

# TRAFFIC IMPACT STATEMENT

For

## Christ the King Presbyterian Church (Santa Barbra Boulevard, Collier County, Florida)

August 7, 2018  
Revised October 5, 2018

---

County TIS Review Fees

TIS Methodology Review Fee = \$500.00

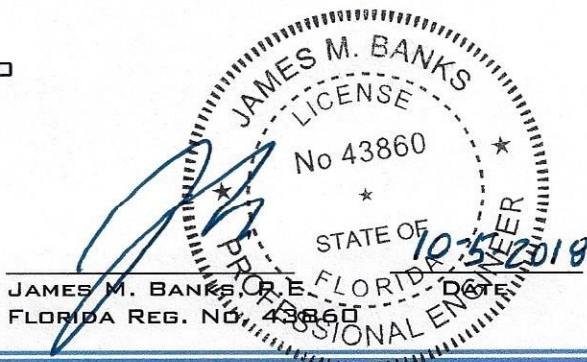
TIS (Small-Scale Study) Review Fee = \$0.00

**Prepared by:**

**JMB** TRANSPORTATION ENGINEERING, INC.  
4711 7TH AVENUE SW  
NAPLES, FLORIDA 34119

CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 180713)



## **TABLE OF CONTENTS**

<b>Conclusions</b>	<b>2</b>
<b>Methodology</b>	<b>2</b>
<b>Scope of Project</b>	<b>2</b>
<b>Table A - Existing &amp; Proposed Development</b>	<b>2</b>
<b>Figure 1 - Project Location &amp; E+C Road Classification</b>	<b>2.1</b>
<b>Master Concept Plan</b>	<b>2.2</b>
<b>Project Generated Traffic</b>	<b>3</b>
<b>Table B - Net New Trips Generated</b>	<b>3</b>
<b>Table 1 - Trip Generation Computations</b>	<b>3.1</b>
<b>Existing + Committed Road Network</b>	<b>4</b>
<b>Project Traffic Distribution</b>	<b>4</b>
<b>Area of Significant Impact</b>	<b>4</b>
<b>Figure 2 - Project Traffic Distribution</b>	<b>4.1</b>
<b>Table 2A - Area of Impact/Road Classification</b>	<b>4.2</b>
<b>Site Access Conditions</b>	<b>5</b>
<b>Table C - Build-out Traffic vs. Intersection Improvements</b>	<b>5</b>
<b>HCS Intersection Analysis</b>	<b>5.1</b>
<b>2017 thru 2020 Project Build-out Traffic Conditions</b>	<b>6</b>
<b>Table 2B - 2017 &amp; 2020 Link Volumes</b>	<b>6.1</b>
<b>Table 2C - 2020 Link Volumes/Capacity Analysis</b>	<b>6.2</b>

## Conclusions

Based upon the findings of this report, it was determined that the proposed Christ the King Orthodox Presbyterian Church 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 worship hall. 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 on Crews County Road and an "emergency only" access on Sunset Boulevard. Crews Road provides access to Santa Barbara Boulevard via a right-in/out and directional left-in median opening. A right ingress turn lane and left ingress turn lane 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 Christ the King Orthodox Presbyterian Church.

## Methodology

On July 26, 2018, a Traffic Impact Statement (TIS) Methodology Report was submitted to the office of Collier County Transportation Planning Department. *The \$500.00 methodology meeting fee will be paid at the time of submitting the zoning application. A copy of the methodology, which is pending approval, has been provided in the appendix (refer to pages M1 thru M11). Note, at the time of the methodology review the proposed number o seats was 450, but subsequently was reduced to 400 seats.*

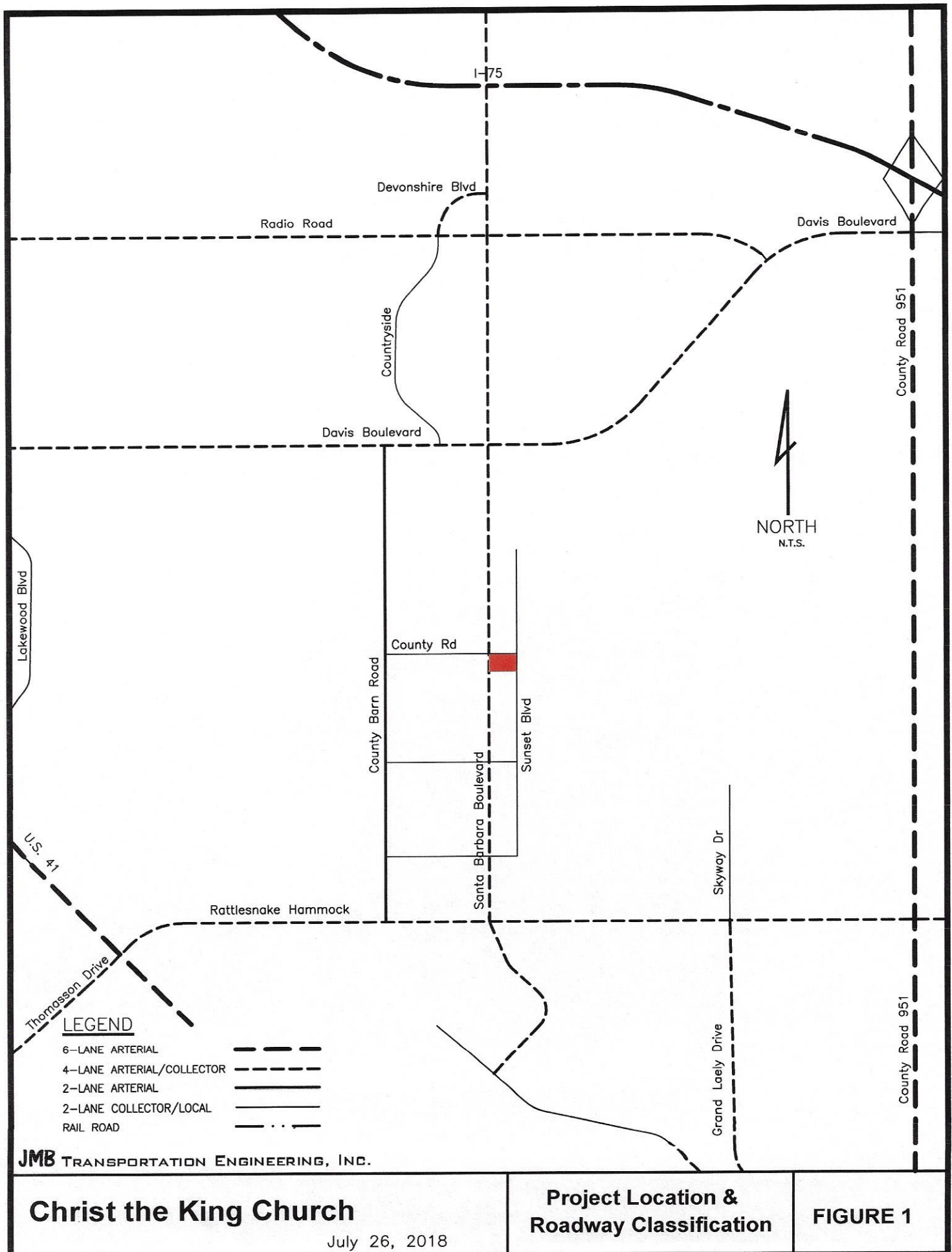
## Scope of Project

Christ the King Orthodox Presbyterian Church is a proposed worship hall that will consist of 21,000 square feet of structures and 400 seats. *Note, at the time of the methodology review the proposed number o seats was 450, but subsequently was reduced to 400 seats.* The site is located on the southeast corner of County Road and Santa Barbara Boulevard and approximately one (1) mile south of Davis Boulevard, within Collier County. It is expected that the project will be completed by the year 2020.

**Table A**  
**Proposed Land Use**

Proposed Land Use	Size
Worship Hall/Church	21,000 s.f. 400 seats









### **Project Generated Traffic**

Traffic that can be expected to be generated by the proposed church was estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 10<sup>th</sup> Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was concluded that land use code "Church" (LUC 560) was most appropriate in estimating the new trips.

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)
<b>176</b>	<b>4</b>	<b>12</b>

The report concludes that the project will generate less than 50 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 "less than 50 trips", which is defined as a small-scale study.

**TABLE 1**  
**TRIP GENERATION COMPUTATIONS**  
Christ the King Church

Land Use

<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>
560	Church	(Weekday) 21,000 s.f.
560	Church	(Weekday) 400 Seats
560	Church	(Sunday) 400 Seats
560	Church	(Sunday) 21,000 s.f.

Land Use

<u>Code</u>	<u>Trip Period</u>	<u>Trip Generation Equation</u> (Based upon S.F.)	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
LUC 560	(Weekday)			
	Daily Traffic (ADT) =	$T = 6.14(X) + 17.09 =$	146 ADT	
	AM Peak Hour (vph) =	$T = 0.36(X) - 0.74 =$ 60% Enter/ 40% Exit =	7 vph	4 / 3 vph
	PM Peak Hour (vph) =	$T = 0.37(X) + 3.90 =$ 45% Enter/ 55% Exit =	12 vph	5 / 6 vph
*****				
LUC 560	(Weekday)	(Based upon Seats)		
	Daily Traffic (ADT) =	$T = 0.44(X) =$	176 ADT	
	AM Peak Hour (vph) =	$T = 0.01(X) =$ 50% Enter/ 50% Exit =	4 ADT	2 / 2 vph
	PM Peak Hour (vph) =	$T = 0.03(X) =$ 40% Enter/ 60% Exit =	12 ADT	5 / 7 vph
*****				
LUC 560	(Sunday)	(Based upon Seats)		
	Daily Traffic (ADT) =	$T = 1.21(X) =$	484 ADT	
	Peak Hour (vph) =	$T = 0.63(X) - 76.74 =$ 49% Enter/ 51% Exit =	175 vph	86 / 89 vph
*****				
LUC 560	(Sunday)	(Based upon S.F.)		
	Daily Traffic (ADT) =	$T = 27.63(X) =$	580 ADT	
	Peak Hour (vph) =	$T = 8.18(X) + 63.81 =$ 48% Enter/ 52% Exit =	236 vph	113 / 123 vph

**TABLE 2A**  
**PROJECT'S AREA OF IMPACT**

		Project Traffic Peak Direction (vphpd) =		7	Exiting						
		Project Traffic Non-Peak Direction (vph) =		5	Entering						
Road Class	LOS Service		Project		Project		Project		Project		Significant Impact
	PK Dir.	PK Direction	Project Traffic	PK Hr	Project Pk Hr	Project Non-Pk Dir	Project Pk Hr	Project Non-Pk Dir	Percent Impact		
	Serv. Vol.	Volume (vphpd)	% Dist.	PK Dir (vphpd)	PK Dir	Non-Pk Dir (vph)	DiR	Standard	Impact		



### **2017 thru 2020 Project Build-out Traffic Conditions**

In order to establish 2017 thru 2020 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 2020 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 "+" 2020 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 2020 background traffic. The net new project generated traffic was then added to the background traffic. Table 2C provides a summary of the 2017 thru 2020 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 & 2020 ROADWAY LINK VOLUMES**

		Per Growth Rate Method				Per Vested Trips Method			
		2017		2020		2020		2020	
		AUIR Traffic (vphpd)	AUIR Pk Dir	Growth Rate per AUIR	Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	Peak Hour PK Direction Background Per Vested Trips (vphpd)	Peak Hour PK Direction Background Per Vested Trips (vphpd)	Peak Hour PK Direction Background Per Vested Trips (vphpd)
15.0	Davis Boulevard	1440	E	2.00%	1528	144	1584	1584	1584
16.1	County Barn to Santa Barbara Santa Barbara to Radio Rd	700	E	2.00%	743	163	863	863	863
74.0	Rattlesnake Ham.	700	W	2.00%	743	40	740	740	740
75.0	County Barn to Santa Barbara Santa Barbara to C.R. 951	490	W	2.00%	520	171	661	661	661
78.0	Santa Barbara Blvd	1350	N	3.98%	1518	213	1563	1563	1563
79.1	Radio Rd to Davis Blvd	890	S	4.00%	1001	112	1002	1002	1002
79.2	Davis Blvd to Site Site to Rattlesnake Hammock	890	S	4.00%	1001	112	1002	1002	1002

**TABLE 2C**  
**2020 ROADWAY LINK VOLUME/CAPACITY ANALYSIS**

		2017				2020				2020				2020				2020			
		Peak Hour		LOS	Peak Hour		Peak Hour		Project		Project		Build-Out		Serv. Vol.		Build-Out		2020		
		PK Direction	(vphpd)		PK Direction	Bkgs	PK Direction	Bkgs	Pjct	Pk Hr	Pjct	Pk Hr	PK Dir	(vphpd)	PK Dir	Pk Hr	PK Dir	v/c Ratio	PK Direction	PK Direction	
																					Background
15.0	Davis Boulevard	County Barn to Santa Barbara	1440	C	1584	E	C	1	W	1	E	1585	2200	0.72	C						
16.1		Santa Barbara to Radio Rd	700	B	863	E	B	1	E	1	W	864	2900	0.30	B						
74.0	Rattlesnake Ham.	County Barn to Santa Barbara	700	B	743	W	B	1	W	1	E	744	1900	0.39	B						
75.0		Santa Barbara to C.R. 951	490	B	661	W	B	1	E	1	W	662	2900	0.23	B						
78.0	Santa Barbara Blvd	Radio Rd to Davis Blvd	1350	B	1563	N	B	2	N	2	S	1565	3100	0.50	B						
79.1		Davis Blvd to Site	890	B	1002	S	B	5	N	3	S	1005	3100	0.32	B						
79.2		Site to Rattlesnake Hammock	890	B	1002	S	B	2	S	2	N	1004	3100	0.32	B						



# TRAFFIC IMPACT STATEMENT METHODOLOGY REPORT

For

**Christ the King Presbyterian Church**  
(Santa Barbra Boulevard, Collier County, Florida)

July 26, 2018

---

County TIS Review Fees

*TIS Methodology Review Fee = \$500.00*

*TIS (Small-Scale Study) Review Fee = \$0.00*

**Prepared by:**

**JMB** TRANSPORTATION ENGINEERING, INC.  
4711 7TH AVENUE SW  
NAPLES, FLORIDA 34119

CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 180713)

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

7-26-2018  
DATE

## APPENDIX A

### INITIAL MEETING CHECKLIST

**Suggestion:** Use this Appendix as a worksheet to ensure that no important elements are overlooked. Cross out the items that do not apply.

Date: 7-26-2018 Time: \_\_\_\_\_

Location: Collier County Government Offices (North Horseshoe Drive)

#### **People Attending:**

Name, Organization, and Telephone Numbers

- 1) James M. Banks, JMB Transportation Engineering, Inc., 239-919-2767
- 2) Michael Sawyer, Collier County Government
- 3)
- 4)

#### **Study Preparer:**

Preparer's Name and Title: James M. Banks, P.E., President

Organization: JMB Transportation Engineering, Inc.

Address & Telephone Number: 4711 7th Avenue SW Naples, Florida 34119 (239)-919-2767

#### **Reviewer(s):**

Reviewer's Name & Title: Michael Sawyer  
Collier County Transportation Division

#### **Applicant:**

Applicant's Name:

Address:

Telephone Number:

#### **Proposed Development:**

Name: Christ the King Orthodox Presbyterian Church

Location: Southeast corner of County Road and Santa Barbara Blvd

Land Use Type: Church (450 seats)

ITE Code #: LUC 560

Proposed number of development units: 18,000 s.f. of structures and 450 seats

Other:

Description:

Zoning:

Existing: Vacant

Comprehensive plan recommendation:

Requested:

Findings of the Preliminary Study: See the attached

**Study Type:**            Small-Scale TIS

**Study Area:**

Boundaries: Based upon the County's 2%, 2% & 3% impact rule. See attached

Additional intersections to be analyzed: None

Horizon Year(s): 2020

Analysis Time Period(s): PM Peak

Future Off-Site Developments: None

Source of Trip Generation Rates: ITE Trip Generation Manual, 10th Edition (Table 1)

**Reductions in Trip Generation Rates:**

Pass-by trips:

Internal trips (PUD):

Transmit use:

Other:

**Horizon Year Roadway Network Improvements:**    2022 per Collier County's 5-year CIE.

**Methodology & Assumptions:**

Non-site traffic estimates: See Attached

Site-trip generation: See Table 1

Trip distribution method: Based upon manual assignment (See Table 2A & Figure 2A)

Traffic assignment method:

Traffic growth rate: Per Collier County Historical & Current AUIR Reports, but not less than 2% or background or vested trips method, whichever is greater.



**Special Features:** (from preliminary study or prior experience)

Accidents locations: \_\_\_\_\_

Sight distance: \_\_\_\_\_

Queuing: \_\_\_\_\_

Access location & configuration: \_\_\_\_\_

Traffic control: \_\_\_\_\_

Signal system location & progression needs: \_\_\_\_\_

On-site parking needs: \_\_\_\_\_

Data Sources: \_\_\_\_\_

Base maps: \_\_\_\_\_

Prior study reports: \_\_\_\_\_

Access policy and jurisdiction: \_\_\_\_\_

Review process: \_\_\_\_\_

Requirements: \_\_\_\_\_

Miscellaneous: \_\_\_\_\_

---

---

Small Scale Study – No Fee   X  

Minor Study - \$750.00 \_\_\_\_\_

Major Study - \$1500.00 \_\_\_\_\_  
Includes 2 intersections

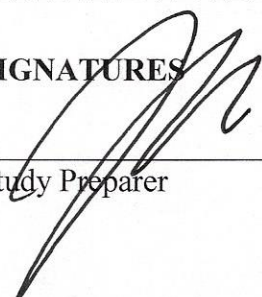
Additional Intersections - \$500.00 each   None  

*All fees will be agreed to during the Methodology meeting and must be paid to Transportation prior to our sign-off on the application.*

---

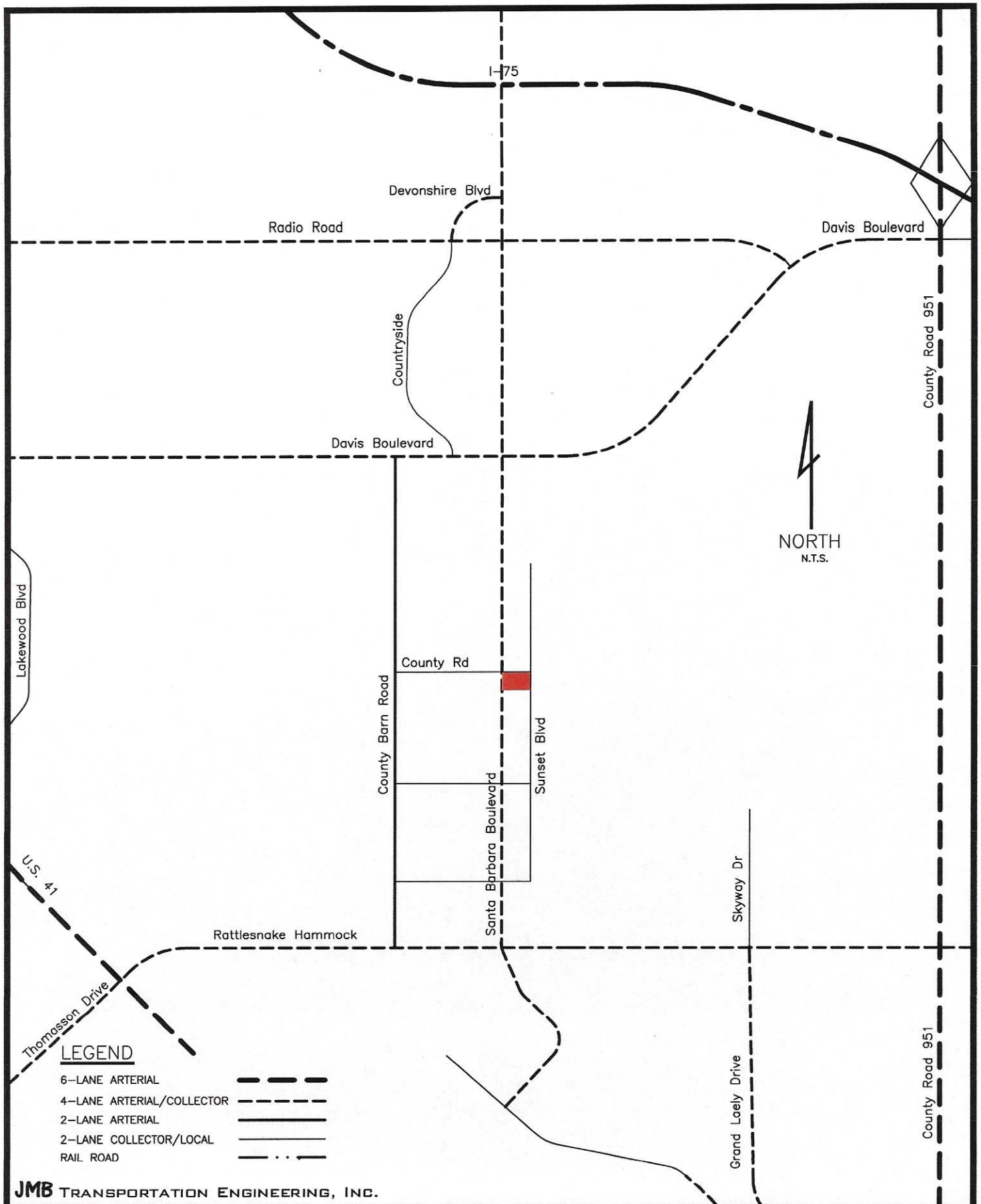
---

**SIGNATURES**

  
\_\_\_\_\_  
Study Preparer

\_\_\_\_\_  
Reviewers

\_\_\_\_\_  
Applicant



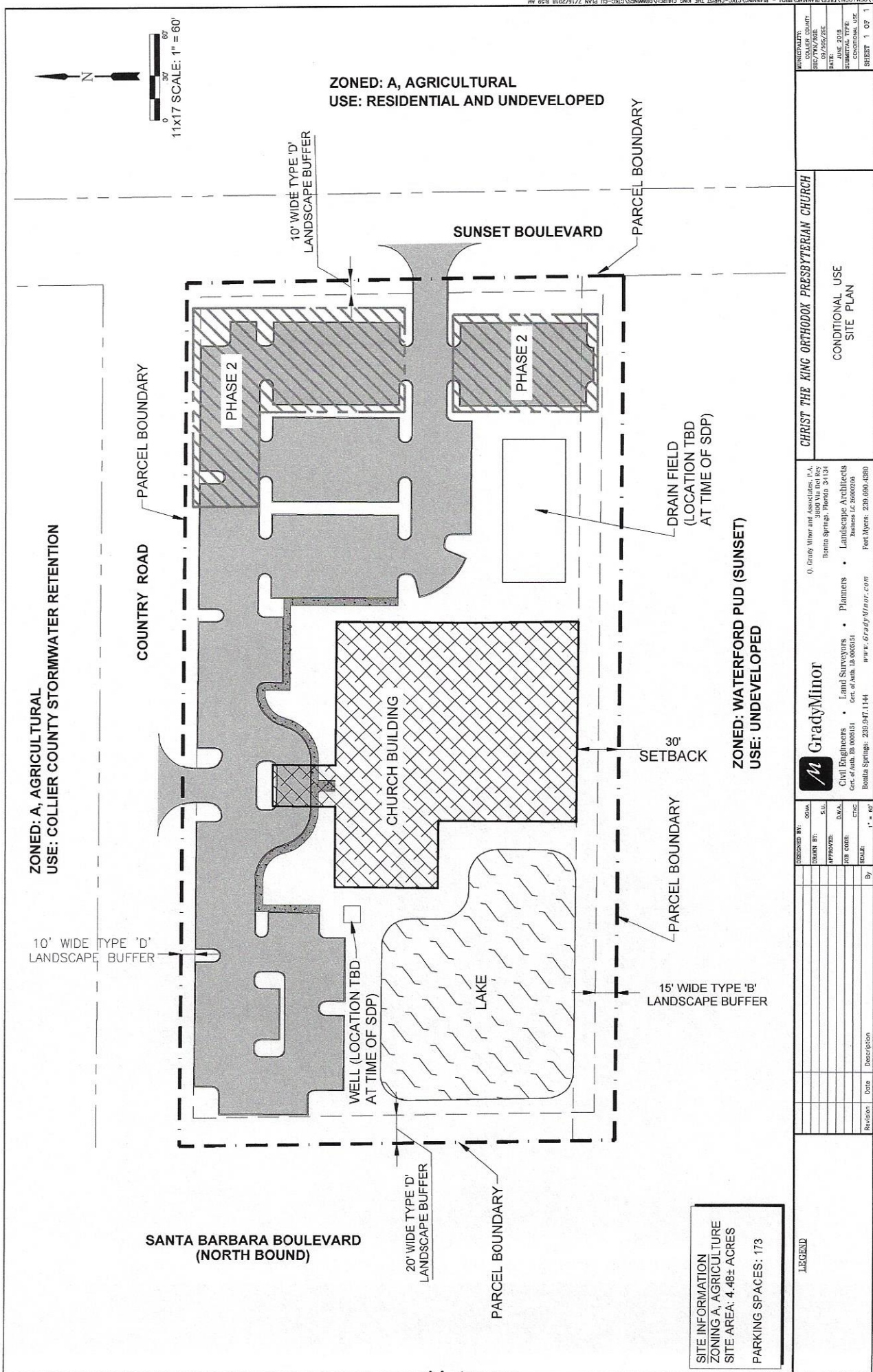
**Christ the King Church**

July 26, 2018

**Project Location &  
Roadway Classification**

**FIGURE 1**

M5



ZONED: A, AGRICULTURAL  
USE: COLLIER COUNTY STORMWATER RETENTION

ZONED: A, AGRICULTURAL  
USE: RESIDENTIAL AND UNDEVELOPED

ZONED: WATERFORD PUD (SUNSET)  
USE: UNDEVELOPED

SITE INFORMATION  
ZONING A, AGRICULTURE  
SITE AREA: 4.48± ACRES  
PARKING SPACES: 173

<p>DESIGNED BY: [ ]</p> <p>DRAWN BY: [ ]</p> <p>APPROVED: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>	
<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>	
<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>		<p>PROJECT: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p> <p>DATE: [ ]</p>	

**GradyMinor**

Civil Engineers • Land Surveyors • Planners • Landscape Architects

220.947.1144 • 220.947.1144 • 220.947.1144 • 220.947.1144

www.GradyMinor.com

0. Grady Minor and Associates, P.A.  
3000 Via del Rey  
Boca Raton, Florida 33431

Christ the King Orthodox Presbyterian Church

CONDITIONAL USE  
SITE PLAN

SHEET 1 OF 1

M6

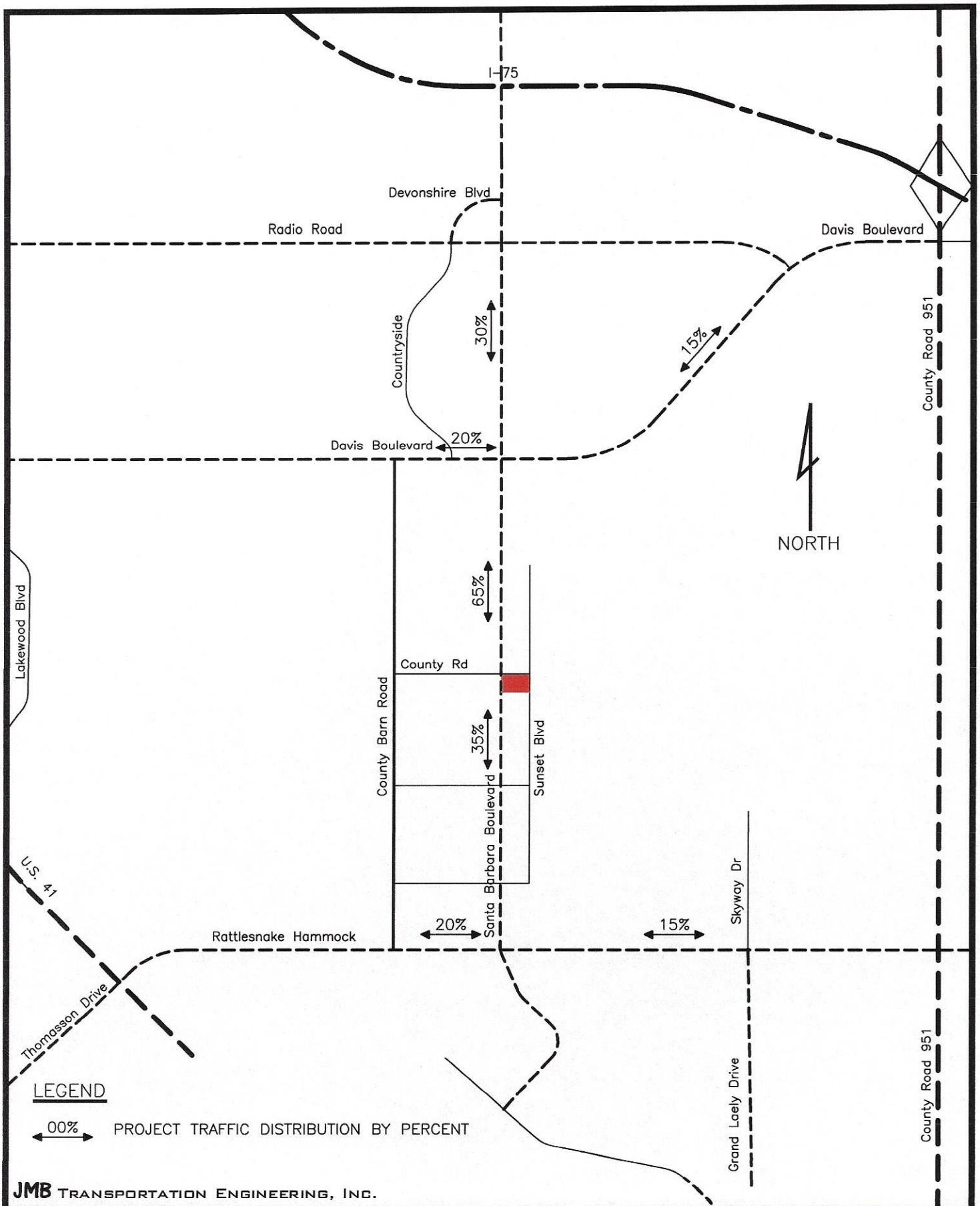


**TABLE 1**  
**TRIP GENERATION COMPUTATIONS**  
Christ the King Church

Land Use

<u>Code</u>	<u>Land Use Description</u>	<u>Build Schedule</u>
<b>560</b>	<b>Church</b>	(Sunday) 450 Seats
<b>560</b>	<b>Church</b>	(Weekday) 18,000 s.f.

	<u>Trip Period</u>	<u>Trip Generation Equation</u>	<u>Total Trips</u>	<u>Trips Enter/Exit</u>
<b>LUC 560</b>	(Sunday)		(Sunday)	
	Daily Traffic (ADT) =	$T = 1.85(X) =$	<b>833 ADT</b>	
	Peak Hour (vph) =	$T = 0.61(X) =$	<b>275 vph</b>	138 / 137 vph
		50% Enter/ 50% Exit =		
<b>LUC 560</b>	(Weekday)		(Weekday)	
	Daily Traffic (ADT) =	$T = 9.11(X) =$	<b>164 ADT</b>	
	AM Peak Hour (vph) =	$T = 0.56(X) =$	<b>10 vph</b>	6 / 4 vph
		62% Enter/ 38% Exit =		
	PM Peak Hour (vph) =	$T = 0.34(X) + 5.24 =$	<b>11 vph</b>	5 / 6 vph
		48% Enter/ 52% Exit =		



**Christ the King Church**

July 26, 2018

**PROJECT-GENERATED  
TRAFFIC DISTRIBUTION**

**FIGURE 2A**

M8

**TABLE 2A**  
**PROJECT'S AREA OF IMPACT**

Project Traffic Peak Direction (vphpd) = **6** Exiting  
 Project Traffic Non-Peak Direction (vph) = **5** Entering

	Road	LOS Service				Project				Project				Significant Impact
		PK Dir.	Serv. Vol.	PK Direction		Project Traffic	Project		Project		Percent Impact	Significant Impact		
				Volume	% Dist.		PK Hr	PK Dir	Non-PK Dir	Non-PK			Impact	
		Class	LOS	(vphpd)		(vph)	Dir	Project	PK Hr	Non-PK Dir	Non-PK	Impact	Standard	
15.0	Davis Boulevard	4D	D	2200	20.0%	1	W	W	1	1	E	2%	2%	NO
16.1	County Barn to Santa Barbara	6D	D	2900	15.0%	1	E	E	1	1	W	2%	2%	NO
16.2	Santa Barbara to Radio Rd	6U	D	2900	15.0%	1	E	E	1	1	W	3%	3%	NO
74.0	Radio Rd to C.R. 951													
74.0	Rattlesnake Ham.	4D	D	1900	20.0%	1	W	W	1	1	E	2%	2%	NO
75.0	County Barn to Santa Barbara	6D	D	2900	15.0%	1	E	E	1	1	W	2%	2%	NO
78.0	Santa Barbara Blvd	6D	E	3100	30.0%	2	N	N	2	2	S	2%	2%	NO
79.1	Radio Rd to Davis Blvd	6D	E	3100	65.0%	4	N	N	3	3	S	2%	2%	NO
79.2	Davis Blvd to Site	6D	E	3100	35.0%	2	S	S	2	2	N	2%	2%	NO
	Site to Rattlesnake Hammock													



**TABLE 2B**  
**2017 & 2020 ROADWAY LINK VOLUMES**

		Per Growth Rate Method					Per Vested Trips Method		
		2017 AUIR Traffic (vphpd)	AUIR Pk DIR	Growth Rate per AUIR	2020 Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	2020 Peak Hour PK Direction Background Per Vested Trips (vphpd)		
15.0	Davis Boulevard								
16.1	County Barn to Santa Barbara	1440	E	2.00%	1528	144	1584		
	Santa Barbara to Radio Rd	700	E	2.00%	743	163	863		
74.0	Rattlesnake Ham.								
75.0	County Barn to Santa Barbara	700	W	2.00%	743	40	740		
	Santa Barbara to C.R. 951	490	W	2.00%	520	171	661		
78.0	Santa Barbara Blvd								
79.1	Radio Rd to Davis Blvd	1350	N	3.98%	1518	213	1563		
79.2	Davis Blvd to Site	890	S	4.00%	1001	112	1002		
	Site to Rattlesnake Hammock	890	S	4.00%	1001	112	1002		

M10

**TABLE 2C**  
**2020 ROADWAY LINK VOLUME/CAPACITY ANALYSIS**

		2017				2020				2020				2020				2020	
		Peak Hour PK Direction	LOS	Peak Hour		Peak Hour		Project		Project		Build-Out		Serv. Vol.		Build-Out		2020 Peak Hour	2020 Peak Hour
				Background	PK Direction	Bkugd	PK Direction	Pk Hr	Prjct	Pk Hr	Prjct	PK Dir	Non-PK Dir	PK Dir	PK Dir	PK Dir	PK Dir		
		(vphpd)		(vphpd)	Dir	LOS	Dir	LOS	(vphpd)	Dir	(vphpd)	Dir	(vphpd)	(vphpd)	(vphpd)	(vphpd)	(vphpd)	(vphpd)	(vphpd)
15.0	Davis Boulevard	1440	C	1584	E	C	W	1	1	W	E	1585	2200	1900	0.72	C			
16.1		700	B	863	E	B	E	1	1	E	W	864	2900	2900	0.30	B			
74.0	Rattlesnake Ham.	700	B	743	W	B	W	1	1	W	E	744	1900	1900	0.39	B			
75.0		490	B	661	W	B	W	1	1	E	W	662	2900	2900	0.23	B			
78.0	Santa Barbara Blvd	1350	B	1563	N	B	N	2	2	N	S	1565	3100	3100	0.50	B			
79.1		890	B	1002	S	B	S	4	3	N	S	1005	3100	3100	0.32	B			
79.2	Site to Rattlesnake Hammock	890	B	1002	S	B	S	2	2	S	N	1004	3100	3100	0.32	B			

Mill