

Traffic Impact Study

For

Bent Grass Plaza

(Lots 1-3)

Falcon, CO

10/09/2023



Add PCD File No.
PPR23342

PREPARED FOR:

Copestone General Contractors
555 Amelia Street, Suite 100
Colorado Springs, CO 80915
Attn: Nathan Derwick, President

PREPARED BY:

Drexel, Barrell & Co.
1800 38th Street
Boulder, CO 80301

Contact:

Derek Schuler, P.E., PTOE

Drexel Barrell Project Number:21814-00CSCV

1.0 Introduction

This report serves to analyze the traffic impacts of the proposed Bent Grass Plaza Development (site) on the adjacent roadway system. This study was conducted to determine the future traffic impacts on the surrounding transportation system and if the proposed development will cause any significant operational or safety problems.

A traffic impact study (TIS) is required per the El Paso County Engineering Criteria Manual, Appendix B (TIS Guidelines). An early assistance meeting (EA 23-074) was held on 8/13/23 and provided more specific guidance for this TIS. The TIS was intended to be more in line with a conformance memo to the previously approved TIS (Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SP2010, October 20, 2021 - LSC Transportation Consultants, Inc.). However, the current application will propose higher trip generation which will not work with a conformance memo. This was clarified with a phone call to Ed Schoenheit on 9/26/23. The scope will be a full TIS update with reduced study area as shown in this report. The following existing intersections will be analyzed in this study:

1. Bent Grass Meadows Dr./Meridian Rd. (Signalized)
2. Bent Grass Meadows Dr./Meridian Park Dr.
3. Bent Grass Meadows Dr./Bent Grass Market View
4. Meridian Park Dr./Bent Grass Market View
5. Bent Grass Market View/Site Access

2.0 Area Conditions

The site is generally located near the southwest corner of Meridian Rd (four lane principal arterial) and Bent Grass Meadows Dr (non-residential collector). The intersection of these streets is now signalized with all planned auxiliary lanes constructed/stripped. Access to the site will be on the recently constructed Bent Grass Market View (private local). These street classifications are per the county's 2040 Major Transportation Corridors Plan.

The existing land use of the site is vacant but has adjacent small commercial uses. These are a veterinary center, dental office, and gas station. The areas to the east and west are existing single family residential neighborhoods. The areas to the north and south are either vacant or contain large lot residential.

New traffic counts were obtained to analyze the critical intersections and site access points. An average daily traffic (ADT) count was obtained on Bent Grass Meadows Drive between intersections 1 and 2. Peak hour turning movement counts (TMC) were obtained for

intersection #'s 1 and 2. All recently collected traffic data is in the Appendix and summarized in **Figure 2**. Level of Service (LOS) Analysis is presented in **Table 3** later in the report. Traffic figures summarizing all traffic turning movements are in the Appendix.

The existing traffic conditions are summarized by the following. The ADT on Bent Grass Meadows Drive is 2,479 vehicles per day (vpd). The signalized intersection #1 currently operates at LOS A. Meridian Rd contains two through lanes in each direction plus separate right and left turn lanes. The eastbound right turns are received by a dedicated southbound acceleration lane. All other intersections are two-way stop controlled and operate at LOS A. There are existing sidewalks on the adjacent streets that will be connected to proposed sidewalks within the site.

3.0 Proposed Development

The roughly 1.9 acre commercial site is shown on conceptual site plan with vicinity map on **Figure 1** in the Appendix. The site is platted into lots 1-3. The following uses are proposed:

- 3 Fast Food Restaurants with drive thru = 5,100 SF
- Strip Retail Plaza (< 40 KSF) = 13,400 SF

In addition to lots 1-3, the planned uses for undeveloped lots 4-6 uses are also noted per the previous TIS:

- Shopping Center = 12,000 SF
- Business Park = 10,800 SF

Bent Grass Market View, a private local street, provides the site access as shown in **Figure 3**. Site access will be from this street only and there will be no additional access to any of the adjacent streets. The planned southbound right turn lane at intersection #4 was recently constructed. Sight distance and intersection spacing at the proposed connection points to existing streets (intersections 3 & 4) were verified with the previous TIS. Bent Grass Meadows Dr is posted at 35-mph. Meridian Park drive is unposted and assumed to be 25-mph.

4.0 Projected Traffic

Trip Generation:

Trip generation for the proposed land uses was determined using the Trip Generation Manual, 11th Edition (2021) published by the Institute of Transportation Engineers. See **Table 1** below for the calculation of site trips and a comparison with the previous TIS. This site (lots 1-3) is estimated to generate 3,114 weekday trips, which is 245 trips higher than the previous TIS. Per **Table 1**, the proposed site is anticipated to generate 259 trips (135 in/124 out) in the morning peak hour and 257 trips (132 in/125 out) in the evening peak hour. **Table 2** shows the planned

trip generation for lots 4-6 (not part of this site) per the previous TIS. Table 2 will be used for future traffic projections if required. Both Tables 1 and 2 are also shown in the Appendix at larger size.

Table 1 - Trip Generation Estimates for Bent Grass Plaza, Falcon, CO																						
ITE Code / Land Use	Lot	Size	Trip Generation Rates			Average Weekday Trips	Trips Generated						External Trips									
			Avg. Weekday	AM PEAK	PM PEAK		AM Peak-Hour (7 - 9)			PM Peak-Hour (4 - 6)			Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips						
							% Trips	Trips	% Trips	Trips	% Trips	Trips					% Trips	Trips	Total			
Previous TIS:																						
#934 FF Restaurant w/ Drive Thru	1	2.5	KSF	470.95	40.19	32.67	1,177	51%	51	49%	49	100	52%	42	48%	39	82	5%	1119	50%	559	
#934 FF Restaurant w/ Drive Thru	2	2.5	KSF	470.95	40.19	32.67	1,177	51%	51	49%	49	100	52%	42	48%	39	82	5%	1119	50%	559	
#820 S hopping Center	3	6.0	KSF	85.72	5.20	7.40	514	62%	19	38%	12	31	48%	21	52%	23	44	5%	489	34%	322	
Proposed:																						
#822 S trip Retail Plaza (<40K)	1-2	8.6	KSF	54.45	2.36	6.59	468	60%	12	40%	8	20	50%	28	50%	28	57	5%	445	0%	445	
#934 FF Restaurant w/ Drive Thru	1	1.7	KSF	467.48	44.61	33.03	795	51%	39	49%	37	76	52%	29	48%	27	56	5%	755	50%	377	
#934 FF Restaurant w/ Drive Thru	2	1.7	KSF	467.48	44.61	33.03	795	51%	39	49%	37	76	52%	29	48%	27	56	5%	755	50%	377	
#822 S trip Retail Plaza (<40K)	3	4.8	KSF	54.45	2.36	6.59	261	60%	7	40%	5	11	50%	16	50%	16	32	5%	248	0%	248	
#934 FF Restaurant w/ Drive Thru	3	1.7	KSF	467.48	44.61	33.03	795	51%	39	49%	37	76	52%	29	48%	27	56	5%	755	50%	377	
Previous TIS Trips						2,869		122		110	232		106		101	208					1,441	
Proposed Trips						3,114		135		124	259		132		125	257						1,826
Difference in Trips						(245)		(13)		(14)	(27)		(25)		(24)	(49)						(385)

¹Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SF2010, October 20, 2021 - LSC Transportation Consultants, Inc."
²Source: "Trip Generation" Institute of Transportation Engineers, 11th Edition, 2021

Table 2 - Trip Generation Estimate for Adjacent Lots 4-6 Bent Grass East Commercial Filing No. 3, Falcon, CO																					
ITE Code / Land Use	Lot	Size	Trip Generation Rates			Average Weekday Trips	Trips Generated						External Trips								
			Avg. Weekday	AM PEAK	PM PEAK		AM Peak-Hour (7 - 9)			PM Peak-Hour (4 - 6)			Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips					
							% Trips	Trips	% Trips	Trips	% Trips	Trips					% Trips	Trips	Total		
Previous TIS:																					
#820 S hopping Center	4	6.0	KSF	85.72	5.20	7.40	514	62%	19	38%	12	31	48%	21	52%	23	44	5%	489	34%	322
#820 S hopping Center	5	6.0	KSF	85.72	5.20	7.40	514	62%	19	38%	12	31	48%	21	52%	23	44	5%	489	34%	322
#770 Business Park	6	10.8	KSF	76.88	1.50	1.85	830	83%	14	15%	2	16	26%	5	74%	15	20	5%	789	0%	789
Previous TIS Trips						1,859		52		26	79		48		61	109					1,434

¹Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SF2010, October 20, 2021 - LSC Transportation Consultants, Inc."

External Trips:

Reduction factors for internal capture and pass by were applied in a similar manner to the previous TIS. The proposed 5% internal capture rate is considered conservative for the proposed commercial uses. Pass-by reductions range from 0-50% depending on the use. The majority of pass-by trips occur on Meridian Rd, in which most site trips originate, as discussed in the next section.

Trip Distribution:

The projected distribution of site traffic is based on the previous TIS. 88% of trips come to/from Meridian Rd. More specifically, 45% will be to/from the north and 43% to/from the south. The remaining 12% will be to/from the west via the recently constructed extension of Bent Grass Meadows Dr to Woodmen Rd as discussed in the previous TIS. Traffic growth factors and forecasts for the 2040 traffic models were included in the previous TIS.

The site build out opening year is expected to be 2025 and an associated Synchro V11 Traffic Software Model (synchro) was created. Trip generation/distribution from the site was added to this model. The resulting intersection LOS values are in a separate column in Table 2. "AM & PM" refer to the morning and afternoon peak hour periods. Traffic Figures and synchro reports for this model are included in the Appendix. 2040 models were presented in the previous TIS.

5.0 Traffic Analysis

The current background traffic was discussed in section 2.0. The site build out is expected by 2025. Therefore the opening year background traffic is not much different than existing conditions. The 2025 traffic conditions with site development have been analyzed in detail and LOS results presented in **Table 3**.

The key focus is on impacts to the Meridian Rd/Bent Grass Meadows Dr signalized intersection. 88% of site outbound trips use the eastbound approach to this intersection. This approach contains dual left turn lanes and there is a southbound acceleration lane to assist the eastbound right turn movement. The northbound left turn lane is controlled by protected/permissive phasing. The remaining 12% of site traffic is to/from the west via the extension of Bent Grass Meadows Dr extension to Woodmen Rd frontage road. The resulting 2025 total traffic turning movements are shown in **Figure 4**.

Table 3 Level of Service Analysis / Average Delay in Seconds						
Intersection	Approach	Control	2023		2025	
			Existing		Total Traffic	
			AM	PM	AM	PM
Meridian Rd / Bent Grass Meadows Dr	Intersection	Signalized	A / 7.8	A / 6.3	B / 10.5	A / 8.4
	EBL	Yield	D / 35.5	D / 36.3	D / 36.1	D / 36.8
	EBR		B / 12.6	B / 11.8	B / 11.1	B / 10.1
	NBL		A / 5.9	A / 3.9	C / 21.3	A / 7.4
	NBT		A / 2.9	A / 5.3	A / 3.5	A / 6.9
	SBT		B / 12.1	A / 8.9	B / 18.8	B / 12.2
	SBR		A / 1.6	A / 1.8	A / 1.9	A / 2.0
Private Rd / Bent Grass Meadows Dr	Intersection	STOP	A / 0.0	A / 0.0	A / 1.3	A / 1.6
	EB	Stop	A / 0.0	A / 0.0	A / 0.0	A / 0.0
	WBL		A / 0.0	A / 0.0	A / 1.1	A / 1.3
	NB		A / 0.0	A / 0.0	B / 10.1	B / 10.1
Meridian Park Dr / Bent Grass Meadows Dr	Intersection	STOP	A / 4.3	A / 4.8	A / 6.2	A / 6.8
	EBR	Stop	A / 0.0	A / 0.0	A / 0.0	A / 0.0
	WBL		A / 4.1	A / 4.2	A / 5.5	A / 5.5
	NB		A / 9.9	A / 9.8	B / 11.4	B / 11.6

The existing intersection #'s 1-3 all have acceptable LOS in all columns of **Table 2**. All movements are LOS C or better except for the EBL in intersection #1(it is at LOS D in both 2023 and 2025). Due to this concern, the volume/capacity ratios were checked for this intersection #1 only in **Table 4**. The striped dual left turn lanes will offer adequate capacity in 2025. The

2025 total traffic conditions include only minor increases in delay and a few changes in the LOS rating compared with existing conditions (all of the changed ratings are still LOS C or better). The signal was modeled with parameters included in the previous TIS. The intersections of Bent Grass Market view with Site Access and with Meridian Park Dr. (#'s 4-5) were not included in the table as all movements are LOS A with minimal delay. The associated synchro model reports are in the Appendix.

Table 4 Volume to Capacity Ratio						
Intersection	Approach	Control	2023		2025	
			Existing		Total Traffic	
			AM	PM	AM	PM
Meridian Rd / Bent Grass Meadows Dr	Intersection	Signalized				
	EBL	Yield	0.33	0.41	0.46	0.53
	EBR		0.45	0.41	0.53	0.52
	NBL		0.31	0.22	0.61	0.46
	NBT		0.24	0.59	0.26	0.64
	SBT		0.71	0.46	0.83	0.54
SBR	0.15		0.1	0.26	0.2	

6.0 Conclusions and Recommendations

This report was intended to be only a conformance memo for the previous TIS, but additional data collection and traffic analyses was performed. The proposed condition includes slightly higher trip generation. All planned roadway and signalization area improvements have been constructed as presented in the previous TIS. The signalized intersection of Meridian Rd/Bent Grass Meadows Drive will operate acceptably after site build-out in 2025. Only the eastbound left turn movement will operate at LOS less than C (it is at LOS D in both 2023 and 2025). The striped dual left turn lanes offer adequate capacity. All other intersections operate at LOS A in 2025. These findings have been determined to present adequate conformance with the previous TIS and no further improvements are recommended.

Revise to provide an analysis of the improvements that were required in filing 3 and determine if any modifications are required because of the increase in ADT. That should include the analysis of aux lanes as well as the striping of adjacent roads to the site.



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 city for traffic reports.

Derek Schuler

10/09/23 (First Submittal)

Derek Schuler, Colorado P.E. #40125
For and on behalf of Drexel, Barrell & Co.

Move this page so that it is after the cover sheet and add the following statement: "

Developer's Statement

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

[Name, Title] Date

[Business Name]

[Address] "

APPENDIX

1. Trip Generation Tables
2. Traffic Figures
3. Traffic Counts
4. Synchro Reports

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Previous TIS ¹ :																						
#934 FF Restaurant w/ Drive Thru	1	2.5	KSF	470.95	40.19	32.67	1,177	51%	51	49%	49	100	52%	42	48%	39	82	5%	1119	50%	559	
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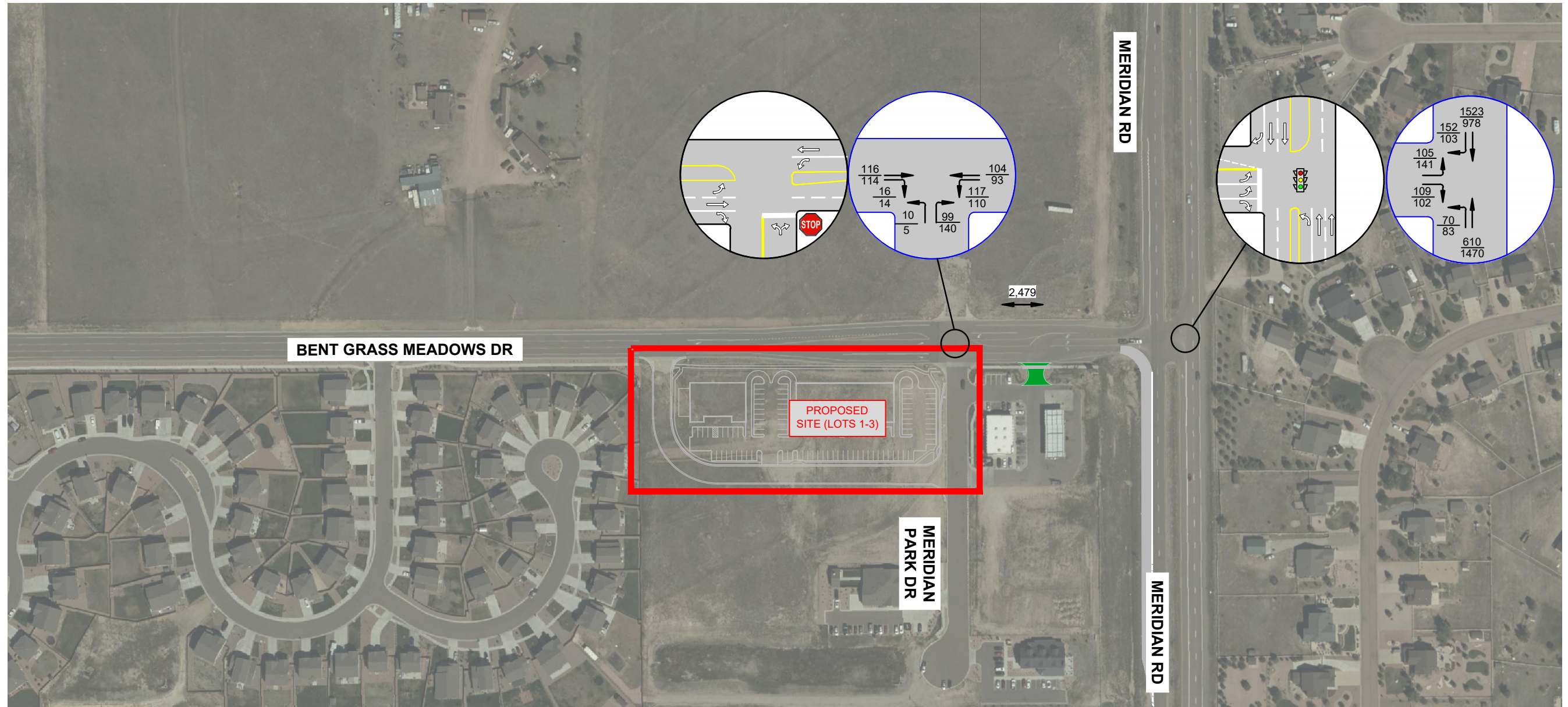


N.T.S.



OVERALL STUDY AREA / VICINITY MAP
 BENT GRASS PLAZA
 FALCON, COLORADO

Drexel, Barrell & Co. Engineers•Surveyors	
DATE: 10/9/2023	DWG. NO: FIGURE 1
JOB NO: 21814-01	



LEGEND:

X,XXX	= 24 HOUR TRAFFIC VOLUME
←→	= LANE MOVEMENT
←	= LANE MOVEMENT
XXX XXX	= WEEKDAY AM/PM PEAK-HOUR TRAFFIC
STOP	= STOP SIGN
🚦	= TRAFFIC SIGNAL

NOTES:
 TRAFFIC COUNTS WERE CONDUCTED ON THURS,
 SEPT 28, 2023 BY ALL TRAFFIC DATA SERVICES (ATD).

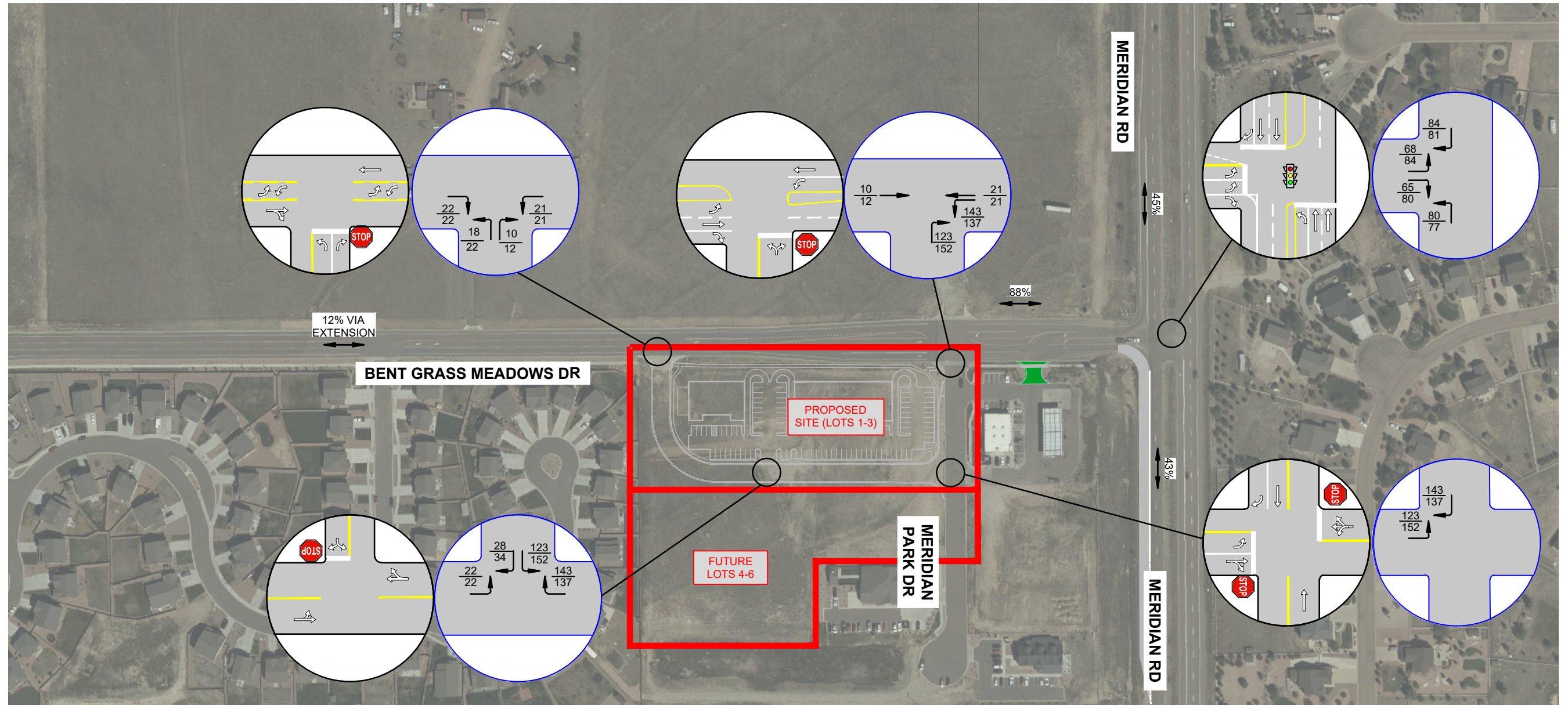


N.T.S.



2023 EXISTING CONDITIONS
 BENT GRASS PLAZA
 FALCON, COLORADO

Drexel, Barrell & Co. Engineers•Surveyors	
DATE: 10/9/2023	DWG. NO: FIGURE 2
JOB NO: 21814-01	



		AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
Total		187	150	180	186
N Meridian	45%	84	68	81	84
S Meridian	43%	80	65	77	80
Bent Grass Meadows Dr	12%	22	18	22	22

LEGEND:

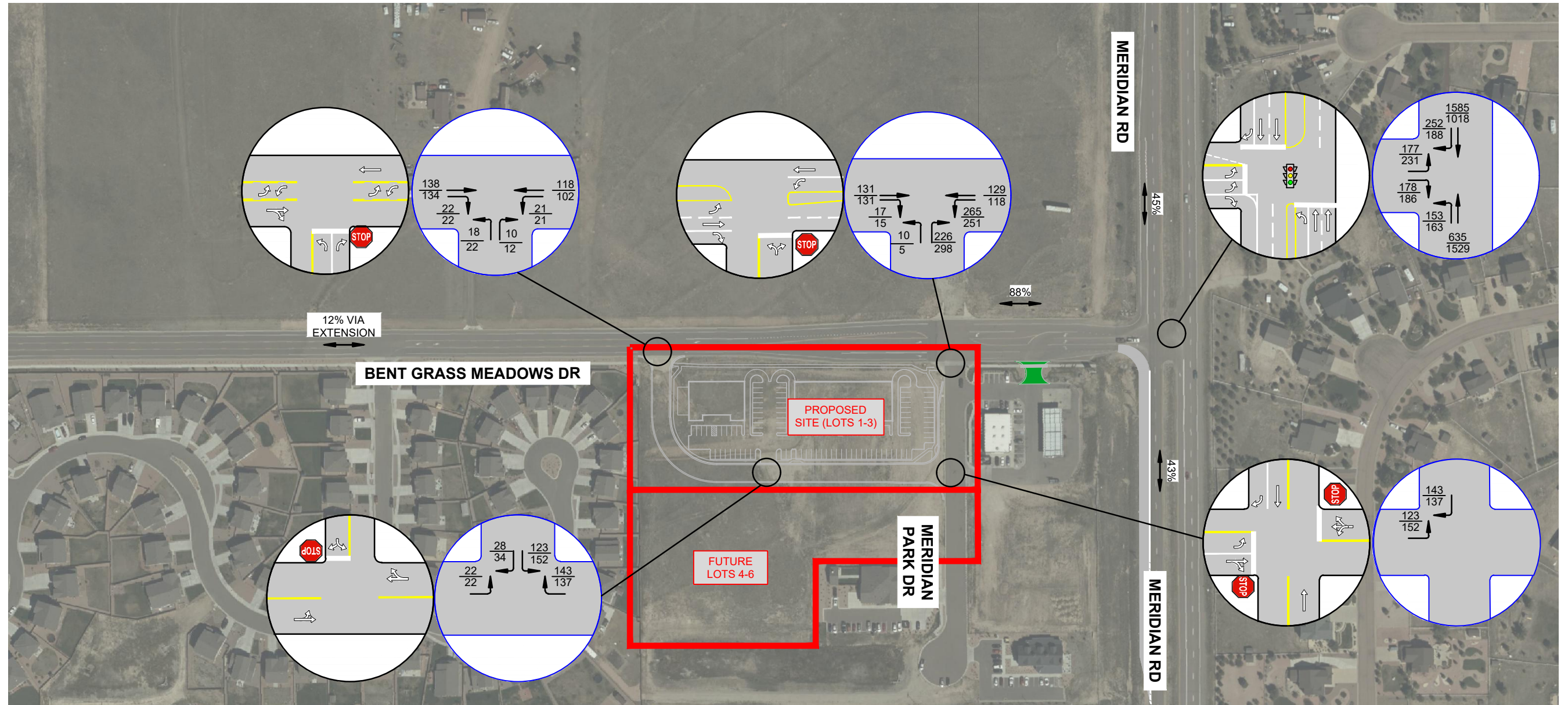
- XX% = SITE DISTRIBUTION
- ↔ = LANE MOVEMENT
- ← = LANE MOVEMENT
- XXX
XXX = WEEKDAY AM/PM PEAK-HOUR TRAFFIC
- STOP = STOP SIGN
- 🚦 = TRAFFIC SIGNAL



2024 SITE GEN
BENT GRASS PLAZA
FALCON, COLORADO

Drexel, Barrell & Co.
Engineers•Surveyors

DATE: 10/9/2023	DWG. NO: FIGURE 3
JOB NO: 21814-01	



LEGEND:

XX%	= SITE DISTRIBUTION
↔	= LANE MOVEMENT
←	= WEEKDAY AM/PM
→	= PEAK-HOUR TRAFFIC
STOP	= STOP SIGN
🚦	= TRAFFIC SIGNAL



**2025 TOTAL TRAFFIC
BENT GRASS PLAZA
FALCON, COLORADO**

Drexel, Barrell & Co. Engineers•Surveyors	
DATE: 10/9/2023	DWG. NO: FIGURE 4
JOB NO: 21814-01	



All Traffic Data Services

9660 W 44th Ave
Wheat Ridge, CO 80033
www.alltrafficdata.net

Site Code: 3

Station ID:

BENT GRASS MEADOWS DR W.O. MERIDIAN RD

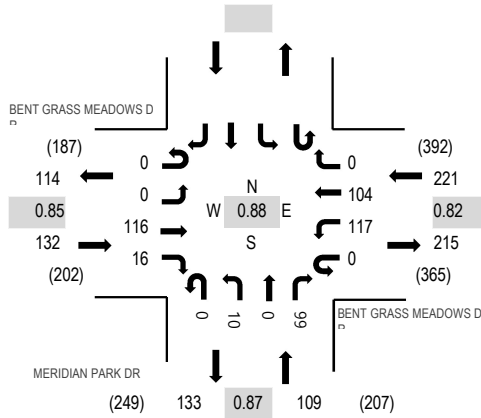
Start Time	28-Sep-23 Thu	EB	WB	Total						
12:00 AM		2	2	4						
01:00		2	2	4						
02:00		1	0	1						
03:00		3	2	5						
04:00		6	4	10						
05:00		19	33	52						
06:00		86	49	135						
07:00		132	114	246						
08:00		70	73	143						
09:00		64	62	126						
10:00		72	49	121						
11:00		68	50	118						
12:00 PM		58	63	121						
01:00		75	87	162						
02:00		117	50	167						
03:00		104	128	232						
04:00		128	98	226						
05:00		131	96	227						
06:00		65	69	134						
07:00		52	45	97						
08:00		38	27	65						
09:00		25	20	45						
10:00		8	15	23						
11:00		5	10	15						
Total		1331	1148	2479						
Percent		53.7%	46.3%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	132	114	-	-	-	-	-	-	246
PM Peak	-	17:00	15:00	-	-	-	-	-	-	15:00
Vol.	-	131	128	-	-	-	-	-	-	232
Grand Total		1331	1148							2479
Percent		53.7%	46.3%							

ADT

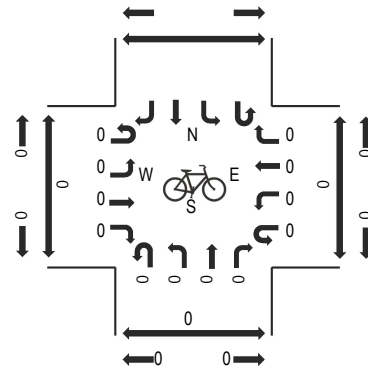
ADT 2,479

AADT 2,479

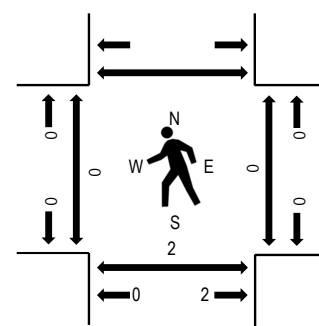
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

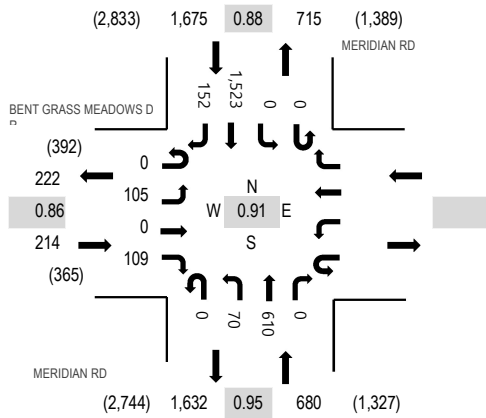


Note: Total study counts contained in parentheses.

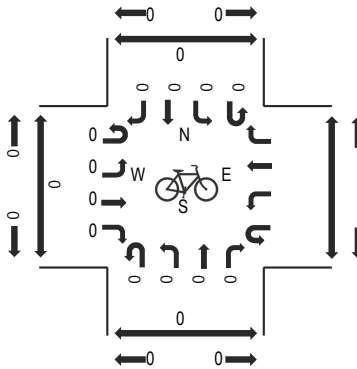
Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOWS DBENT GRASS MEADOWS DR				MERIDIAN PARK DR				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound		Westbound		Northbound		Southbound		Total	West	East	South			North			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right								U-Turn	Left	Thru
7:00 AM	0	0	28	5	0	24	17	0	0	1	0	20	95	462	0	0	0	
7:15 AM	0	0	28	3	0	26	31	0	0	2	0	28	118	455	0	0	0	
7:30 AM	0	0	35	4	0	26	27	0	0	1	0	24	117	434	0	0	0	
7:45 AM	0	0	25	4	0	41	29	0	0	6	0	27	132	395	0	0	2	
8:00 AM	0	0	13	2	0	33	16	0	0	0	0	24	88	339	0	0	0	
8:15 AM	0	0	13	3	0	34	19	0	0	4	0	24	97		0	0	2	
8:30 AM	0	0	15	2	0	18	13	0	0	4	0	26	78		0	0	0	
8:45 AM	0	0	22	0	0	24	14	0	0	3	0	13	76		0	0	0	
Count Total	0	0	179	23	0	226	166	0	0	21	0	186	801		0	0	4	
Peak Hour	0	0	116	16	0	117	104	0	0	10	0	99	462		0	0	2	

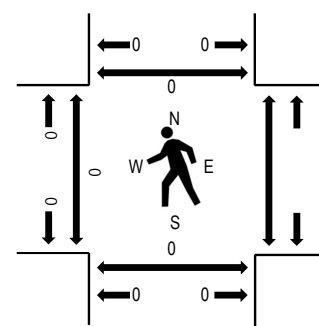
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOWS DR				MERIDIAN RD				MERIDIAN RD				Total	Rolling Hour	Pedestrian Crossings					
	Eastbound		Westbound		Northbound		Southbound		Northbound		Southbound				West	East	South	North		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right				
7:00 AM	0	21	0	26	0	18	121	0	0	0	399	24	609	2,569	0	0	0	0	0	0
7:15 AM	0	26	0	30	0	10	166	0	0	0	429	46	707	2,474	0	0	0	0	0	0
7:30 AM	0	29	0	33	0	23	167	0	0	0	359	32	643	2,302	0	0	0	0	0	0
7:45 AM	0	29	0	20	0	19	156	0	0	0	336	50	610	2,123	0	0	0	0	0	0
8:00 AM	0	28	0	10	0	17	163	0	0	0	265	31	514	1,956	0	0	0	0	0	0
8:15 AM	0	20	0	17	0	15	141	0	0	0	302	40	535		0	0	0	0	0	0
8:30 AM	0	20	0	24	0	8	131	0	0	0	260	21	464		0	0	0	0	0	0
8:45 AM	0	14	0	18	0	15	157	0	0	0	216	23	443		0	0	0	0	0	0
Count Total	0	187	0	178	0	125	1,202	0	0	0	2,566	267	4,525		0	0	0	0	0	0
Peak Hour	0	105	0	109	0	70	610	0	0	0	1,523	152	2,569		0	0	0	0	0	0

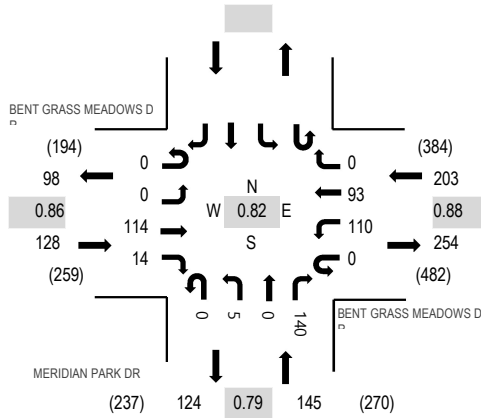
Location: 1 MERIDIAN PARK DR & BENT GRASS MEADOWS DR PM

Date: Thursday, September 28, 2023

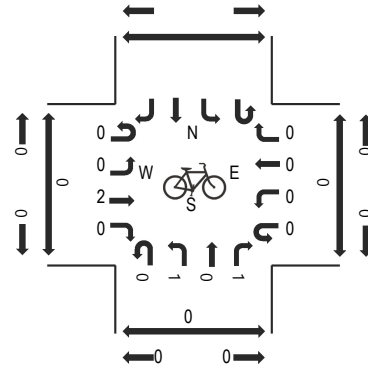
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

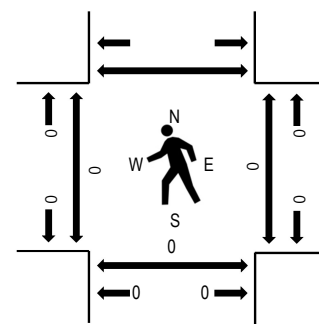
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOWS D				BENT GRASS MEADOWS DR				MERIDIAN PARK DR				Total	Rolling Hour	Pedestrian Crossings							
	Eastbound				Westbound				Northbound						Southbound				West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			U-Turn	Left	Thru	Right				
4:00 PM	0	0	34	7	0	36	22	0	0	1	0	45	145	476	0	0	0					
4:15 PM	0	0	21	4	0	26	25	0	0	1	0	38	115	444	0	0	0					
4:30 PM	0	0	23	1	0	20	28	0	0	0	0	32	104	451	0	0	0					
4:45 PM	0	0	36	2	0	28	18	0	0	3	0	25	112	459	0	0	0					
5:00 PM	0	0	31	3	0	22	23	0	0	2	0	32	113	437	0	0	0					
5:15 PM	0	0	34	7	1	27	23	0	0	3	0	27	122		0	0	0					
5:30 PM	0	0	24	4	0	26	20	0	0	4	0	34	112		0	0	0					
5:45 PM	0	0	24	4	0	20	19	0	0	2	0	21	90		0	0	0					
Count Total	0	0	227	32	1	205	178	0	0	16	0	254	913		0	0	0					
Peak Hour	0	0	114	14	0	110	93	0	0	5	0	140	476		0	0	0					

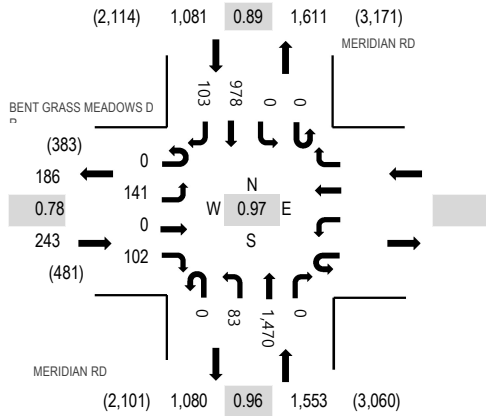
Location: 2 MERIDIAN RD & BENT GRASS MEADOWS DR PM

Date: Thursday, September 28, 2023

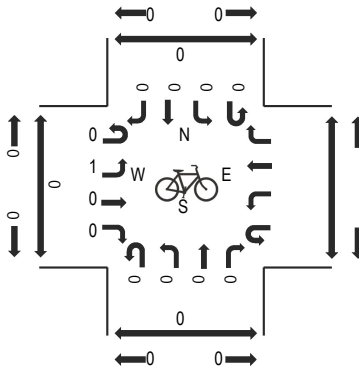
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

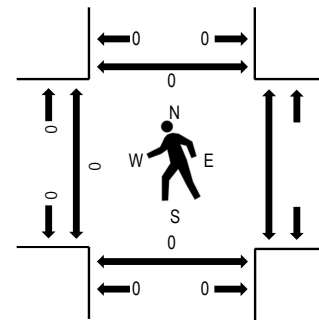
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOWS DR				MERIDIAN RD			MERIDIAN RD				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound		Westbound		Northbound			Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
4:00 PM	0	43	0	38	0	24	357	0	0	0	249	34	745	2,876	0	0	0
4:15 PM	0	34	0	23	0	23	361	0	0	0	226	28	695	2,825	0	0	0
4:30 PM	0	39	0	18	0	18	364	0	0	0	239	31	709	2,873	0	0	0
4:45 PM	0	34	0	23	0	17	338	0	0	0	285	30	727	2,877	0	0	0
5:00 PM	0	35	0	31	0	21	372	0	0	0	214	21	694	2,779	0	0	0
5:15 PM	0	33	0	26	0	24	382	0	0	0	251	27	743	2,877	0	0	0
5:30 PM	0	39	0	22	0	21	378	0	0	0	228	25	713	2,877	0	0	0
5:45 PM	0	22	0	21	0	20	340	0	0	0	207	19	629	2,877	0	0	0
Count Total	0	279	0	202	0	168	2,892	0	0	0	1,899	215	5,655	2,877	0	0	0
Peak Hour	0	141	0	102	0	83	1,470	0	0	0	978	103	2,877	2,877	0	0	0

Volume
2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM Existing
10/06/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	105	109	70	610	1523	152
Future Volume (vph)	105	109	70	610	1523	152
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	114	118	76	663	1655	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	118	76	663	1655	165
Intersection Summary						

Timings
2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM Existing
10/06/2023

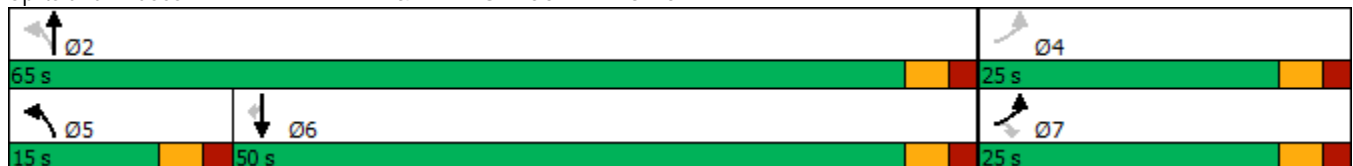


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗	
Traffic Volume (vph)	105	109	70	610	1523	152	
Future Volume (vph)	105	109	70	610	1523	152	
Turn Type	pm+pt	Perm	pm+pt	NA	NA	Perm	
Protected Phases	7		5	2	6		4
Permitted Phases	4	7	2			6	
Detector Phase	7	7	5	2	6	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0	15.0	65.0	50.0	50.0	25.0
Total Split (%)	27.8%	27.8%	16.7%	72.2%	55.6%	55.6%	28%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None
Act Effect Green (s)	8.1	8.1	62.9	62.9	53.4	53.4	
Actuated g/C Ratio	0.10	0.10	0.78	0.78	0.66	0.66	
v/c Ratio	0.33	0.45	0.31	0.24	0.71	0.15	
Control Delay	35.5	12.6	5.9	2.9	12.1	1.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.5	12.6	5.9	2.9	12.1	1.6	
LOS	D	B	A	A	B	A	
Approach Delay	23.9			3.2	11.2		
Approach LOS	C			A	B		

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 81
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 10.1
 Intersection Capacity Utilization 62.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: MERIDIAN RD & BENT GRASS MEADOWS DR



HCM 6th Signalized Intersection Summary
2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM Existing
10/06/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (veh/h)	105	109	70	610	1523	152
Future Volume (veh/h)	105	109	70	610	1523	152
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	0	76	663	1655	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	210		297	2861	2434	1085
Arrive On Green	0.06	0.00	0.05	0.81	0.68	0.68
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	114	0	76	663	1655	165
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	2.4	0.0	0.8	3.3	20.5	2.7
Cycle Q Clear(g_c), s	2.4	0.0	0.8	3.3	20.5	2.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	210		297	2861	2434	1085
V/C Ratio(X)	0.54		0.26	0.23	0.68	0.15
Avail Cap(c_a), veh/h	927		441	2861	2434	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	7.0	1.7	6.9	4.1
Incr Delay (d2), s/veh	2.2	0.0	0.5	0.2	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.3	0.1	4.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.2	0.0	7.4	1.9	8.5	4.4
LnGrp LOS	D		A	A	A	A
Approach Vol, veh/h	114			739	1820	
Approach Delay, s/veh	36.2			2.5	8.1	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		9.5	9.0	56.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		60.0		20.0	10.0	45.0
Max Q Clear Time (g_c+I1), s		5.3		4.4	2.8	22.5
Green Ext Time (p_c), s		4.3		0.3	0.1	12.8

Intersection Summary

HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Volume
5: PRIVATE DR & BENT GRASS MEADOWS DR

AM Existing
10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	132	0	0	114	0	0	0	0	0	0	0
Future Volume (vph)	0	132	0	0	114	0	0	0	0	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	143	0	0	124	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	0	0	124	0	0	0	0	0	0	0
Intersection Summary												

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗		↘	↗		↘		↗			
Traffic Vol, veh/h	0	132	0	0	114	0	0	0	0	0	0	0
Future Vol, veh/h	0	132	0	0	114	0	0	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	100	-	-	100	-	-	100	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	143	0	0	124	0	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1				
Conflicting Flow All	124	0	-	143	0	0	267	-	143
Stage 1	-	-	-	-	-	-	143	-	-
Stage 2	-	-	-	-	-	-	124	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	-	3.318
Pot Cap-1 Maneuver	1463	-	0	1440	-	0	722	0	905
Stage 1	-	-	0	-	-	0	884	0	-
Stage 2	-	-	0	-	-	0	902	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1463	-	-	1440	-	-	722	0	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	722	0	-
Stage 1	-	-	-	-	-	-	884	0	-
Stage 2	-	-	-	-	-	-	902	0	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT
Capacity (veh/h)	-	-	1463	-	1440	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	0	-
HCM Lane LOS	A	A	A	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-	0	-

Volume
7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

AM Existing
10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	116	16	117	104	0	10	0	99	0	0	0
Future Volume (vph)	0	116	16	117	104	0	10	0	99	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	126	17	127	113	0	11	0	108	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	17	127	113	0	0	119	0	0	0	0
Intersection Summary												

HCM 6th TWSC
 7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

AM Existing
 10/06/2023

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑			↕				
Traffic Vol, veh/h	0	116	16	117	104	0	10	0	99	0	0	0
Future Vol, veh/h	0	116	16	117	104	0	10	0	99	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	200	-	200	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	126	17	127	113	0	11	0	108	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	113	0	0	143	0	0	493	493	126
Stage 1	-	-	-	-	-	-	126	126	-
Stage 2	-	-	-	-	-	-	367	367	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1440	-	0	535	477	924
Stage 1	-	-	-	-	-	0	900	792	-
Stage 2	-	-	-	-	-	0	701	622	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1476	-	-	1440	-	-	488	0	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	488	0	-
Stage 1	-	-	-	-	-	-	900	0	-
Stage 2	-	-	-	-	-	-	639	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			4.1			9.9		
HCM LOS							A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	854	1476	-	-	1440	-
HCM Lane V/C Ratio	0.139	-	-	-	0.088	-
HCM Control Delay (s)	9.9	0	-	-	7.7	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0	-	-	0.3	-

Volume
 2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM Existing
 10/06/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	141	102	83	1470	978	103
Future Volume (vph)	141	102	83	1470	978	103
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	153	111	90	1598	1063	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	111	90	1598	1063	112
Intersection Summary						

Timings
2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM Existing
10/06/2023

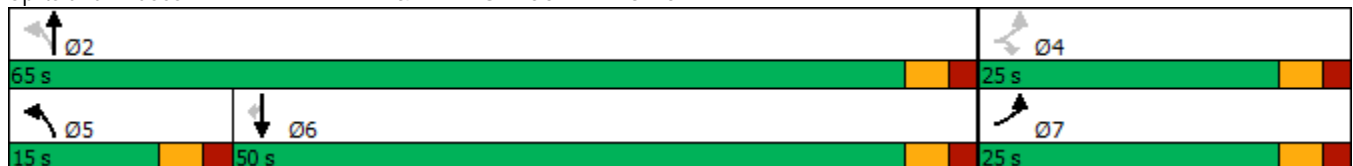


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	141	102	83	1470	978	103
Future Volume (vph)	141	102	83	1470	978	103
Turn Type	pm+pt	Perm	pm+pt	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases	4	4	2			6
Detector Phase	7	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0	15.0	65.0	50.0	50.0
Total Split (%)	27.8%	27.8%	16.7%	72.2%	55.6%	55.6%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effect Green (s)	9.0	9.0	62.9	62.9	53.2	53.2
Actuated g/C Ratio	0.11	0.11	0.77	0.77	0.65	0.65
v/c Ratio	0.41	0.41	0.22	0.59	0.46	0.10
Control Delay	36.3	11.8	3.9	5.3	8.9	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	11.8	3.9	5.3	8.9	1.8
LOS	D	B	A	A	A	A
Approach Delay	26.0			5.2	8.2	
Approach LOS	C			A	A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 81.9
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 8.1
 Intersection Capacity Utilization 53.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 2: MERIDIAN RD & BENT GRASS MEADOWS DR



HCM 6th Signalized Intersection Summary
 2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM Existing
 10/06/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (veh/h)	141	102	83	1470	978	103
Future Volume (veh/h)	141	102	83	1470	978	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	0	90	1598	1063	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	248		450	2828	2392	1067
Arrive On Green	0.07	0.00	0.06	0.80	0.67	0.67
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	153	0	90	1598	1063	112
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	3.2	0.0	1.0	12.6	10.5	1.9
Cycle Q Clear(g_c), s	3.2	0.0	1.0	12.6	10.5	1.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	248		450	2828	2392	1067
V/C Ratio(X)	0.62		0.20	0.57	0.44	0.10
Avail Cap(c_a), veh/h	917		586	2828	2392	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	3.6	2.9	5.7	4.3
Incr Delay (d2), s/veh	2.5	0.0	0.2	0.8	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.1	0.7	2.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.5	0.0	3.9	3.7	6.3	4.5
LnGrp LOS	D		A	A	A	A
Approach Vol, veh/h	153			1688	1175	
Approach Delay, s/veh	36.5			3.7	6.2	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		10.4	9.2	55.8
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		60.0		20.0	10.0	45.0
Max Q Clear Time (g_c+I1), s		14.6		5.2	3.0	12.5
Green Ext Time (p_c), s		15.6		0.4	0.1	8.1

Intersection Summary

HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Volume
5: PRIVATE DR & BENT GRASS MEADOWS DR

PM Existing
10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	128	0	0	98	0	0	0	0	0	0	0
Future Volume (vph)	0	128	0	0	98	0	0	0	0	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	139	0	0	107	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	107	0	0	0	0	0	0	0
Intersection Summary												

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗		↘	↗		↘		↗			
Traffic Vol, veh/h	0	128	0	0	98	0	0	0	0	0	0	0
Future Vol, veh/h	0	128	0	0	98	0	0	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	100	-	-	100	-	-	100	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	139	0	0	107	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	107	0	139
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	2.218
Pot Cap-1 Maneuver	1484	0	1445
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1484	-	1445
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

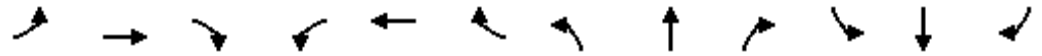
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT
Capacity (veh/h)	-	-	1484	-	1445	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	0	-
HCM Lane LOS	A	A	A	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-	0	-

Volume

PM Existing

7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	114	14	110	93	0	5	0	140	0	0	0
Future Volume (vph)	0	114	14	110	93	0	5	0	140	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	124	15	120	101	0	5	0	152	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	15	120	101	0	0	157	0	0	0	0
Intersection Summary												

HCM 6th TWSC
7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

PM Existing
10/06/2023

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑			↕				
Traffic Vol, veh/h	0	114	14	110	93	0	5	0	140	0	0	0
Future Vol, veh/h	0	114	14	110	93	0	5	0	140	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	200	-	200	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	124	15	120	101	0	5	0	152	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	101	0	0	139	0	0	465	465	124
Stage 1	-	-	-	-	-	-	124	124	-
Stage 2	-	-	-	-	-	-	341	341	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1491	-	-	1445	-	0	556	495	927
Stage 1	-	-	-	-	-	0	902	793	-
Stage 2	-	-	-	-	-	0	720	639	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1491	-	-	1445	-	-	510	0	927
Mov Cap-2 Maneuver	-	-	-	-	-	-	510	0	-
Stage 1	-	-	-	-	-	-	902	0	-
Stage 2	-	-	-	-	-	-	660	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			4.2			9.8		
HCM LOS							A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	902	1491	-	-	1445	-
HCM Lane V/C Ratio	0.175	-	-	-	0.083	-
HCM Control Delay (s)	9.8	0	-	-	7.7	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0	-	-	0.3	-

Volume
 2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM 2025
 10/06/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	177	178	153	635	1585	252
Future Volume (vph)	177	178	153	635	1585	252
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	192	193	166	690	1723	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	193	166	690	1723	274
Intersection Summary						

Timings
2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM 2025
10/06/2023

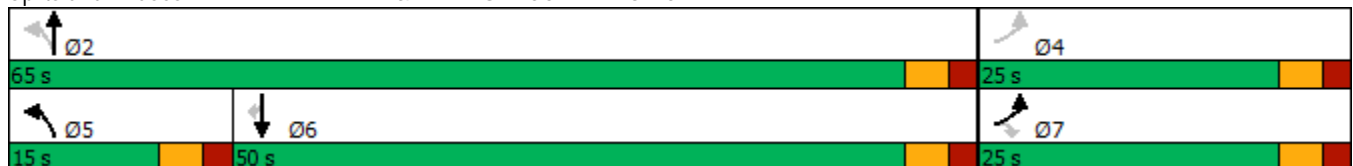


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗	
Traffic Volume (vph)	177	178	153	635	1585	252	
Future Volume (vph)	177	178	153	635	1585	252	
Turn Type	pm+pt	Perm	pm+pt	NA	NA	Perm	
Protected Phases	7		5	2	6		4
Permitted Phases	4	7	2			6	
Detector Phase	7	7	5	2	6	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0	15.0	65.0	50.0	50.0	25.0
Total Split (%)	27.8%	27.8%	16.7%	72.2%	55.6%	55.6%	28%
Yellow Time (s)	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
Lost Time Adjust (s)	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	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None
Act Effect Green (s)	9.8	9.8	60.0	60.0	46.9	46.9	
Actuated g/C Ratio	0.12	0.12	0.75	0.75	0.59	0.59	
v/c Ratio	0.46	0.53	0.61	0.26	0.83	0.26	
Control Delay	36.1	11.1	21.3	3.5	18.8	1.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	36.1	11.1	21.3	3.5	18.8	1.9	
LOS	D	B	C	A	B	A	
Approach Delay	23.6			6.9	16.5		
Approach LOS	C			A	B		

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 79.8
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 14.8
 Intersection LOS: B
 Intersection Capacity Utilization 69.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: MERIDIAN RD & BENT GRASS MEADOWS DR



HCM 6th Signalized Intersection Summary

2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM 2025
10/06/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (veh/h)	177	178	153	635	1585	252
Future Volume (veh/h)	177	178	153	635	1585	252
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	192	0	166	690	1723	274
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	294		279	2787	2329	1039
Arrive On Green	0.09	0.00	0.06	0.78	0.66	0.66
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	192	0	166	690	1723	274
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.1	0.0	2.0	4.0	24.8	5.5
Cycle Q Clear(g_c), s	4.1	0.0	2.0	4.0	24.8	5.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	294		279	2787	2329	1039
V/C Ratio(X)	0.65		0.60	0.25	0.74	0.26
Avail Cap(c_a), veh/h	903		398	2787	2329	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	15.1	2.2	8.8	5.5
Incr Delay (d2), s/veh	2.5	0.0	2.0	0.2	2.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.9	0.3	6.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.4	0.0	17.1	2.4	11.0	6.1
LnGrp LOS	D		B	A	B	A
Approach Vol, veh/h	192			856	1997	
Approach Delay, s/veh	36.4			5.3	10.3	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		11.5	9.9	55.1
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		60.0		20.0	10.0	45.0
Max Q Clear Time (g_c+I1), s		6.0		6.1	4.0	26.8
Green Ext Time (p_c), s		4.5		0.5	0.2	12.0

Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Volume
5: PRIVATE DR & BENT GRASS MEADOWS DR

AM 2025
10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	138	22	21	118	0	18	0	10	0	0	0
Future Volume (vph)	0	138	22	21	118	0	18	0	10	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	150	24	23	128	0	20	0	11	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	23	128	0	20	0	11	0	0	0
Intersection Summary												

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	138	22	21	118	0	18	0	10	0	0	0
Future Vol, veh/h	0	138	22	21	118	0	18	0	10	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	100	-	-	100	-	-	100	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	150	24	23	128	0	20	0	11	0	0	0

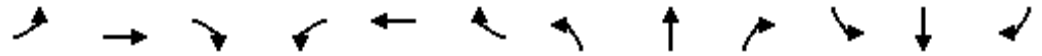
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	128	0	0	174	0	0	336	-	162
Stage 1	-	-	-	-	-	-	162	-	-
Stage 2	-	-	-	-	-	-	174	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	-	3.318
Pot Cap-1 Maneuver	1458	-	-	1403	-	0	659	0	883
Stage 1	-	-	-	-	-	0	867	0	-
Stage 2	-	-	-	-	-	0	856	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1458	-	-	1403	-	-	648	0	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	648	0	-
Stage 1	-	-	-	-	-	-	867	0	-
Stage 2	-	-	-	-	-	-	842	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			1.1			10.1		
HCM LOS							B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	648	883	1458	-	-	1403	-
HCM Lane V/C Ratio	0.03	0.012	-	-	-	0.016	-
HCM Control Delay (s)	10.7	9.1	0	-	-	7.6	-
HCM Lane LOS	B	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0.1	-

7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	131	17	265	129	0	10	0	226	0	0	0
Future Volume (vph)	0	131	17	265	129	0	10	0	226	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	142	18	288	140	0	11	0	246	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	18	288	140	0	0	257	0	0	0	0
Intersection Summary												

HCM 6th TWSC
 7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

AM 2025
 10/06/2023

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑			↕				
Traffic Vol, veh/h	0	131	17	265	129	0	10	0	226	0	0	0
Future Vol, veh/h	0	131	17	265	129	0	10	0	226	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	200	-	200	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	142	18	288	140	0	11	0	246	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	140	0	0	160	0	0	858	858	142
Stage 1	-	-	-	-	-	-	142	142	-
Stage 2	-	-	-	-	-	-	716	716	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1443	-	-	1419	-	0	327	294	906
Stage 1	-	-	-	-	-	0	885	779	-
Stage 2	-	-	-	-	-	0	484	434	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1443	-	-	1419	-	-	261	0	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	0	-
Stage 1	-	-	-	-	-	-	885	0	-
Stage 2	-	-	-	-	-	-	386	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			5.5			11.4		
HCM LOS							B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	1443	-	-	1419	-
HCM Lane V/C Ratio	0.313	-	-	-	0.203	-
HCM Control Delay (s)	11.4	0	-	-	8.2	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	1.3	0	-	-	0.8	-

Volume
 2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM 2025
 10/06/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	231	186	163	1529	1018	188
Future Volume (vph)	231	186	163	1529	1018	188
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	251	202	177	1662	1107	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	202	177	1662	1107	204
Intersection Summary						

Timings
2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM 2025
10/06/2023

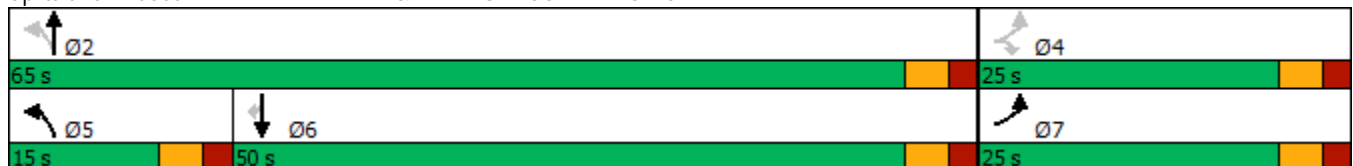


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	231	186	163	1529	1018	188
Future Volume (vph)	231	186	163	1529	1018	188
Turn Type	pm+pt	Perm	pm+pt	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases	4	4	2			6
Detector Phase	7	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0	15.0	65.0	50.0	50.0
Total Split (%)	27.8%	27.8%	16.7%	72.2%	55.6%	55.6%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effect Green (s)	11.2	11.2	60.0	60.0	47.1	47.1
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.58	0.58
v/c Ratio	0.53	0.52	0.46	0.64	0.54	0.20
Control Delay	36.8	10.1	7.4	6.9	12.2	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	10.1	7.4	6.9	12.2	2.0
LOS	D	B	A	A	B	A
Approach Delay	24.9			6.9	10.6	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 81.2
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 10.5
 Intersection Capacity Utilization 57.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: MERIDIAN RD & BENT GRASS MEADOWS DR



HCM 6th Signalized Intersection Summary

2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM 2025
10/06/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (veh/h)	231	186	163	1529	1018	188
Future Volume (veh/h)	231	186	163	1529	1018	188
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	0	177	1662	1107	204
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	359		405	2729	2279	1017
Arrive On Green	0.10	0.00	0.06	0.77	0.64	0.64
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	251	0	177	1662	1107	204
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	5.5	0.0	2.3	15.9	12.7	4.1
Cycle Q Clear(g_c), s	5.5	0.0	2.3	15.9	12.7	4.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	359		405	2729	2279	1017
V/C Ratio(X)	0.70		0.44	0.61	0.49	0.20
Avail Cap(c_a), veh/h	885		521	2729	2279	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	5.6	3.9	7.3	5.8
Incr Delay (d2), s/veh	2.5	0.0	0.7	1.0	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.4	2.0	3.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.3	0.0	6.3	5.0	8.0	6.2
LnGrp LOS	D		A	A	A	A
Approach Vol, veh/h	251			1839	1311	
Approach Delay, s/veh	36.3			5.1	7.8	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		13.1	9.9	55.1
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		60.0		20.0	10.0	45.0
Max Q Clear Time (g_c+I1), s		17.9		7.5	4.3	14.7
Green Ext Time (p_c), s		16.3		0.7	0.2	8.9
Intersection Summary						
HCM 6th Ctrl Delay			8.4			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Volume
5: PRIVATE DR & BENT GRASS MEADOWS DR

PM 2025
10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	134	22	21	102	0	22	0	12	0	0	0
Future Volume (vph)	0	134	22	21	102	0	22	0	12	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	146	24	23	111	0	24	0	13	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	0	23	111	0	24	0	13	0	0	0
Intersection Summary												

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	134	22	21	102	0	22	0	12	0	0	0
Future Vol, veh/h	0	134	22	21	102	0	22	0	12	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	100	-	-	100	-	-	100	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	146	24	23	111	0	24	0	13	0	0	0

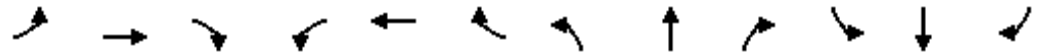
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	111	0	0	170	0	0	315	-	158
Stage 1	-	-	-	-	-	-	158	-	-
Stage 2	-	-	-	-	-	-	157	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	-	3.318
Pot Cap-1 Maneuver	1479	-	-	1407	-	0	678	0	887
Stage 1	-	-	-	-	-	0	871	0	-
Stage 2	-	-	-	-	-	0	871	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1479	-	-	1407	-	-	667	0	887
Mov Cap-2 Maneuver	-	-	-	-	-	-	667	0	-
Stage 1	-	-	-	-	-	-	871	0	-
Stage 2	-	-	-	-	-	-	857	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			1.3			10.1		
HCM LOS							B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	667	887	1479	-	-	1407	-
HCM Lane V/C Ratio	0.036	0.015	-	-	-	0.016	-
HCM Control Delay (s)	10.6	9.1	0	-	-	7.6	-
HCM Lane LOS	B	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-

7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

10/06/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	131	15	251	118	0	5	0	298	0	0	0
Future Volume (vph)	0	131	15	251	118	0	5	0	298	0	0	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	142	16	273	128	0	5	0	324	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	16	273	128	0	0	329	0	0	0	0
Intersection Summary												

HCM 6th TWSC
7: MERIDIAN PARK DR & BENT GRASS MEADOWS DR

PM 2025
10/06/2023

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑			↔				
Traffic Vol, veh/h	0	131	15	251	118	0	5	0	298	0	0	0
Future Vol, veh/h	0	131	15	251	118	0	5	0	298	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	200	-	200	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	142	16	273	128	0	5	0	324	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	128	0	0	158	0	0	816	816	142
Stage 1	-	-	-	-	-	-	142	142	-
Stage 2	-	-	-	-	-	-	674	674	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1458	-	-	1422	-	0	347	311	906
Stage 1	-	-	-	-	-	0	885	779	-
Stage 2	-	-	-	-	-	0	506	454	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1458	-	-	1422	-	-	280	0	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	0	-
Stage 1	-	-	-	-	-	-	885	0	-
Stage 2	-	-	-	-	-	-	409	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	0			5.5			11.6		
HCM LOS							B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	874	1458	-	-	1422	-
HCM Lane V/C Ratio	0.377	-	-	-	0.192	-
HCM Control Delay (s)	11.6	0	-	-	8.1	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0	-	-	0.7	-