

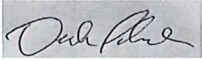
**Traffic Impact Study**  
**For**  
**Bent Grass Plaza (Lots 1-3)**  
**PCD File No. PPR23342**  
**Falcon, CO**  
**11/16/2023**

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

PREPARED BY:  
Drexel, Barrell & Co.  
1800 38<sup>th</sup> Street  
Boulder, CO 80301  
Contact:  
Derek Schuler, P.E., PTOE  
*Drexel Barrell Project Number:21814-00CSCV*

### Traffic Engineer's Statement

The attached 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.



\_\_\_\_\_  
[Derek Schuler, Colorado P.E. #40125]

11/16/2023 \_\_\_\_\_

Date



### Developer's Statement

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



\_\_\_\_\_  
Nathan Derwick, President

Copestone General Contractors

555 Amelia Street, Suite 100, Colorado Springs, CO 80915

11/17/2023

Date

### 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 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, 11<sup>th</sup> 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 Estimate for Bent Grass Plaza, Falcon, CO																				
ITE Code / Land Use			Trip Generation Rates			Trips Generated										External Trips				
						Average Weekday Trips	AM Peak-Hour (7 - 9)				Total	PM Peak-Hour (4 - 6)				Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips	
			Avg. Weekday	AM PEAK	PM PEAK		% Trips	Trips	% Trips	Trips		% Trips	Trips	% Trips	Trips					
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		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		1119	50%	559
#820 Shopping 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:																				
#8223 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
#8223 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)

<sup>1</sup>Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SP2010, October 20, 2021 - LSC Transportation Consultants, Inc."

<sup>2</sup>Source: "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			Trip Generation Rates			Trips Generated										External Trips				
						Average Weekday Trips	AM Peak-Hour (7 - 9)				Total	PM Peak-Hour (4 - 6)				Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips	
			Avg. Weekday	AM PEAK	PM PEAK		% Trips	Trips	% Trips	Trips		% Trips	Trips	% Trips	Trips					
Previous TIS :																				
#820 Shopping 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 Shopping 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	85%	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	

<sup>1</sup>Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SP2010, 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. Trips from a related TIS, "Bent Grass Dunkin' Donuts, PCD File No. PPR-22-027, SM Rocha, LLC, October 2022", were also added since they also affect the site's adjacent intersections. 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
<b>Meridian Rd / Bent Grass Meadows Dr</b>	<b>Intersection</b>	<b>Signalized</b>	<b>A / 7.8</b>	<b>A / 6.3</b>	<b>B / 11.9</b>	<b>A / 8.8</b>
	EBL	Yield	D / 35.5	D / 36.3	D / 36.3	D / 36.3
	EBR		B / 12.6	B / 11.8	B / 11.1	B / 10.1
	NBL		A / 5.9	A / 3.9	C / 22.8	A / 6.9
	NBT		A / 2.9	A / 5.3	A / 2.7	A / 5.2
	SBT		B / 12.1	A / 8.9	B / 11.7	B / 8.3
	SBR		A / 1.6	A / 1.8	A / 7.0	A / 6.6
<b>Private Rd / Bent Grass Meadows Dr</b>	<b>Intersection</b>	<b>STOP</b>	<b>A / 0.0</b>	<b>A / 0.0</b>	<b>A / 1.3</b>	<b>A / 1.6</b>
	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
<b>Meridian Park Dr / Bent Grass Meadows Dr</b>	<b>Intersection</b>	<b>STOP</b>	<b>A / 4.3</b>	<b>A / 4.8</b>	<b>A / 7.6</b>	<b>A / 7.4</b>
	EBR	Stop	A / 0.0	A / 0.0	A / 0.0	A / 0.0
	WBL		A / 4.1	A / 4.2	A / 8.5	A / 8.3
	NB		A / 9.9	A / 9.8	B / 13.2	B / 12.4

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). This is further discussed in the next section.

#### 6.0 Intersection and Auxiliary Lane Analysis

An analysis of auxiliary lanes is presented below and with volume/capacity ratios in **Table 4**.

Meridian Rd / Bent Grass Meadows Dr: The existing striped 160' eastbound dual left turn lanes will offer adequate capacity in 2025. The existing auxiliary lanes for both directions of Meridian Rd will also remain under capacity. The 2025 total traffic conditions include only minor increases in delay and a few changes in the LOS rating compared with existing conditions. The traffic signal was modeled with parameters included in the previous TIS.

Table 4 Volume to Capacity Ratio							
Intersection	Approach	Control	2023		2025		Storage Lengths (ft)
			Existing		Total Traffic		
			AM	PM	AM	PM	
Meridian Rd / Bent Grass Meadows Dr	Intersection	Signalized					
	EBL	Yield	0.33	0.62	0.69	0.71	2 x 160
	EBR		0.45	0.41	0.53	0.52	
	NBL		0.30	0.2	0.78	0.49	700
	NBT		0.23	0.57	0.24	0.61	
	SBT		0.67	0.44	0.74	0.48	
	SBR		0.14	0.1	0.31	0.22	330
Meridian Park Dr / Bent Grass Meadows Dr	Intersection	STOP					
	WBL	STOP	0.14	0.18	0.27	0.22	150
	EBR		-	-	-	-	150
	NB		0.09	0.08	0.44	0.43	

Meridian Park Dr / Bent Grass Meadows Dr: Per tables 3 and 4, the auxiliary lanes and single lane NB approach will have LOS B or better and adequate capacity. The existing lane striping along Bent Grass Meadows Drive is adequate.

The intersections with Bent Grass Market View (private street) provide access to this site (Lots 1-3) and future Lots 4-6 only. These intersections will operate with all movements at LOS B or better. The existing striped two way left turn lane on Bent Grass Meadows Drive at the private

street intersection is adequate to handle the relatively lower volume of turning traffic (Figure 4). The associated synchro model reports for all intersections analyzed are in the Appendix.

## 7.0 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 and have adequate capacity in the existing striped turn lanes. These findings have been determined to present adequate conformance with the previous TIS and no further improvements are recommended.

## APPENDIX

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

Table 1 - Trip Generation Estimate for Bent Grass Plaza, Falcon, CO																					
ITE Code / Land Use      Lot      Size			Trip Generation Rates			Trips Generated											External Trips				
						Average Weekday Trips	AM Peak-Hour (7 - 9)				Total	PM Peak-Hour (4 - 6)				Total	Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips	
			Avg. Weekday	AM PEAK	PM PEAK		% Trips	Trips	% Trips	Trips		% Trips	Trips	% Trips	Trips						% Trips
Previous TIS <sup>1</sup> :																					
#934 FF Restaurant w/ Drive Thru	1	2.5	K S F	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	K S F	470.95	40.19	32.67	1,177	51%	51	49%	49	100	52%	42	48%	39	82	5%	1119	50%	559
#820 Shopping Center	3	6.0	K S F	85.72	5.20	7.40	514	62%	19	38%	12	31	48%	21	52%	23	44	5%	489	34%	322
Proposed <sup>2</sup> :																					
#822 Strip Retail Plaza (<40K)	1-2	8.6	K S F	54.45	2.36	6.59	468	60%	12	40%	8	20	50%	28	50%	28	57	5%	445	0%	445
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Proposed Trips							3,114		135		124	259		132		125	257			1,826	
Difference in Trips							(245)		(13)		(14)	(27)		(25)		(24)	(49)			(385)	

<sup>1</sup>Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SP2010, October 20, 2021 - LSC Transportation Consultants, Inc."

<sup>2</sup>Source: "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			Trips Generated										External Trips							
						Average Weekday Trips	AM Peak-Hour (7 - 9)				PM Peak-Hour (4 - 6)					Internal Capture % Reduced	External Weekday Trips	Pass-By Trips % Reduced	Adjusted Weekday Trips				
			Inbound		Outbound		Total	Inbound		Outbound		Total											
			% Trips	Trips	% Trips			Trips	% Trips	Trips	% Trips		Trips	% Trips	Trips								
			Avg. Weekday	AM PEAK	PM PEAK		% Trips	Trips	% Trips	Trips	Total	% Trips	Trips	% Trips	Trips	Total							
Previous TIS <sup>1</sup> :																							
#820 Shopping Center			4	6.0	K S F	85.72	5.20	7.40	514	62%	19	38%	12	31	48%	21	52%	23	44	5%	489	34%	322
#820 Shopping Center			5	6.0	K S F	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	K S F	76.88	1.50	1.85	830	85%	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		

<sup>1</sup>Source: "Bent Grass East Commercial, Filing No. 3, Updated Traffic Impact Analysis, PCD File No. SP2010, October 20, 2021 - LSC Transportation Consultants, Inc."

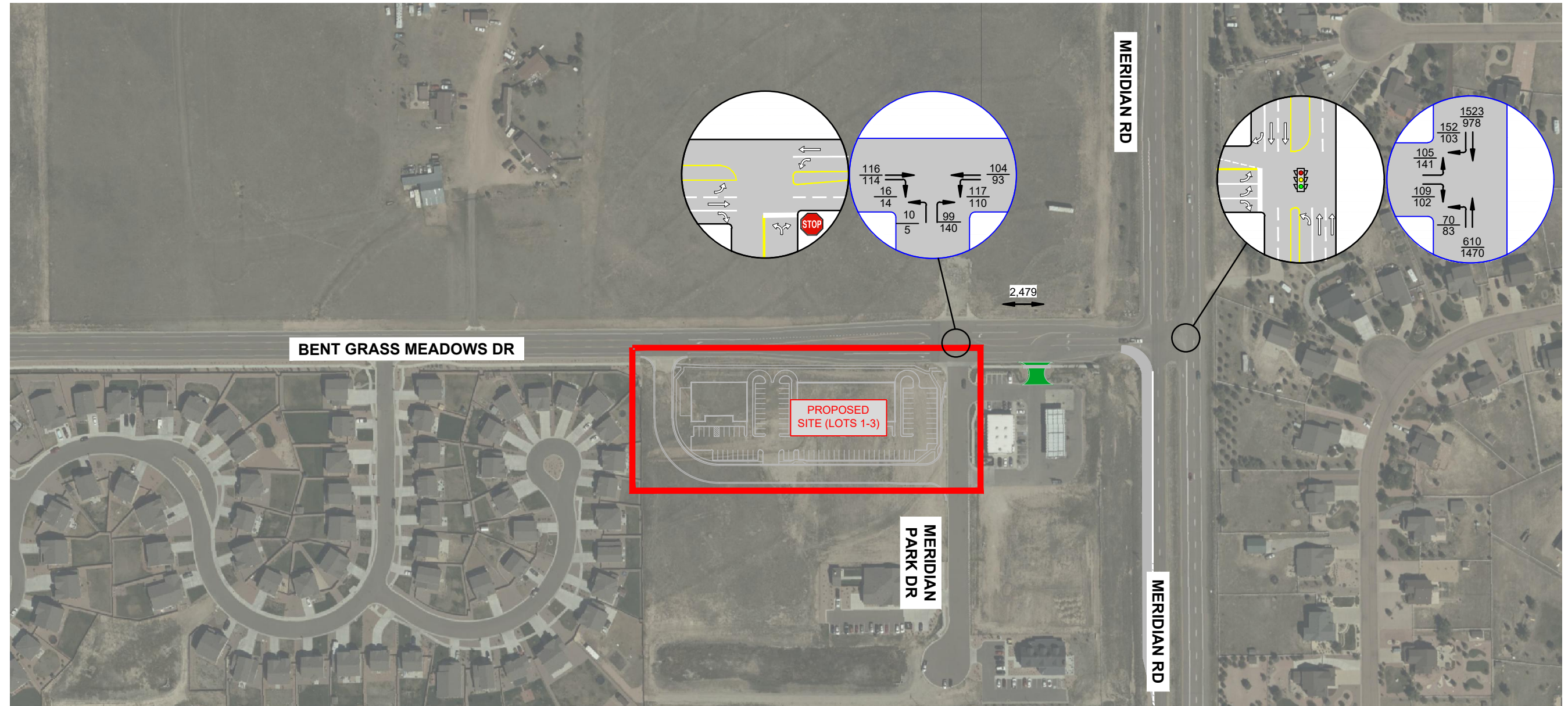


OVERALL STUDY AREA / VICINITY MAP  
BENT GRASS PLAZA  
FALCON, COLORADO

Drexel, Barrell & Co.  
Engineers•Surveyors

DATE:  
11/17/2023  
JOB NO:  
21814-01

DWG. NO:  
FIGURE 1



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

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



N.T.S.

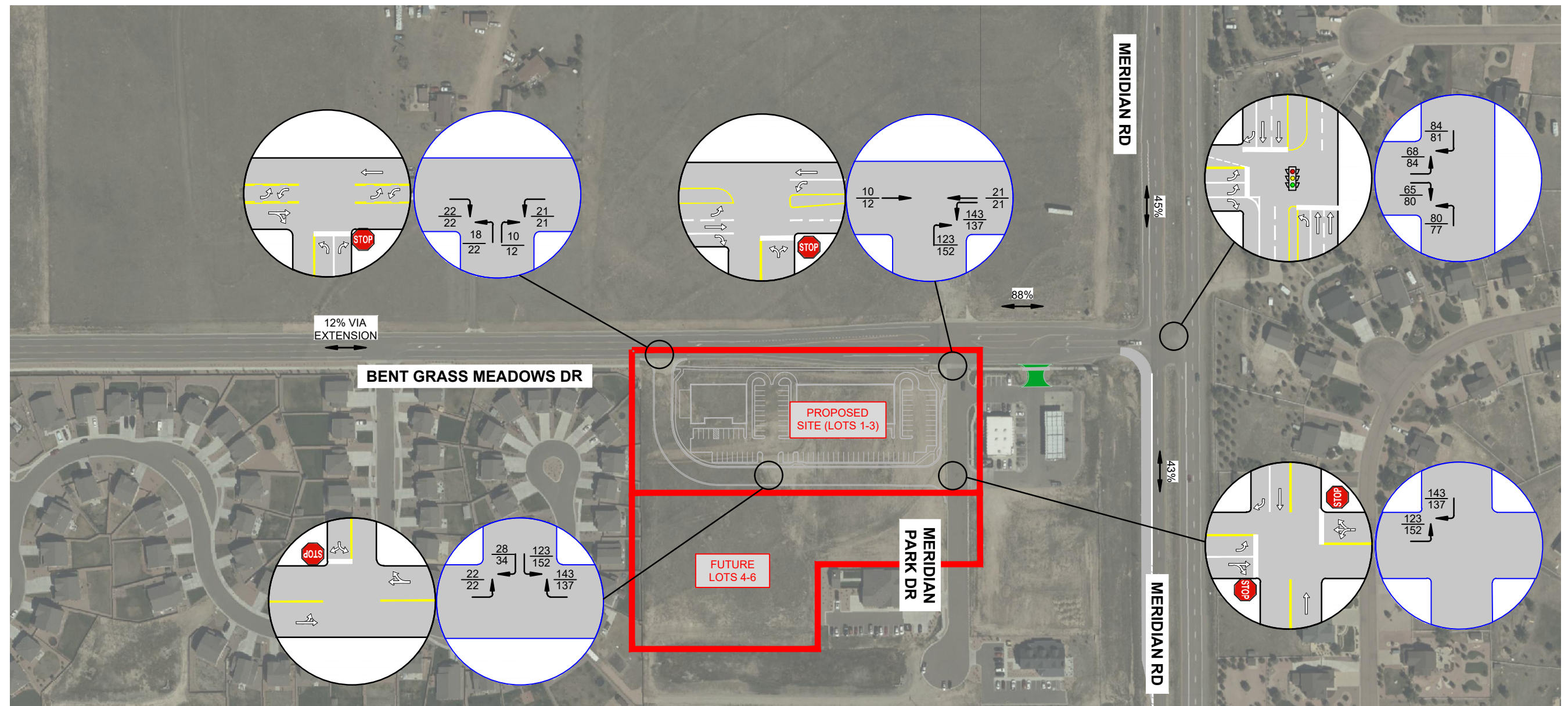


2023 EXISTING CONDITIONS  
BENT GRASS PLAZA  
FALCON, COLORADO

Drexel, Barrell & Co.  
Engineers•Surveyors

DATE:  
11/17/2023  
JOB NO:  
21814-01

DWG. NO:  
FIGURE 2



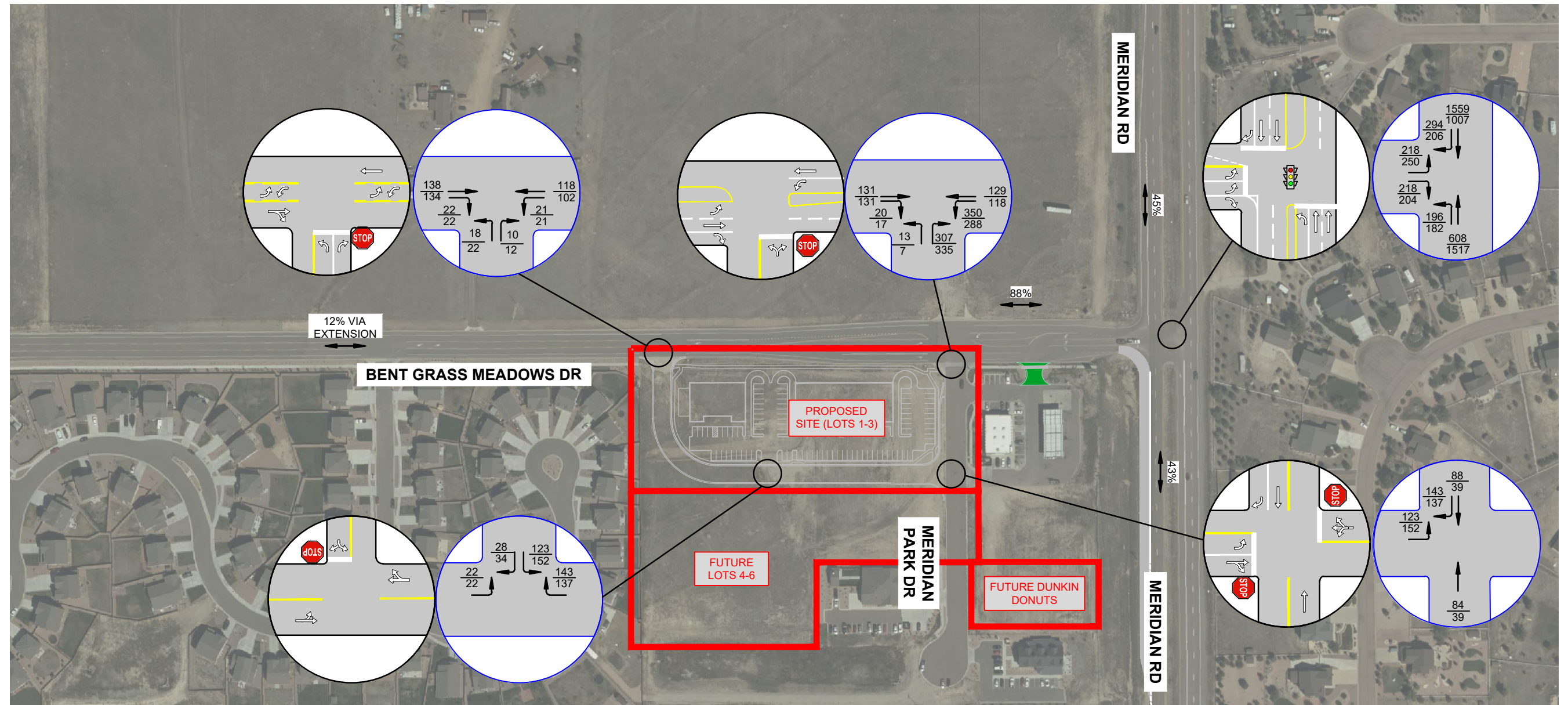
		AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
<b>Total</b>		<b>187</b>	<b>150</b>	<b>180</b>	<b>186</b>
N Meridian	45%	84	68	81	84
S Meridian	43%	80	65	77	80
Bent Grass Meadows Dr	12%	22	18	22	22

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



2024 SITE GEN  
BENT GRASS PLAZA  
FALCON, COLORADO

Drexel, Barrell & Co. Engineers•Surveyors	
DATE: 11/17/2023	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



N.T.S.

**DBC**  
Drexel, Barrell & Co.  
Traditional Services, Innovative Solutions  
Since 1949

2025 TOTAL TRAFFIC  
BENT GRASS PLAZA  
FALCON, COLORADO

Drexel, Barrell & Co. Engineers•Surveyors	
DATE: 11/17/2023	DWG. NO: FIGURE 4
JOB NO: 21814-01	



# All Traffic Data Services

9660 W 44th Ave  
Wheat Ridge, CO 80033  
[www.alltrafficdata.net](http://www.alltrafficdata.net)

Page 1

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	



ALL TRAFFIC DATA SERVICES

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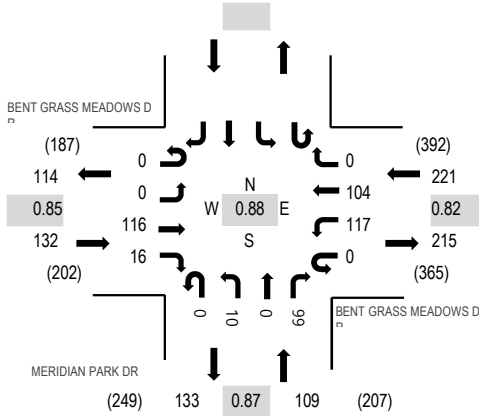
**Location:** 1 MERIDIAN PARK DR & BENT GRASS MEADOWS DR AM

**Date:** Thursday, September 28, 2023

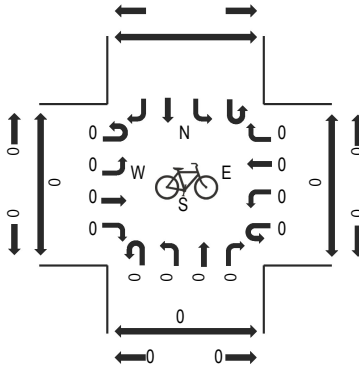
**Peak Hour:** 07:00 AM - 08:00 AM

**Peak 15-Minutes:** 07:45 AM - 08:00 AM

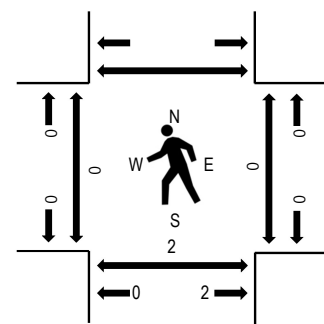
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

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



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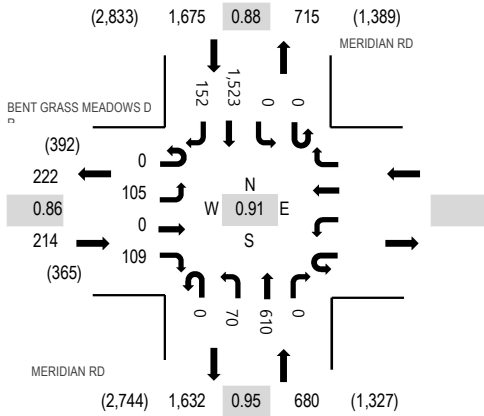
**Location:** 2 MERIDIAN RD & BENT GRASS MEADOWS DR AM

**Date:** Thursday, September 28, 2023

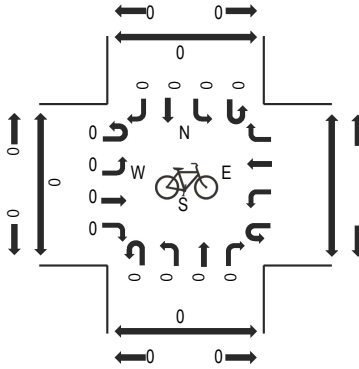
**Peak Hour:** 07:00 AM - 08:00 AM

**Peak 15-Minutes:** 07:15 AM - 07:30 AM

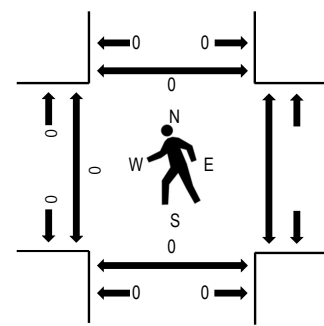
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

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



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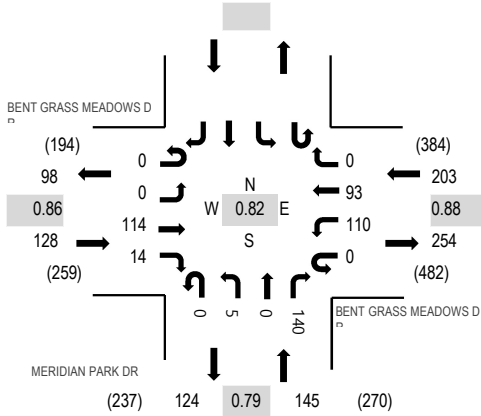
**Location:** 1 MERIDIAN PARK DR & BENT GRASS MEADOWS DR PM

**Date:** Thursday, September 28, 2023

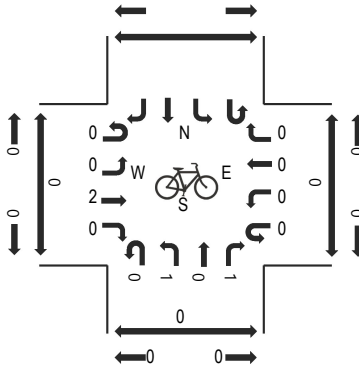
**Peak Hour:** 04:00 PM - 05:00 PM

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

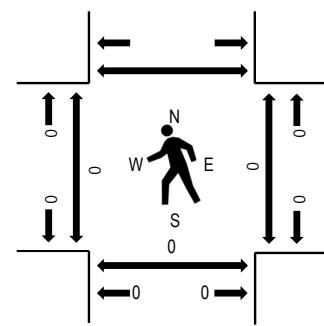
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

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



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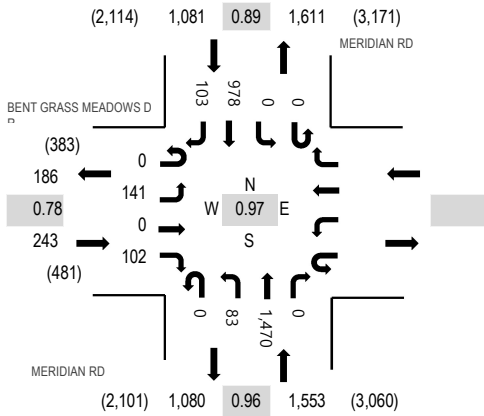
**Location:** 2 MERIDIAN RD & BENT GRASS MEADOWS DR PM

**Date:** Thursday, September 28, 2023

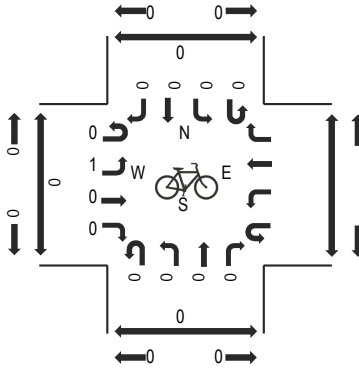
**Peak Hour:** 04:45 PM - 05:45 PM

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

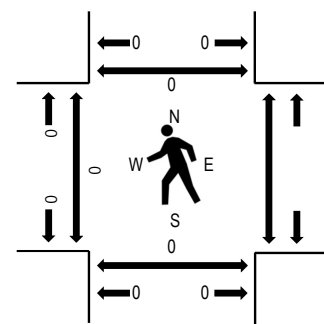
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians









Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

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

Volume  
2: MERIDIAN RD & BENT GRASS MEADOWS DR

AM Peak Existing  
11/16/2023

						
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 Peak Existing  
11/16/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	105	109	70	610	1523	152
Future Volume (vph)	105	109	70	610	1523	152
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases		7	2			6
Detector Phase	3	7	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)	8.0	7.9	63.0	64.0	54.7	54.7
Actuated g/C Ratio	0.10	0.10	0.80	0.81	0.69	0.69
v/c Ratio	0.33	0.45	0.30	0.23	0.67	0.14
Control Delay	35.1	12.7	5.4	2.6	11.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	12.7	5.4	2.6	11.4	1.5
LOS	D	B	A	A	B	A
Approach Delay	23.7			2.9	10.5	
Approach LOS	C			A	B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 78.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.6

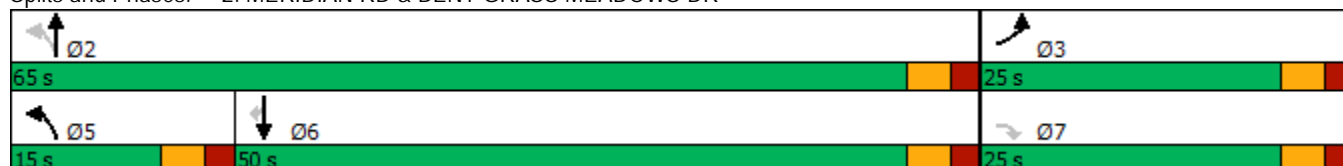
Intersection LOS: A

Intersection Capacity Utilization 62.9%

ICU Level of Service B

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 Peak Existing

11/16/2023



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	0.5
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		5		6	8
Phs Duration (G+Y+Rc), s	65.0		9.0		56.0	9.5
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	60.0		10.0		45.0	20.0
Max Q Clear Time (g_c+I1), s	5.3		2.8		22.5	4.4
Green Ext Time (p_c), s	4.3		0.1		12.8	0.3

### 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 Peak Existing

11/16/2023

												
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												

HCM 6th TWSC  
5: PRIVATE DR & BENT GRASS MEADOWS DR

AM Peak Existing  
11/16/2023

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	-







## 7: MERIDIAN PARK DR &amp; BENT GRASS MEADOWS DR

11/16/2023

												
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 Peak Existing  
11/16/2023

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	150	-	150	150	-	-	-	-	-	-	-	-
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 Peak Existing  
11/16/2023



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 Peak Existing  
11/16/2023



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	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases		4	2			6
Detector Phase	3	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 (%)	21.7%	21.7%	13.0%	56.5%	43.5%	43.5%
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	Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effect Green (s)	9.4	6.8	60.8	60.8	50.7	50.7
Actuated g/C Ratio	0.10	0.07	0.66	0.66	0.55	0.55
v/c Ratio	0.44	0.50	0.27	0.68	0.55	0.12
Control Delay	42.8	16.7	8.4	12.2	16.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	16.7	8.4	12.2	16.1	3.1
LOS	D	B	A	B	B	A
Approach Delay	31.8			12.0	14.9	
Approach LOS	C			B	B	

## Intersection Summary

Cycle Length: 115  
Actuated Cycle Length: 92  
Natural Cycle: 90  
Control Type: Semi Act-Uncoord  
Maximum v/c Ratio: 0.68  
Intersection Signal Delay: 14.7  
Intersection LOS: B  
Intersection Capacity Utilization 53.1%  
ICU Level of Service A  
Analysis Period (min) 15

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

 65 s	 25 s	 25 s
 15 s	 50 s	

# HCM 6th Signalized Intersection Summary

## 2: MERIDIAN RD & BENT GRASS MEADOWS DR

PM Peak Existing  
11/16/2023



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	0.4
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		5		6	8
Phs Duration (G+Y+Rc), s	65.0		9.2		55.8	10.4
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	60.0		10.0		45.0	20.0
Max Q Clear Time (g_c+I1), s	14.6		3.0		12.5	5.2
Green Ext Time (p_c), s	15.6		0.1		8.1	0.4

### 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 Peak Existing  
11/16/2023

												
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												

HCM 6th TWSC  
5: PRIVATE DR & BENT GRASS MEADOWS DR

PM Peak Existing  
11/16/2023

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	0	0	246	-	139
Stage 1	-	-	-	-	-	-	139	-	-
Stage 2	-	-	-	-	-	-	107	-	-
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	1484	-	0	1445	-	0	742	0	909
Stage 1	-	-	0	-	-	0	888	0	-
Stage 2	-	-	0	-	-	0	917	0	-
Platoon blocked, %	-			-					
Mov Cap-1 Maneuver	1484	-	-	1445	-	-	742	0	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	742	0	-
Stage 1	-	-	-	-	-	-	888	0	-
Stage 2	-	-	-	-	-	-	917	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)	-	-	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 Peak Existing







## 7: MERIDIAN PARK DR &amp; BENT GRASS MEADOWS DR

11/16/2023

												
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 Peak Existing  
11/16/2023

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	150	-	150	150	-	-	-	-	-	-	-	-
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

2025 Total AM  
11/16/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	218	218	196	608	1559	294
Future Volume (vph)	218	218	196	608	1559	294
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)	237	237	213	661	1695	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	237	237	213	661	1695	320
Intersection Summary						

# Timings 2: MERIDIAN RD & BENT GRASS MEADOWS DR

2025 Total AM  
11/16/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	218	218	196	608	1559	294
Future Volume (vph)	218	218	196	608	1559	294
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases		7	2			6
Detector Phase	3	7	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)	11.0	11.0	60.0	60.0	45.9	45.9
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.57	0.57
v/c Ratio	0.51	0.60	0.73	0.25	0.85	0.31
Control Delay	36.4	14.2	30.9	3.8	20.7	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	14.2	30.9	3.8	20.7	2.1
LOS	D	B	C	A	C	A
Approach Delay	25.3			10.4	17.8	
Approach LOS	C			B	B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 81

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 16.9

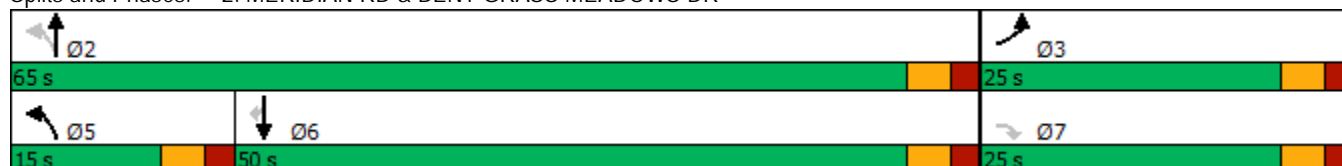
Intersection LOS: B

Intersection Capacity Utilization 72.7%

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

2025 Total AM

11/16/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←	→	←	↑↑	↑↑	↔
Traffic Volume (veh/h)	218	218	196	608	1559	294
Future Volume (veh/h)	218	218	196	608	1559	294
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	237	0	213	661	1695	320
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	344		275	2743	2285	1019
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	237	0	213	661	1695	320
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	5.2	0.0	2.8	4.1	25.3	7.0
Cycle Q Clear(g_c), s	5.2	0.0	2.8	4.1	25.3	7.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	344		275	2743	2285	1019
V/C Ratio(X)	0.69		0.78	0.24	0.74	0.31
Avail Cap(c_a), veh/h	889		389	2743	2285	1019
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	16.6	2.5	9.5	6.2
Incr Delay (d2), s/veh	2.5	0.0	6.2	0.2	2.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.7	0.4	6.7	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.3	0.0	22.8	2.7	11.7	7.0
LnGrp LOS	D		C	A	B	A
Approach Vol, veh/h	237			874	2015	
Approach Delay, s/veh	36.3			7.6	10.9	
Approach LOS	D			A	B	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	65.0		10.0		55.0	12.7
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	60.0		10.0		45.0	20.0
Max Q Clear Time (g_c+I1), s	6.1		4.8		27.3	7.2
Green Ext Time (p_c), s	4.3		0.2		11.7	0.6

### Intersection Summary













HCM 6th Ctrl Delay	11.9
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

2025 Total AM  
11/16/2023

												
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												

HCM 6th TWSC  
5: PRIVATE DR & BENT GRASS MEADOWS DR

2025 Total AM  
11/16/2023

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 &amp; BENT GRASS MEADOWS DR

11/16/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	131	20	350	129	0	13	0	307	0	0	0
Future Volume (vph)	0	131	20	350	129	0	13	0	307	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	22	380	140	0	14	0	334	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	22	380	140	0	0	348	0	0	0	0
Intersection Summary												

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

2025 Total AM  
11/16/2023

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	0	131	20	350	129	0	13	0	307	0	0	0
Future Vol, veh/h	0	131	20	350	129	0	13	0	307	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	150	-	150	150	-	-	-	-	-	-	-	-
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	22	380	140	0	14	0	334	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	140	0	0	164	0	0	1042	1042	142
Stage 1	-	-	-	-	-	-	142	142	-
Stage 2	-	-	-	-	-	-	900	900	-
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	-	-	1414	-	0	254	230	906
Stage 1	-	-	-	-	-	0	885	779	-
Stage 2	-	-	-	-	-	0	397	357	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1443	-	-	1414	-	-	186	0	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	0	-
Stage 1	-	-	-	-	-	-	885	0	-
Stage 2	-	-	-	-	-	-	290	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	783	1443	-	-	1414	-
HCM Lane V/C Ratio	0.444	-	-	-	0.269	-
HCM Control Delay (s)	13.2	0	-	-	8.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	2.3	0	-	-	1.1	-

Volume  
2: MERIDIAN RD & BENT GRASS MEADOWS DR

2025 Total PM  
11/16/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	250	204	182	1517	1007	206
Future Volume (vph)	250	204	182	1517	1007	206
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)	272	222	198	1649	1095	224
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	222	198	1649	1095	224
Intersection Summary						

# Timings

## 2: MERIDIAN RD & BENT GRASS MEADOWS DR

2025 Total PM

11/16/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↰	↰	↰	↗↗	↗↗	↰
Traffic Volume (vph)	250	204	182	1517	1007	206
Future Volume (vph)	250	204	182	1517	1007	206
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases		4	2			6
Detector Phase	3	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 (%)	21.7%	21.7%	13.0%	56.5%	43.5%	43.5%
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	Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effect Green (s)	12.8	7.6	60.2	60.2	45.3	45.3
Actuated g/C Ratio	0.13	0.08	0.63	0.63	0.47	0.47
v/c Ratio	0.59	0.67	0.62	0.74	0.65	0.26
Control Delay	44.9	16.8	19.3	15.9	22.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	16.8	19.3	15.9	22.4	3.3
LOS	D	B	B	B	C	A
Approach Delay	32.2			16.3	19.2	
Approach LOS	C			B	B	

### Intersection Summary

Cycle Length: 115

Actuated Cycle Length: 95.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.5

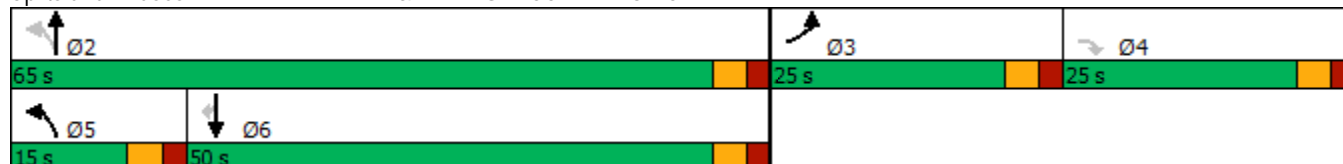
Intersection LOS: B

Intersection Capacity Utilization 57.6%

ICU Level of Service B

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

2025 Total PM

11/16/2023















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↱	↱	↰	↰↱	↰↱	↱
Traffic Volume (veh/h)	250	204	182	1517	1007	206
Future Volume (veh/h)	250	204	182	1517	1007	206
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	272	0	198	1649	1095	224
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	381		401	2710	2261	1009
Arrive On Green	0.11	0.00	0.06	0.76	0.64	0.64
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	272	0	198	1649	1095	224
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	6.0	0.0	2.7	16.2	12.7	4.7
Cycle Q Clear(g_c), s	6.0	0.0	2.7	16.2	12.7	4.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	381		401	2710	2261	1009
V/C Ratio(X)	0.71		0.49	0.61	0.48	0.22
Avail Cap(c_a), veh/h	878		515	2710	2261	1009
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	6.0	4.1	7.5	6.1
Incr Delay (d2), s/veh	2.5	0.0	0.9	1.0	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.6	2.2	3.4	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.3	0.0	6.9	5.2	8.3	6.6
LnGrp LOS	D		A	A	A	A
Approach Vol, veh/h	272			1847	1319	
Approach Delay, s/veh	36.3			5.4	8.0	
Approach LOS	D			A	A	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	65.0		9.9		55.1	13.7
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	60.0		10.0		45.0	20.0
Max Q Clear Time (g_c+I1), s	18.2		4.7		14.7	8.0
Green Ext Time (p_c), s	16.1		0.2		8.8	0.7
Intersection Summary						
HCM 6th Ctrl Delay			8.8			
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

2025 Total PM  
11/16/2023

												
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												

HCM 6th TWSC  
5: PRIVATE DR & BENT GRASS MEADOWS DR

2025 Total PM  
11/16/2023

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 &amp; BENT GRASS MEADOWS DR

11/16/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	0	131	17	288	118	0	7	0	335	0	0	0
Future Volume (vph)	0	131	17	288	118	0	7	0	335	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	313	128	0	8	0	364	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	18	313	128	0	0	372	0	0	0	0
Intersection Summary												

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

2025 Total PM  
11/16/2023

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	131	17	288	118	0	7	0	335	0	0	0
Future Vol, veh/h	0	131	17	288	118	0	7	0	335	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	150	-	150	150	-	-	-	-	-	-	-	-
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	313	128	0	8	0	364	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	128	0	0	160	0	0	896	896	142
Stage 1	-	-	-	-	-	-	142	142	-
Stage 2	-	-	-	-	-	-	754	754	-
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	-	-	1419	-	0	311	280	906
Stage 1	-	-	-	-	-	0	885	779	-
Stage 2	-	-	-	-	-	0	465	417	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1458	-	-	1419	-	-	242	0	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	0	-
Stage 1	-	-	-	-	-	-	885	0	-
Stage 2	-	-	-	-	-	-	362	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	858	1458	-	-	1419	-
HCM Lane V/C Ratio	0.433	-	-	-	0.221	-
HCM Control Delay (s)	12.4	0	-	-	8.3	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	2.2	0	-	-	0.8	-