

TRAFFIC IMPACT STATEMENT
FOR A
PROPOSED AUTOMATED CAR WASH

Tommy's Express - 2910 Lee Boulevard

PREPARED FOR:

Mr. Paul Sevene, Vice President – Design and Construction
ROC Wash Holdings, LLC.
1170 Pittsford Victor Road, Suite 275
Pittsford, NY 14534

PREPARED BY:



43 Barkley Circle, Suite 200
Fort Myers, FL 33907
Phone 239-433-4231 Fax 239-433-9632
www.tdmcivilengineering.com
Certificate of Authorization # 29086

January 2022



DEAN MARTIN
FLORIDA P.E. #52022
VALID ONLY WITH EMBOSSED SEAL

1. PURPOSE

OBJECTIVE

This report has been prepared in accordance with Lee County Department of Community Development criteria as outlined in the Lee County Traffic Impact Statement Guidelines and the Lee County Turn Lane Policy for projects seeking Development Order approval. This report analyzes the anticipated traffic conditions of the proposed development in order to determine any adverse roadway impacts associated with the addition of **Tommy's Express – 2910 Lee Boulevard**.

The subject parcel as surveyed by Harris-Jorgensen, LLC. is 0.929 acres.

This Traffic Impact Statement is based on the assumption that the proposed development will be completed in 2023.

2. SITE DESCRIPTION

SITE LOCATION

Tommy's Express – 2910 Lee Boulevard is a 0.929-acre project located on the north side of Lee Boulevard in Section 25, Township 44 South, Range 26 East, Lee County, Florida (see Exhibit 1). The applicant proposes to raze the existing self-service car wash with six (6) wash stalls and replace it with a 1-tunnel automated car wash.

Access to the proposed development will be provided by one (1) existing right-in right-out driveway connection to Lee Boulevard and one (1) proposed full-access driveway connection to 5th Street West.

3. OBSERVATIONS

3.1 TRIP GENERATION CALCULATIONS

Vehicular trips generated by the proposed development were calculated by using the equations provided by the Institute of Transportation Engineers, 11th Edition of the Trip Generation Manual, Land Use Code 948 (Automated Car Wash) using the average rate equation shown in the tables.

Table 1. Raw Trip Generation – Proposed Automated Car Wash (LUC 948)

1 Tunnel:

P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)

$$T = 77.50 (1) = \mathbf{78 (39 \text{ entering, } 39 \text{ exiting})}$$

Source: TDM, 2021

Vehicular trips generated by the existing development were calculated by using the equations provided by the Institute of Transportation Engineers, 11th Edition of the Trip Generation Manual, Land Use Code 947 (Self-Service Car Wash) using the average rate equation shown in the tables.

Table 2. Raw Trip Generation – Existing Self-Service Car Wash (LUC 947)

6 Wash Stalls:

P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)

$$T = 5.54 (6) = \mathbf{33 (17 \text{ entering, } 16 \text{ exiting})}$$

Source: TDM, 2021

Table 3. Raw Trip Generation – Increase Due to Development

Table 1 Less Table 2:

P.M. Peak Hour Average Vehicle Trip Ends (Adjacent Street)

$$T = 78 - 33 = \mathbf{45 (22 \text{ entering, } 23 \text{ exiting})}$$

Source: TDM, 2021

Based on this, the proposed development will be analyzed using the criteria established for developments generating less than three hundred (300) vehicle trips during the peak hour as outlined in the Lee County Traffic Impact Guidelines.

Table 1 above will be used for the requisite turn-lane analyses found later in this report.

Table 3 above will be used for the requisite concurrency analysis found later in this report.

3.2 TRIP DISTRIBUTION

As stated previously herein, traffic will enter and exit the proposed development at the one (1) existing right-in right-out driveway connection to Lee Boulevard and at the one (1) proposed full-access driveway connection to 5th Street West.

Because the nearest arterial street (Lee Boulevard) does not allow left-in or left-out turning movements, it is assumed for this report that 50% of traffic will enter and exit the proposed development using the existing right-in right-out driveway connection to Lee Boulevard while the remaining 50% of traffic will enter and exit the proposed development using the proposed full-access driveway connection to 5th Street West.

Because 5th Street West indirectly accesses the nearest arterial street (Lee Boulevard) to the east and to the west, it is assumed for this report that 50% of traffic will enter and exit the proposed development using the proposed full-access driveway connection to 5th Street West from/to the east while the remaining 50% of traffic will enter and exit the proposed development using the proposed full-access driveway connection to 5th Street West from/to the west.

3.3 EXISTING TRAFFIC CONDITIONS

Lee Boulevard is the nearest major road being accessed. The posted speed limit is forty-five (45) miles per hour. Based on the 2020 Traffic Count Report prepared by the Lee County Department of Transportation, traffic on Lee Boulevard near the proposed development heads west 81% of the time and east 19% of the time in the A.M. peak. In the P.M. peak, traffic near the proposed development heads east 62% of the time and west 38% of the time.

Lee Boulevard is classified by the Lee County Comprehensive Plan as a six-lane divided arterial road. Per the 2020 Lee County Concurrency Report, it has an existing “B” Level of Service near the proposed development with a 2019 peak direction of flow volume of two thousand one hundred thirty-one (2,131) vehicles per hour, a Performance Standard “E” Level of Service, and a Performance Standard Capacity of two thousand eight hundred forty (2,840) vehicles per hour.

5th Street West is a County-maintained minor collector road. The posted speed limit is thirty (30) miles per hour.

3.4 TURN LANE ANALYSIS (LEE BOULEVARD)

A. Traffic Conditions on Lee Boulevard (Arterial)

- P.M. Peak Hour Vehicle Trip Ends - 38
- Posted Speed Limit - 45 mph

B. Deceleration and Left Turn Lane

This turning movement does not exist at this existing driveway connection.

C. Separate Left Turn Lane on the Access Point Connection

This turning movement does not exist at this existing driveway connection.

D. Deceleration and Right Turn Lane

Based on the Turn Lane Policy, a deceleration and right turn lane is not required. Only one (1) of the required warrants is satisfied. The posted speed limit of the arterial street is above the threshold. However, the number of right-turning movements from the arterial street during the peak hour of the arterial street is below the threshold, the available site distance for the posted speed limit of the arterial street is above the threshold, the arterial street has not been designated as a controlled-access facility, and the access point connection is not controlled by a traffic signal.

E. Separate Right Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate right turn lane on the access point connection is not required. Only one (1) of the required warrants is satisfied. The posted speed limit of the intersecting street is equal to the threshold. However, the number of right-turning vehicles from the access point connection during the peak hour of the arterial street is below the threshold, the arterial street being entered has not been designated as a controlled-access facility, and the access point connection is not controlled by a traffic signal.

3.5 TURN LANE ANALYSIS (5TH STREET WEST)

A. Traffic Conditions on 5th Street West (Collector)

- P.M. Peak Hour Vehicle Trip Ends - 40
- Posted Speed Limit - 30 mph

B. Deceleration and Left Turn Lane

Based on the Turn Lane Policy, a deceleration and left turn lane is not required. None of the required warrants are satisfied. The posted speed limit of the collector street is below the threshold, the number of left-turning movements from the collector street during the peak hour of the collector street is below the threshold, the available site distance for the

posted speed limit of the collector street is above the threshold, and the access point connection is not controlled by a traffic signal.

C. Separate Left Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate right turn lane on the access point connection is not required. None of the required warrants are satisfied. The posted speed limit of the intersecting street is below the threshold, the number of left-turning vehicles from the access point connection during the peak hour of the collector street is below the threshold, and the access point connection is not controlled by a traffic signal.

D. Deceleration and Right Turn Lane

Based on the Turn Lane Policy, a deceleration and right turn lane is not required. None of the required warrants are satisfied. The posted speed limit of the collector street is below the threshold, the number of right-turning movements from the collector street during the peak hour of the collector street is below the threshold, the available site distance for the posted speed limit of the collector street is above the threshold, and the access point connection is not controlled by a traffic signal.

E. Separate Right Turn Lane on the Access Point Connection

Based on the Turn Lane Policy, a separate right turn lane on the access point connection is not required. None of the required warrants are satisfied. The posted speed limit of the intersecting street is below the threshold, the number of right-turning movements from the access point connection during the peak hour of the collector street is below the threshold, and the access point connection is not controlled by a traffic signal.

3.6 RECOMMENDED IMPROVEMENTS (LEE BOULEVARD)

One (1) typical right-in right-out driveway connection is existing. No other improvements are required or proposed.

It is worth noting that DOS2021-00082 for the adjoining parcel to the east has a cross-access easement that allows access to this existing driveway connection. Because of their additional turning movements at this driveway, turn-lane thresholds are exceeded. A west-bound right-turn lane will be constructed as part of DOS2021-00082.

3.7 RECOMMENDED IMPROVEMENTS (5th STREET WEST)

One (1) typical full-access driveway connection is proposed. No other improvements are required or proposed.

3.8 LEVEL OF SERVICE ANALYSIS (LEE BOULEVARD)

The proposed development will not introduce a significant increase in traffic flows and will not degrade the Level of Service of Lee Boulevard during the peak season below the Performance Standard Level of Service (see attached 100th Highest Hour Level of Service Calculation).

3.9 DETERMINATION OF POTENTIAL IMPACTS (LEE BOULEVARD)

The proposed development will add fourteen (14) vehicle trips to Lee Boulevard in the peak hour peak direction. The maximum service volume at LOS “E” of Lee Boulevard is two thousand eight hundred forty (2,840) vehicles in the peak hour in the peak direction.

Significance determination percentage = (Cumulative project traffic)/(maximum service volume at LOS standard) = $(14)/(2,840) = 0.49\%$.

This does not meet the definition of a significant impact on Lee Boulevard with less than 5% of the adopted peak hour LOS maximum service volume of the roadway.

The proposed development is not required to pay a proportionate share towards a future improvement of Lee Boulevard.

100TH HIGHEST HOUR LEVEL OF SERVICE CALCULATION LEE BOULEVARD

ENGINEER: TDM Consulting, Inc.
Dean Martin, P.E.

DATE: December 29, 2021

PROJECT NAME: Tommy's Express - 2910 Lee Boulevard

PROJECT LOCATION: East of Gunnery Road

PERMANENT COUNTING STATION NUMBER: 22

100TH HOUR V.P.H.

(Year & Rate) = 2019 2,131

YEAR FOLLOWING PROJECT CONSTRUCTION: 2.24

ADJUSTMENT FACTOR =

Count & Yr_{min}

Count & Yr_{max}

Adjustment Factor = $(\frac{0}{0})^{2.24} = 1.000$

ADJUSTED 100TH HOUR V.P.H. = 2,131 x 1.000 2,131

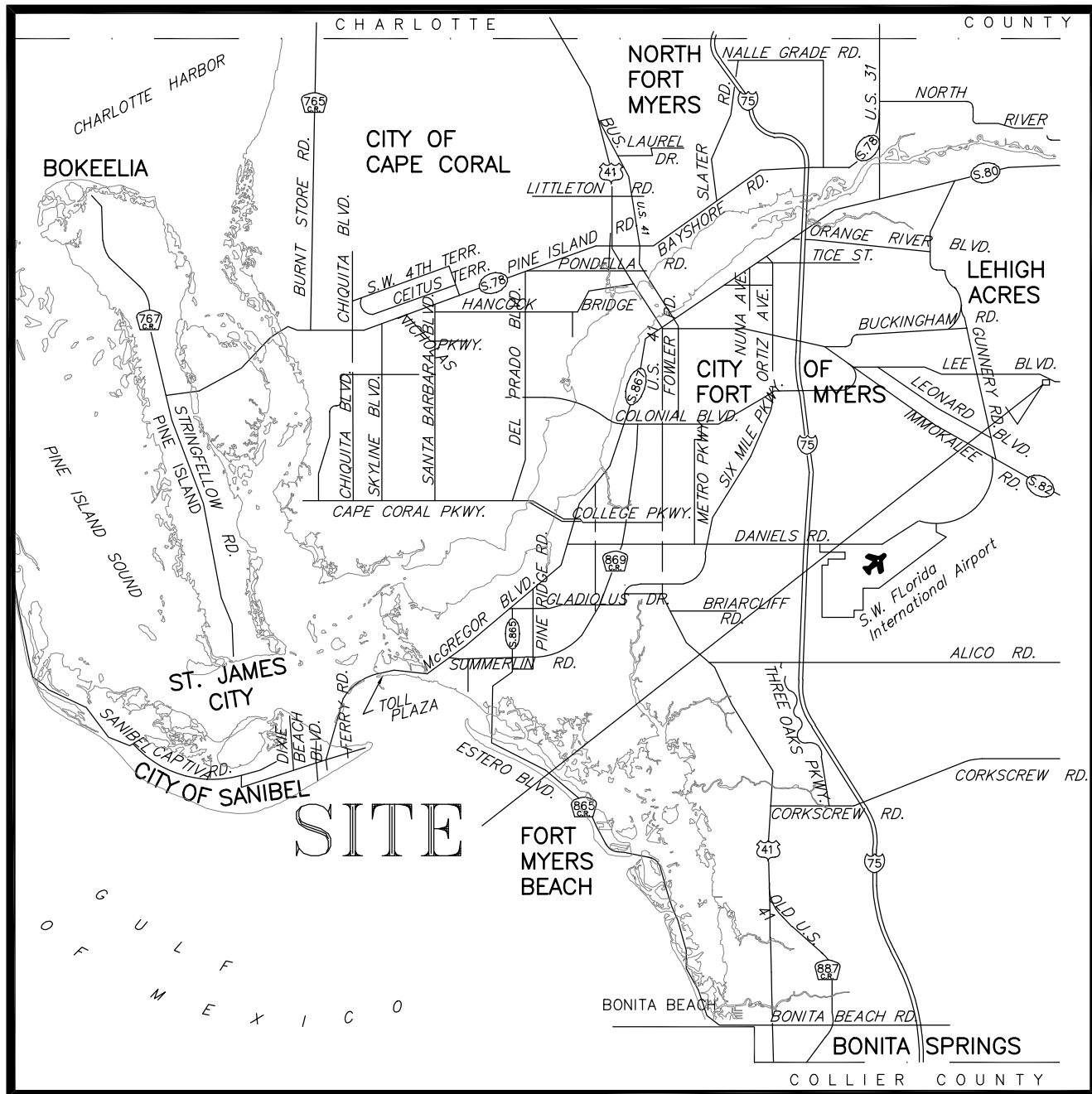
EXISTING LEVEL OF SERVICE = B

PROJECT V.P.H. = 23 (P.M. Exiting) x 62% (East-Bound) 14

TOTAL V.P.H. = 2,131 + 14 2,145

LEVEL OF SERVICE = B

COMMENTS: Growth to Build-Out is not Required



LOCATION SKETCH
N.T.S.

EXHIBIT 1
TRAFFIC IMPACT STATEMENT
LOCATION MAP
2910 LEE BOULEVARD
LEHIGH ACRES, FL 33936

SOURCE: TDM, 12/2021



43 Barkley Circle, Suite #200
Fort Myers, FL 33907
Phone: (239) 433-4231
Fax: (239) 433-9632
Email: dean@tdmconsulting.com
Certificate of Authorization # 29086

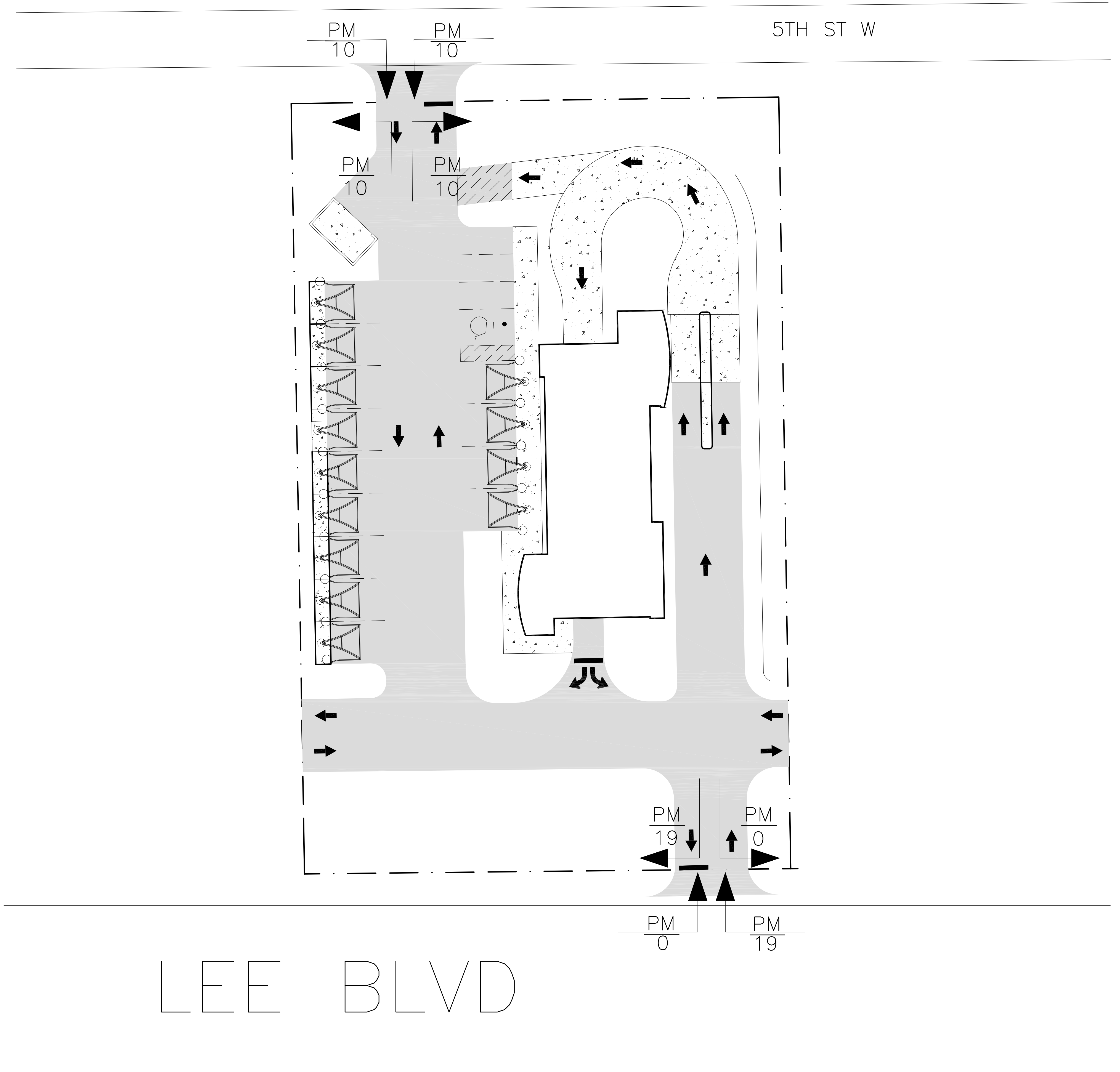
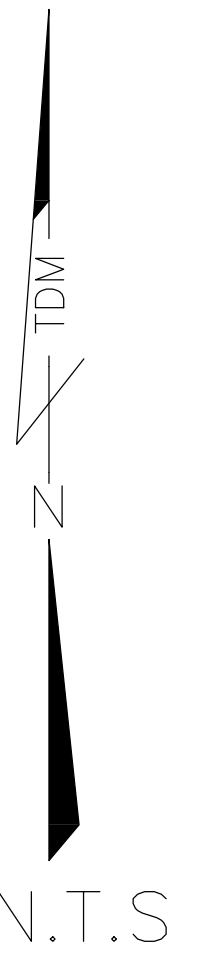
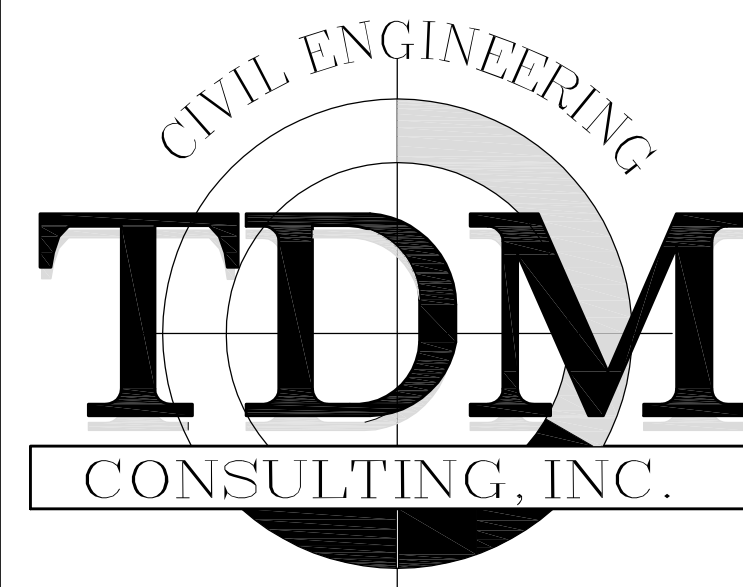


EXHIBIT 2
 TRAFFIC IMPACT STATEMENT
 PEAK HOUR TRAFFIC DISTRIBUTION
 2910 LEE BLVD
 LEHIGH ACRES, FL 33971

SOURCE: TDM, 12/21



43 Barkley Circle, Suite #200
 Fort Myers, FL 33907
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