Previously-Approved Land Use (Meadowlake Commons ZCP)													
820	Shopping Center	148.27	KSF	42.70	0.60	0.36	1.78	1.93	6331	89	53	264	286
Phase 1													
416	Campground/RV Park	48	Occupied Campsites	1.06	0.08	0.13	0.18	0.09	51	4	6	8	5
---	RV/Vehicle Storage	3.879	Hundred Occupied Spaces	20.00	2.28	1.37	1.98	2.81	78	9	5	8	11
151	Mini Warehouse	0.77	Hundred Storage Units	17.96	0.71	0.68	2.07	2.07	14	1	1	2	2
								Total	**142**	**13**	**12**	**18**	**17**
Buildout													
416	Campground/RV Park	120	Occupied Campsites	1.06	0.08	0.13	0.18	0.09	127	9	16	21	11
---	RV/Vehicle Storage	3.879	Hundred Occupied Spaces	20.00	2.28	1.37	1.98	2.81	78	9	5	8	11
151	Mini Warehouse	0.77	Hundred Storage Units	17.96	0.71	0.68	2.07	2.07	14	1	1	2	2
								Total	**219**	**18**	**22**	**30**	**24**
Change in Trip Generation													
								Phase 1	**-6189**	**-76**	**-41**	**-246**	**-269**
								Site Buildout	**-6113**	**-71**	**-31**	**-234**	**-262**

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

N

Approximate Scale
Scale: 1"= 2,000'

Figure 1

Vicinity Map

Honeywood RV Park (LSC #164650)

LSC TRANSPORTATION CONSULTANTS, INC.

Note: Future intersection Judge Orr/Frontage Rd./Blue Gill (realigned shown at 650' east of the Judge Orr/US 24 intersection on the current PEL study. Change to prior US 24 access management plan has not yet been adopted.

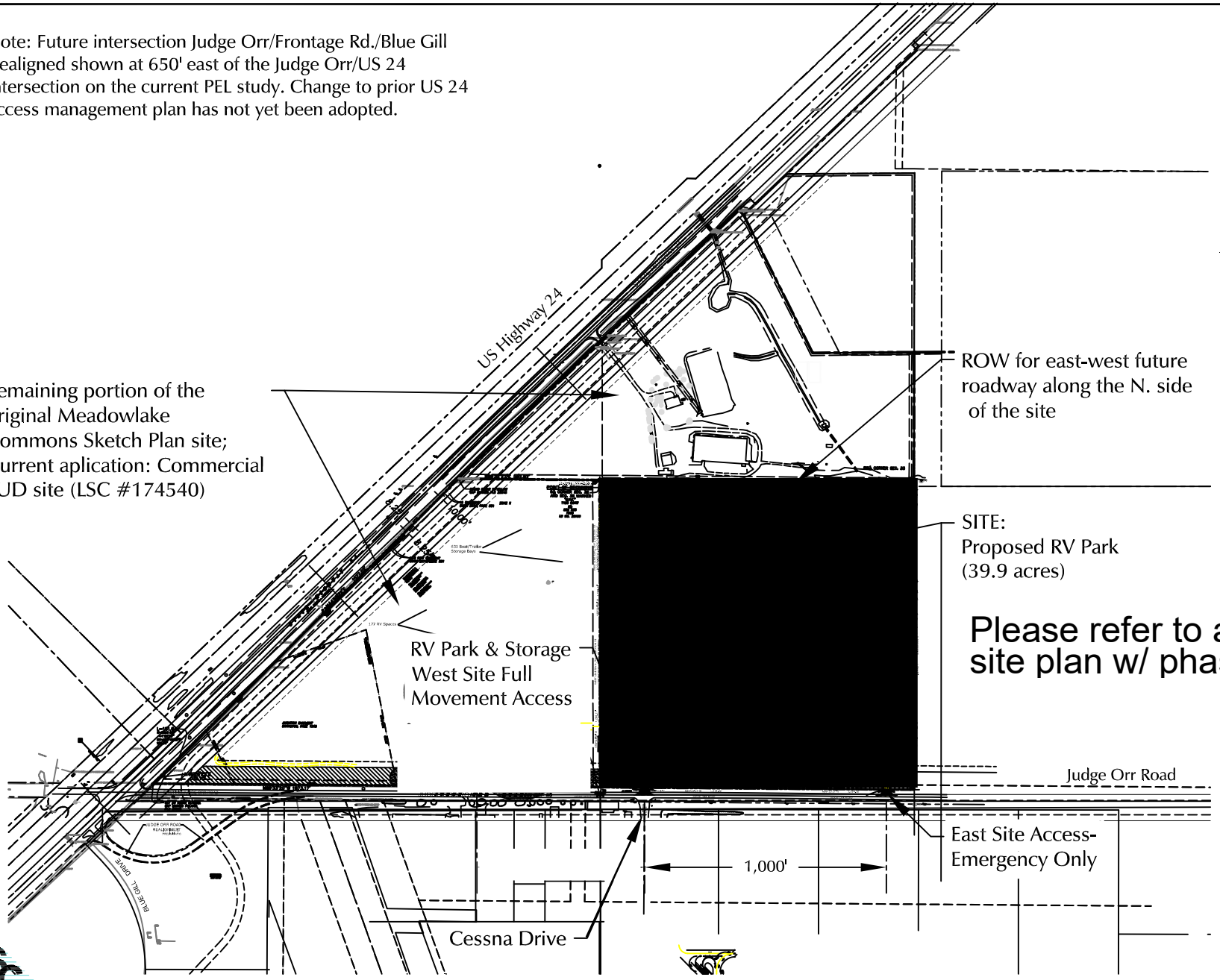
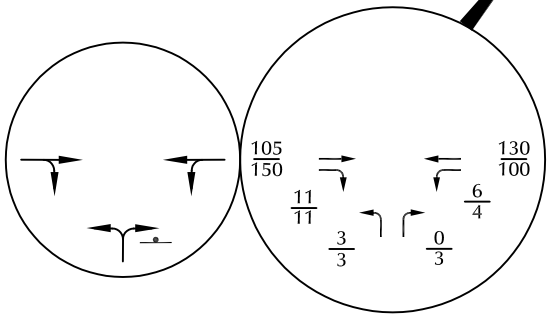


Figure 2

Site Plan

Honeywood RV Park (LSC #164650)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

⊦ = Stop Sign

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

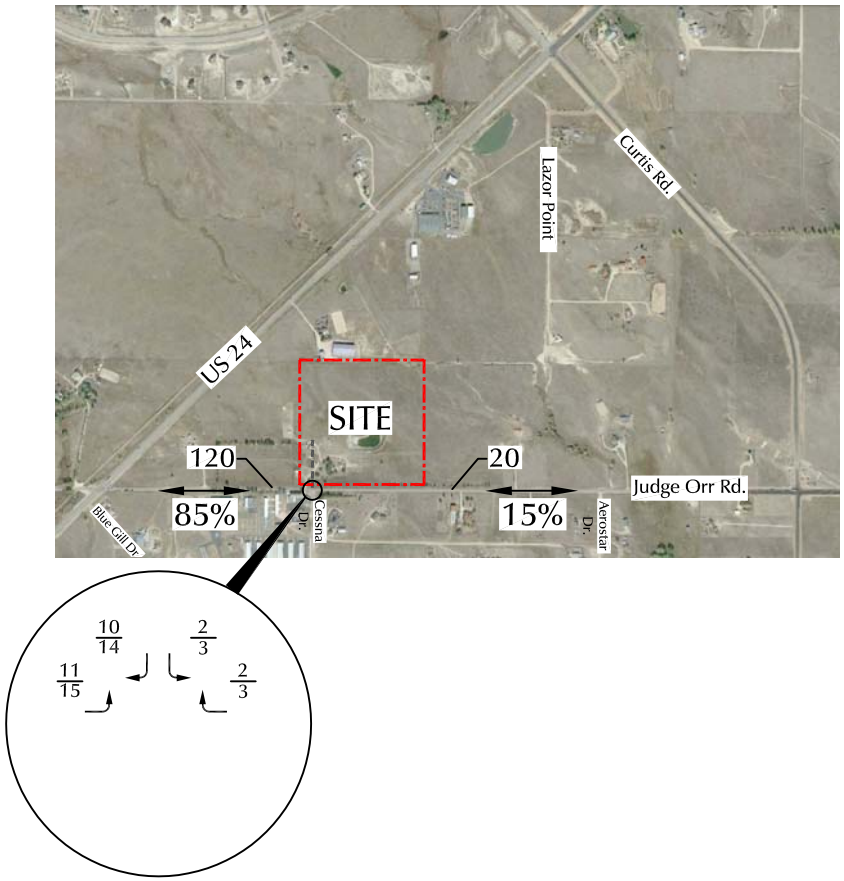
500 = Average Weekday Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 3

Existing Traffic, Lane Geometry and Traffic Control

Honeywood RV Park (LSC #164650)



N

Approximate Scale
Scale: 1"= 2,000'

LEGEND:

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

500 = Average Weekday Traffic (vehicles per day)

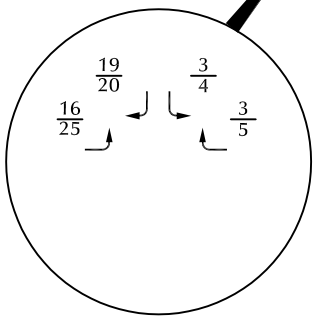
65% = Percent Directional Distribution

Figure 4

Directional Distribution and Assignment of Phase 1 Site-Generated Traffic

Honeywood RV Park (LSC #164650)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

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

500 = Average Weekday Traffic (vehicles per day)

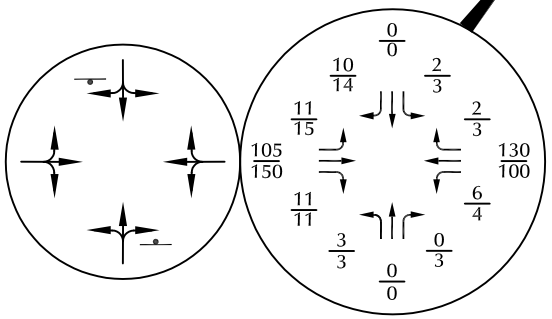
$\overleftrightarrow{65\%}$ = Percent Directional Distribution

Figure 5

Directional Distribution and Assignment of Buildout Site-Generated Traffic

Honeywood RV Park (LSC #164650)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

| = Stop Sign

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

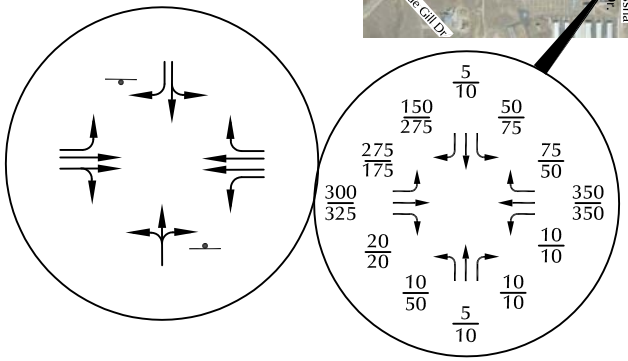
500 = Average Weekday Traffic (vehicles per day)

Figure 6

Existing plus Phase 1 Site-Generated Traffic, Lane Geometry and Traffic Control

Honeywood RV Park (LSC #164650)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"= 2,000'

LEGEND:

= Stop Sign

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

500 = Average Weekday Traffic (vehicles per day)

Note: Represents 3%/year growth rate

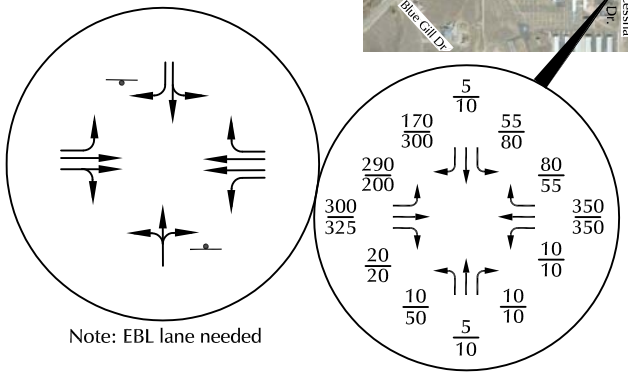
Figure 7

Year 2040 Background Traffic, Lane Geometry and Traffic Control

Honeywood RV Park (LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 2,000'



Note: EBL lane needed

LEGEND:

= Stop Sign

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

500 = Average Weekday Traffic (vehicles per day)

Figure 8

Year 2040 Background + Site Buildout Traffic Lane Geometry Traffic Control

Honeywood RV Park (LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Hwy 24 - Judge Orr Rr AM
Site Code : 00000000
Start Date : 06/27/2017
Page No : 1

Groups Printed- Unshifted

	Hwy 24 From North				Judge Orr Rd From East				Hwy 24 From South				Judge Orr 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	4	150	0	0	1	1	38	0	12	65	5	0	33	19	2	0	330
06:45 AM	2	127	0	0	1	2	26	0	12	40	6	0	38	9	0	0	263
Total	6	277	0	0	2	3	64	0	24	105	11	0	71	28	2	0	593
07:00 AM	2	124	0	0	0	2	33	0	7	49	1	0	33	25	0	0	276
07:15 AM	0	111	1	0	1	2	26	0	18	45	6	0	24	13	3	0	250
07:30 AM	0	123	0	0	0	6	31	0	13	56	11	0	25	15	3	0	283
07:45 AM	2	96	0	0	1	9	28	0	14	66	4	0	26	14	3	0	263
Total	4	454	1	0	2	19	118	0	52	216	22	0	108	67	9	0	1072
08:00 AM	3	91	2	0	0	4	21	0	13	69	7	0	14	9	5	0	238
08:15 AM	1	88	0	0	1	3	18	0	12	65	6	0	15	8	4	0	221
Grand Total	14	910	3	0	5	29	221	0	101	455	46	0	208	112	20	0	2124
Apprch %	1.5	98.2	0.3	0.0	2.0	11.4	86.7	0.0	16.8	75.6	7.6	0.0	61.2	32.9	5.9	0.0	
Total %	0.7	42.8	0.1	0.0	0.2	1.4	10.4	0.0	4.8	21.4	2.2	0.0	9.8	5.3	0.9	0.0	

Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Hwy 24 - Judge Orr Rr PM
Site Code : 00000000
Start Date : 06/27/2017
Page No : 1

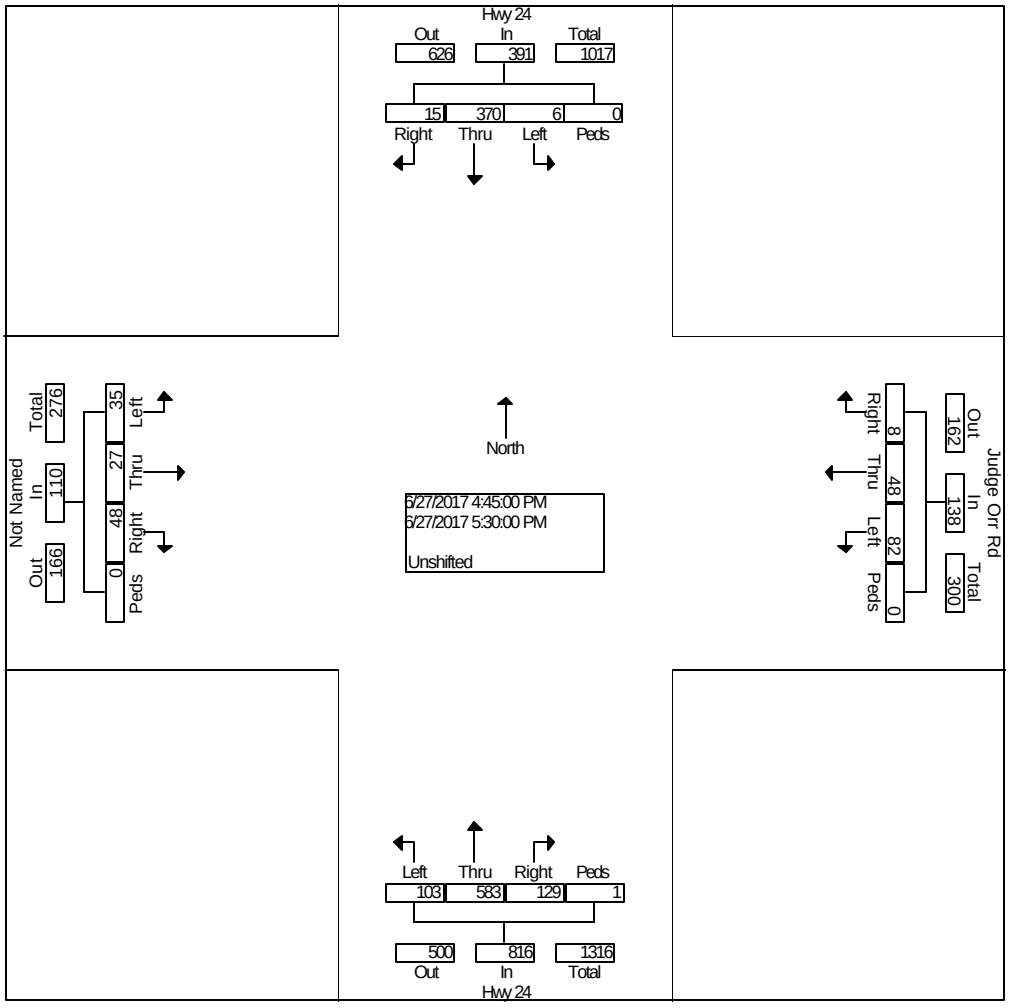
Groups Printed- Unshifted

	Hwy 24 From North				Judge Orr Rd From East				Hwy 24 From South				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	1	78	0	0	0	13	15	0	39	137	26	0	9	9	4	0	331
04:15 PM	2	80	2	0	1	17	16	0	42	149	29	0	8	10	5	0	361
04:30 PM	2	90	0	0	0	24	35	0	27	119	29	0	10	10	10	0	356
04:45 PM	3	101	2	0	5	21	15	0	42	144	27	1	6	5	10	0	382
Total	8	349	4	0	6	75	81	0	150	549	111	1	33	34	29	0	1430
05:00 PM	4	81	1	0	1	11	28	0	32	141	28	0	15	6	7	0	355
05:15 PM	4	95	2	0	2	10	21	0	32	134	19	0	13	11	11	0	354
05:30 PM	4	93	1	0	0	6	18	0	23	164	29	0	14	5	7	0	364
05:45 PM	3	89	1	0	0	8	16	0	21	152	26	0	12	7	5	0	340
Total	15	358	5	0	3	35	83	0	108	591	102	0	54	29	30	0	1413
Grand Total	23	707	9	0	9	110	164	0	258	1140	213	1	87	63	59	0	2843
Apprch %	3.1	95.7	1.2	0.0	3.2	38.9	58.0	0.0	16.0	70.7	13.2	0.1	41.6	30.1	28.2	0.0	
Total %	0.8	24.9	0.3	0.0	0.3	3.9	5.8	0.0	9.1	40.1	7.5	0.0	3.1	2.2	2.1	0.0	

Counts by LSC

File Name : Hwy 24 - Judge Orr Rr PM
Site Code : 00000000
Start Date : 06/27/2017
Page No : 2

	Hwy 24 From North					Judge Orr Rd From East					Hwy 24 From South					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	15	370	6	0	391	8	48	82	0	138	129	583	103	1	816	48	27	35	0	110	1455
Percent	3.8	94.6	1.5	0.0		5.8	34.8	59.4	0.0		15.8	71.4	12.6	0.1		43.6	24.5	31.8	0.0		
04:45 Volume	3	101	2	0	106	5	21	15	0	41	42	144	27	1	214	6	5	10	0	21	382
Peak Factor																					0.952
High Int.	04:45 PM					04:45 PM					05:30 PM					05:15 PM					
Volume	3	101	2	0	106	5	21	15	0	41	23	164	29	0	216	13	11	11	0	35	
Peak Factor					0.922					0.841					0.944					0.786	



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	105	11	6	130	0	3	0	0	0	0	0
Future Vol, veh/h	0	105	11	6	130	0	3	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	69	69	92	92	92	92	92	92	92
Heavy Vehicles, %	20	2	2	2	2	20	2	2	2	20	2	20
Mvmt Flow	0	117	12	9	188	0	3	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	129	0	0	329	329	123	329	335	188
Stage 1	-	-	-	-	-	-	123	123	-	206	206	-
Stage 2	-	-	-	-	-	-	206	206	-	123	129	-
Critical Hdwy	4.3	-	-	4.12	-	-	7.12	6.52	6.22	7.3	6.52	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Follow-up Hdwy	2.38	-	-	2.218	-	-	3.518	4.018	3.318	3.68	4.018	3.48
Pot Cap-1 Maneuver	1285	-	-	1457	-	-	624	590	928	591	585	810
Stage 1	-	-	-	-	-	-	881	794	-	757	731	-
Stage 2	-	-	-	-	-	-	796	731	-	839	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1285	-	-	1457	-	-	621	586	928	588	581	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	621	586	-	588	581	-
Stage 1	-	-	-	-	-	-	881	794	-	757	726	-
Stage 2	-	-	-	-	-	-	790	726	-	839	789	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	10.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	621	1285	-	-	1457	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.006	-	-	-
HCM Control Delay (s)	10.8	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	150	11	4	100	0	3	0	3	0	0	0
Future Vol, veh/h	0	150	11	4	100	0	3	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	85	85	95	95	92	81	92	81	92	92	92
Heavy Vehicles, %	20	2	2	2	2	20	2	2	2	20	2	20
Mvmt Flow	0	176	13	4	105	0	4	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	189	0	0	296	296	183	298	302	105
Stage 1	-	-	-	-	-	-	183	183	-	113	113	-
Stage 2	-	-	-	-	-	-	113	113	-	185	189	-
Critical Hdwy	4.3	-	-	4.12	-	-	7.12	6.52	6.22	7.3	6.52	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Follow-up Hdwy	2.38	-	-	2.218	-	-	3.518	4.018	3.318	3.68	4.018	3.48
Pot Cap-1 Maneuver	1381	-	-	1385	-	-	656	616	859	620	611	903
Stage 1	-	-	-	-	-	-	819	748	-	850	802	-
Stage 2	-	-	-	-	-	-	892	802	-	777	744	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1385	-	-	655	614	859	616	609	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	655	614	-	616	609	-
Stage 1	-	-	-	-	-	-	819	748	-	850	800	-
Stage 2	-	-	-	-	-	-	889	800	-	774	744	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	9.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	743	1381	-	-	1385	-	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.003	-	-	-
HCM Control Delay (s)	9.9	0	-	-	7.6	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	105	11	6	130	2	3	0	0	2	0	10
Future Vol, veh/h	11	105	11	6	130	2	3	0	0	2	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	90	90	69	69	92	92	92	92	92	92	92
Heavy Vehicles, %	20	2	2	2	2	20	2	2	2	20	2	20
Mvmt Flow	12	117	12	9	188	2	3	0	0	2	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	129	0	0	360	355	123	354	360	189
Stage 1	-	-	-	-	-	-	147	147	-	207	207	-
Stage 2	-	-	-	-	-	-	213	208	-	147	153	-
Critical Hdwy	4.3	-	-	4.12	-	-	7.12	6.52	6.22	7.3	6.52	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Follow-up Hdwy	2.38	-	-	2.218	-	-	3.518	4.018	3.318	3.68	4.018	3.48
Pot Cap-1 Maneuver	1283	-	-	1457	-	-	596	571	928	569	567	809
Stage 1	-	-	-	-	-	-	856	775	-	756	731	-
Stage 2	-	-	-	-	-	-	789	730	-	815	771	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1283	-	-	1457	-	-	581	561	928	562	557	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	581	561	-	562	557	-
Stage 1	-	-	-	-	-	-	847	767	-	748	726	-
Stage 2	-	-	-	-	-	-	773	725	-	807	763	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	11.2	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	1283	-	-	1457	-	-	754
HCM Lane V/C Ratio	0.006	0.009	-	-	0.006	-	-	0.017
HCM Control Delay (s)	11.2	7.8	0	-	7.5	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	15	150	11	4	100	3	3	0	3	3	0	14
Future Vol, veh/h	15	150	11	4	100	3	3	0	3	3	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	85	85	95	95	92	81	92	81	92	92	92
Heavy Vehicles, %	20	2	2	2	2	20	2	2	2	20	2	20
Mvmt Flow	16	176	13	4	105	3	4	0	4	3	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	189	0	0	337	331	183	332	336	107
Stage 1	-	-	-	-	-	-	215	215	-	115	115	-
Stage 2	-	-	-	-	-	-	122	116	-	217	221	-
Critical Hdwy	4.3	-	-	4.12	-	-	7.12	6.52	6.22	7.3	6.52	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.3	5.52	-
Follow-up Hdwy	2.38	-	-	2.218	-	-	3.518	4.018	3.318	3.68	4.018	3.48
Pot Cap-1 Maneuver	1378	-	-	1385	-	-	617	588	859	588	585	900
Stage 1	-	-	-	-	-	-	787	725	-	848	800	-
Stage 2	-	-	-	-	-	-	882	800	-	746	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1385	-	-	599	579	859	579	576	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	579	-	579	576	-
Stage 1	-	-	-	-	-	-	777	716	-	837	798	-
Stage 2	-	-	-	-	-	-	864	798	-	733	711	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	10.2	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	706	1378	-	-	1385	-	-	820
HCM Lane V/C Ratio	0.01	0.012	-	-	0.003	-	-	0.023
HCM Control Delay (s)	10.2	7.6	0	-	7.6	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	275	300	20	10	350	75	10	5	10	50	5	150
Future Vol, veh/h	275	300	20	10	350	75	10	5	10	50	5	150
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	385	-	-	285	-	235	-	-	-	-	-	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	289	316	21	11	368	79	11	5	11	53	5	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	0	337	0	0	1114	1374	169	1129	1305	184
Stage 1	-	-	-	-	-	-	905	905	-	390	390	-
Stage 2	-	-	-	-	-	-	209	469	-	739	915	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1110	-	-	1219	-	-	163	144	845	159	159	827
Stage 1	-	-	-	-	-	-	298	353	-	606	606	-
Stage 2	-	-	-	-	-	-	774	559	-	375	350	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1110	-	-	1219	-	-	101	106	845	120	117	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	106	-	120	117	-
Stage 1	-	-	-	-	-	-	221	261	-	448	601	-
Stage 2	-	-	-	-	-	-	615	554	-	268	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.3	0.2	32.3	23.8
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	158	1110	-	-	1219	-	-	120	827
HCM Lane V/C Ratio	0.167	0.261	-	-	0.009	-	-	0.482	0.191
HCM Control Delay (s)	32.3	9.4	-	-	8	-	-	60.2	10.4
HCM Lane LOS	D	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.6	1	-	-	0	-	-	2.2	0.7

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	175	325	20	10	350	50	50	10	10	75	10	275
Future Vol, veh/h	175	325	20	10	350	50	50	10	10	75	10	275
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	385	-	-	285	-	235	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	184	342	22	11	368	53	54	11	11	79	11	289

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	364	0	0	933	1164	182	935	1122	184
Stage 1	-	-	-	-	-	-	721	721	-	390	390	-
Stage 2	-	-	-	-	-	-	212	443	-	545	732	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1135	-	-	1191	-	-	221	193	829	220	205	827
Stage 1	-	-	-	-	-	-	385	430	-	606	606	-
Stage 2	-	-	-	-	-	-	770	574	-	490	425	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1135	-	-	1191	-	-	119	160	829	179	170	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	160	-	179	170	-
Stage 1	-	-	-	-	-	-	323	360	-	508	601	-
Stage 2	-	-	-	-	-	-	487	569	-	393	356	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.2	57.1	19.4
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	141	1135	-	-	1191	-	-	178	827
HCM Lane V/C Ratio	0.54	0.162	-	-	0.009	-	-	0.505	0.35
HCM Control Delay (s)	57.1	8.8	-	-	8.1	-	-	44.2	11.7
HCM Lane LOS	F	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	2.7	0.6	-	-	0	-	-	2.5	1.6

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	290	300	20	10	350	80	10	5	10	55	5	170
Future Vol, veh/h	290	300	20	10	350	80	10	5	10	55	5	170
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	385	-	-	285	-	235	-	-	-	-	-	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	305	316	21	11	368	84	11	5	11	58	5	179

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	452	0	0	337	0	0	1146	1411	169	1161	1337	184
Stage 1	-	-	-	-	-	-	937	937	-	390	390	-
Stage 2	-	-	-	-	-	-	209	474	-	771	947	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1105	-	-	1219	-	-	154	137	845	150	152	827
Stage 1	-	-	-	-	-	-	285	342	-	606	606	-
Stage 2	-	-	-	-	-	-	774	556	-	359	338	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1105	-	-	1219	-	-	91	98	845	111	109	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	98	-	111	109	-
Stage 1	-	-	-	-	-	-	206	248	-	439	601	-
Stage 2	-	-	-	-	-	-	596	551	-	251	245	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	0.2	35.3	27
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	145	1105	-	-	1219	-	-	111	827
HCM Lane V/C Ratio	0.181	0.276	-	-	0.009	-	-	0.569	0.216
HCM Control Delay (s)	35.3	9.5	-	-	8	-	-	73.5	10.6
HCM Lane LOS	E	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.6	1.1	-	-	0	-	-	2.7	0.8

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	200	325	20	10	350	55	50	10	10	80	10	300
Future Vol, veh/h	200	325	20	10	350	55	50	10	10	80	10	300
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	385	-	-	285	-	235	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	211	342	22	11	368	58	54	11	11	84	11	316

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	364	0	0	987	1223	182	989	1176	184
Stage 1	-	-	-	-	-	-	775	775	-	390	390	-
Stage 2	-	-	-	-	-	-	212	448	-	599	786	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1130	-	-	1191	-	-	202	178	829	201	190	827
Stage 1	-	-	-	-	-	-	357	406	-	606	606	-
Stage 2	-	-	-	-	-	-	770	571	-	455	401	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1130	-	-	1191	-	-	101	143	829	159	153	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	143	-	159	153	-
Stage 1	-	-	-	-	-	-	290	330	-	493	601	-
Stage 2	-	-	-	-	-	-	463	566	-	353	326	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.2	75.3	22.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	121	1130	-	-	1191	-	-	158	827
HCM Lane V/C Ratio	0.629	0.186	-	-	0.009	-	-	0.602	0.382
HCM Control Delay (s)	75.3	8.9	-	-	8.1	-	-	57.3	12
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	3.2	0.7	-	-	0	-	-	3.2	1.8

Preliminary

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Exhibits

(separate figure numbers
from the main report figures)

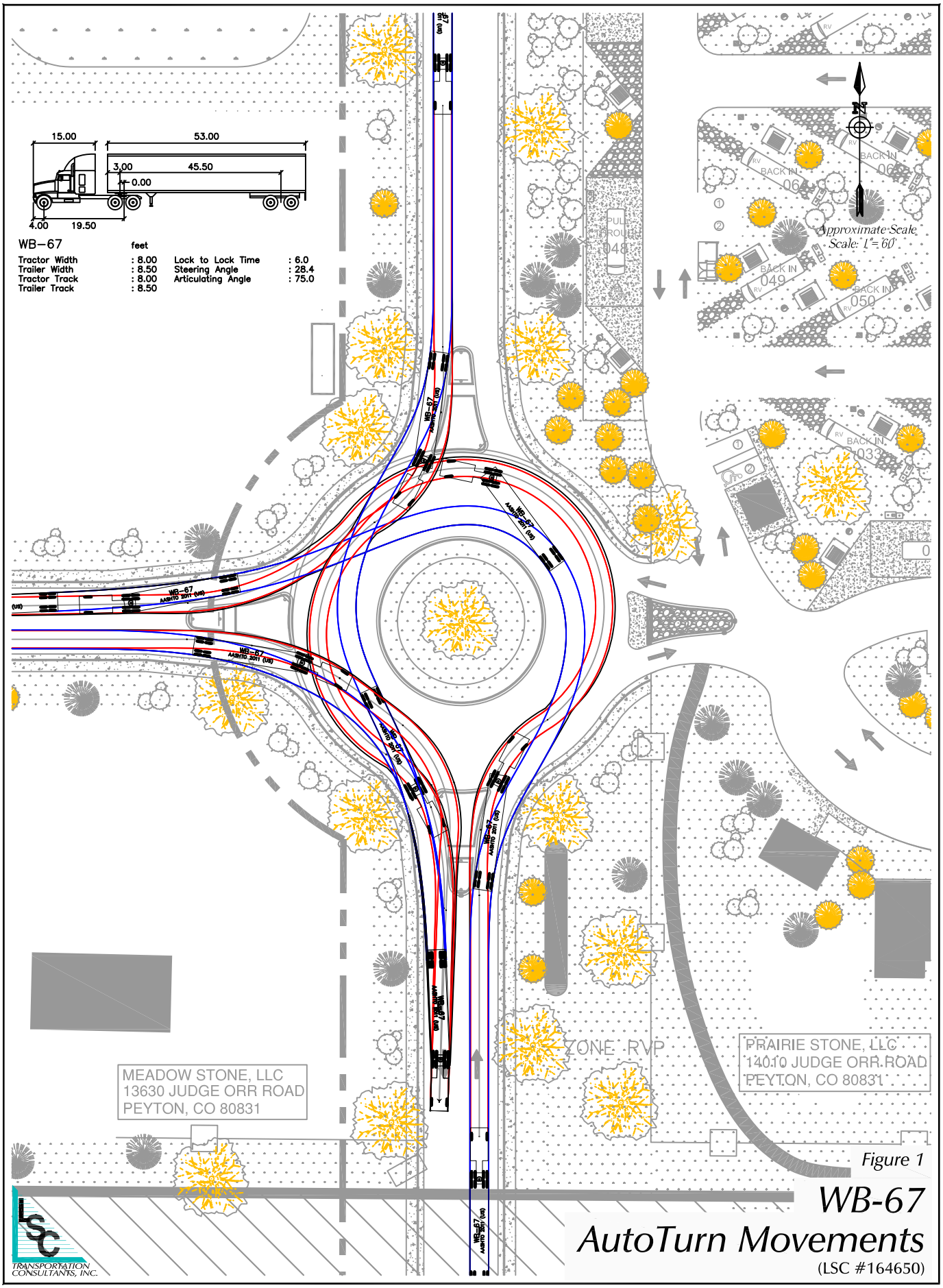


Figure 1

WB-67 AutoTurn Movements

(LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

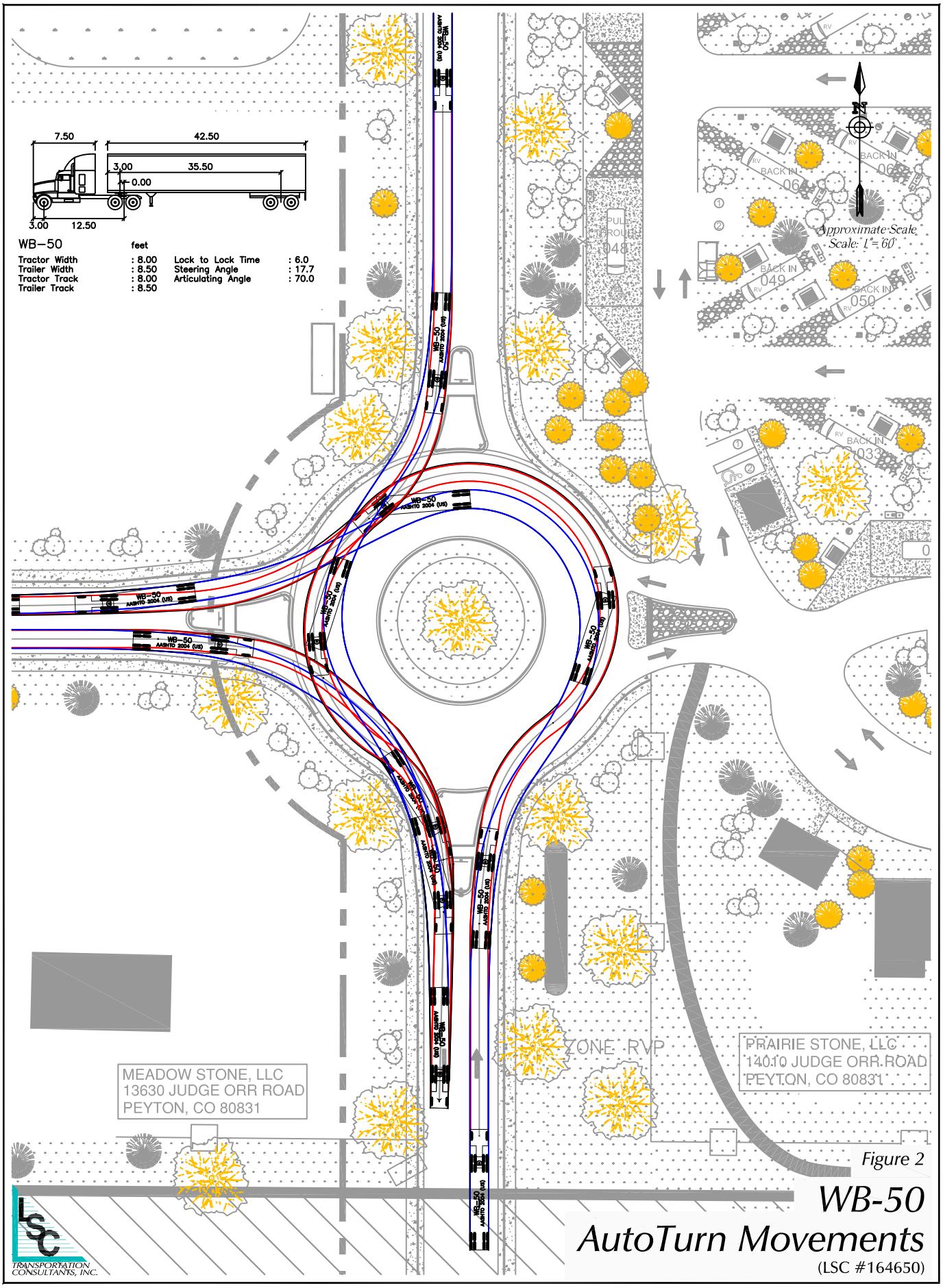


Figure 2

WB-50 AutoTurn Movements

(LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

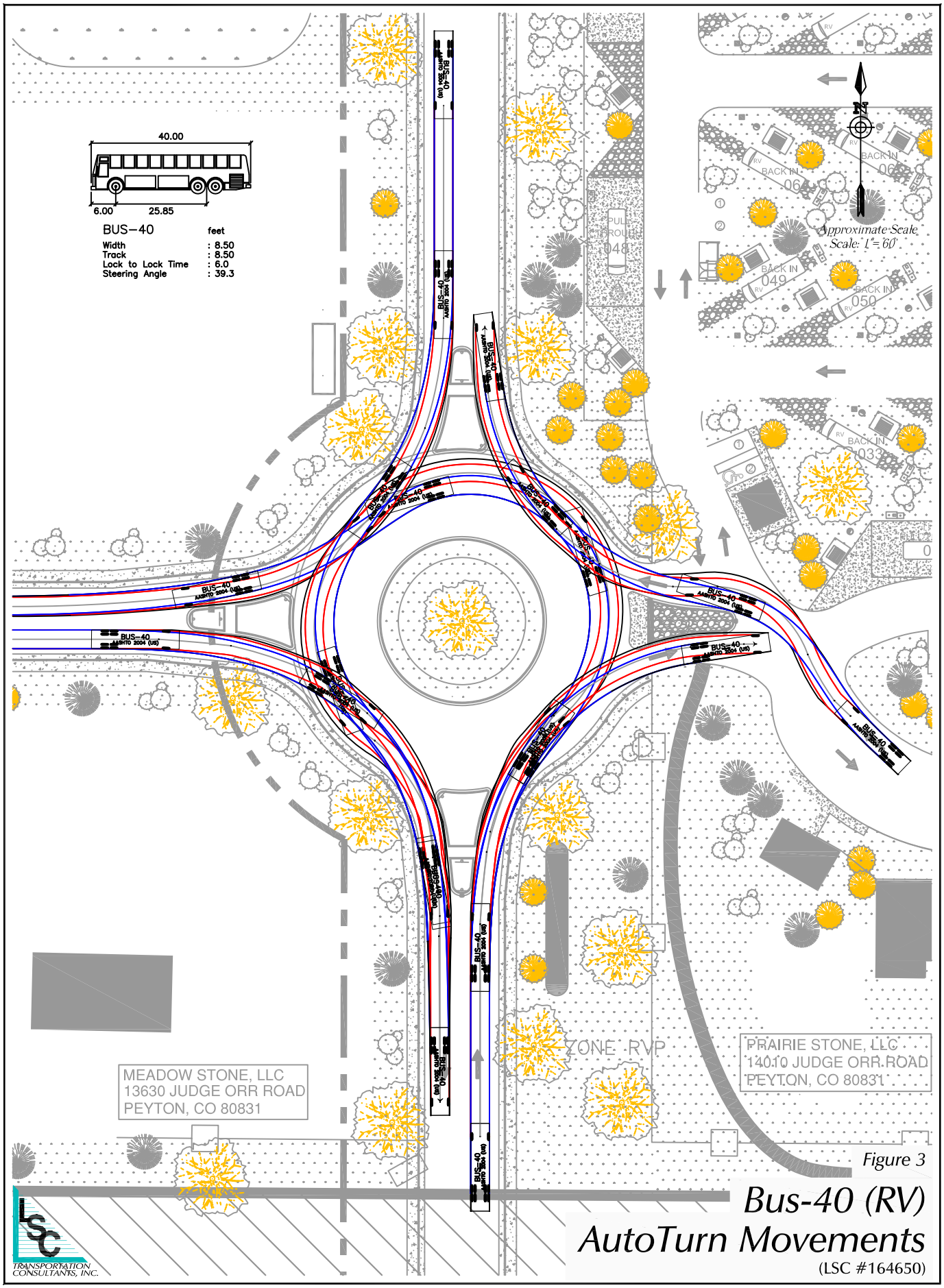


Figure 3

Bus-40 (RV) AutoTurn Movements

(LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

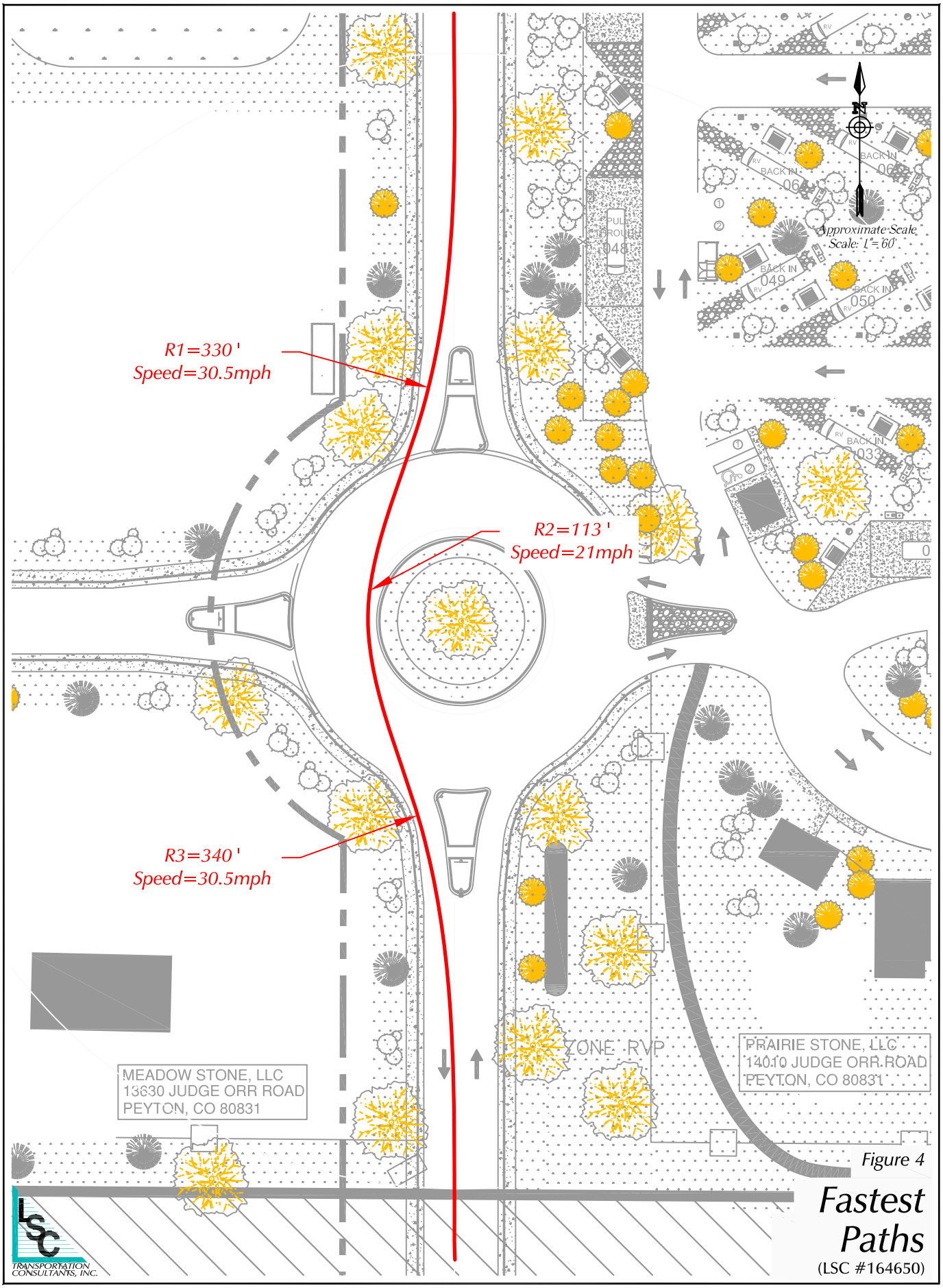


Figure 4

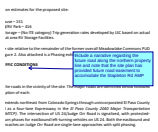
Fastest Paths

(LSC #164650)

TRANSPORTATION CONSULTANTS, INC.

Markup Summary

dsdlaforce (5)



Subject: Callout
Page Label: 3
Author: dsdlaforce
Date: 8/8/2018 6:48:56 PM
Color:

Include a narrative regarding the future road along the northern property line and note that the site plan has provided future road easement to accomodate the Stapleton Rd AMP

Subject: Cloud+
Page Label: 7
Author: dsdlaforce
Date: 8/8/2018 6:50:23 PM
Color:

Include the trip generation calculation for the preliminary estimates for the adjacent PUD commercial.

Subject: Callout
Page Label: 7
Author: dsdlaforce
Date: 8/8/2018 6:53:55 PM
Color:

Also provide a short-range horizon Phase 2 (buildout) analysis in the event Phase 2 occurs prior to any development on the adjacent proposed PUD.

Subject: Cloud+
Page Label: 10
Author: dsdlaforce
Date: 8/8/2018 6:58:33 PM
Color:

This will be a condition of approval.

Subject: Text Box
Page Label: 11
Author: dsdlaforce
Date: 8/8/2018 7:16:14 PM
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Provide a recommendation regarding the roadway classification for the proposed Cessna Rd extension to the north. The intent is to dedicate this road to the County in the future when the applicant subdivides this and the adjacent property to the west. For the County to accept this road, it must be built to county standards. With the roadway classification recommendation, ensure intersection spacing meets the ECM criteria.

The applicant will be required to submit street construction plans for the street and cul-de-sac being constructed with this application. Staff is especially concerned that the entry approach lanes to the Roundabout from the east as shown on the site plan will not meet the roundabout design standards. Detailed analysis of the roundabout design must be provided with the construction plans at this stage since it could have significant impact to the overall site layout and the developers intent to dedicate the road for County ownership/maintenance in the future.

jchodsdon (2)

Subject: Typewritten Text
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Author: jchodsdon
Date: 7/25/2018 4:51:25 PM
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Preliminary

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