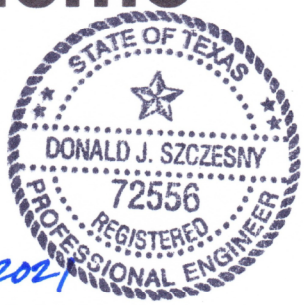
DUNAWAY

Memo



3/5/2021

To: Olga Chernomorets, AICP
Planning and Development Manager
Town of Addison

From: Donald J. Szczesny, PE, PTOE
Sr. Discipline Lead (Traffic)
Dunaway Associates, L.P.

Date: March 5, 2021

Dunaway #: B007043.001

Re: Dutch Bros Coffee Shop – Auxiliary Lane Analysis

Introduction

The Nunnally Studio Architects retained Dunaway Associates, L.P. (Dunaway) to prepare a traffic assessment for the proposed Dutch Bros coffee shop development located on a 0.867-acre tract in the Town of Addison, Texas. The existing tract of land at 14380 Marsh Lane is developed as the Brookhaven Shopping Center. The purpose of this document is to analyze the trip generation, trip distribution, and to evaluate the need for right turn lanes at the proposed and shared access driveways for a proposed coffee shop and a new fast-food type restaurant, located directly to the north. The concept plan for the coffee shop, **Exhibit 1**, is bounded by the undeveloped land to the north, Marsh Lane to the west, and Brookhaven Shopping Center with existing driveways to the east and south.

Proposed Development

The proposed Dutch Bros coffee shop development is located on a 0.867-acre tract of land along Marsh Lane and west of the Brookhaven Shopping Center. The development is expected to consist of 950 SF of Coffee Shop Drive Thru only and 4.15 KSF of fast-food resturant. **Exhibit 1** shows the proposed site plan for the proposed Dutch Bros coffee shop development. **Table 1** summarizes the assumed land use. The site plan for the proposed development proposes one right in / right out driveway along Marsh Lane and will utilize the existing all access driveways for the Brookhaven Shopping Center along Marsh Lane and Spring Valley Road, both within the Town of Addison.

Table 1. ITE Land Use Assumptions

ITE Land Use	ITE Code	Unit	Qty.
Fast Food with Drive Thru	934	KSF	4.15
Coffee/Donut Shop Drive Thru Only	938	KSF	0.95

Trip Generation

The Institute of Transportation Engineers (ITE) provides predicted trip generation rates and equations for several land uses as provided in ***ITE Trip Generation, 10th Edition***. These rates are based on individual sites to compute driveway volumes for particular land uses. The summary of the trip generation rate used for the proposed site is provided in **Table 2**.

Table 2. Summary of Trip Generation Rates

Land Use	ITE Code	Unit	Trip Rate		Pass-By (%)		Distribution Rate (%)			
			AM	PM	AM	PM	AM Hour		PM Hour	
							In	Out	In	Out
Fast Food with Drive Thru	934	KSF	40.19	32.67	49	50	51	49	52	48
Coffee/Donut Shop Drive Thru Only	938	KSF	337.04	83.33	50	50	50	50	50	50

ITE Trip Generation Handbook, 3rd Edition provides that significant pass-by trips are associated with particular land uses located adjacent to highly traveled roadways and states "The pass-by trip-making phenomenon, if estimated to be significant, should be recognized when examining the traffic impact of a development on the adjacent street system." For the purpose of this analysis, the pass-by phenome was not considered in the trip generation. **Table 3** provides the summary of the generated trips.

Table 3. Summary of Trips

ITE Land Use	ITE Code	Unit	Qty.	AM Peak Hour		PM Peak Hour	
				Enter	Exit	Enter	Exit
Fast Food with Drive Thru	934	KSF	4.15	85	82	71	65
Coffee/Donut Shop Drive Thru Only	938	KSF	0.95	160	160	40	40
			Subtotal	**245**	**242**	**111**	**105**

Proposed Study Intersections:

Marsh Lane (from North to South) at:

- **Driveway A** – [UNSIGNALIZED] proposed as a two-way stop-controlled right in/right out T-intersection with approaches from the north, south, and east (stop controlled). The northbound approach is proposed with two thru lanes, and one shared thru-right turn lane. The southbound approach is proposed with two thru lanes. The westbound approach is proposed with one right turn lane. The intersection will serve as an entrance for the proposed site.

- **Brookhaven Shopping Center Driveway** – [UNSIGNALIZED] exists as a two-way stop-controlled T-intersection with approaches from the north, south, and east (stop controlled). The northbound approach provides two thru lanes, and one shared thru-right turn lane. The southbound approach provides two thru lanes and one left turn lane. The westbound approach provides one left turn lane and one right turn lane. This intersection serves as an entrance to Brookhaven Shopping Center, and once the site develops this intersection will serve as a shared entrance for the proposed site.

Trip Distribution and Traffic Assignment

The assumed trip origin and destination of peak hour site traffic to and from the development were based on site location within major routes. Below are the general orientation assumptions:

- Dutch Bros Coffee Shop Development
  - 34 percent to/from the east along Spring Valley Road
  - 33 percent to/from the north along Marsh Lane
  - 33 percent to/from the south along Marsh Lane

Entering and exiting primary site trip assignments were calculated by multiplying the predicted percentages by the total entering and exiting primary trip generation for both the AM and PM peak hours. Inbound site traffic volume from the north will have to make a left turn into the existing driveway and inbound volume from the south was divided between both driveways as right turn volume with 1/3 utilizing the existing driveway. Outbound site traffic volume traveling south will make a left turn out of the existing driveway and outbound volume traveling north was divided between both driveways as right turn volume with 1/3 utilizing the existing driveway. It was assumed the traffic volume to and from the east will utilize the existing driveways and alternatives routes through the Brookhaven Shopping Center. **Exhibit 3** shows the trip distribution for the proposed development.

Auxiliary Lane Analysis

The Town of Addison guidelines indicate that the threshold for warranting a right-turn deceleration lane occurs when the right turn volume is greater than 75 vph. Marsh Lane has a posted speed limit of 35 mph. **Table 4** lists the projected right-turn volumes at the proposed driveway and existing shared access driveway during the AM and PM peak hours after the build-out of the site. Based on the projected right-turn volumes at both of the driveways during the AM or PM peak hour after the full build-out of the site, a right turn deceleration lane is not recommended for either intersection.

Table 4. Right-Turn Lane Volume Analysis, Build-out Conditions

Marsh Lane (from North to South)	Projected Right Turns, (vph)		Criteria (vph)	Meets Criteria
	AM	PM		
Proposed Driveway	54	24	75	**NO**
Existing Driveway	28	12	75	**NO**

Conclusions/Recommendations

Based on the trip generation and trip distribution the anticipate site volume was calculated for the proposed driveway and the existing shared access driveway. Results of the auxiliary lane analysis for the proposed development indicate a right turn auxiliary lane is not recommended for either driveway.

It is Dunaway's recommendation to permit the proposed roadway connections along Marsh Lane as described within this document without right-turn deceleration lanes.

CAA/djs

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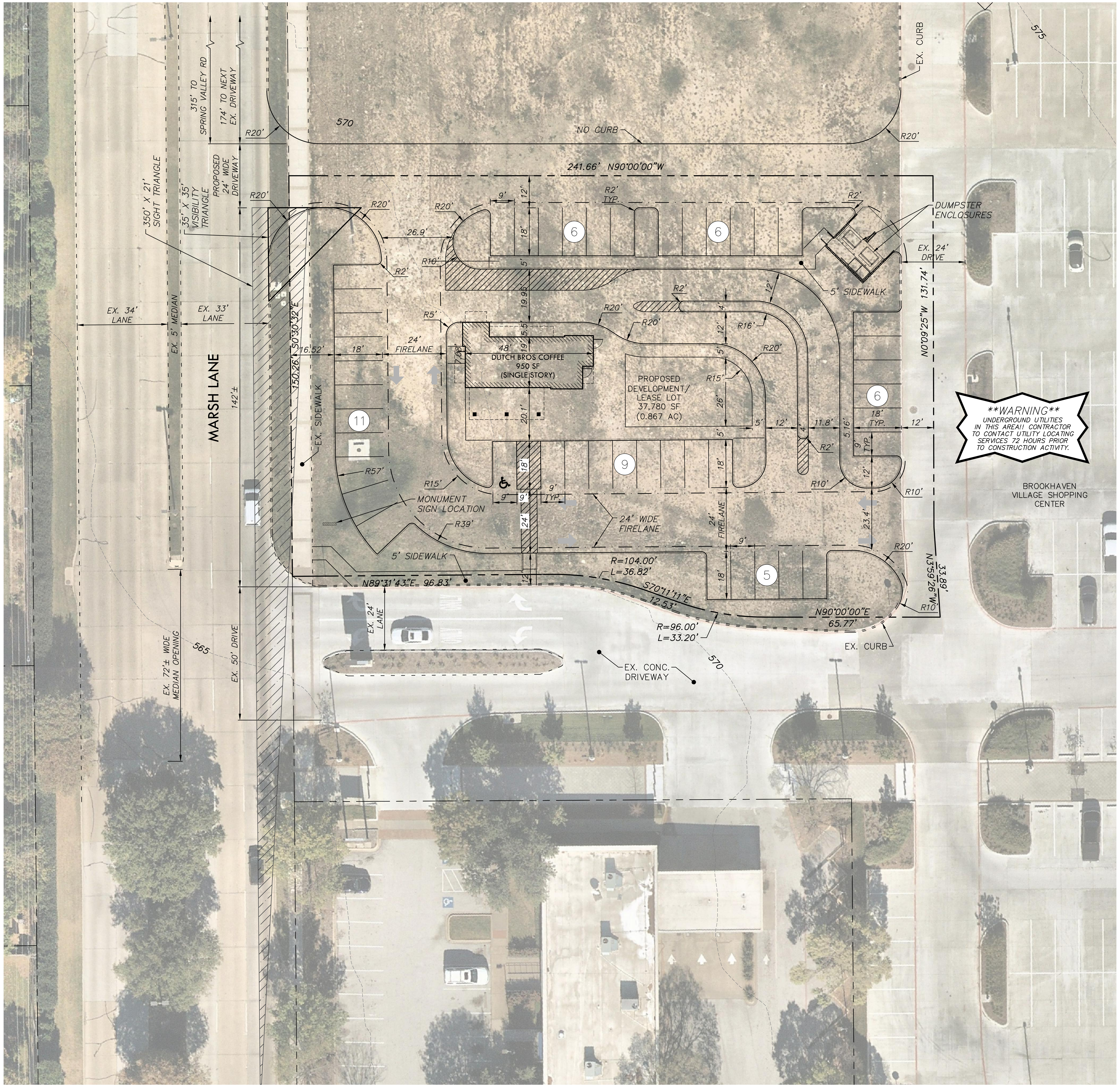
Exhibit 1 – Coffee Shop Proposed Site Plan
Exhibit 2 – Brookhaven Shopping Center Proposed Site Plan
Exhibit 3 – Trip Distribution
Trip Generation
Trip Distribution

cc: File



VICINITY MAP
SCALE: N.T.S.

SITE LEGEND

- PROPERTY BOUNDARY
- ADJOINERS
- BUILDING SETBACK
- YARD SETBACK
- EASEMENT
- FIRE LANE
- PROPOSED CURB
- PROPOSED RETAINING WALL
- TAS COMPLIANT ROUTE
- # PARKING COUNT

TOWN PROJECT NUMBER

SUBDIVISION
BROOKHAVEN SHOPPING CENTER, PHASE 2
LOT 2, BLOCK 1, .867 AC.

DUTCH BROS COFFEE
JEFFREY BENNETT
110 4TH STREET
GRANTS PASS, OR 97526
214.842.1588

DUNAWAY ASSOCIATES
CIVIL, LANDSCAPE
550 BAILEY
FORT WORTH, TX 76107
817.335.1121

GRAPHIC SCALE IN FEET
20 0 10 20 40

NO.	DATE	REVISIONS DESCRIPTION

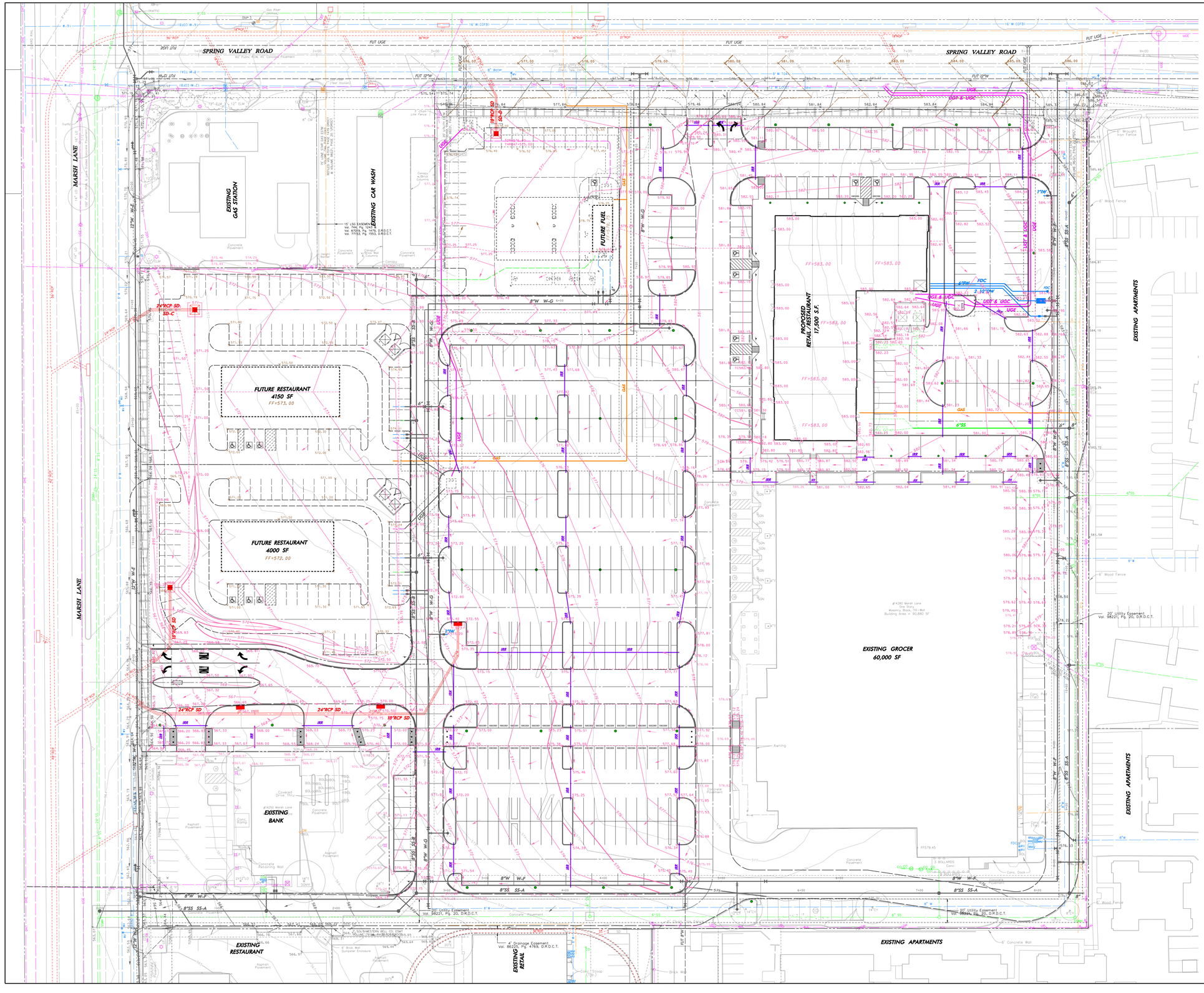
CONCEPT PLAN

DUNAWAY
550 Bailey Avenue • Suite 400 • Fort Worth, Texas 76107
Tel: 817.335.1121
(TX REG. F-1114)

DUTCH BROS COFFEE
BROOKHAVEN SHOPPING CENTER
14380 MARSH LANE
ADDISON, TEXAS

PRELIMINARY
FOR REVIEW ONLY
THESE DOCUMENTS ARE FOR DESIGN REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES. THEY WERE PREPARED BY, OR UNDER THE SUPERVISION OF:
AUSTIN M. CARR
P.E.# 133775
DATE: February 5, 2021

JOB NO.	B0007043.001
DESIGNED BY:	JBB / BS
DRAWN BY:	JBB
CHECKED BY:	AMC
DATE:	FEBRUARY 5, 2021
SHEET:	C1.0



NO.	REVISION	BY	DATE

icon Consulting Engineers, Inc. 2840 W. Southlake Blvd., Suite 110
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210
Engineering Firm Registration Number F-9007

BROOKHAVEN VILLAGE SHOPPING CENTER

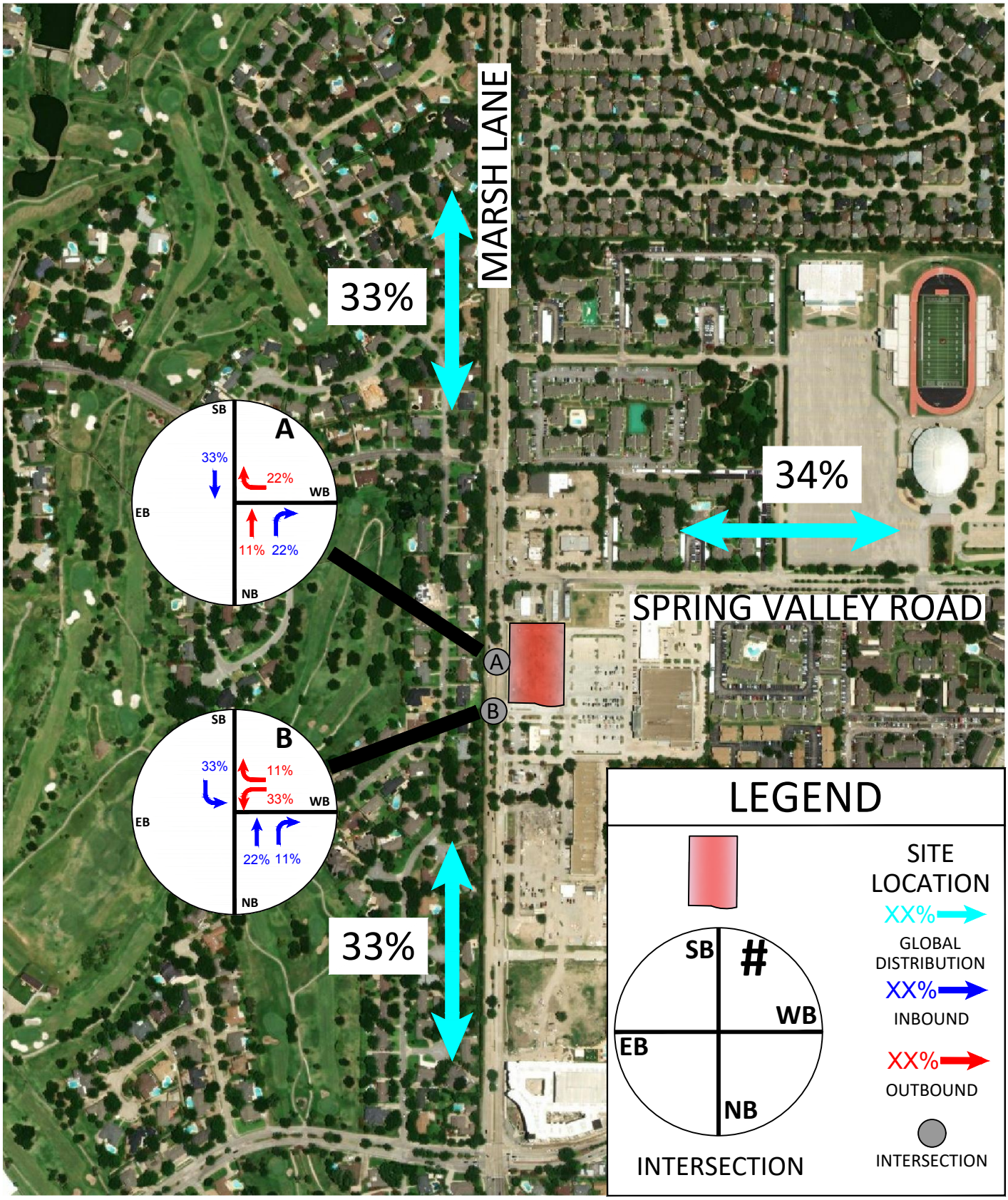
TOWN OF ADDISON, TEXAS

LOT 1, BLOCK E, VITRUVIAN PARK ADDITION

CIVIL DESIGN LAYOUTS

DESIGN	DRAWN	DATE	SCALE	NOTES	Sheet No.
ICE	ICE	JUL 9, 2018	AS NOTED		C2.0

BROOKHAVEN VILLAGE SHOPPING CENTER – PROJECT NO. 5134-01



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TX REG. F-1114

Trip Distribution Percentages

DUTCH BROS COFFEE SHOP, ADDISON, TX

EXHIBIT 3

04-Mar-21

ITE Trip Generation Rates - 10th Edition
Pass-by rates from ITE Trip Generation Handbook - 3rd Edition

Instructions: Enter Expected Unit Volumes into Column 'M'

Description/ITE Code	Units	ITE Vehicle Trip Generation Rates (Peak Hour of Adjacent Street)					(Peak Hour of Generator)				Expected Units	Total Generated Trips					Unadjusted Volume		Pass-By Volume		Unadjusted Volume		Pass-By Volume	
		Weekday	AM	PM	AM Pass-By	PM Pass-By	AM In	AM Out	PM In	PM Out		Daily	AM Hour	PM Hour	AM Pass-By	PM Pass-By	AM In	AM Out	AM In	AM Out	PM In	PM Out	PM In	PM Out
Fast Food with Drive Thru 934	KSF2	470.95	40.19	32.67	49%	50%	51%	49%	52%	48%	4.15	1,954	167	136	82	68	85	82	41	41	71	65	34	34
Coffee/Donut Shop Drive Thru Only 938	KSF²	2000.00	337.04	83.33	50%	50%	50%	50%	50%	50%	0.95	1,900	320	79	160	40	160	160	80	80	40	40	20	20

RED Rates = CAUTION - Use Carefully - Small Sample Size
(Peak hour of Adjacent Street)
(Peak Hour of Generator)

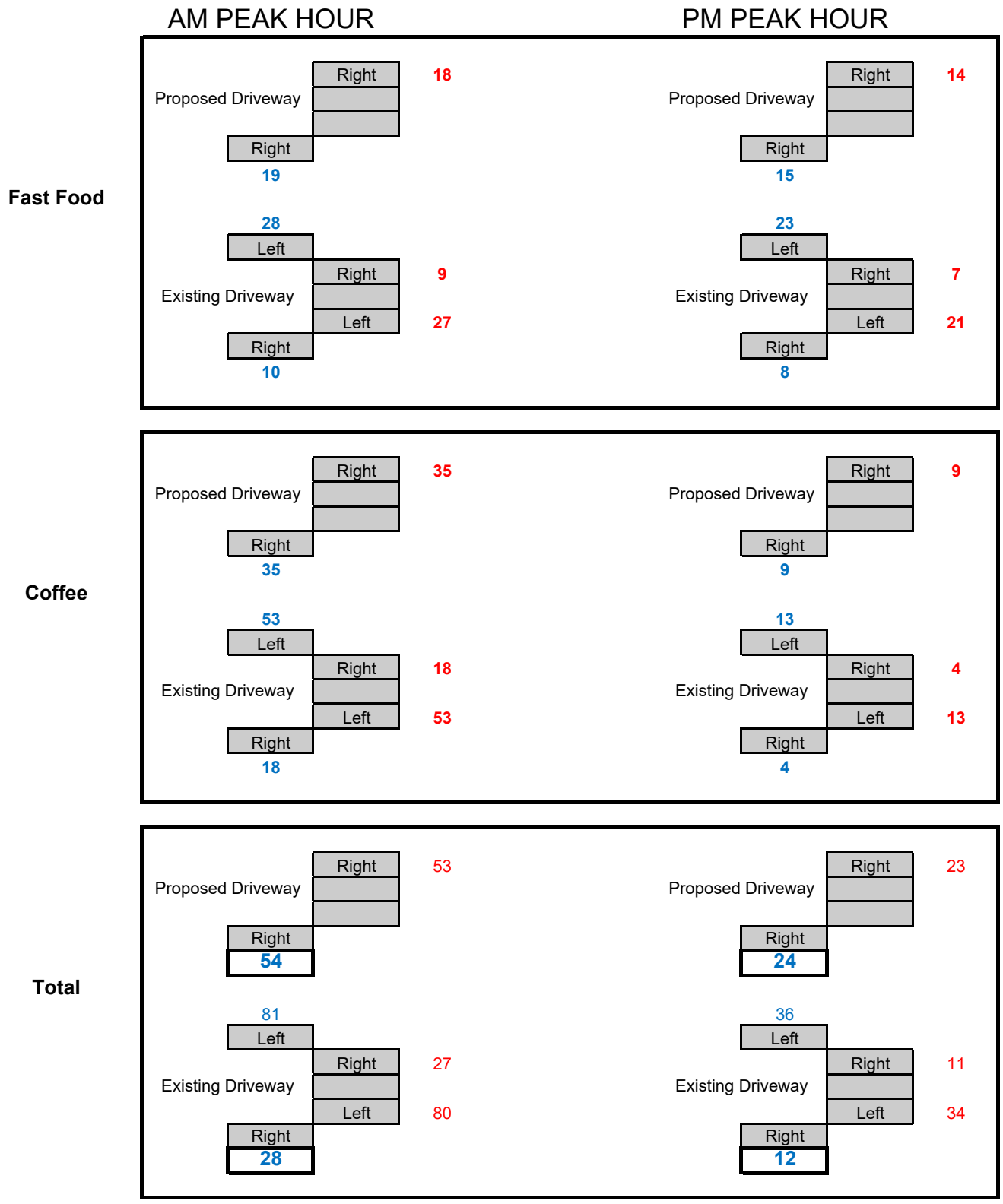
***The Total Pass-By Trips will be Distributed:** **50% IN / 50 % OUT**

NA = Not Available
DU = Dwelling Unit
Occ.Room = Occupied Room
KSF² = Units of 1,000 square feet
Fuel Position = the number of vehicles that could be fueled simultaneously

04-Mar-21

33%	Assumed Percent From North
33%	Assumed Percent From South
34%	Assumed Percent From East*

66%	Assumed Percent Utilize North Driveway
34%	Assumed Percent Utilize South Driveway



*Volume to/from the east along Spring Valley Road will use the existing parking lot to access the proposed developments.