Kimley»Horn

TECHNICAL MEMORANDUM

To: Kristen Crane, Planning Director, Town of James Island

From: Dillon Turner, P.E., PTOE – Kimley-Horn

Date: May 8, 2024

Subject: 896 Folly Road Redevelopment TIA Update

The purpose of this technical memorandum is to update the trip generation, capacity analysis results, and recommendations of the ***896 Folly Road Redevelopment Traffic Impact Analysis*** (Kimley-Horn, October 2020) due to a land use change from high-turnover sit-down restaurant to coffee shop with drive-through for the proposed development. The proposed development is located in the northeast quadrant of the intersection of SC 171 (Folly Road) with Camp Road in James Island, South Carolina. **Figure 1** illustrates the location of the proposed development.

Figure 1 – Site Location

Trip Generation Update

The previous traffic generation potential of the proposed development was determined using the trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* for the various Land Use Codes (LUCs) represented within the proposed site.

Please note, there is now an updated version on the ITE Trip Generation Manual: ITE *Trip Generation Manual, 11th Edition*, which has been published since the original ***896 Folly Road Redevelopment Traffic Impact Analysis*** (Kimley-Horn, October 2020). This memo will utilize the higher of the trip generations between the two ITE Trip Generation Manuals to be conservative.

These trip generation estimates include reductions for internal capture and pass-by trips as prescribed by ITE. Please note, LUC 937 – Coffee Shop with Drive Through does not provide pass-by rates, however, LUC 938- Coffee Shop with Drive Through and No Indoor Seating has over 90% pass-by during the peak hours. To be conversative, a 50% pass-by rate was used for LUC 937 – Coffee Shop with Drive Through Window.

The ***896 Folly Road Redevelopment Traffic Impact Analysis*** (Kimley-Horn, October 2020) analyzed:

- Drive-In Bank (LUC 912)
  - 3,470 SF gross floor area
- High-Turnover Sit-Down Restaurant (LUC 932)
  - 2,310 SF gross floor area

The updated trip generation includes:

- Drive-In Bank (LUC 912)
  - 3,470 SF gross floor area
- Coffee Shop with Drive-Through (LUC 937)
  - 950 SF gross floor area

Please note, LUC 938 – Cofree shop with drive through and no indoor seating could apply to this site, however, there is a low number of studies for this land use, therefore, the most similar land use LUC 937 was used. The trip generation rates for LUC 938 are lower than LUC 937, therefore this analysis is conservative.

Internally captured trips are trips that begin and end within the project site and do not access the external roadway network. The National Cooperative Highway Research Program (NCHRP) Report 684 *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*, produced by the Transportation Research Board, was used to calculate the internal capture for the development.

Pass-by trips are trips already on the roadway network that turn into the site as they pass by on the adjacent street. Pass-by percentages were calculated for the bank and high-turnover sit-down restaurant component of the proposed site based on the equations and data presented in the ITE *Trip Generation Handbook*. Pass-by volumes were limited to ten percent of the adjacent street traffic.

The previous site plan is attached in **Attachment A**. The updated site plan is attached in **Attachment B**.

Table 1A – Trip Generation from the 896 Folly Road Redevelopment Traffic Impact Analysis ITE Trip Generation 10th Edition

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
ITE 912 -Drive-In Bank	3,470 SF	33	19	14	71	36	35
ITE 932 - High-Turnover Sit-Down Rest.	2,310 SF	32	18	14	40	21	19
Subtotal		65	37	28	111	57	54
Internal Capture		*8*	*4*	*4*	*22*	*11*	*11*
Pass-By		*6*	*3*	*3*	*30*	*15*	*15*
Net New External Trips		***51***	***30***	***21***	***59***	***31***	***28***

Table 1A summarizes the projected trip generation of the proposed development using the *ITE Trip Generation Manual 10th Edition*. During a typical weekday, the proposed development has the potential to generate 51 (30 In/21 out) and 59 (31 In/28 Out) net new external trips during the AM and PM peak hours, respectively. The previous projected traffic volumes for this trip generation are attached in **Attachment C**.

Table 1B – Updated Trip Generation for the 896 Folly Road Redevelopment Traffic Impact Analysis ITE Trip Generation, 11th Edition

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
ITE 912 -Drive-In Bank	3,470 SF	35	30	15	73	37	36
ITE 932 - High-Turnover Sit-Down Rest.	2,310 SF	32	18	14	38	19	19
Subtotal		67	38	29	111	56	55
Internal Capture		*8*	*4*	*4*	*22*	*11*	*11*
Pass-By		*8*	*4*	*4*	*32*	*16*	*16*
Net New External Trips		***51***	***30***	***21***	***57***	***29***	***28***

Table 1B summarizes the projected trip generation of the proposed development using the *ITE Trip Generation Manual 11th Edition*. During a typical weekday, the proposed development has the potential to generate 51 (30 In/21 out) and 57 (29 In/ 28 Out) net new external trips during the AM and PM peak hours, respectively.

Since the *ITE Trip Generation Manual, 10th Edition* is anticipated to generate the exact same net new external trips during the AM peak hour and the PM peak hour is anticipated to generate two more inbound net new external trips during the PM peak hour, the data from the *ITE Trip Generation Manual, 10th Edition* will be utilized for conservative comparative purposes.

Table 2A – Updated Trip Generation for the 896 Folly Road Redevelopment
ITE Trip Generation 10th Edition

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
ITE 912 -Drive-In Bank	3,470 SF	33	19	14	71	36	35
ITE 937 – Coffee Shop with Drive-Through Window	950 SF	85	43	42	41	21	20
Subtotal		118	62	56	112	57	55
Internal Capture		8	4	4	22	11	11
Pass-By		46	23	23	36	18	18
Net New External Trips		64	35	29	54	28	26

Table 2A summarizes the projected trip generation of the proposed development using the *ITE Trip Generation Manual 10th Edition*. During a typical weekday, the proposed development has the potential to generate 64 (35 In/29 out) and 54 (28 In/26 Out) net new external trips during the AM and PM peak hours, respectively

Table 2B – Updated Trip Generation for the 896 Folly Road Redevelopment
ITE Trip Generation 11th Edition

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
ITE 912 -Drive-In Bank	3,470 SF	35	20	15	73	37	36
ITE 937 – Coffee Shop with Drive-Through Window	950 SF	82	42	40	37	19	18
Subtotal		117	62	55	110	56	54
Internal Capture		8	4	4	22	11	11
Pass-By		46	23	23	34	17	17
Net New External Trips		63	35	28	54	28	26

Table 2B summarizes the projected trip generation of the proposed development using the *ITE Trip Generation Manual 11th Edition.* During a typical weekday, the proposed development has the potential to generate 63 (35 In/28 out) and 54 (28 In/26 Out) net new external trips during the AM and PM peak hours, respectively.

Since the *ITE Trip Generation Manual 10th Edition* is anticipated to generate one more net new external trip during the AM peak hour and the PM peak hour is anticipated to the exact same net new external trips during the PM peak hour, the data from the ITE Trip Generation Manual 10th Edition will be utilize for conservative comparative purposes.

Table 3 – Trip Generation Comparison for the Land Use Changes

Trip Generation Scenario	AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out
Net New External Trips – Updated Trip Generation	64	35	29	54	28	26
Net New External Trips – Original Trip Generation	51	30	21	59	31	28
Δ (Updated – Original)	13	5	8	-5	-3	-2

As shown in **Table 3**, by changing the proposed land use from high-turnover sit-down restaurant to coffee shop with drive-through, the net new trip generation is anticipated to increase by 13 (5 In/8 out)

trips in the AM peak hour and *decrease* by 5 (3 less in/2 less out) trips during the PM peak hour. The updated build volumes are attached.

Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours using Synchro Version 11 software to determine the operating characteristics at the signalized and stop-controlled intersections of the adjacent street network and to evaluate the impacts of the proposed development. In the *Highway Capacity Manual, 6th Edition* (HCM), capacity is defined as "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point of uniform section of a lane or roadway during a given time period under prevailing conditions." Synchro uses methodologies contained in the HCM to determine the operating characteristics of an intersection, which are typically evaluated in terms of level of service (LOS).

The HCM defines LOS as a "quantitative stratification of a performance measure or measures representing quality of service" and is used to "translate complex numerical performance results into a simple A-F system representative of travelers' perceptions of the quality of service provided by a facility or service." The HCM defines six levels of service, LOS A through LOS F, with A having the best operating conditions from the traveler's perspective and F having the worst. However, it must be understood that "the LOS letter results hides much of the complexity of facility performance," and that "the appropriate LOS for a given system element in the community is a decision for local policy makers." According to the HCM, "for cost, environmental impact, and other reasons, roadways are typically designed not to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travelers' desires against society's desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A."

LOS for a two-way stop-controlled (TWSC) intersection is determined by the control delay at the side-street approaches, typically during the highest volume periods of the day, the AM and PM peak periods. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. With respect to field measurements, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little or no delay.

Tables 4A and **4B** list the LOS control delay thresholds published in the HCM for unsignalized and signalized intersections, respectively, as well as the unsignalized operational descriptions assumed herein.

Table 4.0A

Vehicular LOS Control Delay Thresholds for Unsignalized Intersections

Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

Table 4.0B

Vehicular LOS Control Delay Thresholds for Signalized Intersections

Level-of-Service	Average Control Delay per Vehicle [sec/veh]
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Capacity analyses were performed for 2020 Existing, 2024 Background, and 2024 Build traffic conditions. Mitigation of traffic impacts caused by the proposed development were noted and recommended based on guidance provided in the SCDOT Access and Roadside Management Standards (ARMS) Manual, where applicable. When determining the proposed development's traffic impact to the study area intersections, the 2024 Background and 2024 Build-Out conditions were compared.

Please note, the capacity analysis traffic counts collected in 2020 were grown by 3% for four years to develop 2024 background volumes. These counts were used as part of the analysis to accurately compare to the previous ***896 Folly Road Redevelopment Traffic Impact Analysis*** (Kimley-Horn, October 2020). To ensure further accuracy in the analysis, additional turning movement counts were conducted on April 24,2024, at the intersection of Folly Road with Camp Road. The capacity analysis and new turning movement counts are compared in **Table 5**.

Table 5 – Folly Road at Camp Road Traffic Volume Comparison

Total Intersection Traffic Volume	AM Peak Hour	PM Peak Hour
Capacity Analysis	4,349	4,689
April 24, 2024	3,621	4,008
Net Traffic Volume (April 24, 2024 – Capacity Analysis)	-728	-681

As shown in **Table 5**, the traffic volumes used in the capacity analysis of this study are greater than the counts conducted on April 24,2024. Therefore, to provide a conservative analysis, the 2020 turning movement counts grown by 3% per year for four years were used in this study. The additional turning movement traffic counts are provided in **Attachment E**.

Existing signal timing plans were provided by the City of Charleston and are included in the **Appendix**. All signal timing and phasing were coded in Synchro in accordance with SCDOT Signal Design Guidelines and Synchro Default Settings. Observed peak hour factors (PHFs) were used in all analyses, where available. A PHF of 0.90 was assumed for all site trips.

Synchro LOS results are reported in **Table 6**. **Attachment F** shows the previous capacity analysis results and **Attachment G** shows the updated capacity analysis results.

Table 6 summarizes the LOS and control delay changes for the original study and the updated study based on the change in land use.

Table 6 – Capacity Analysis Results (LOS/Delay)

Intersection	Condition	Previous Intersection LOS (Delay -seconds)	Updated Intersection LOS (Delay -seconds)	Δ in Delay (seconds)
AM Peak Hour				
Camp Road at Folly Road	2020 Existing	F (134.7)	F (134.7)	0
	2024 Background	F (170.5)	F (170.5)	0
	2024 Build	F (176.0)	F (179.0)	3
Camp Road at Site Access #1	2024 Build[1]	D (31.9)/C (21.5)	D (34.8)/C(22.0)	2.9/0.5
Folly Road at Site Access #2	2024 Build[2]	B (12.0)	B (12.2)	0.2
PM Peak Hour				
Camp Road at Folly Road	2020 Existing	E (66.8)	E (66.8)	0
	2024 Background	F (87.0)	F (87.0)	0
	2024 Build	F (90.4)	F (89.7)	-0.7
Camp Road at Site Access #1	2024 Build[1]	E (35.0)/C (16.7)	D (34.3)/ C (15.6)	-0.7/-1.1
Folly Road at Site Access #2	2024 Build[2]	B (10.3)	B (10.4)	0.1

1- Delay listed for side-street NB first, SB second

2 - Delay listed for side-street WB movement

As shown in **Table 6**, the overall intersection delay at the intersection of Camp Road at Folly Road is anticipated to increase by 3.0 seconds during the AM peak hour and decrease by 0.7 seconds by changing the land use from high-turnover sit-down restaurant to coffee shop with drive through.

By changing the land use from high-turnover sit-down restaurant to coffee shop with drive through, the side-street delays are anticipated to increase by 2.9 seconds on the northbound approach and 0.5 seconds on the southbound during the AM peak hour at the intersection of Camp Road at Site Access #1.

The side-street delays are anticipated to decrease by 0.7 seconds on the northbound approach and 1.1 seconds on the southbound during the PM peak hour at the intersection of Camp Road at Site Access #1 by changing the land use from high-turnover sit-down restaurant to coffee shop with drive through.

By changing the land use from high-turnover sit-down restaurant to coffee shop with drive through, the side-street delay is anticipated to increase by 0.2 seconds on the westbound approach during the AM peak hour and 0.1 seconds on the westbound approach during the PM peak hour at the intersection of Folly Road at Site Access #2

Recommendations

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, the following improvements have been identified to mitigate the impact of the proposed development on the adjacent street network under 2022 Build Conditions (please note, these recommendations are ***unchanged*** from the ***896 Folly Road Redevelopment Traffic Impact Analysis*** (Kimley-Horn, October 2020)):

SC 171 (Folly Road) at Camp Road

- No improvements recommended

Camp Road at Site Access A

- Construct a full-movement driveway with one ingress and one egress lane
- No further improvements recommended

**Please note, an eastbound left-turn was warranted for both the previous uses and the current proposed uses. However, based on the proximity of the proposed access to the existing signalized intersection of SC 171 (Folly Road) with Camp Road, it is not anticipated that a left-turn lane will be warranted for operations, and right-of-way constraints limit its constructability; accordingly, a left-turn lane is not recommended at this location.*

SC 171 (Folly Road) at Site Access B

- Construct a right-in/right-out driveway with one ingress and one egress lane
- No further improvements recommended

The recommended improvements identified within the study are attached in **Attachment H**. The improvements shown **Attachment H** have previously been approved by SCDOT and the Town of James Island. All additions and attachments to the State and Town roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.

Attachments

Attachment A – Previous Site Plan
Attachment B – Updated Site Plan
Attachment C – Previous Uses Volume Figures and Volume Development
Attachment D – Updated Uses Build Volume Figures and Volume Development
Attachment E – April 24, 2024, Turning Movement Counts
Attachment F – Previous Uses Synchro Reports
Attachment G – Updated Uses Synchro Reports for the Build Condition
Attachment H – Recommended Laneage Figure and SCDOT Updated Turn Lane Warrants
Attachment I – Previous Approvals from SCDOT and Coordination with the Town of James Island

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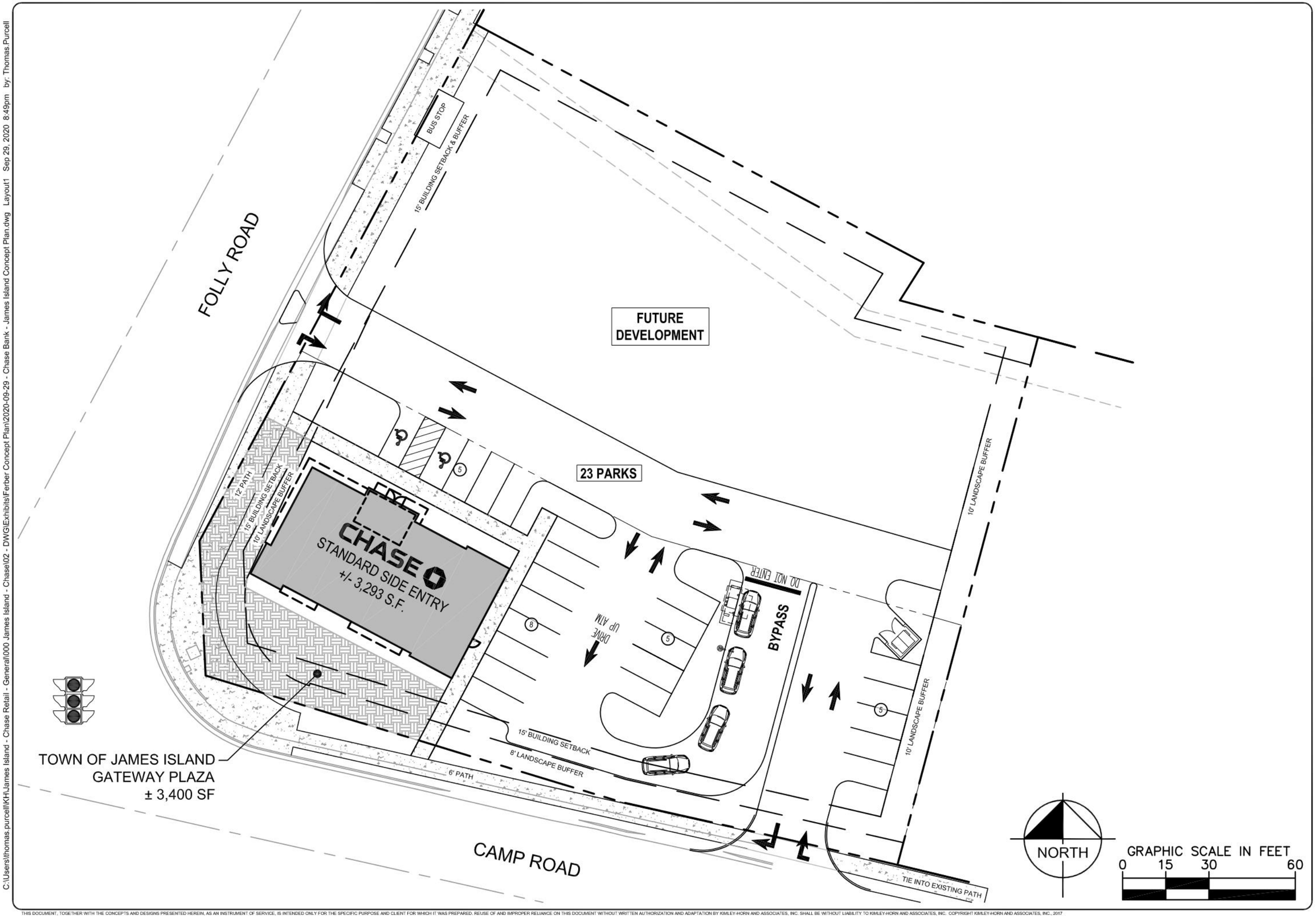
Attachment A – Previous Site Plan



Kimley»Horn
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PHONE: (843) 737-6390 I www.kimley-horn.com

CLIENT: THE FERBER COMPANY

TITLE: CONCEPTUAL SITE PLAN

PROJECT: CHASE BANK - JAMES ISLAND

JOB NO.:	013893000
SCALE:	1" = 30'
DATE:	09/29/20

SHEET: EXHIBIT A

C:\Users\thomas.purcell\KH\James Island - Chase Retail - General\000 James Island - Chase\02 - DWG\Exhibits\Ferber Concept Plan\2020-09-29 - Chase Bank - James Island Concept Plan.dwg Layout1 Sep 29, 2020 8:49pm by: Thomas.Purcell

Kimley»Horn

Attachment B – Updated Site Plan

Thursday, April 11, 2024 - 4:08 PM

PROJECT DATA

SC0104
890 FOLLY RD
CHARLESTON, TOWN OF JAMES ISLAND, SC 29412

LEGEND

(#)	NUMBER OF PARKING SPACES		CONCRETE PAVING
	ACCESSIBLE PARKING SPACES		VEHICLE STACKING POSITION
	MENU BOARD		DIRECTIONAL SIGNAGE

SITE DATA

		REQUIRED (BY AHJ)	REQUIRED (BY DBC)	PROVIDED
BUILDING SQ. FT.:		-	950 SF	950 SF
PROPERTY SIZE:		-	-	± 0.652 AC
LANDSCAPE BUFFER -	FRONT:	15	N/A	15
	SIDE:	8	N/A	8
	REAR:	8	N/A	8
BUILDING SETBACK -	FRONT:	15	N/A	64
	SIDE:	10	N/A	39
	REAR:	20	N/A	109
PARKING:		10 SPACES	13 SPACES	10 SPACES
ACCESSIBLE PARKING:		1 PER 25 SPACES	1 SPACE	1 SPACE
MINIMUM CAR QUEUING LENGTH:		6 SPACES	360 FT	270 FT
EXIT QUEUING LENGTH:			40 FT	115 FT
MINIMUM TURN RADII:			20 FT (INSIDE) 20 FT (OUTSIDE)	20 FT (INSIDE) 20 FT (OUTSIDE)
MINIMUM DRIVE AISLE WIDTH:		11 FT (ONE-WAY) 22 FT (TWO-WAY)	12 FT (ONE-WAY) 24 FT (TWO-WAY)	11 FT (ONE-WAY) 22 FT (TWO-WAY)

NOTES:
1) PROPERTY LINES OBTAINED FROM SURVEY BY CDS DATED 12/15/2023 .
2) A SITE VISIT HAS NOT BEEN COMPLETED AT THIS TIME.
3) A SIGN STUDY HAS NOT BEEN PROVIDED AT THIS TIME.

ENGINEER:

FORESITE group

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DEVELOPER:

DUTCH BROS

CONTACT: MS. MELANIE DYE

PROJECT:

DUTCH BROS

SC0104
890 FOLLY RD
CHARLESTON, TOWN OF JAMES ISLAND, 29412

SEAL:

THESE PLANS WERE PREPARED UNDER THE SUPERVISION AND DIRECTION OF

SARAH HAMBLIN, PE #35977

THESE PLANS ARE RELEASED FOR INITIAL REVIEW PURPOSES ONLY.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

REVISIONS	DATE

PROJECT MANAGER:	SMH
DRAWING BY:	BSD
JURISDICTION:	TOWN OF JAMES ISLAND
DATE:	03/15/2024
TITLE:	

PRELIMINARY SITE PLAN (AERIAL)

SHEET NUMBER:

1 OF 1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 1519.067

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Monday, April 01, 2024 - 8:48 AM

PROJECT DATA

SC0104
890 FOLLY RD
CHARLESTON, TOWN OF JAMES ISLAND, SC 29412

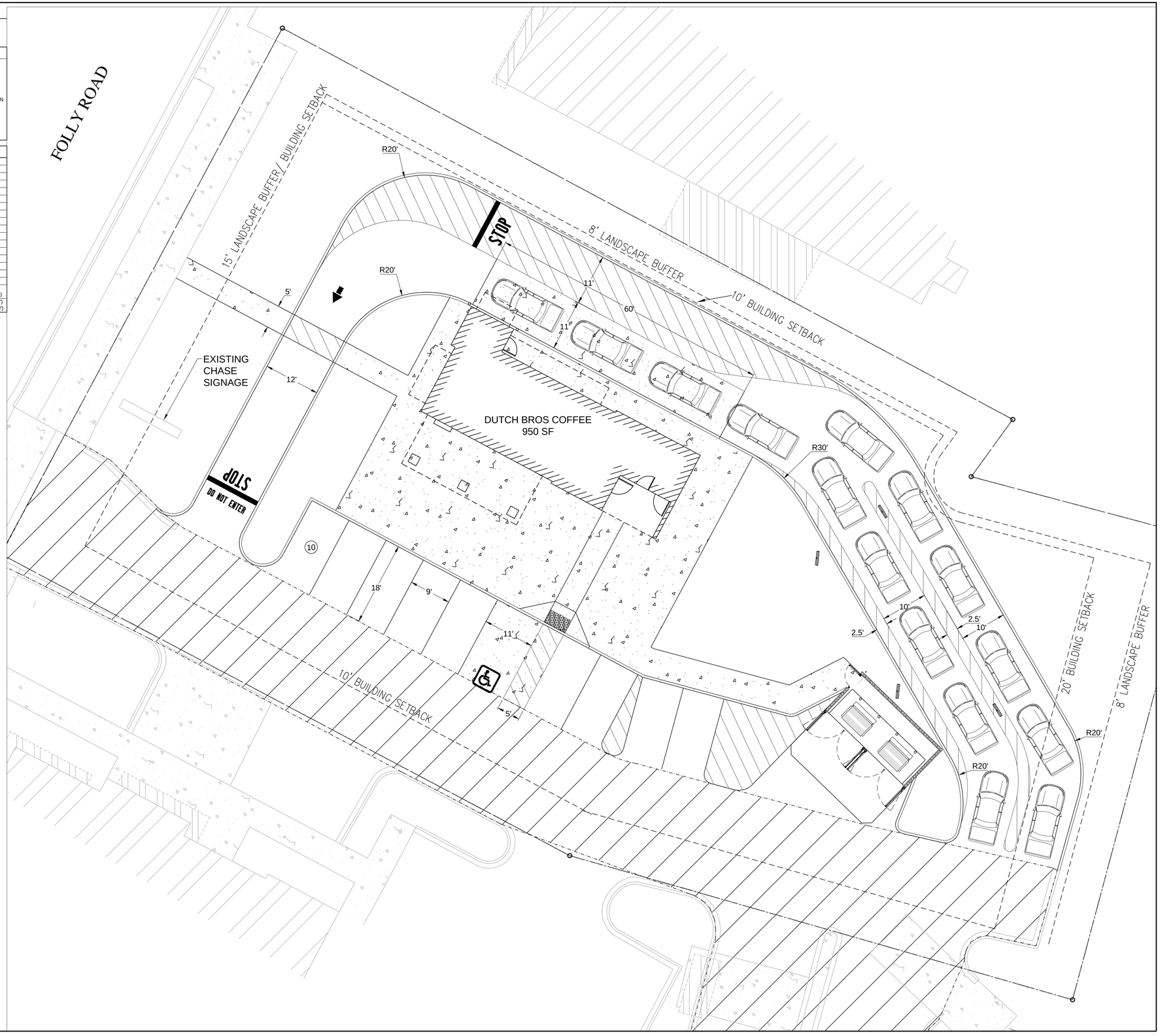
LEGEND

(#) NUMBER OF PARKING SPACES	CONCRETE PAVING
ACCESSIBLE PARKING SPACES	VEHICLE STACKING POSITION
MENU BOARD	DIRECTIONAL SIGNAGE

SITE DATA

		REQUIRED (BY AHJ)	REQUIRED (BY DBC)	PROVIDED
BUILDING SQ. FT.:		-	950 SF	950 SF
PROPERTY SIZE:		-	-	± 0.652 AC
LANDSCAPE BUFFER -	FRONT:	15	N/A	15
	SIDE:	8	N/A	8
	REAR:	8	N/A	8
BUILDING SETBACK -	FRONT:	15	N/A	64
	SIDE:	10	N/A	39
	REAR:	20	N/A	109
PARKING:		10 SPACES	13 SPACES	10 SPACES
ACCESSIBLE PARKING:		1 PER 25 SPACES	1 SPACE	1 SPACE
MINIMUM CAR QUEUING LENGTH:		6 SPACES	360 FT	270 FT
EXIT QUEUING LENGTH:			40 FT	115 FT
MINIMUM TURN RADII:			20 FT (INSIDE) 20 FT (OUTSIDE)	20 FT (INSIDE) 20 FT (OUTSIDE)
MINIMUM DRIVE AISLE WIDTH:		11 FT (ONE-WAY) 22 FT (TWO-WAY)	12 FT (ONE-WAY) 24 FT (TWO-WAY)	11 FT (ONE-WAY) 22 FT (TWO-WAY)

NOTES:
1) PROPERTY LINES OBTAINED FROM SURVEY BY CDS DATED 12/15/2023 .
2) A SITE VISIT HAS NOT BEEN COMPLETED AT THIS TIME.
3) A SIGN STUDY HAS NOT BEEN PROVIDED AT THIS TIME.



N

1" = 20'

20 10 0 20 40

SCALE IN FEET

ENGINEER:

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CONTACT: MS. MELANIE DYE

PROJECT:

DUTCH BROS Coffee

SC0104
890 FOLLY RD
CHARLESTON, TOWN OF JAMES ISLAND, 29412

SEAL:

THESE PLANS WERE PREPARED UNDER THE SUPERVISION AND DIRECTION OF

SARAH HAMBLIN, PE #35977

THESE PLANS ARE RELEASED FOR INITIAL REVIEW PURPOSES ONLY.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

REVISIONS	DATE

PROJECT MANAGER:	SMH
DRAWING BY:	BSD
JURISDICTION:	TOWN OF JAMES ISLAND
DATE:	03/15/2024
TITLE:	

PRELIMINARY SITE PLAN

SHEET NUMBER:

1 OF 1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER:
1519.067

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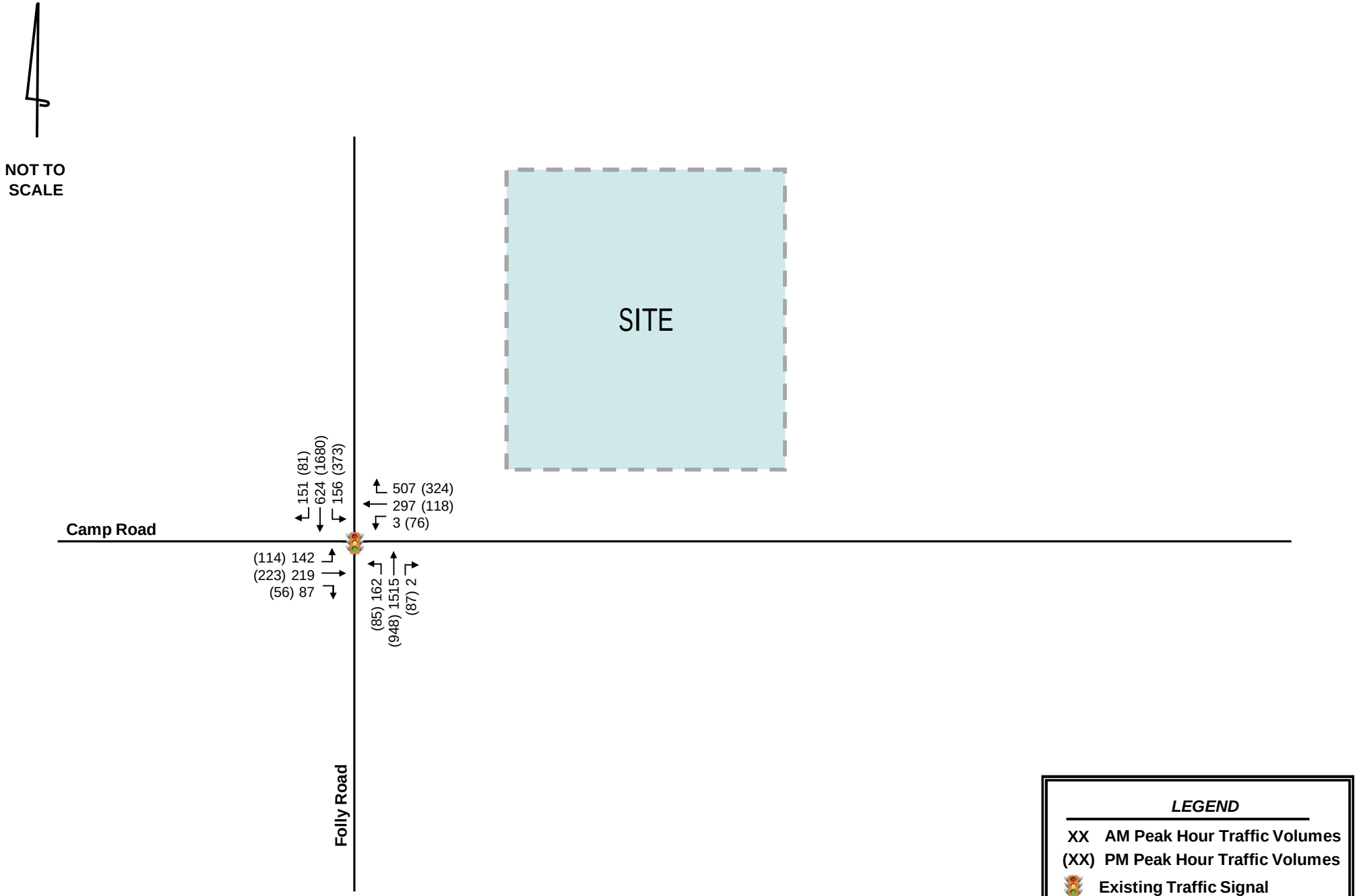
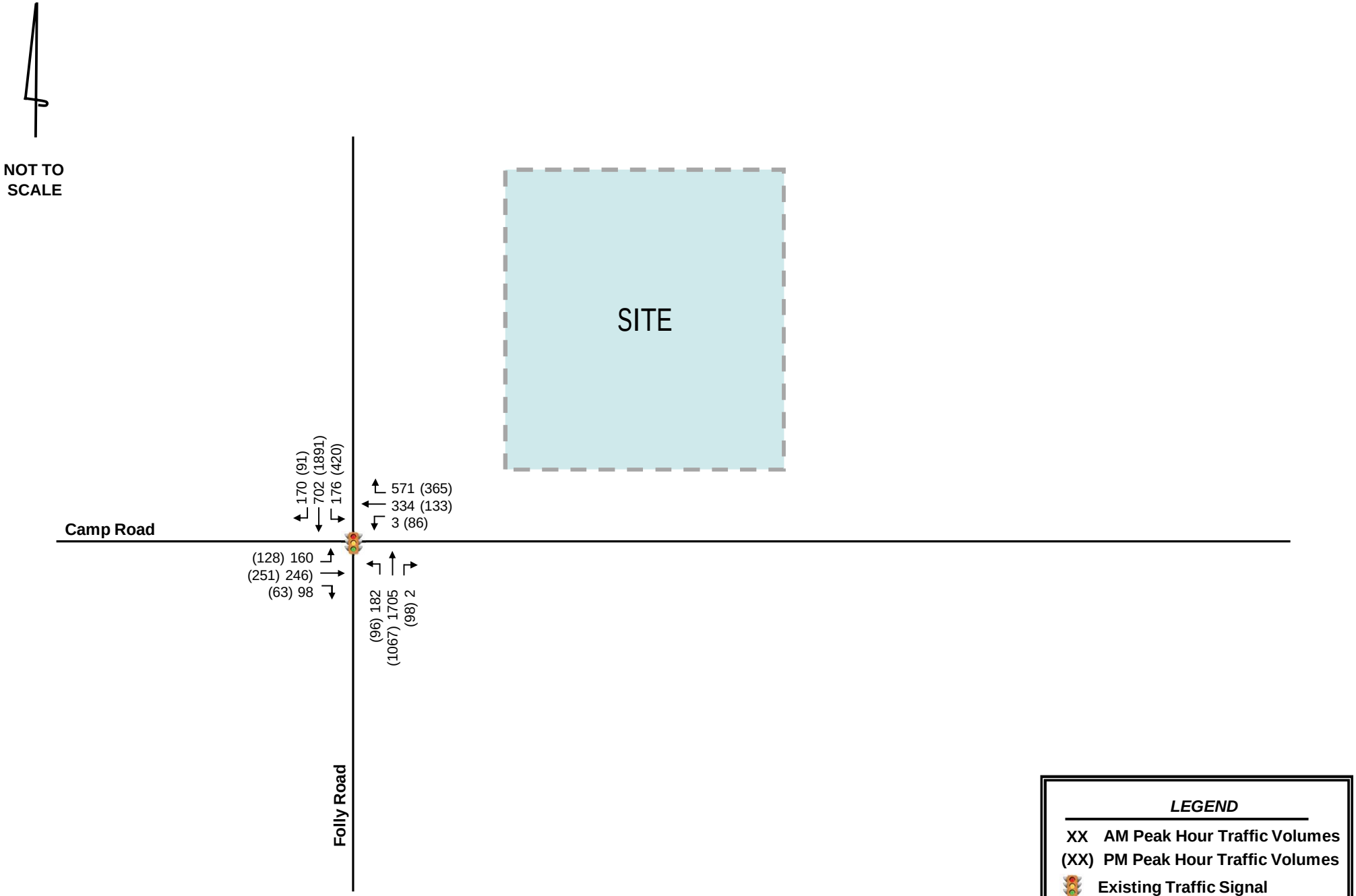
Kimley»Horn

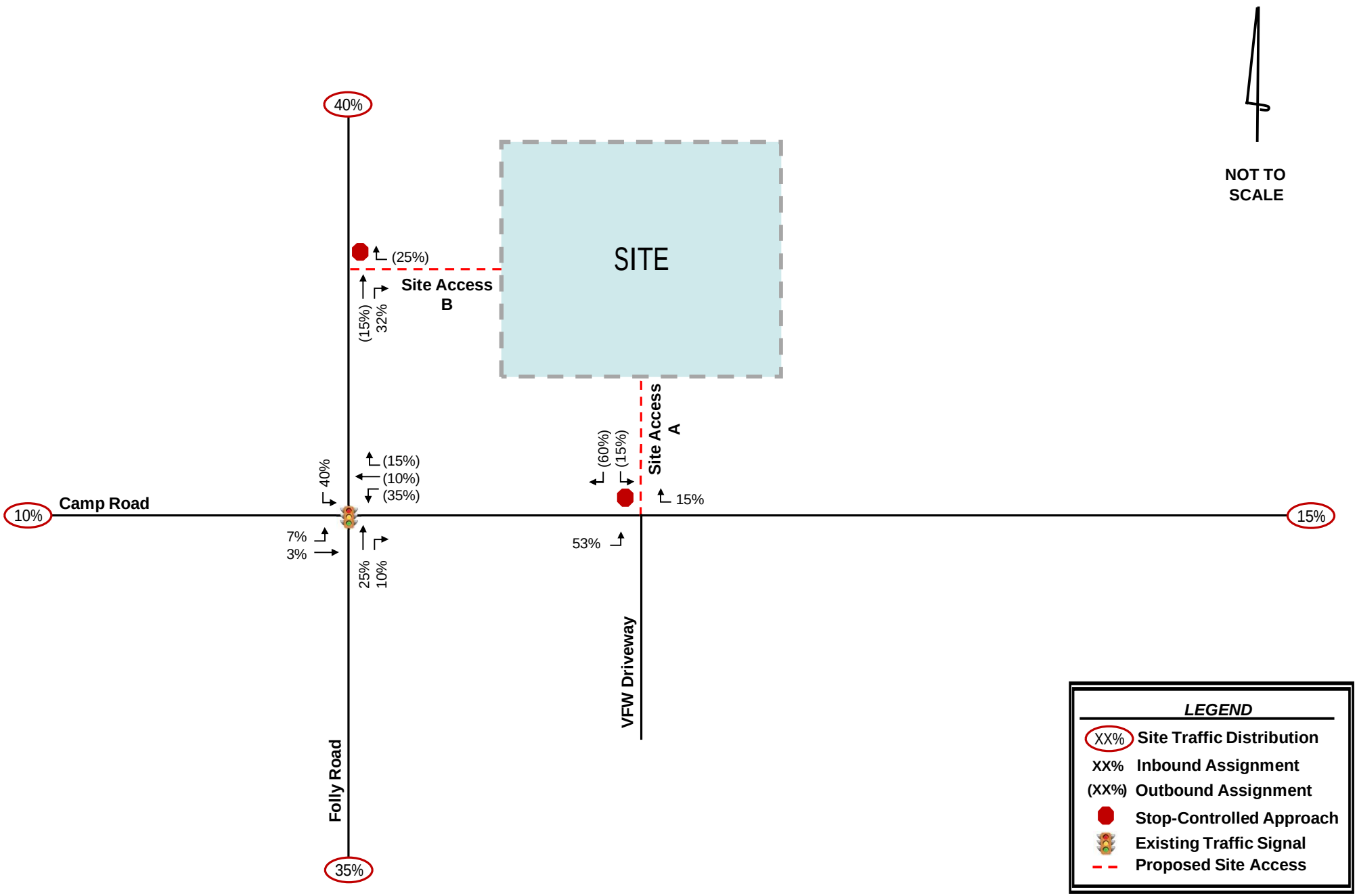
Attachment C – Previous Volume Figures and Volume Development



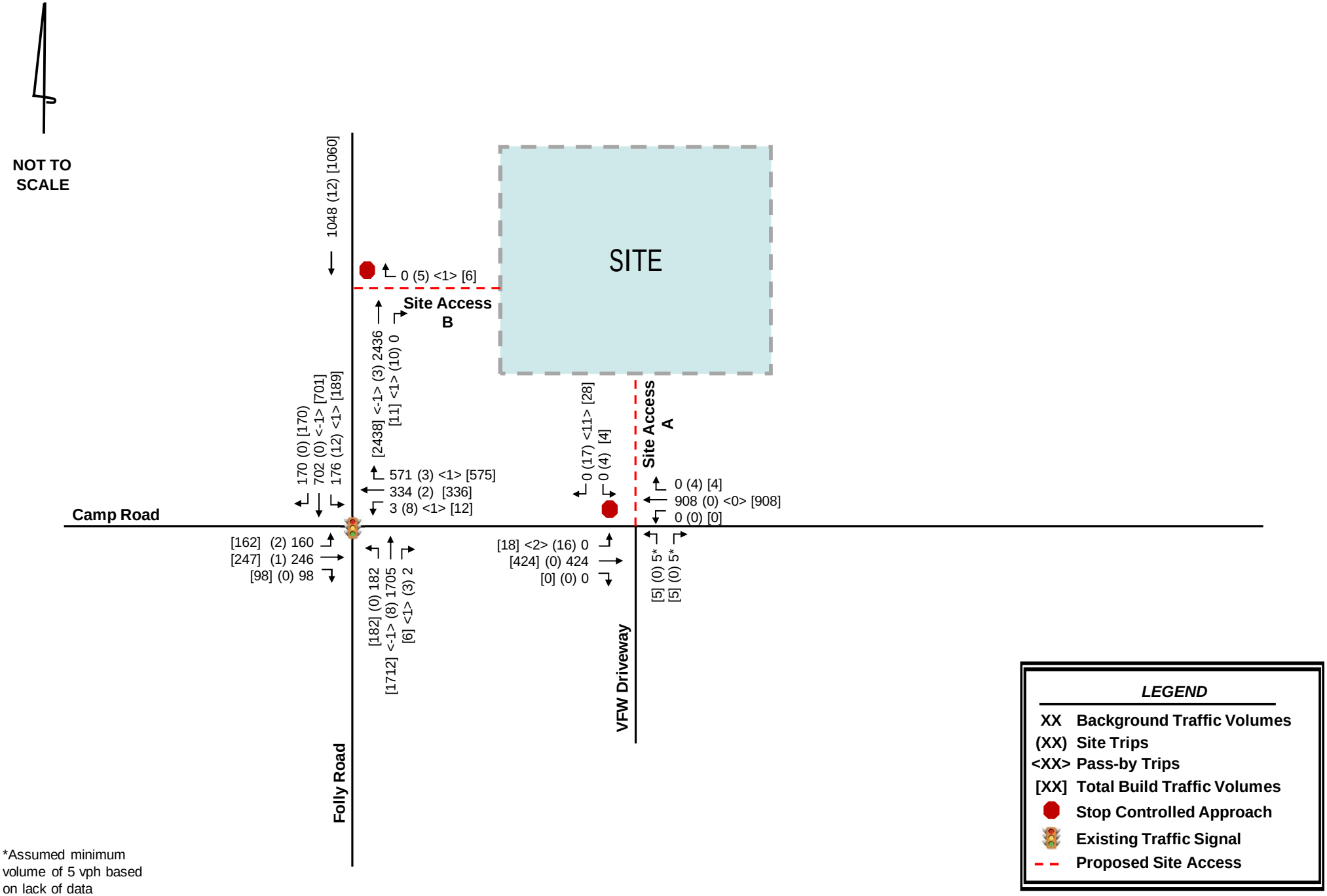
Kimley»Horn	896 Folly Road Redevelopment	2020 Existing Peak Hour Traffic Volumes	Attachment C



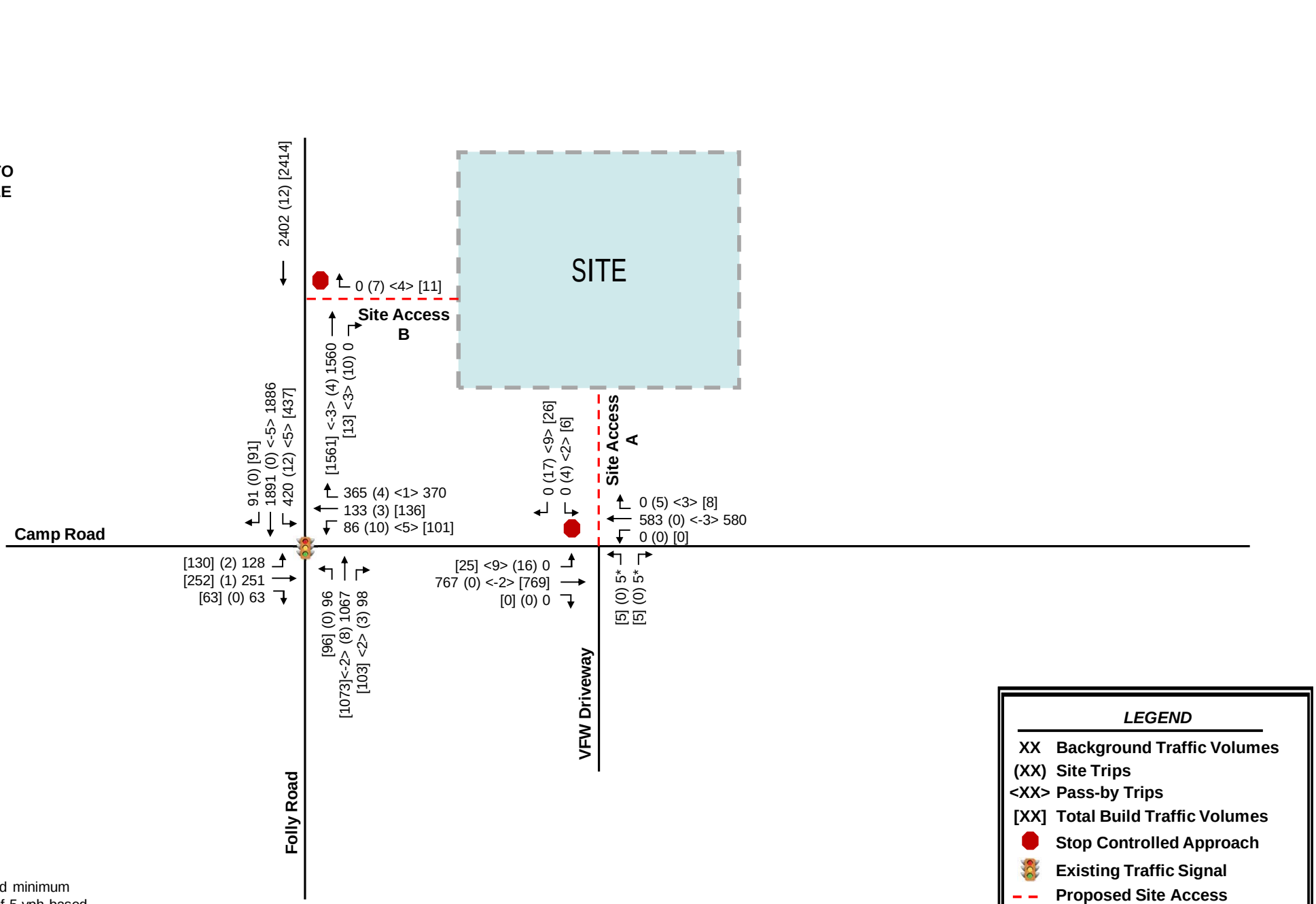
Kimley»Horn	896 Folly Road Redevelopment	2024 Background Peak Hour Traffic Volumes	Attachment C



Kimley»Horn	896 Folly Road Redevelopment	Site Traffic Distribution and Assignment	Attachment C



Kimley»Horn	896 Folly Road Redevelopment	2024 Build Previous Uses Traffic Volumes AM Peak Hour – Chase Bank + HTSD	Attachment C



*Assumed minimum volume of 5 vph based on lack of data

Kimley»Horn	896 Folly Road Redevelopment	2024 Previous Uses Build Traffic Volumes PM Peak Hour – Chase Bank + HTSD	Attachment C

INTERSECTION VOLUME DEVELOPMENT

Folly Road and Camp Road
AM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	162	1,515	2	156	624	151	142	219	87	3	297	507
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	162	1,515	2	156	624	151	142	219	87	3	297	507
PHF	0.85	0.85	0.85	0.91	0.91	0.91	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	182	1,705	2	176	702	170	160	246	98	3	334	571
Percent Inbound Assignment	0%	25%	10%	40%	0%	0%	7%	3%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	10%	15%
Project Trips (Total)	0	8	3	12	0	0	2	1	0	8	2	3
Pass-By Traffic	0	-1	1	1	-1	0	0	0	0	1	0	1
Build HV%	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
2024 Buildout Total	182	1,712	6	189	701	170	162	247	98	12	336	575

PM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	85	948	87	373	1,680	81	114	223	56	76	118	324
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	85	948	87	373	1,680	81	114	223	56	76	118	324
PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	96	1,067	98	420	1,891	91	128	251	63	86	133	365
Percent Inbound Assignment	0%	25%	10%	40%	0%	0%	7%	3%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	10%	15%
Project Trips (Total)	0	8	3	12	0	0	2	1	0	10	3	4
Pass-By Traffic	0	-2	2	5	-5	0	0	0	0	5	0	1
Build HV%	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
2024 Buildout Total	96	1,073	103	437	1,886	91	130	252	63	101	136	370

INTERSECTION VOLUME DEVELOPMENT

Camp Road and Site Access #1
AM PEAK HOUR

Description	VFW Driveway Northbound			Site Access #1 Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic	4		4					377			807	
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	5	0	5	0	0	0	0	424	0	0	908	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	53%	0%	0%	0%	0%	15%
Percent Outbound Assignment	0%	0%	0%	15%	0%	60%	0%	0%	0%	0%	0%	0%
Project Trips (Total)	0	0	0	3	0	13	16	0	0	0	0	4
Pass-By Traffic	0	0	0	0	0	2	2	0	0	0	0	0
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	5	0	5	3	0	15	18	424	0	0	908	4

PM PEAK HOUR

Description	VFW Driveway Northbound			Site Access #1 Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic	4		4					683			518	
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	5	0	5	0	0	0	0	769	0	0	583	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	53%	0%	0%	0%	0%	15%
Percent Outbound Assignment	0%	0%	0%	15%	0%	60%	0%	0%	0%	0%	0%	0%
Project Trips (Total)	0	0	0	4	0	17	16	0	0	0	0	5
Pass-By Traffic	0	0	0	2	0	9	9	-2	0	0	-3	3
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	5	0	5	6	0	26	25	767	0	0	580	8

INTERSECTION VOLUME DEVELOPMENT

Folly Road and Site Access #2
AM PEAK HOUR

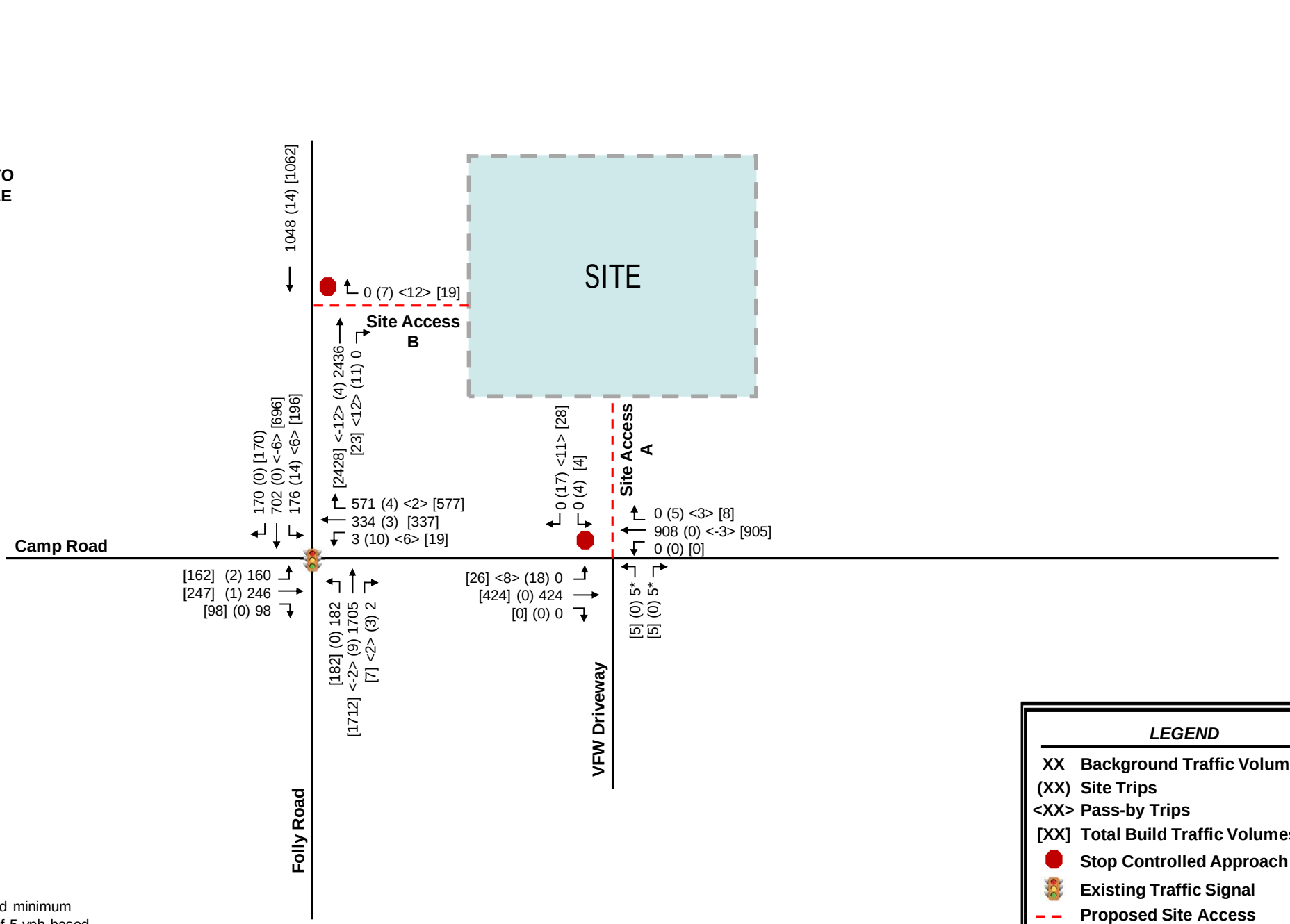
Description	Folly Road Northbound			Folly Road Southbound			- Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic		2,164			931							
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	0	2,436	0	0	1,048	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	32%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Project Trips (Total)	0	3	10	0	12	0	0	0	0	0	0	5
Pass-By Traffic	0	-1	1	0	0	0	0	0	0	0	0	1
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	0	2,438	11	0	1,060	0	0	0	0	0	0	6

PM PEAK HOUR

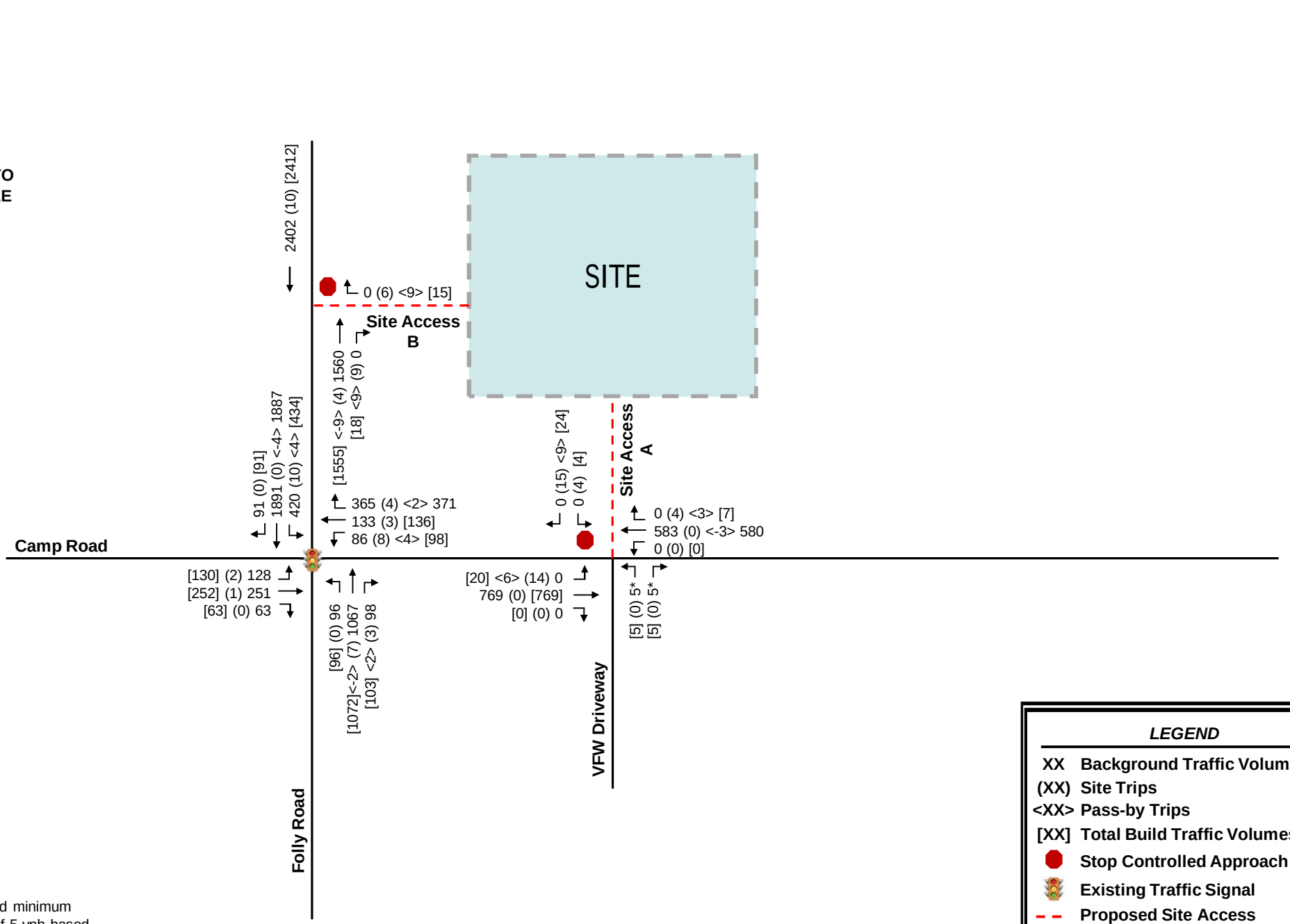
Description	Folly Road Northbound			Folly Road Southbound			- Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic		1,386			2,134							
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	0	1,560	0	0	2,402	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	32%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Project Trips (Total)	0	4	10	0	12	0	0	0	0	0	0	7
Pass-By Traffic	0	-3	3	0	0	0	0	0	0	0	0	4
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	0	1,561	13	0	2,414	0	0	0	0	0	0	11

Kimley»Horn

Attachment D – Updated Uses Build Volume Figures and Volume Development



Kimley»Horn	896 Folly Road Redevelopment	2024 Build Updated Uses Traffic Volumes AM Peak Hour – Chase Bank + Dutch Brothers	Attachment D



Kimley»Horn	896 Folly Road Redevelopment	2024 Build Updated Uses Traffic Volumes PM Peak Hour – Chase Bank + Dutch Brothers	Attachment D

INTERSECTION VOLUME DEVELOPMENT

Folly Road and Camp Road
AM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	162	1,515	2	156	624	151	142	219	87	3	297	507
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	162	1,515	2	156	624	151	142	219	87	3	297	507
PHF	0.85	0.85	0.85	0.91	0.91	0.91	0.83	0.83	0.83	0.92	0.92	0.92
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	182	1,705	2	176	702	170	160	246	98	3	334	571
Percent Inbound Assignment	0%	25%	10%	40%	0%	0%	7%	3%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	10%	15%
Project Trips (Total)	0	9	3	14	0	0	2	1	0	10	3	4
Pass-By Traffic	0	-2	2	6	-6	0	0	0	0	6	0	2
Build HV%	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
2024 Buildout Total	182	1,712	7	196	696	170	162	247	98	19	337	577

PM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	85	948	87	373	1,680	81	114	223	56	76	118	324
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	85	948	87	373	1,680	81	114	223	56	76	118	324
PHF	0.89	0.89	0.89	0.94	0.94	0.94	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	96	1,067	98	420	1,891	91	128	251	63	86	133	365
Percent Inbound Assignment	0%	25%	10%	40%	0%	0%	7%	3%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	10%	15%
Project Trips (Total)	0	7	3	10	0	0	2	1	0	8	3	4
Pass-By Traffic	0	-2	2	4	-4	0	0	0	0	4	0	2
Build HV%	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
2024 Buildout Total	96	1,072	103	434	1,887	91	130	252	63	98	136	371

INTERSECTION VOLUME DEVELOPMENT

Camp Road and Site Access #1
AM PEAK HOUR

Description	VFW Driveway Northbound			Site Access #1 Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic	4		4					377			807	
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	5	0	5	0	0	0	0	424	0	0	908	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	53%	0%	0%	0%	0%	15%
Percent Outbound Assignment	0%	0%	0%	15%	0%	60%	0%	0%	0%	0%	0%	0%
Project Trips (Total)	0	0	0	4	0	17	18	0	0	0	0	5
Pass-By Traffic	0	0	0	0	0	11	8	0	0	0	-3	3
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	5	0	5	4	0	28	26	424	0	0	905	8

PM PEAK HOUR

Description	VFW Driveway Northbound			Site Access #1 Southbound			Camp Road Eastbound			Camp Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic	4		4					683			518	
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	5	0	5	0	0	0	0	769	0	0	583	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	53%	0%	0%	0%	0%	15%
Percent Outbound Assignment	0%	0%	0%	15%	0%	60%	0%	0%	0%	0%	0%	0%
Project Trips (Total)	0	0	0	4	0	15	14	0	0	0	0	4
Pass-By Traffic	0	0	0	0	0	9	6	0	0	0	-3	3
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	5	0	5	4	0	24	20	769	0	0	580	7

INTERSECTION VOLUME DEVELOPMENT

Folly Road and Site Access #2
AM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			- Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic		2,164			931							
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	0	2,436	0	0	1,048	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	32%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Project Trips (Total)	0	4	11	0	14	0	0	0	0	0	0	7
Pass-By Traffic	0	-12	12	0	0	0	0	0	0	0	0	12
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	0	2,428	23	0	1,062	0	0	0	0	0	0	19

PM PEAK HOUR

Description	Folly Road Northbound			Folly Road Southbound			- Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes												
Balanced Volumes												
2020 Existing Traffic		1,386			2,134							
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2024 Background Traffic	0	1,560	0	0	2,402	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	32%	0%	40%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Project Trips (Total)	0	4	9	0	10	0	0	0	0	0	0	6
Pass-By Traffic	0	-9	9	0	0	0	0	0	0	0	0	9
Build HV%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2024 Buildout Total	0	1,555	18	0	2,412	0	0	0	0	0	0	15

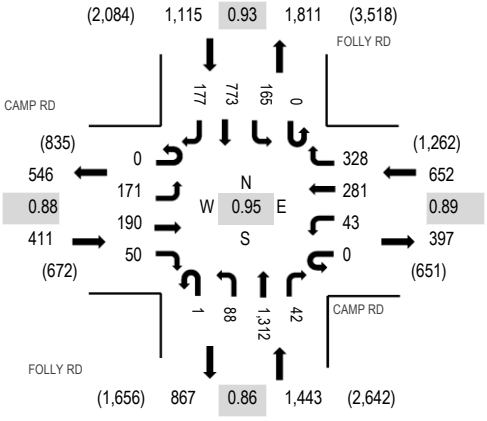
Kimley»Horn

Attachment E – April 24, 2024, Turning Movement Counts

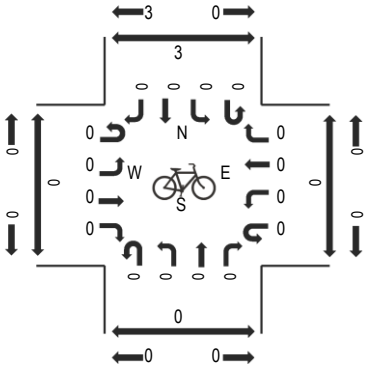
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 FOLLY RD & CAMP RD AM
Date: Wednesday, April 24, 2024
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

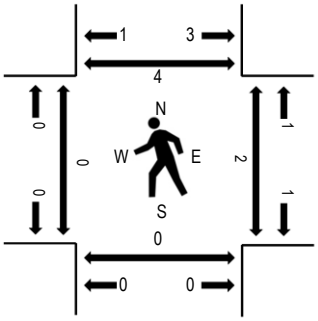
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CAMP RD Eastbound				CAMP RD Westbound				FOLLY RD Northbound				FOLLY RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	32	15	9	0	5	27	119	0	3	287	5	0	21	157	32	712	3,294	0	0	0	0
7:15 AM	0	34	20	7	0	10	40	109	0	11	295	5	0	34	161	34	760	3,459	0	0	0	0
7:30 AM	0	34	29	7	0	15	58	95	0	11	397	11	0	35	146	32	870	3,621	0	1	0	0
7:45 AM	0	41	52	11	0	11	75	73	1	23	340	14	0	38	218	55	952	3,552	0	0	0	2
8:00 AM	0	48	55	16	0	9	75	58	0	30	297	8	0	38	194	49	877	3,366	0	0	0	1
8:15 AM	0	48	54	16	0	8	73	102	0	24	278	9	0	54	215	41	922		0	1	0	1
8:30 AM	0	44	29	5	0	16	37	100	0	9	299	10	1	33	188	30	801		0	0	0	0
8:45 AM	0	35	22	9	0	16	31	100	0	8	252	15	0	45	206	27	766		1	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	1	0	0	0	0	0	0	3	0	0	0	4	1	10
Lights	0	168	175	47	0	43	271	324	1	84	1,291	41	0	163	752	172	3,532
Mediums	0	3	14	2	0	0	10	4	0	4	18	1	0	2	17	4	79
Total	0	171	190	50	0	43	281	328	1	88	1,312	42	0	165	773	177	3,621

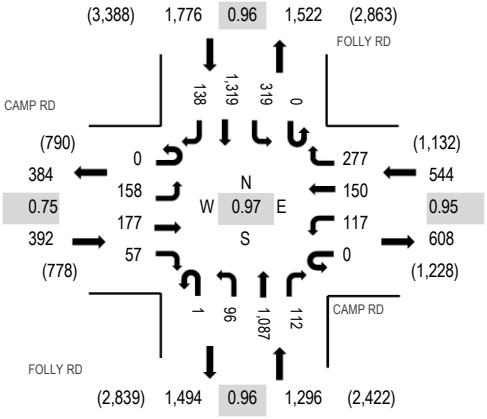
Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %		0.5%				0.0%				0.2%				0.4%			0.3%
Heavy Vehicle %	0.0%	0.0%	0.5%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.5%	0.6%	0.3%
Peak Hour Factor		0.88				0.89				0.86				0.93			0.95
Peak Hour Factor	0.00	0.94	0.86	0.78	0.00	0.77	0.94	0.83	0.25	0.73	0.84	0.70	0.25	0.79	0.93	0.80	0.95

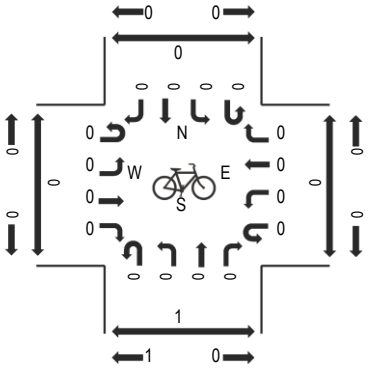
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 FOLLY RD & CAMP RD PM
Date: Wednesday, April 24, 2024
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

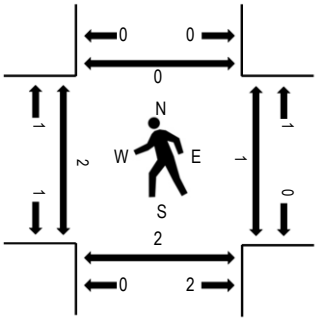
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CAMP RD Eastbound				CAMP RD Westbound				FOLLY RD Northbound				FOLLY RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	60	53	18	0	35	30	93	1	27	285	26	0	77	302	26	1,033	4,008	0	0	0	0
4:15 PM	0	35	35	16	0	25	30	60	0	30	253	26	0	101	332	41	984	3,945	1	0	0	0
4:30 PM	0	29	41	11	0	24	43	63	0	19	274	29	0	73	353	43	1,002	3,933	1	1	1	0
4:45 PM	0	34	48	12	0	33	47	61	0	20	275	31	0	68	332	28	989	3,853	0	0	1	0
5:00 PM	0	35	40	18	0	27	55	72	0	30	219	28	0	95	325	26	970	3,712	0	1	0	0
5:15 PM	0	30	44	15	0	29	46	66	1	15	250	32	0	86	323	35	972		0	0	0	1
5:30 PM	0	42	40	14	0	27	53	63	0	18	249	29	0	77	278	32	922		2	0	0	0
5:45 PM	0	36	59	13	0	30	49	71	0	23	208	24	0	66	245	24	848		0	0	0	0

Peak Rolling Hour Flow Rates

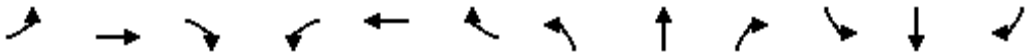
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5
Lights	0	157	170	57	0	114	149	273	1	95	1,066	111	0	317	1,301	137	3,948
Mediums	0	1	7	0	0	3	1	4	0	1	16	1	0	2	18	1	55
Total	0	158	177	57	0	117	150	277	1	96	1,087	112	0	319	1,319	138	4,008

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %		0.0%				0.0%				0.4%				0.0%			0.1%
Heavy Vehicle %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Peak Hour Factor		0.75				0.95				0.96				0.96			0.97
Peak Hour Factor	0.00	0.66	0.78	0.83	0.00	0.84	0.92	0.74	0.25	0.83	0.95	0.94	0.00	0.83	0.95	0.80	0.97

Kimley»Horn

Attachment F – Previous Uses Synchro Reports



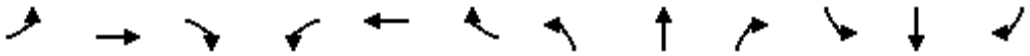
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	219	87	3	297	507	162	1515	2	156	624	151
Future Volume (veh/h)	142	219	87	3	297	507	162	1515	2	156	624	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	264	105	3	323	551	191	1782	2	171	686	166
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.85	0.85	0.85	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	245	97	53	242	302	120	1937	874	210	1527	369
Arrive On Green	0.07	0.19	0.19	0.01	0.13	0.13	0.07	0.55	0.55	0.06	0.54	0.54
Sat Flow, veh/h	1767	1263	502	1781	1870	1585	1781	3554	1585	3456	2838	686
Grp Volume(v), veh/h	171	0	369	3	323	551	191	1782	2	171	429	423
Grp Sat Flow(s),veh/h/ln	1767	0	1765	1781	1870	1585	1781	1777	1585	1728	1777	1747
Q Serve(g_s), s	12.0	0.0	32.9	0.2	22.0	22.0	11.5	77.8	0.1	8.3	25.0	25.1
Cycle Q Clear(g_c), s	12.0	0.0	32.9	0.2	22.0	22.0	11.5	77.8	0.1	8.3	25.0	25.1
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	167	0	342	53	242	302	120	1937	874	210	956	940
V/C Ratio(X)	1.02	0.00	1.08	0.06	1.33	1.83	1.59	0.92	0.00	0.81	0.45	0.45
Avail Cap(c_a), veh/h	167	0	342	168	242	302	120	1937	874	234	956	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	68.5	57.7	74.0	68.8	79.3	35.3	17.1	78.9	23.9	23.9
Incr Delay (d2), s/veh	75.9	0.0	71.3	0.2	175.9	384.9	298.9	8.6	0.0	15.8	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	21.6	0.1	22.4	45.3	15.3	34.7	0.0	4.1	10.8	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.0	0.0	139.8	57.8	249.9	453.7	378.2	43.9	17.1	94.7	25.4	25.5
LnGrp LOS	F	A	F	E	F	F	F	D	B	F	C	C
Approach Vol, veh/h		540			877			1975			1023	
Approach Delay, s/veh		139.9			377.3			76.2			37.0	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	100.0	9.1	40.9	18.8	101.2	20.0	30.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	11.5	91.5	12.0	22.0	11.5	91.5	12.0	22.0
Max Q Clear Time (g_c+I1), s	13.5	27.1	2.2	34.9	10.3	79.8	14.0	24.0
Green Ext Time (p_c), s	0.0	40.6	0.0	0.0	0.0	11.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	134.7
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



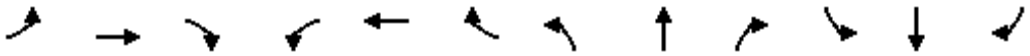
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	223	56	76	118	324	85	948	87	373	1680	81
Future Volume (veh/h)	114	223	56	76	118	324	85	948	87	373	1680	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	251	63	79	123	338	96	1065	98	397	1787	86
Peak Hour Factor	0.89	0.89	0.89	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	191	48	129	209	378	89	1765	864	439	1980	95
Arrive On Green	0.07	0.13	0.13	0.05	0.11	0.11	0.05	0.50	0.50	0.13	0.57	0.57
Sat Flow, veh/h	1767	1432	359	1781	1870	1585	1781	3554	1585	3456	3453	165
Grp Volume(v), veh/h	128	0	314	79	123	338	96	1065	98	397	914	959
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1781	1870	1585	1781	1777	1585	1728	1777	1841
Q Serve(g_s), s	10.9	0.0	22.7	6.5	10.6	19.0	8.5	36.6	5.1	19.3	76.7	78.9
Cycle Q Clear(g_c), s	10.9	0.0	22.7	6.5	10.6	19.0	8.5	36.6	5.1	19.3	76.7	78.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	213	0	239	129	209	378	89	1765	864	439	1019	1056
V/C Ratio(X)	0.60	0.00	1.31	0.61	0.59	0.89	1.08	0.60	0.11	0.91	0.90	0.91
Avail Cap(c_a), veh/h	213	0	239	168	209	378	89	1765	864	498	1019	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	0.0	73.6	61.0	71.8	62.6	80.8	30.8	18.7	73.2	31.8	32.3
Incr Delay (d2), s/veh	3.4	0.0	166.8	1.7	2.9	22.0	118.1	1.5	0.3	17.4	12.1	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	21.5	3.0	5.3	16.4	6.8	15.9	2.0	9.6	35.1	37.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	0.0	240.4	62.7	74.7	84.6	198.8	32.3	19.0	90.6	44.0	45.2
LnGrp LOS	E	A	F	E	E	F	F	C	B	F	D	D
Approach Vol, veh/h		442			540			1259			2270	
Approach Delay, s/veh		189.6			79.1			44.0			52.6	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	106.0	16.3	30.7	30.1	92.9	20.0	27.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	8.5	97.5	12.0	19.0	24.5	81.5	12.0	19.0
Max Q Clear Time (g_c+I1), s	10.5	80.9	8.5	24.7	21.3	38.6	12.9	21.0
Green Ext Time (p_c), s	0.0	16.5	0.0	0.0	0.3	36.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



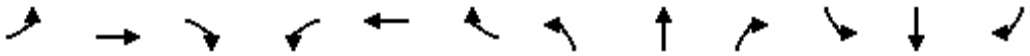
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	246	98	3	334	571	182	1705	2	176	702	170
Future Volume (veh/h)	160	246	98	3	334	571	182	1705	2	176	702	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	296	118	3	363	621	214	2006	2	193	771	187
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.85	0.85	0.85	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	245	97	53	242	311	120	1915	864	231	1526	370
Arrive On Green	0.07	0.19	0.19	0.01	0.13	0.13	0.07	0.54	0.54	0.07	0.54	0.54
Sat Flow, veh/h	1767	1262	503	1781	1870	1585	1781	3554	1585	3456	2836	688
Grp Volume(v), veh/h	193	0	414	3	363	621	214	2006	2	193	483	475
Grp Sat Flow(s),veh/h/ln	1767	0	1765	1781	1870	1585	1781	1777	1585	1728	1777	1747
Q Serve(g_s), s	12.0	0.0	32.9	0.2	22.0	22.0	11.5	91.6	0.1	9.4	29.3	29.3
Cycle Q Clear(g_c), s	12.0	0.0	32.9	0.2	22.0	22.0	11.5	91.6	0.1	9.4	29.3	29.3
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	167	0	342	53	242	311	120	1915	864	231	956	940
V/C Ratio(X)	1.16	0.00	1.21	0.06	1.50	1.99	1.78	1.05	0.00	0.83	0.51	0.51
Avail Cap(c_a), veh/h	167	0	342	168	242	311	120	1915	864	234	956	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	68.5	57.7	74.0	68.3	79.3	39.2	17.6	78.4	24.9	24.9
Incr Delay (d2), s/veh	117.4	0.0	118.8	0.2	245.3	459.0	380.5	34.3	0.0	20.8	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	26.1	0.1	27.1	53.2	18.0	47.4	0.0	4.8	12.8	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	181.5	0.0	187.3	57.8	319.3	527.3	459.8	73.5	17.6	99.1	26.8	26.8
LnGrp LOS	F	A	F	E	F	F	F	F	B	F	C	C
Approach Vol, veh/h		607			987			2222			1151	
Approach Delay, s/veh		185.5			449.4			110.6			38.9	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	100.0	9.1	40.9	19.9	100.1	20.0	30.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	11.5	91.5	12.0	22.0	11.5	91.5	12.0	22.0
Max Q Clear Time (g_c+I1), s	13.5	31.3	2.2	34.9	11.4	93.6	14.0	24.0
Green Ext Time (p_c), s	0.0	43.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	170.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



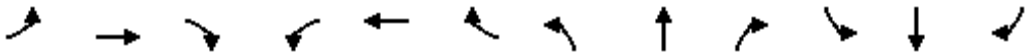
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	251	63	86	133	365	96	1067	98	420	1891	91
Future Volume (veh/h)	128	251	63	86	133	365	96	1067	98	420	1891	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	282	71	90	139	380	108	1199	110	447	2012	97
Peak Hour Factor	0.89	0.89	0.89	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	183	46	140	209	399	89	1718	853	484	1980	95
Arrive On Green	0.07	0.13	0.13	0.05	0.11	0.11	0.05	0.48	0.48	0.14	0.57	0.57
Sat Flow, veh/h	1767	1431	360	1781	1870	1585	1781	3554	1585	3456	3452	165
Grp Volume(v), veh/h	144	0	353	90	139	380	108	1199	110	447	1027	1082
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1781	1870	1585	1781	1777	1585	1728	1777	1841
Q Serve(g_s), s	12.0	0.0	21.7	7.4	12.1	19.0	8.5	44.7	5.9	21.7	97.5	97.5
Cycle Q Clear(g_c), s	12.0	0.0	21.7	7.4	12.1	19.0	8.5	44.7	5.9	21.7	97.5	97.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	203	0	229	140	209	399	89	1718	853	484	1019	1056
V/C Ratio(X)	0.71	0.00	1.54	0.64	0.66	0.95	1.21	0.70	0.13	0.92	1.01	1.02
Avail Cap(c_a), veh/h	203	0	229	168	209	399	89	1718	853	498	1019	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	0.0	74.1	61.2	72.4	62.6	80.8	34.2	19.5	72.2	36.2	36.3
Incr Delay (d2), s/veh	9.5	0.0	265.1	3.3	6.3	32.5	163.2	2.4	0.3	22.1	30.2	34.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	26.8	3.5	6.2	19.7	7.9	19.6	2.3	11.1	48.7	51.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.3	0.0	339.3	64.6	78.7	95.0	244.0	36.6	19.8	94.3	66.5	70.3
LnGrp LOS	E	A	F	E	E	F	F	D	B	F	F	F
Approach Vol, veh/h		497			609			1417			2556	
Approach Delay, s/veh		261.9			86.8			51.1			73.0	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	106.0	17.3	29.7	32.3	90.7	20.0	27.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	8.5	97.5	12.0	19.0	24.5	81.5	12.0	19.0
Max Q Clear Time (g_c+I1), s	10.5	99.5	9.4	23.7	23.7	46.7	14.0	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	32.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	87.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	247	98	12	336	575	182	1712	6	189	701	170
Future Volume (veh/h)	162	247	98	12	336	575	182	1712	6	189	701	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	195	298	118	13	365	625	214	2014	7	208	770	187
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.85	0.85	0.85	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	226	89	81	242	312	120	1913	887	234	1526	371
Arrive On Green	0.07	0.18	0.18	0.02	0.13	0.13	0.07	0.54	0.54	0.07	0.54	0.54
Sat Flow, veh/h	1767	1265	501	1781	1870	1585	1781	3554	1585	3456	2835	688
Grp Volume(v), veh/h	195	0	416	13	365	625	214	2014	7	208	483	474
Grp Sat Flow(s),veh/h/ln	1767	0	1765	1781	1870	1585	1781	1777	1585	1728	1777	1746
Q Serve(g_s), s	12.0	0.0	30.3	1.0	22.0	22.0	11.5	91.5	0.3	10.2	29.3	29.3
Cycle Q Clear(g_c), s	12.0	0.0	30.3	1.0	22.0	22.0	11.5	91.5	0.3	10.2	29.3	29.3
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	167	0	315	81	242	312	120	1913	887	234	956	940
V/C Ratio(X)	1.17	0.00	1.32	0.16	1.51	2.00	1.78	1.05	0.01	0.89	0.50	0.50
Avail Cap(c_a), veh/h	167	0	315	168	242	312	120	1913	887	234	956	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	69.8	57.5	74.0	68.2	79.3	39.2	16.5	78.6	24.9	24.9
Incr Delay (d2), s/veh	121.7	0.0	164.9	0.3	248.9	461.7	380.5	36.2	0.0	30.6	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	28.1	0.5	27.3	53.6	18.0	47.9	0.1	5.5	12.7	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	185.7	0.0	234.8	57.8	322.9	529.9	459.8	75.4	16.6	109.3	26.8	26.8
LnGrp LOS	F	A	F	E	F	F	F	F	B	F	C	C
Approach Vol, veh/h		611			1003			2235			1165	
Approach Delay, s/veh		219.1			448.5			112.0			41.5	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	100.0	11.7	38.3	20.0	100.0	20.0	30.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	11.5	91.5	12.0	22.0	11.5	91.5	12.0	22.0
Max Q Clear Time (g_c+I1), s	13.5	31.3	3.0	32.3	12.2	93.5	14.0	24.0
Green Ext Time (p_c), s	0.0	43.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	176.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	424	0	0	908	4	5	0	5	3	0	15
Future Vol, veh/h	18	424	0	0	908	4	5	0	5	3	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	471	0	0	1009	4	6	0	6	3	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1013	0	0	471	0	0	1531	1524	236	1287	1522	1011
Stage 1	-	-	-	-	-	-	511	511	-	1011	1011	-
Stage 2	-	-	-	-	-	-	1020	1013	-	276	511	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	682	-	-	1089	-	-	87	117	766	131	118	290
Stage 1	-	-	-	-	-	-	514	536	-	288	316	-
Stage 2	-	-	-	-	-	-	285	316	-	708	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	682	-	-	1089	-	-	80	112	766	126	113	290
Mov Cap-2 Maneuver	-	-	-	-	-	-	80	112	-	126	113	-
Stage 1	-	-	-	-	-	-	493	515	-	276	316	-
Stage 2	-	-	-	-	-	-	269	316	-	675	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	31.9	21.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	145	682	-	-	1089	-	-	238
HCM Lane V/C Ratio	0.077	0.029	-	-	-	-	-	0.084
HCM Control Delay (s)	31.9	10.4	0.2	-	0	-	-	21.5
HCM Lane LOS	D	B	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	6	2438	11	0	1060
Future Volume (Veh/h)	0	6	2438	11	0	1060
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	7	2709	12	0	1178
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			218			
pX, platoon unblocked	0.48	0.48			0.48	
vC, conflicting volume	3010	1360			2721	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3020	0			2423	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	5	524			93	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3	SB 4
Volume Total	7	1806	915	294	294	294	294
Volume Left	0	0	0	0	0	0	0
Volume Right	7	0	12	0	0	0	0
cSH	524	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	1.06	0.54	0.17	0.17	0.17	0.17
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	12.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.0	0.0		0.0			
Approach LOS	B						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	252	63	101	136	370	96	1073	103	437	1886	91
Future Volume (veh/h)	130	252	63	101	136	370	96	1073	103	437	1886	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	283	71	105	142	385	108	1206	116	465	2006	97
Peak Hour Factor	0.89	0.89	0.89	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	171	43	154	209	406	89	1704	859	498	1980	95
Arrive On Green	0.07	0.12	0.12	0.06	0.11	0.11	0.05	0.48	0.48	0.14	0.57	0.57
Sat Flow, veh/h	1767	1432	359	1781	1870	1585	1781	3554	1585	3456	3452	166
Grp Volume(v), veh/h	146	0	354	105	142	385	108	1206	116	465	1025	1078
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1781	1870	1585	1781	1777	1585	1728	1777	1841
Q Serve(g_s), s	12.0	0.0	20.4	8.7	12.4	19.0	8.5	45.5	6.1	22.6	97.5	97.5
Cycle Q Clear(g_c), s	12.0	0.0	20.4	8.7	12.4	19.0	8.5	45.5	6.1	22.6	97.5	97.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	201	0	214	154	209	406	89	1704	859	498	1019	1056
V/C Ratio(X)	0.73	0.00	1.65	0.68	0.68	0.95	1.21	0.71	0.14	0.93	1.01	1.02
Avail Cap(c_a), veh/h	201	0	214	168	209	406	89	1704	859	498	1019	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	0.0	74.8	61.6	72.6	62.2	80.8	34.9	19.2	71.9	36.2	36.3
Incr Delay (d2), s/veh	10.9	0.0	312.9	7.4	7.1	31.6	163.2	2.5	0.3	24.5	29.5	33.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	28.0	4.3	6.4	19.8	7.9	20.0	2.4	11.6	48.5	51.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.9	0.0	387.7	69.0	79.7	93.7	244.0	37.4	19.6	96.5	65.8	69.5
LnGrp LOS	E	A	F	E	E	F	F	D	B	F	F	F
Approach Vol, veh/h		500			632			1430			2568	
Approach Delay, s/veh		296.1			86.5			51.5			72.9	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	106.0	18.6	28.4	33.0	90.0	20.0	27.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	8.5	97.5	12.0	19.0	24.5	81.5	12.0	19.0
Max Q Clear Time (g_c+I1), s	10.5	99.5	10.7	22.4	24.6	47.5	14.0	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	31.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	90.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

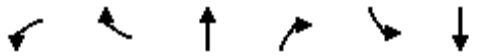
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	767	0	0	580	8	5	0	5	6	0	26
Future Vol, veh/h	25	767	0	0	580	8	5	0	5	6	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	852	0	0	644	9	6	0	6	7	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	653	0	0	852	0	0	1571	1561	426	1131	1557	649
Stage 1	-	-	-	-	-	-	908	908	-	649	649	-
Stage 2	-	-	-	-	-	-	663	653	-	482	908	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	932	-	-	785	-	-	82	112	578	169	112	469
Stage 1	-	-	-	-	-	-	297	353	-	458	465	-
Stage 2	-	-	-	-	-	-	450	463	-	535	353	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	932	-	-	785	-	-	74	106	578	160	106	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	74	106	-	160	106	-
Stage 1	-	-	-	-	-	-	280	333	-	432	465	-
Stage 2	-	-	-	-	-	-	422	463	-	500	333	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	35	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	131	932	-	-	785	-	-	344
HCM Lane V/C Ratio	0.085	0.03	-	-	-	-	-	0.103
HCM Control Delay (s)	35	9	0.2	-	0	-	-	16.7
HCM Lane LOS	E	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3



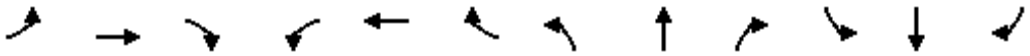
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	11	1561	13	0	2414
Future Volume (Veh/h)	0	11	1561	13	0	2414
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	12	1734	14	0	2682
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			223			
pX, platoon unblocked	0.73	0.73			0.73	
vC, conflicting volume	2412	874			1748	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2196	97			1290	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	28	689			390	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3	SB 4
Volume Total	12	1156	592	670	670	670	670
Volume Left	0	0	0	0	0	0	0
Volume Right	12	0	14	0	0	0	0
cSH	689	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.68	0.35	0.39	0.39	0.39	0.39
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	10.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.3	0.0		0.0			
Approach LOS	B						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Kimley»Horn

Attachment G - Updated Uses Synchro Reports for the Build Condition



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	247	98	19	337	577	182	1712	7	196	696	170
Future Volume (veh/h)	162	247	98	19	337	577	182	1712	7	196	696	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	195	298	118	21	366	627	214	2014	8	215	765	187
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.85	0.85	0.85	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	215	85	95	242	312	120	1913	900	234	1524	372
Arrive On Green	0.07	0.17	0.17	0.03	0.13	0.13	0.07	0.54	0.54	0.07	0.54	0.54
Sat Flow, veh/h	1767	1265	501	1781	1870	1585	1781	3554	1585	3456	2831	692
Grp Volume(v), veh/h	195	0	416	21	366	627	214	2014	8	215	480	472
Grp Sat Flow(s),veh/h/ln	1767	0	1765	1781	1870	1585	1781	1777	1585	1728	1777	1746
Q Serve(g_s), s	12.0	0.0	29.0	1.6	22.0	22.0	11.5	91.5	0.4	10.5	29.1	29.1
Cycle Q Clear(g_c), s	12.0	0.0	29.0	1.6	22.0	22.0	11.5	91.5	0.4	10.5	29.1	29.1
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	167	0	301	95	242	312	120	1913	900	234	956	940
V/C Ratio(X)	1.17	0.00	1.38	0.22	1.51	2.01	1.78	1.05	0.01	0.92	0.50	0.50
Avail Cap(c_a), veh/h	167	0	301	168	242	312	120	1913	900	234	956	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	70.5	57.5	74.0	68.2	79.3	39.2	16.0	78.8	24.8	24.8
Incr Delay (d2), s/veh	121.7	0.0	191.7	0.4	250.6	464.5	380.5	36.2	0.0	37.1	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	29.1	0.7	27.4	53.8	18.0	47.9	0.1	5.9	12.6	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	185.7	0.0	262.2	57.9	324.6	532.8	459.8	75.4	16.0	115.9	26.7	26.8
LnGrp LOS	F	A	F	E	F	F	F	F	B	F	C	C
Approach Vol, veh/h		611			1014			2236			1167	
Approach Delay, s/veh		237.8			447.8			112.0			43.2	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	100.0	13.0	37.0	20.0	100.0	20.0	30.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	11.5	91.5	12.0	22.0	11.5	91.5	12.0	22.0
Max Q Clear Time (g_c+I1), s	13.5	31.1	3.6	31.0	12.5	93.5	14.0	24.0
Green Ext Time (p_c), s	0.0	43.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	179.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	424	0	0	905	8	5	0	5	4	0	28
Future Vol, veh/h	26	424	0	0	905	8	5	0	5	4	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	471	0	0	1006	9	6	0	6	4	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1015	0	0	471	0	0	1555	1544	236	1305	1540	1011
Stage 1	-	-	-	-	-	-	529	529	-	1011	1011	-
Stage 2	-	-	-	-	-	-	1026	1015	-	294	529	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	681	-	-	1089	-	-	84	114	766	127	115	290
Stage 1	-	-	-	-	-	-	502	526	-	288	316	-
Stage 2	-	-	-	-	-	-	282	315	-	691	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	681	-	-	1089	-	-	72	107	766	121	108	290
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	107	-	121	108	-
Stage 1	-	-	-	-	-	-	473	495	-	271	316	-
Stage 2	-	-	-	-	-	-	252	315	-	646	495	-

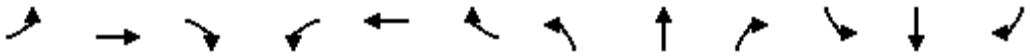
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	34.8	22
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	132	681	-	-	1089	-	-	247
HCM Lane V/C Ratio	0.084	0.042	-	-	-	-	-	0.144
HCM Control Delay (s)	34.8	10.5	0.3	-	0	-	-	22
HCM Lane LOS	D	B	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	19	2428	23	0	1062
Future Volume (Veh/h)	0	19	2428	23	0	1062
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	21	2698	26	0	1180
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			218			
pX, platoon unblocked	0.48	0.48			0.48	
vC, conflicting volume	3006	1362			2724	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3012	0			2429	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	5	524			93	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3	SB 4
Volume Total	21	1799	925	295	295	295	295
Volume Left	0	0	0	0	0	0	0
Volume Right	21	0	26	0	0	0	0
cSH	524	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	1.06	0.54	0.17	0.17	0.17	0.17
Queue Length 95th (ft)	3	0	0	0	0	0	0
Control Delay (s)	12.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.2	0.0		0.0			
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	252	63	98	136	371	96	1072	103	434	1887	91
Future Volume (veh/h)	130	252	63	98	136	371	96	1072	103	434	1887	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	283	71	102	142	386	108	1204	116	462	2007	97
Peak Hour Factor	0.89	0.89	0.89	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	174	44	151	209	405	89	1704	857	497	1980	95
Arrive On Green	0.07	0.12	0.12	0.06	0.11	0.11	0.05	0.48	0.48	0.14	0.57	0.57
Sat Flow, veh/h	1767	1432	359	1781	1870	1585	1781	3554	1585	3456	3452	165
Grp Volume(v), veh/h	146	0	354	102	142	386	108	1204	116	462	1025	1079
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1781	1870	1585	1781	1777	1585	1728	1777	1841
Q Serve(g_s), s	12.0	0.0	20.6	8.4	12.4	19.0	8.5	45.3	6.2	22.5	97.5	97.5
Cycle Q Clear(g_c), s	12.0	0.0	20.6	8.4	12.4	19.0	8.5	45.3	6.2	22.5	97.5	97.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	201	0	217	151	209	405	89	1704	857	497	1019	1056
V/C Ratio(X)	0.73	0.00	1.63	0.68	0.68	0.95	1.21	0.71	0.14	0.93	1.01	1.02
Avail Cap(c_a), veh/h	201	0	217	168	209	405	89	1704	857	498	1019	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	0.0	74.7	61.5	72.6	62.3	80.8	34.8	19.4	71.9	36.2	36.3
Incr Delay (d2), s/veh	10.9	0.0	303.2	6.6	7.1	32.3	163.2	2.5	0.3	23.6	29.6	33.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	27.8	4.1	6.4	20.0	7.9	19.9	2.4	11.5	48.5	51.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.9	0.0	377.9	68.1	79.7	94.6	244.0	37.3	19.7	95.5	65.9	69.7
LnGrp LOS	E	A	F	E	E	F	F	D	B	F	F	F
Approach Vol, veh/h		500			630			1428			2566	
Approach Delay, s/veh		289.2			86.9			51.5			72.8	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	106.0	18.4	28.6	33.0	90.0	20.0	27.0
Change Period (Y+Rc), s	8.5	8.5	8.0	8.0	8.5	8.5	8.0	8.0
Max Green Setting (Gmax), s	8.5	97.5	12.0	19.0	24.5	81.5	12.0	19.0
Max Q Clear Time (g_c+I1), s	10.5	99.5	10.4	22.6	24.5	47.3	14.0	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	31.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	89.7
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	769	0	0	580	7	5	0	5	4	0	24
Future Vol, veh/h	20	769	0	0	580	7	5	0	5	4	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	854	0	0	644	8	6	0	6	4	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	652	0	0	854	0	0	1560	1550	427	1119	1546	648
Stage 1	-	-	-	-	-	-	898	898	-	648	648	-
Stage 2	-	-	-	-	-	-	662	652	-	471	898	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	932	-	-	783	-	-	83	113	577	172	114	469
Stage 1	-	-	-	-	-	-	301	357	-	458	465	-
Stage 2	-	-	-	-	-	-	450	463	-	543	357	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	932	-	-	783	-	-	76	108	577	164	109	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	108	-	164	109	-
Stage 1	-	-	-	-	-	-	287	341	-	437	465	-
Stage 2	-	-	-	-	-	-	424	463	-	514	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	34.3	15.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	134	932	-	-	783	-	-	371
HCM Lane V/C Ratio	0.083	0.024	-	-	-	-	-	0.084
HCM Control Delay (s)	34.3	9	0.2	-	0	-	-	15.6
HCM Lane LOS	D	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

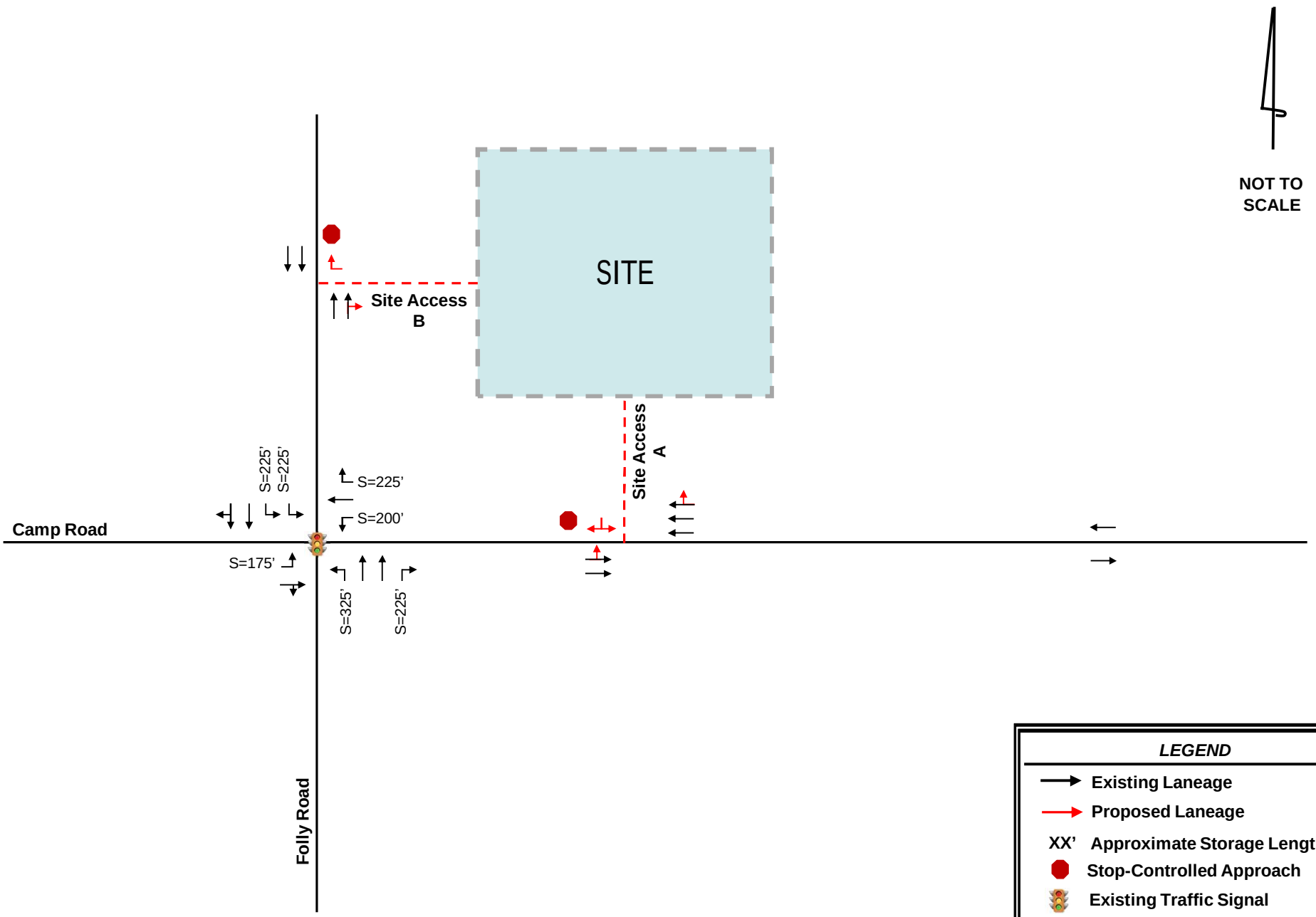
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	15	1555	18	0	2412
Future Volume (Veh/h)	0	15	1555	18	0	2412
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	17	1728	20	0	2680
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			223			
pX, platoon unblocked	0.73	0.73			0.73	
vC, conflicting volume	2408	874			1748	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2193	101			1293	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	28	686			390	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3	SB 4
Volume Total	17	1152	596	670	670	670	670
Volume Left	0	0	0	0	0	0	0
Volume Right	17	0	20	0	0	0	0
cSH	686	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.68	0.35	0.39	0.39	0.39	0.39
Queue Length 95th (ft)	2	0	0	0	0	0	0
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.4	0.0		0.0			
Approach LOS	B						

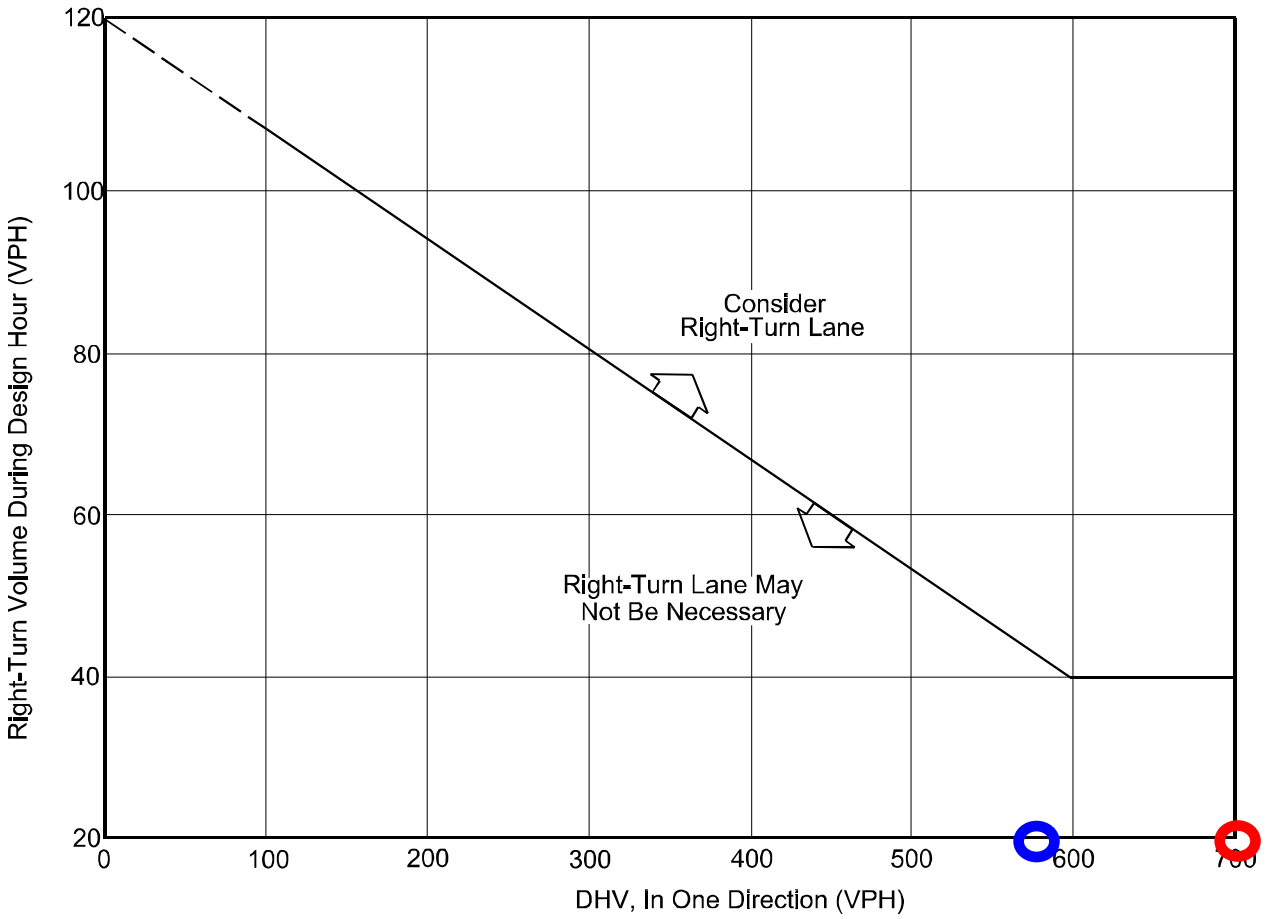
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Kimley»Horn

Attachment H – Recommended Laneage Figure and SCDOT Turn Lane Warrants



Kimley»Horn	896 Folly Road Redevelopment	2024 Build Recommended Laneage	Attachment G



Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

AM DHV: 913
AM RT: 8
Warrants?: No, less than 40 Right-turns

PM DHV: 580
PM RT:7
Warrants?: No, less than 40 Right-turns

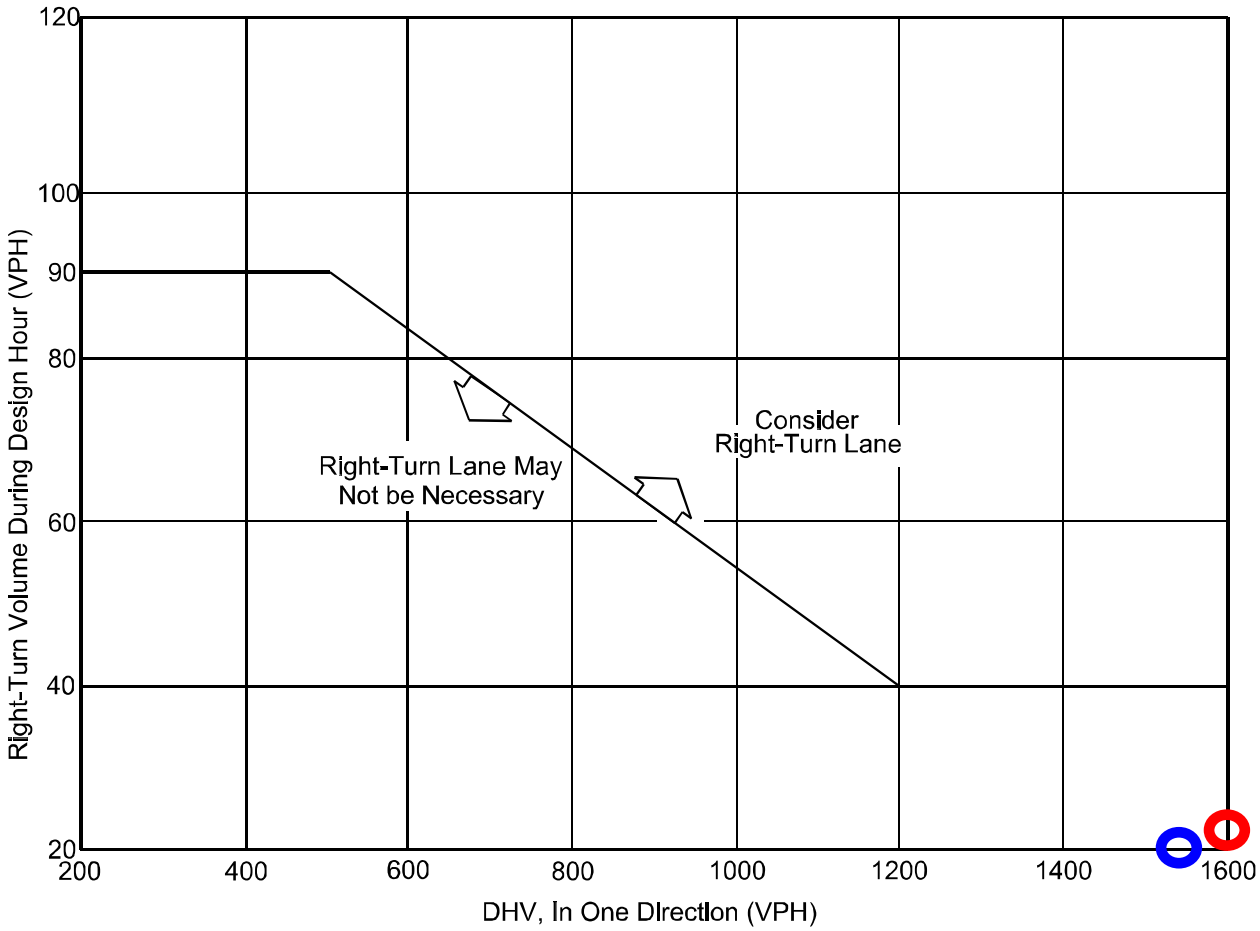
Example

Given:	Design Speed	=	35 miles per hour
	DHV	=	250 vehicles per hour
	Right Turns	=	100 vehicles per hour

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use 100 – 20 = 80 vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A

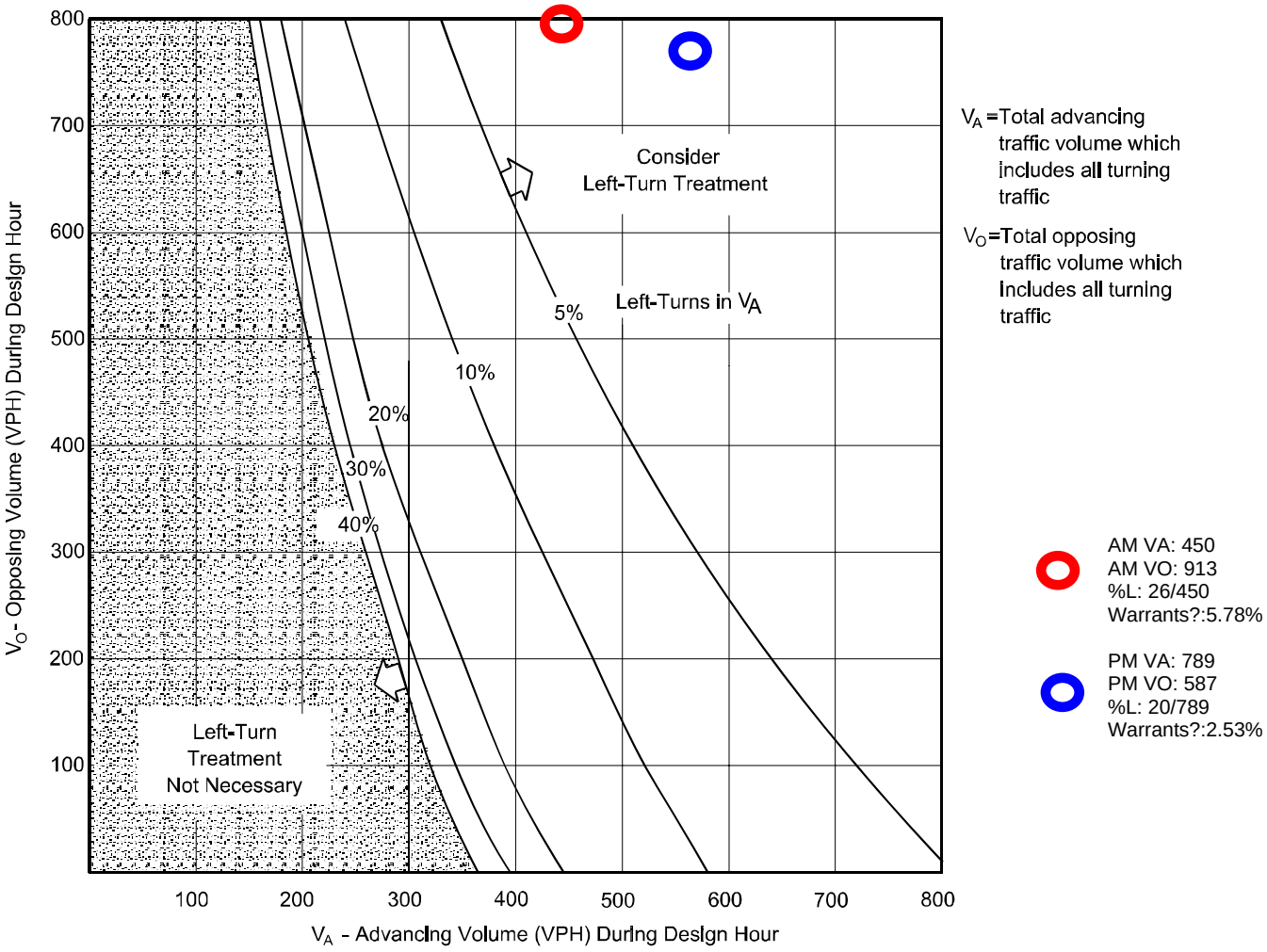


Note: Figure is only applicable on highways with a design speed of 50 miles per hour or greater.

AM DHV: 2451
AM RT: 23
Warrants?: No, less than 40 Right-turns

PM DHV: 1573
PM RT:18
Warrants?: No, less than 40 Right-turns

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON FOUR-LANE HIGHWAYS
Figure 9.5-B



Instructions:

1. *The family of curves represents the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.*

2. *Read V_A and V_O into the chart and locate the intersection of the two volumes.*

3. *Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.*

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G

Kimley»Horn

Attachment I – Previous Approvals from SCDOT and Coordination with the Town of James Island

Turner, Dillon

From:	Kristen Crane <kcrane@jamesislandsc.us>
Sent:	Thursday, October 29, 2020 10:37 AM
To:	Johnson, Joshua A.; Turner, Dillon
Cc:	Fleming, Juleigh B.; Grooms, Robert W.; Jehn, Nick; Moseley, Marianne; Payne, Adam C.
Subject:	RE: James Island Bank TIA
Categories:	External

Thanks for the info Josh. I'm sure you could have guessed I was going to ask this next question, but if the median could be widened, is there any way to add landscaping (at the Town's expense?). Not that the Crosstown trees are a good example, because I doubt street trees would be approved, but that is an awful narrow median there. I'd be mad at myself if I didn't inquire!

Kristen Crane

From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Thursday, October 29, 2020 10:31 AM
To: Kristen Crane <kcrane@jamesislandsc.us>; 'Turner, Dillon' <Dillon.Turner@kimley-horn.com>
Cc: Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Jehn, Nick <Nick.Jehn@kimley-horn.com>; Moseley, Marianne <Marianne.Moseley@kimley-horn.com>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: James Island Bank TIA

The median will be an extension of the 4-ft concrete median already in place and the ~70 ft extension will not block the driveway across the street. I don't think it can be landscaped with such a narrow width.

Josh Johnson, PE, PTOE
District Traffic Engineer | SCDOT District 6

Please wear a mask around others.

From: Kristen Crane <kcrane@jamesislandsc.us>
Sent: Thursday, October 29, 2020 9:54 AM
To: Johnson, Joshua A. <JohnsonJA@scdot.org>; 'Turner, Dillon' <Dillon.Turner@kimley-horn.com>
Cc: Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Jehn, Nick <Nick.Jehn@kimley-horn.com>; Moseley, Marianne <Marianne.Moseley@kimley-horn.com>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: James Island Bank TIA

Hello All,

I have a few questions/comments if you don't mind?

1. On pg. 9 it states that the speed limit on Camp Rd. in the vicinity of the site is 35mph, and it's actually posted in both directions on Camp as 30mph. It does increase to 35mph at Oyster Point going East, and I'm not sure exactly where it increases going West. Not sure if that matters or not.
2. If the median is extended 70', will that block Hyam's most south entrance to their site? I didn't do any measurements so I'm not sure, but the Town would like to make sure the driveway is not blocked to their entrance.
3. Finally, is there any way to create a low-maintenance landscaped median, since the median is required to be extended? The Town would obviously accept and maintain this sort of thing. It just seems like the perfect opportunity to get one of ReThink's goals established. I would imagine it would slow traffic a little as well and perhaps be more cost-effective to construct? There are landscaped medians already on Folly Road, further towards the intersection of Maybank. What would it take to make that happen?

Thank you!

Kristen Crane

From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Wednesday, October 28, 2020 11:24 AM
To: 'Turner, Dillon' <Dillon.Turner@kimley-horn.com>; Kristen Crane <kcrane@jamesislandsc.us>
Cc: Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Jehn, Nick <Nick.Jehn@kimley-horn.com>; Moseley, Marianne <Marianne.Moseley@kimley-horn.com>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: James Island Bank TIA

Dillon,

The James Island Chase Bank TIA is accepted with no external mitigation other than that which is required to construct the driveways. The median on Folly Rd will need to be extended approximately 70 ft due to the proposed RIRO driveway. Please upload the TIA and this approval email with the encroachment application in EPPS.

Thanks,
Josh Johnson, PE, PTOE
District Traffic Engineer | SCDOT District 6

From: Turner, Dillon <Dillon.Turner@kimley-horn.com>
Sent: Tuesday, October 27, 2020 4:39 PM
To: Johnson, Joshua A. <JohnsonJA@scdot.org>; kcrane@jamesislandsc.us
Cc: Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Jehn, Nick <Nick.Jehn@kimley-horn.com>; Moseley, Marianne <Marianne.Moseley@kimley-horn.com>
Subject: James Island Bank TIA

Josh and Kristen,

Please see the attached TIA and Synchro files for the James Island Bank TIA located at Folly Road and Camp Road. Please let me know if you have questions.

Thank You,

Dillon Turner

Dillon Turner, P.E, PTOE | Project Manager
Kimley-Horn | 115 Fairchild Street, Suite 250, Charleston, SC 29492
Direct: 843 574 8593 | Mobile: 803 917 8216
Connect with us: Twitter | LinkedIn | Facebook | Instagram | Kimley-Horn.com

Turner, Dillon

From:	Turner, Dillon
Sent:	Thursday, October 29, 2020 10:31 AM
To:	Kristen Crane; Johnson, Joshua A.
Cc:	Fleming, Juleigh B.; Grooms, Robert W.; Jehn, Nick; Moseley, Marianne; Payne, Adam C.
Subject:	RE: James Island Bank TIA

Kristen,

Good catch. I did a check on the analysis and modifying the speed limit from 35 to 30 MPH does not change the HCM 6th Level of Service or Synchro 95th queues. Thus, the change in speed limit does not affect the results for this TIA.

Thanks!
Dillon Turner

From: Kristen Crane <kcrane@jamesislandsc.us>
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To: Johnson, Joshua A. <JohnsonJA@scdot.org>; Turner, Dillon <Dillon.Turner@kimley-horn.com>
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Subject: James Island Bank TIA

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Thank You,

Dillon Turner

Dillon Turner, P.E, PTOE | Project Manager
Kimley-Horn | 115 Fairchild Street, Suite 250, Charleston, SC 29492
Direct: 843 574 8593 | Mobile: 803 917 8216
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