



LARGE PROJECT TRANSPORTATION IMPACT ANALYSIS
Leon County Development Support and Environmental Management
435 North Macomb Street
Tallahassee, Florida 32301
(850) 606-1300

This form shall be completed and submitted if this is a "large" project as defined in Section 5.2.2 of the Leon County Concurrency Policies and Procedures Manual.

1. **TRIP GENERATION:** In Table I, estimate the total number of p.m. peak hour vehicle trips generated for each land use by the proposed project at build-out, using the regression equation or rate (whichever is more appropriate) from the most recent edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. If the ITE Manual is not applicable or does not address the land use, explain the methodology used in detail (if a survey is used, consult concurrency staff for appropriate methodology).

TABLE I
TOTAL P.M. PEAK HOUR PROJECT TRIP GENERATION

LAND USE	ITE LAND USE CODE	DU (RES) OR/ SQ.FT. (NON-RES)	FORMULA/ RATE	P.M. PEAK HOUR TRIPS
Convenience Market w/ Gas Pumps	853	2,904 SF	62.57/1,000 SF	182

TOTAL P.M. PEAK HOUR TRIPS GENERATED BY PROJECT: 182

Table I: Notes/References/Justification: Trip Generation 9th Edition, ITE

2. **ENTER/EXIT SPLIT:** In Table II, provide the enter/exit split of trips generated by each land use during the p.m. peak hour. Use the % provided in the ITE Manual, if available and appropriate. If not, explain methodology used.

TABLE II
ENTER/EXIT BREAKDOWN OF TRIPS DURING P.M. PEAK HOUR

LAND USE	TOTAL TRIPS	PERCENTAGE ENTER/EXIT	P.M. TRIPS ENTER/EXIT
853	182	50/50	91/91

TOTAL P. M. PEAK HOUR EXTERNAL TRIPS GENERATED BY PROJECT: 182

Table II: Notes/References/Justification: _____

3. **INTERNAL CAPTURE ADJUSTMENT (if applicable):** In Table III, estimate the total number of external p.m. peak hour trips resulting from each land use at build-out (show separately for enter and exit trips). Attach an internal trip matrix or other appropriate diagram which shows the balanced interrelation between captured trips and land uses.

**TABLE III
TOTAL P.M. PEAK HOUR EXTERNAL PROJECT TRIPS**

LAND USE	TOTAL TRIPS (FROM TABLE II)	INTERNAL CAPT. %	P.M. PEAK HOUR EXTERNAL TRIPS
<u>853</u>	Enter <u>91</u>	<u>0</u>	<u>91</u>
	Exit <u>91</u>	<u>0</u>	<u>91</u>
	Enter		
	Exit		
	Enter		
	Exit		
TOTAL TRIPS ENTERING PROJECT DURING P.M. PEAK HOUR:			<u>91</u>
TOTAL TRIPS EXITING PROJECT DURING P.M. PEAK HOUR:			<u>91</u>
Table III: Notes/References/Justification: _____			

4. **PASS-BY ADJUSTMENT (If applicable):** In Table IV, estimate the total number of non-pass-by trips resulting from each land use at build-out (show separately for enter and exit). Attach a map which shows the pass-by trip assignment at each project access point.

**TABLE IV
TOTAL P.M. PEAK HOUR EXTERNAL PROJECT TRIPS**

LAND USE	TOTAL TRIPS (FROM TABLE III)	PASS- BY %	P.M. PEAK HOUR EXTERNAL TRIPS
<u>853</u>	Enter <u>91</u>	<u>25.3%</u>	<u>68</u>
	Exit <u>91</u>		<u>68</u>
	Enter		
	Exit		
	Enter		
	Exit		
TOTAL NON PASS-BY EXTERNAL TRIPS ENTERING PROJECT DURING P.M. PEAK HOUR:			<u>68</u>
TOTAL NON PASS-BY EXTERNAL TRIPS EXITING PROJECT DURING P.M. PEAK HOUR:			<u>68</u>
Table IV: Notes/References/Justification: <u>See attached pass-by calculations.</u> <u>10% of adjacent street traffic governs.</u>			

5. In Table V and on a map, provide the p.m. peak hour project trip distribution and assignment for both the peak and off-peak directions and clearly indicate the following:

- a) Project impact on all segments within the Comprehensive Traffic Analysis Network (CTAN) and Immediate Traffic Impact Network (ITIN) (Table 1 of the Leon County Concurrency Management Policies and Procedures Manual) for the proposed project (required for both table and map).
- b) Project impact on any concurrency roadway segment located in the Immediate Traffic Impact Network (ITIN) or Comprehensive Traffic Analysis Network (CTAN). Both the table and map should show whether a segment is 'significantly affected' as defined in the Leon County Concurrency Management Policies and Procedures Manual. Both the maps and table should be formatted to show separately the impact of each major land use category, as well as the cumulative project impacts on each segment. The assignment should clearly show the specific roadways or driveways onto which project trips are assigned (unexplained mid-segment reductions in assigned trips due to "trip attenuation" are not acceptable).
- c) In Table V Notes, describe in detail the basis of the assumptions used in project traffic distribution and assignment.
- d) Provide an electronic copy as an Excel file of Table V to guffeyr@leoncountyfl.gov.

TABLE V (a)
ITIN IMPACTED SEGMENTS

SEGMENT NO.	ROADWAY NAME	FROM/TO SEGMENT	DIRECTION	P.M. PEAK HOUR PROJECT TRIPS
<i>See attached Table V spread sheet for (a) + (b)</i>				

TABLE V (b)
CTAN IMPACTED SEGMENTS

SEGMENT NO.	ROADWAY NAME	FROM/TO SEGMENT	DIRECTION	P.M. PEAK HOUR PROJECT TRIPS

* Appendix A-2 Street Inventory/Status of the all concurrency roadway segments and their corresponding segment numbers and capacities. If you wish to obtain an up-to-date electronic file of this list you can email your request to guffeyr@leoncountyfl.gov.

Table V: Notes/References/Justification: _____

6. In Table VI, list the segments from Table V the proposed project is significantly affecting (as defined in Section 1.5.26 of the Leon County Concurrency Policies and Procedures Manual) and the mitigation strategy used to address these impacts. The mitigation strategy must include:
- If the project is to be phased, attach a detailed phasing schedule that includes the starting and ending date of each phase (month/year) and the number of units or square footage constructed during each phase.
 - If a capacity improvement is proposed, identify the improvement in Table VI and attach a conceptual plan that provides the design schematics or describes the proposed improvement, cost of the proposed capacity improvement, and the pro-rata share of the improvement to be borne by the project* using the criteria established in Section 6.2.3 of the Leon County Concurrency Policies and Procedures Manual.

**TABLE VI
MITIGATION STRATEGY FOR IMPACTED SEGMENTS**

SEGMENT NO.	ROADWAY NAME	FROM/TO SEGMENT	MITIGATION STRATEGY
29660	Crump Rd	Miles Johnson to Mice.	TBD

* Pro-Rata Share Option is only available for impacts to segments identified to be located outside the CTAN. Full mitigation is required for significantly affected segments located within the CTAN.

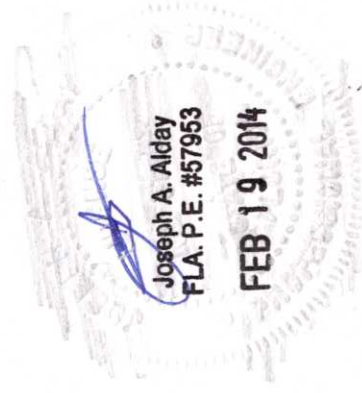
Table V of the Large Project Transportation Impact Analysis

Name of Development Crump Road Convenience Store
 Name of Applicant Alday-Howell Engineering
 Name of Analyst JAA
 Date 2/18/2014

Segment No.*	Road*	Segment*	Dir*	Adopt. LOS*	Maximum Capacity*	Actual 2012 PM PK Hr. Dir. Vol.*	Total Committed Demand*	Total Demand	Pre Available Capacity*	Pre V/C Ratio*	ITIN (0.25 Miles)	CTAN (1.4 Miles)	PM Peak Hr. Project Trips	% of Max. Capacity	Post Available Capacity	Post V/C Ratio
29660	Crump Rd	Miles Johnson to Micc	NB	C	430	319	136	455	-25	105.81%	Yes	Yes	21	4.88%	-46	110.70%
29661	Crump Rd	Micc to Miles Johnson	SB	C	430	258	30	288	142	66.98%	Yes	Yes	17	3.95%	125	70.93%
29680	Crump Rd	Micc to Roberts	NV	C	430	199	65	264	166	61.40%	Yes	Yes	39	9.07%	127	70.47%
29681	Crump Rd	Roberts to Micc	SB	C	430	175	20	195	235	45.35%	Yes	Yes	29	6.74%	206	52.09%
52800	Miccosukee Rd	Miles Johnson to Crump	NE	D	740	204	112	316	424	42.70%	Yes	Yes	15	2.03%	409	44.73%
52801	Miccosukee Rd	Crump to Miles Johnson	SW	D	740	54	16	70	670	9.46%	Yes	Yes	4	0.54%	666	10.00%
52820	Miccosukee Rd	Crump to McCracken	NE	C	740	105	41	146	594	19.73%	Yes	Yes	8	1.08%	586	20.81%
52821	Miccosukee Rd	McCracken to Crump	SW	C	740	39	6	45	695	6.08%	Yes	Yes	3	0.41%	692	6.49%
67450	Proctor Rd	Roberts to Centerville	NB	C	430	72	47	119	311	27.67%	No	Yes	12	2.79%	299	30.47%
67451	Proctor Rd	Centerville to Roberts	SB	C	430	30	2	32	398	7.44%	No	Yes	4	0.93%	394	8.37%
68740	Roberts Rd	Centerville to Crump	EB	C	430	191	13	204	226	47.44%	No	Yes	25	5.81%	201	53.26%
68741	Roberts Rd	Crump to Centerville	WB	C	430	183	80	263	167	61.16%	No	Yes	27	6.28%	140	67.44%

* Data per the Leon County Concurrency Street Inventory as of Jan 2, 2014

Indicates Critically Deficient Roadway Segment





I. Introduction

The subject project is located just north of the northeast quadrant of the Miccosukee and Crump Road intersection off of Crump Road in Leon County, FL. The proposed development plan is to move the existing single family residence off-site and construct a 2,904 square foot Convenience Store with 10 Gasoline Pump sites and a drive thru self-contained car wash along with the associated parking, sidewalks, and a retention stormwater management facility. The project proposes two driveway connections to Crump Road which is paved. The anticipated project build out year is 2015. This concurrency application is being submitted concurrently with the Type A Site Plan and Environmental Permit Application as a part of the Final Design Plan Approval Track (FDPA) Process. See the environmental permit submittal package for information regarding the stormwater analysis.

II. Electric, Water & Sanitary Sewer Service

The project site is outside of the urban service area. Public water and sewer service is not available to the site. Therefore, the project is proposed to be served by a private well and on-site septic system. Electric service is proposed to be provided by the City of Tallahassee.

III. Trip Generation and Distribution

Trip generation rates for this land use were obtained from the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition. The proposed development utilized the Land Use Code 853 (Convenience Market with Gasoline Pumps). With this Land Use Code, the number of PM peak hour trips generated by the development was based on gross floor area. With the rates provided, the project is anticipated to generate a total of 182 (91 entering, 91 exiting) external trips at PM Peak Hour.

PM Peak Hour Trip Generation										
ITE Code	Land Type	# Units	Independent Variable	Rate	Trip Rate Per Unit	Total Single Use Trips	Directional Distribution		Trip Generation	
							Entering	Exiting	Entering	Exiting
853	Convenience Market w/ Gas Pumps	2,904	1,000 SF	62.57	62.57	182	50%	50%	91	91
Total						182			91	91

Land Use Code 853 has a 66% average pass-by percentage determined using the Trip Generation Handbook, 2nd Edition. Therefore, the PM Peak Hour project trips could be reduced by 120 trips (66% of 182) which are existing pass-by trips. However, the FDOT Site Impact Handbooks states, "In general the number of pass-by trips should not exceed 10 percent of the adjacent street traffic during the peak hour." Per the Leon County Concurrency Street Inventory Data Sheet dated January 2, 2014 the total demand (actual and committed) of the adjacent street traffic (Crump Road) is 459 trips. Therefore, the peak hour project trips can only be reduced by 46 trips (10% of 459). Using the 10% reduction for pass-by trips the project is anticipated to generate 136 primary peak hour trips (68 entering, 68 exiting) and 46 pass-by trips (23 entering, 23 exiting). Using Table 1 from the Leon County Concurrency Management

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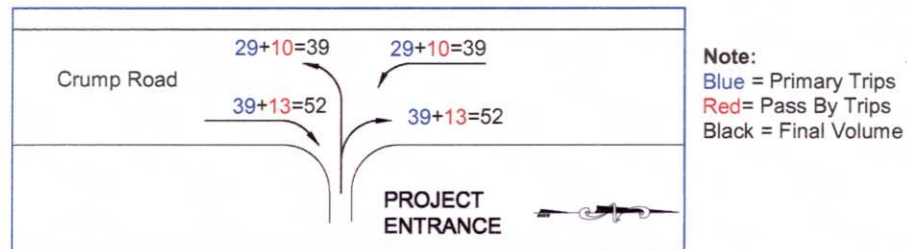
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Policies and Procedures Manual the Comprehensive Traffic Analysis Network (CTAN) Radius is 1.40 miles and Immediate Traffic Impact Network (ITIN) radius is 0.25 miles.

The directional distribution is based on the "gravity method". Below is a sketch showing the directional distribution of the projects external peak hour trips from the site onto Crump Road.

PM Peak Hour Project Trip Distribution



See the attached map (sheet titled "Project PM Peak Hour Primary Trip Calculations and Distribution Map") showing the distribution of the project primary trips on the adjacent roadway segments within the CTAN and ITIN.

IV. Traffic Impact Analysis

The proposed site is located on the east side of Crump Road, just north of the northeast quadrant of Crump and Miccosukee Roads within the Leon County Transportation Concurrency Network. The impacted segments of roads are shown on the attached Table V and the PM peak hour project trip distribution and calculations are shown on the attached "Project PM Peak Hour Primary Trip Calculations and Distribution Map". Table V. shows that the majority of the roadway segments within the CTAN and ITIN are significantly impacted. However, there is sufficient capacity on all the roadway segments with the exception of segment 29660, Crump Road from Miles Johnson to Miccosukee Road North Bound. This segment of roadway is deficient pre project trips and due to the project becomes Critically Deficient.

V. Conclusion

In conclusion, although the project's PM peak hour primary trips cause a significant impact on the majority of the roadway segments within the CTAN and ITIN roadway network there is sufficient capacity on those roadway segments to support the proposed development. The exception is segment 29660, Crump Road from Miles Johnson to Miccosukee Road North Bound. The segment of roadway is deficient pre project trips and due to the project becomes Critically Deficient. Therefore, it is anticipated that mitigation measures will be required as a result of the project's PM peak hour primary trips. The developer will coordinate with Leon County's Development Support Services staff on determining what mitigation measures may be necessary.

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CRUMP/MICCOSUKEE INTERSECTION DISTRIBUTION CALCS:

TOTAL PEAK HR TRIPS GOING OUT = 70(MICCOSUKEE WEST BOUND) + 288(CRUMP SOUTH BOUND) + 146(MICCOSUKEE EAST BOUND) = 504

DISTRIBUTE PRIMARY TRIPS: 14% MICCOSUKEE WEST BOUND, 57% CRUMP SOUTH BOUND, & 29% MICCOSUKEE EAST BOUND.

TOTAL PEAK HR INCOMING = 316(MICCOSUKEE EAST BOUND) + 455(CRUMP NORTH BOUND) + 45(MICCOSUKEE WEST BOUND) = 816

DISTRIBUTE PRIMARY TRIPS: 39% MICCOSUKEE EAST BOUND, 55% CRUMP NORTH BOUND, & 6% MICCOSUKEE WEST BOUND.

PROCTOR/ROBERTS INTERSECTION DISTRIBUTION CALCS:

TOTAL PEAK HR TRIPS GOING OUT = 119(PROCTOR NORTH BOUND) + 263(ROBERTS WEST BOUND) = 382

DISTRIBUTE PRIMARY TRIPS: 31% PROCTOR NORTH BOUND & 69% ROBERTS WEST BOUND.

TOTAL PEAK HR TRIPS INCOMING = 204(ROBERTS EAST BOUND) + 32(PROCTOR SOUTH BOUND) = 236

DISTRIBUTE PRIMARY TRIPS: 86% ROBERTS EAST BOUND & 14% PROCTOR SOUTH BOUND.

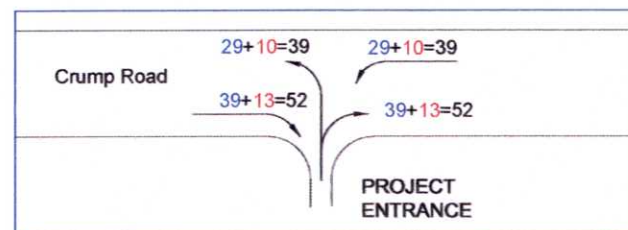
PROJECT PM PEAK HOUR TRIP DISTRIBUTION CALCULATIONS:

TOTAL PM PEAK HOUR PROJECT TRIPS = 182

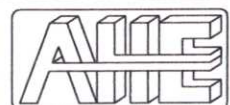
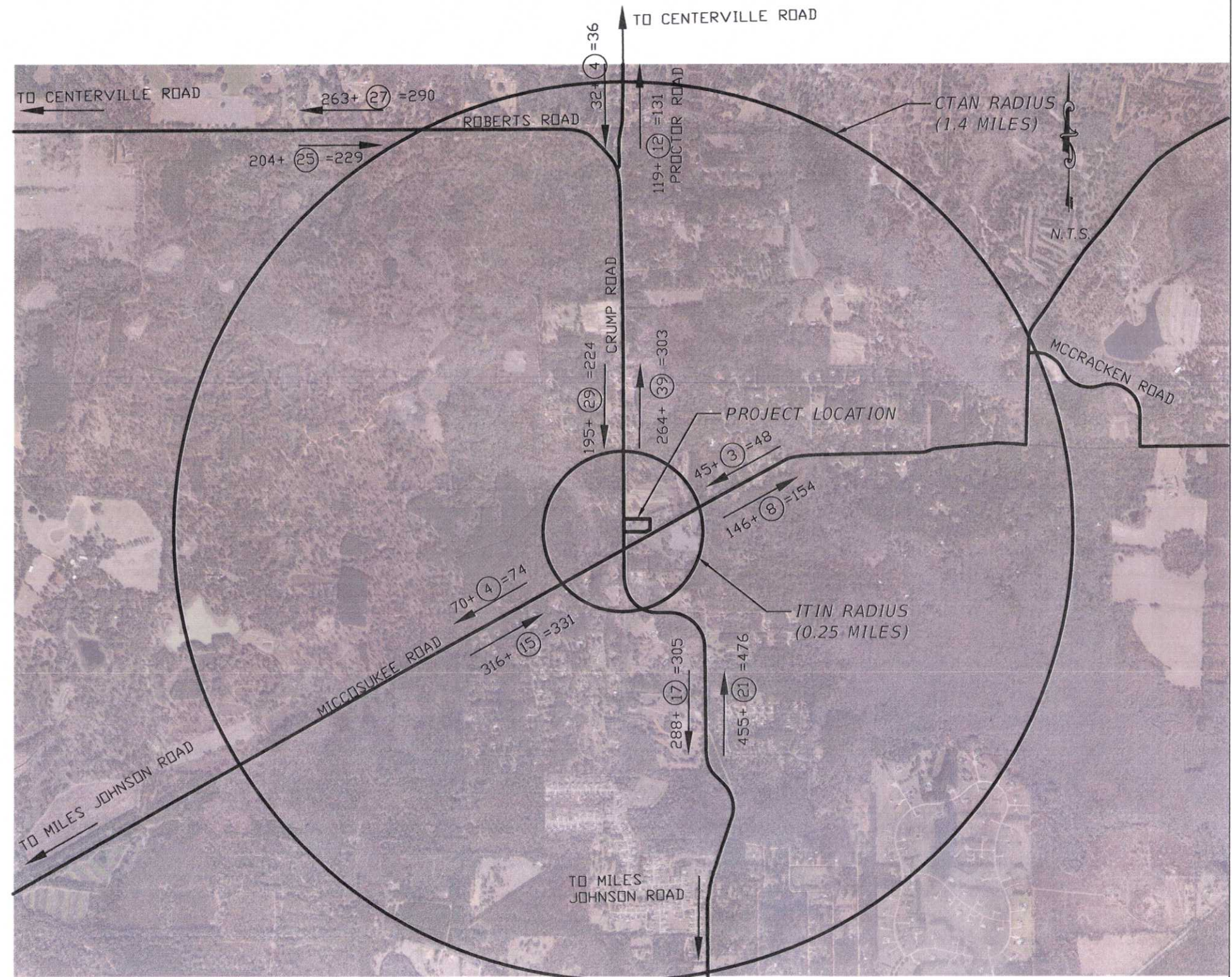
PASS BY TRIPS = 46

○ PRIMARY TRIPS = 182 - 46 = 136VPH

PROJECT PM PEAK HOUR TRIP DISTRIBUTION DIAGRAM TO CRUMP ROAD



Note:
Blue = Primary Trips
Red = Pass By Trips
Black = Final Volume



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FLORIDA CERTIFICATE OF AUTHORIZATION. NO. 26105

REVISIONS

DESCRIPTION	INT.	DATE

CLIENT :
GLEN BROWN

PROJECT :
CRUMP ROAD
CONVENIENCE STORE

SHEET TITLE :

PROJECT PM PEAK HR
PRIMARY TRIP
CALCULATIONS &
DISTRIBUTION MAP

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FEB 19 2014

NOT VALID UNLESS EMBOSSED

JOB NO. 13-034

DRAWN BY BER

CHECKED BY JAA

DATE 2/18/14

SHEET 1