TRAFFIC IMPACT STATEMENT

For

Russell Square RPUD

(Santa Barbara Boulevard, Collier County, Florida)

February 23, 2018

County TIS Review Fees
TIS Methodology Review Fee = $500.00
TIS (Major Study) Review Fee = $1,500.00

Prepared by:

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4711 7TH AVENUE SW
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CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 170611)

James M. Banks

Digitally signed by James M. Banks
Date: 2018.02.23 13:20:40 -05'00'

JAMES M. BANKS LICENSE No 43860 STATE OF FLORIDA PROFESSIONAL ENGINEER

2-23-2018

JAMES M. BANKS, P.E. DATE
FLORIDA REG. NO. 43860

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Conclusions

Based upon the findings of this report, it was determined that the proposed Russell Square RPUD will not have a significant or negative impact upon the surrounding road network. It was verified that all roadways, within the project's area of influence, currently have a surplus of capacity and can accommodate the traffic associated with the proposed residential community that will consist of 230 multi-family dwelling units and associated amenities. As determined, the road network will continue to operate at acceptable levels of service for the foreseeable future and the project will not create any off-site transportation deficiencies that need to be mitigated.

Site Access

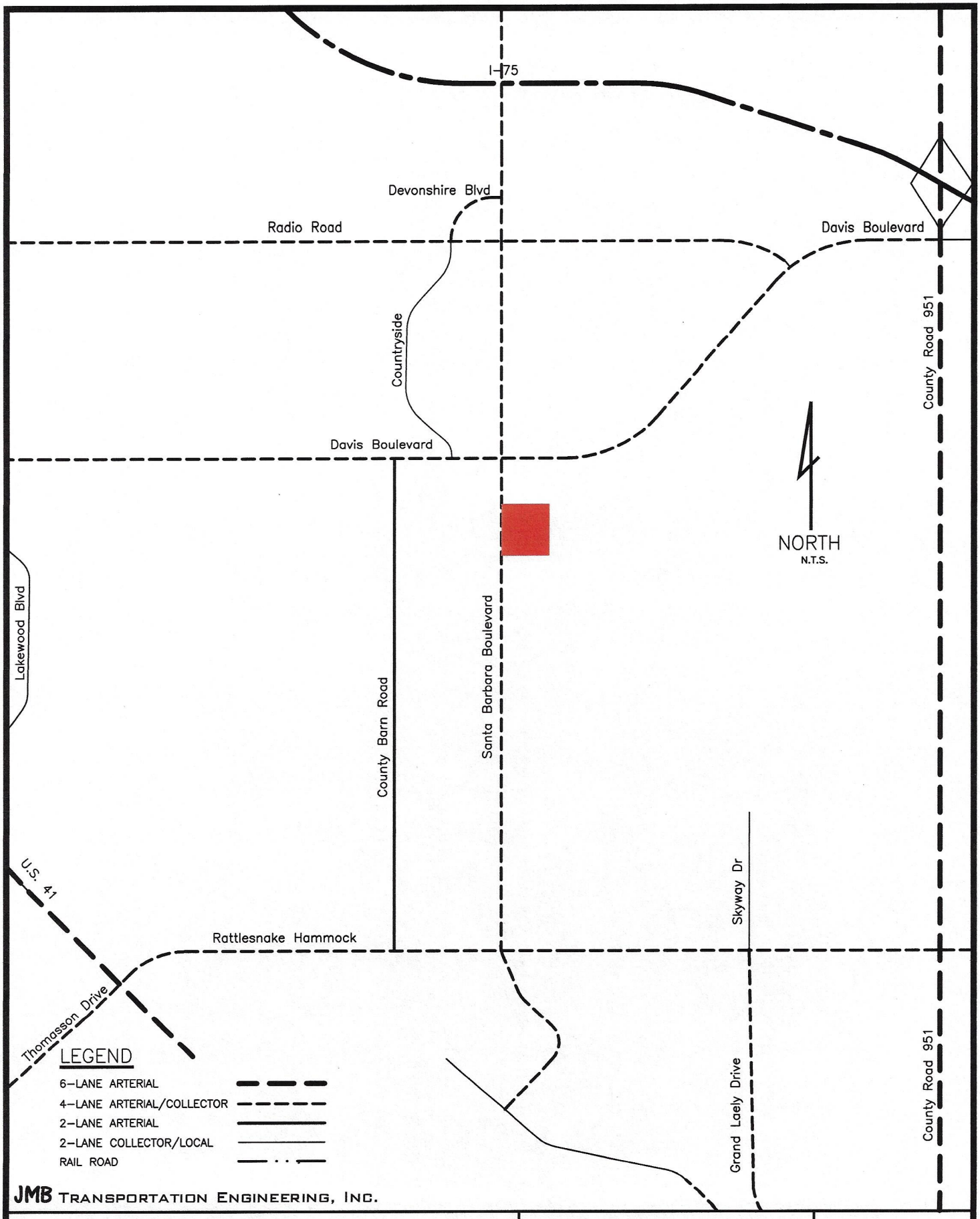
The project proposes to construct one (1) means of ingress/egress that will be located at the southern property boundary. The access will be created by extending a two-lane road from Santa Barbara Boulevard to the site's proposed entrance/exit. The entrance road will be aligned with an existing right-in/out and left-in (u-turn) median opening on Santa Barbara Boulevard. A right ingress turn lane and left ingress turn lane (u-turn) were previously constructed at the existing median opening and the report concludes that those turn lanes are adequate in length to accommodate the traffic generated by Russell Square. However, what will be the left-ingress turn lane was previously defined as a u-turn lane which will require restriping to indicate a left turn lane. Also, the right turn lane was previously striped as a recovery lane which will require restriping to indicate a right turn lane.

Scope of Project

Russell Square is a proposed residential community that will consist of 230 multi-family dwelling units. The 32 +/- acre site is located on the east side of Santa Barbara Boulevard and approximately one-half mile south of Davis Boulevard, within Collier County. It is expected that the project will be completed by the year 2023.

Table A
Proposed Land Use

Proposed Land Use	Number of Units
Multi-Family	230 d.u.'s



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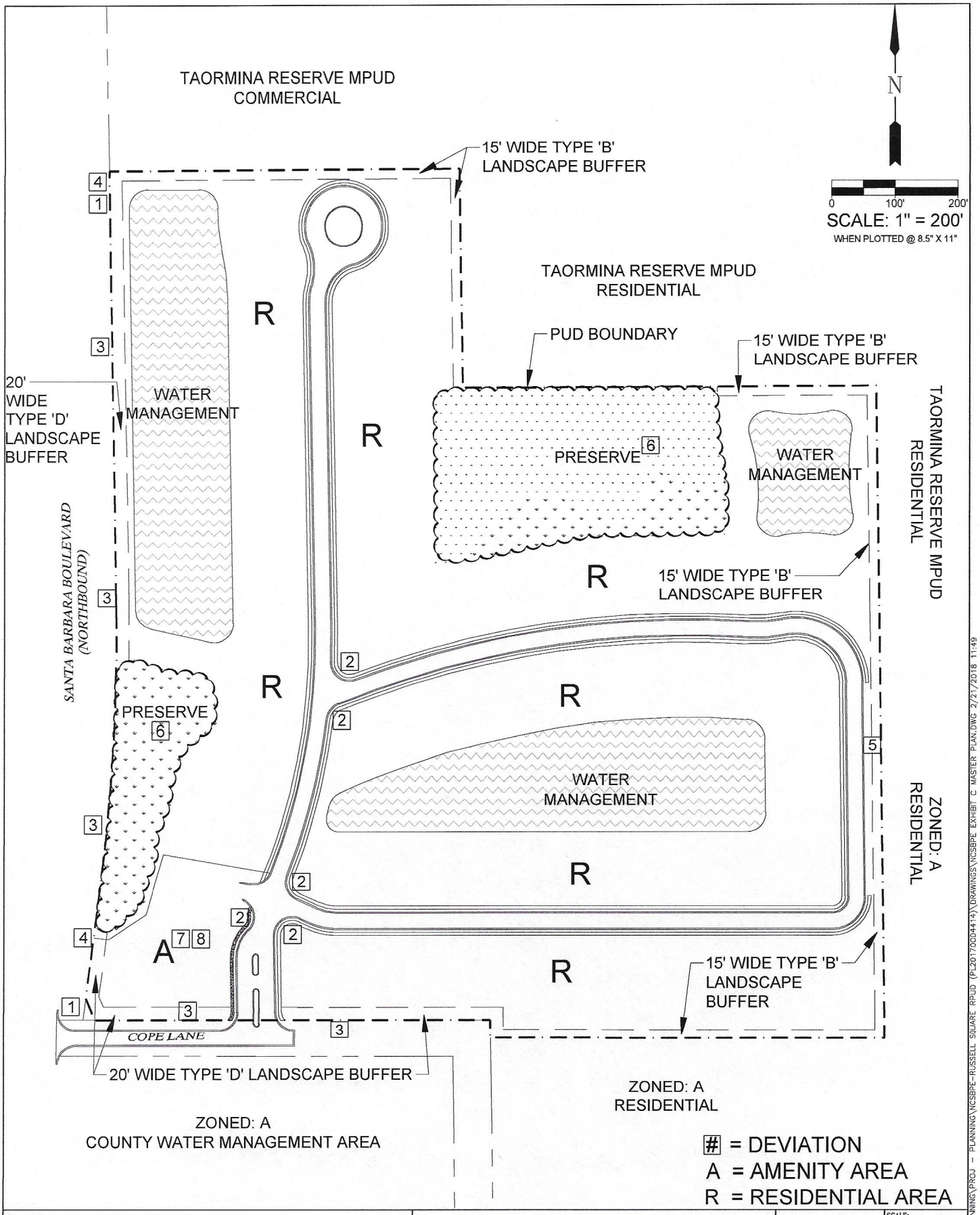
Russell Square February 23, 2018	**Project Location & Roadway Classification**	**FIGURE 1**



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RUSSELL SQUARE RPUD

EXHIBIT C1
MASTER PLAN

SCALE:	1" = 200' @ 8.5 x 11
JOB CODE:	NCSBPE
DATE:	FEBRUARY 2018
FILE NAME:	NCSBPE EXHIBIT C MASTER PLAN
SHEET	1 OF 2

\\GM-LOCAL\FILES\PLANNING\PROJ - PLANNING\NCSBPE-RUSSELL SQUARE RPUD (P12017000414)\DRAWINGS\NCSBPE EXHIBIT C MASTER PLAN.DWG 2/21/2018 11:49 AM

Project Generated Traffic

Traffic that can be expected to be generated by the project was estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was determined that land use code "Multi-Family" (LUC 220) was most appropriate for the purpose of estimating the net new trips associated with the RPUD.

As determined, Russell Square RPUD will generate 105 vph & 124 vph during the AM & PM peak hours, respectively. Table 1 depicts the computations performed in determining the total new trips. Table B provides a summary of the trip generation computation results that are shown in Table 1.

Table B
Site-Generated Trips
(Summation of Table 1)

Daily Weekday Trips Generated (ADT)	AM Peak Hour Trips Generated (vph)	PM Peak Hour Trips Generated (vph)
1,698	**105**	**124**

The report concludes that the project will generate more than 100 net new trip ends during the weekday highest peak hour. As such, the report investigates the traffic impacts associated with the project based upon the criteria set forth by the Collier County Government's Traffic Impact Statement Guidelines for developments generating "more than 100 trips", which is defined as a major study.

TABLE 1

TRIP GENERATION COMPUTATIONS

Russell Square

Land Use Code	Land Use Description	Build Schedule
220	**Multi-Family (Low Rise)**	230 Units

Land Use Code	Trip Period	Trip Generation Equation	Total Trips	Trips Enter/Exit
LUC 220	Daily Traffic (ADT) =	T = 7.56(X) - 40.86 =	**1,698 ADT**	
	AM Peak Hour (vph) =	Ln(T) = 0.95Ln(X)-0.51 = 23% Enter/ 77% Exit =	**105 vph**	24 / 81 vph
	PM Peak Hour (vph) =	Ln(T) = 0.89Ln(X)-0.02 = 63% Enter/ 37% Exit =	**124 vph**	78 / 46 vph

Existing + Committed Road Network

Figure 1 and Table 2A provide a detail of the surrounding E + C road network. Table 2A depicts the minimum level of service performance standards and capacity for the roads within the project's are of influence.

Santa Barbra Boulevard

Santa Barbara Boulevard varies from a four-lane to a six-lane major arterial that has a north/south orientation between its southern terminus at its intersection with Rattlesnake Hammock Road and its northern terminus at its intersection with Green Boulevard where the roadway continues north to Immokalee Road and is known as Logan Boulevard. Between Golden Gate Boulevard and Rattlesnake Hammock Road, Santa Barbara Boulevard is classified as a six-lane divided arterial having a maximum service capacity of 3,100 vphpd. Within proximity of the site, the posted speed limit of Santa Barbara Boulevard is 45 MPH.

Rattlesnake Hammock Road

Rattlesnake Hammock Road varies from a four-lane to a six-lane divided arterial that has an east/west orientation between its eastern terminus that extends past its intersection with C.R. 951 and its western terminus at its intersection with U.S. 41.

Davis Boulevard

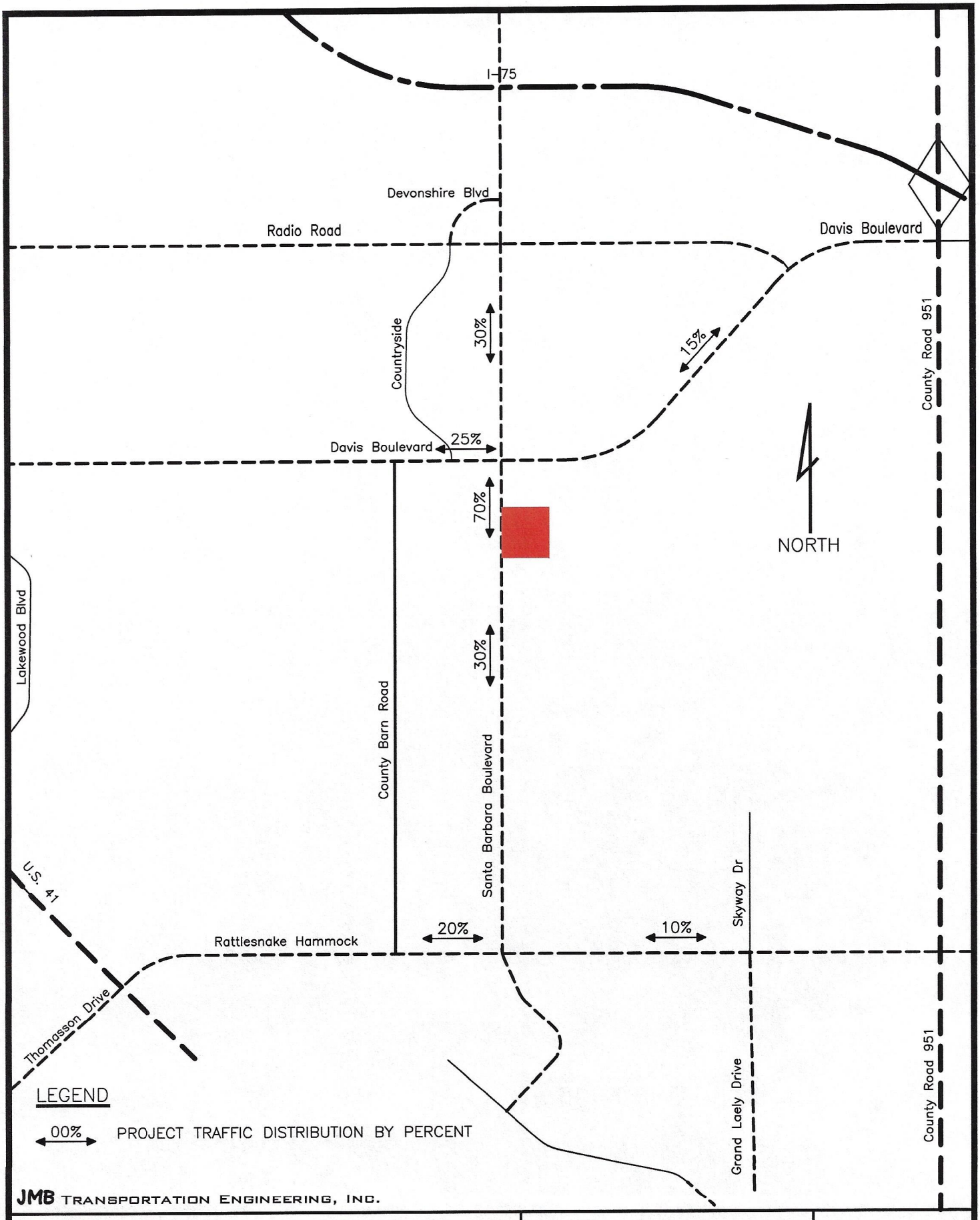
Davis Boulevard varies from a four-lane to a six-lane divided arterial that has an east/west orientation between its eastern terminus at its intersection with C.R. 951 and its western terminus at its intersection with U.S. 41.

Project Generated Traffic Distribution

The project's net new traffic was distributed to the surrounding road network based upon logical means of ingress/egress, current and future traffic patterns in the area, nearby businesses and recreational features, as well as growth trends for the surrounding areas. Table 2A and Figure 2A provide a detail of the traffic distributions to the adjacent road network. Figure 2B depicts the site-generated turning movements at the project's access on Santa Barbara Boulevard for AM & PM peak hours.

Area of Significant Impact

The area of significant impact was determined based upon Collier County's 2%, 2% and 3% criteria (i.e., if the project's traffic is 2% or more of a roadway's adopted level of service capacity, then the project has a significant impact upon that link). Table 2A describes the project traffic distributions and the level of impact on the surrounding roadways. Roads that were identified as being within the projects area impact are shown in Table 2A.



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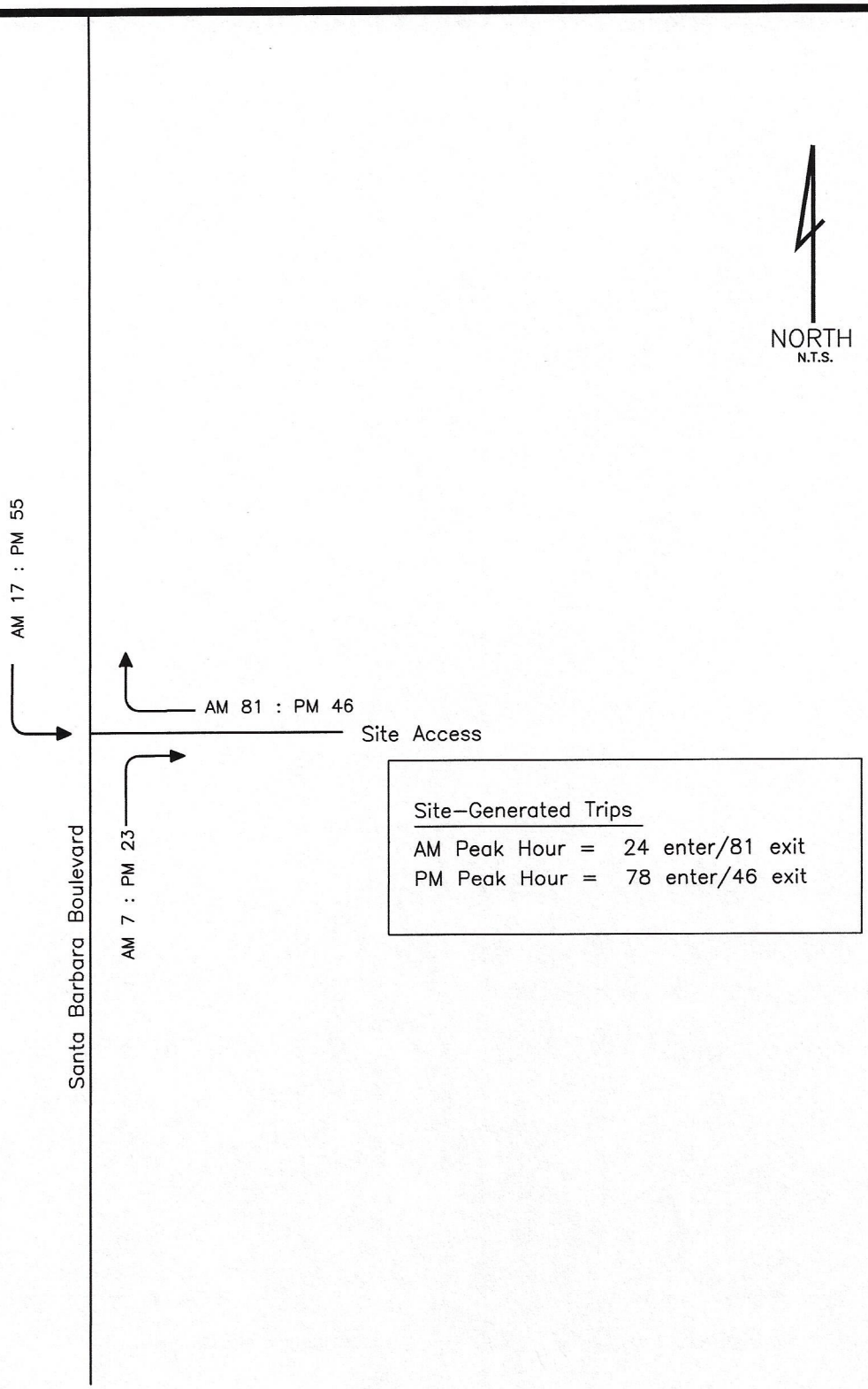
Russell Square February 23, 2018	**PROJECT-GENERATED TRAFFIC DISTRIBUTION**	**FIGURE 2A**

TABLE 2A
PROJECT'S AREA OF IMPACT

Project Traffic Peak Direction (vphpd) = **78** **Entering**
Project Traffic Non-Peak Direction (vph) = **46** **Exiting**

			Road Class	PK Dir. Serv. Vol. LOS	LOS Service PK Direction Volume (vphpd)	Project Traffic % Dist.	Project Pk Hr PK Dir (vphpd)	Project Pk Hr PK Dir	Project Pk Hr Non-PK Dir (vph)	Project Non-Pk DiR	Impact Standard	Percent Impact	Significant Impact
15.0	**Davis Boulevard**	County Barn to Santa Barbara	4D	D	2200	25.0%	20	E	12	W	2%	0.89%	NO
16.1		Santa Barbara to Radio Rd	6D	D	2900	15.0%	12	W	7	E	2%	0.40%	NO
16.2		Radio Rd to C.R 951	6U	D	2900	15.0%	12	W	7	E	3%	0.40%	NO
74.0	**Rattlesnake Ham.**	County Barn to Santa Barbara	4D	D	1900	20.0%	16	E	9	W	2%	0.82%	NO
75.0		Santa Barbara to C.R. 951	6D	D	2900	10.0%	8	W	5	E	2%	0.27%	NO
78.0	**Santa Barbara Blvd**	Radio Rd to Davis Blvd	6D	E	3100	30.0%	23	S	14	N	2%	0.75%	NO
79.1		Davis to Site	6D	E	3100	70.0%	55	S	32	N	2%	1.76%	NO
79.2		Site to Rattlesnake	6D	E	3100	30.0%	23	N	14	S	2%	0.75%	NO

4.2



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Russell Square February 23, 2018	**PROJECT-GENERATED TRAFFIC ASSIGNMENT**	**FIGURE 2B**

2017 thru 2023 Project Build-out Traffic Conditions

In order to establish 2017 thru 2023 project build-out traffic conditions, two forecasting methods were used.

The first traffic forecasting method was the County's traffic count data was adjusted for peak season conditions, peak hour conditions, peak direction, and an annual growth rate was then applied. The peak season/peak hour/peak direction and annual growth rates were derived from the 2017 Collier County AUIR Report. Using the annual growth rate, the 2023 background traffic conditions were determined, which are depicted in Table 2B.

The second traffic forecasting method was to add the vested trips (trip bank) identified in the 2017 AUIR report to the adjusted peak season, peak hour and peak direction traffic counts. The vested trips "+" 2023 background traffic volumes are depicted in Table 2B.

The greater of the two values produced by the two forecasting procedures was then considered to reflect the 2023 background traffic. The net new project generated traffic was then added to the background traffic. Table 2C provides a summary of the 2017 thru 2023 traffic conditions and the roadways' level of service and remaining available capacity. As shown, all project impacted roadways will continue to operate at the County's adopted minimum level of service thresholds at project build-out.

TABLE 2B
2017 & 2023 ROADWAY LINK VOLUMES

						Per Growth Rate Method		*Per Vested Trips Metho*
			2017 AUIR Traffic (vphpd)	AUIR Pk DiR	Growth Rate per AUIR	2023 Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	2023 Peak Hour PK Direction Background Per Vested Trips (vphpd)
15.0	**Davis Boulevard**	County Barn to Santa Barbara	1440	E	2.00%	**1622**	144	1584
16.1		Santa Barbara to Radio Rd	700	E	2.00%	788	163	**863**
74.0	**Rattlesnake Ham.**	County Barn to Santa Barbara	700	W	2.00%	**788**	40	740
75.0		Santa Barbara to C.R. 951	490	W	2.00%	552	171	**661**
78.0	**Santa Barbara Blvd**	Radio Rd to Davis Blvd	1350	N	3.98%	**1706**	213	1563
79.1		Davis to Site	890	S	4.00%	**1126**	112	1002

TABLE 2C
2023 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

			2017 Peak Hour PK Direction (vphpd)	LOS	2023 Peak Hour PK Direction Background (vphpd)	Bkgd Pk Dir	2023 Peak Hour PK Direction Background LOS	Project Pk Hr PK Dir (vphpd)	Prjct Pk Dir	Project Pk Hr Non-PK Dir (vph)	Prjct Non-Pk Dir	2023 Build-Out Peak Hour PK Dir (vphpd)	Serv. Vol. Pk Hr PK Dir (vphpd)	2023 Build-Out Peak Hour PK Direction v/c Ratio	2023 Build-Out Peak Hour PK Direction LOS
15.0	**Davis Boulevard**	County Barn to Santa Barbara	1440	C	1584	E	C	20	E	12	W	1604	2200	0.73	C
16.1		Santa Barbara to Radio Rd	700	A	863	E	A	12	W	7	E	870	2900	0.30	A
74.0	**Rattlesnake Ham.**	County Barn to Santa Barbara	700	A	740	W	A	16	E	9	W	749	1900	0.39	A
75.0		Santa Barbara to C.R. 951	490	A	661	W	A	8	W	5	E	669	2900	0.23	A
78.0	**Santa Barbara Blvd**	Radio Rd to Davis Blvd	1350	C	1563	N	C	23	S	14	N	1577	3100	0.51	C
79.1		Davis to Site	890	A	1002	S	A	55	S	32	N	1057	3100	0.34	A