TRAFFIC IMPACT STUDY
FOR
RIVERVIEW DEVELOPMENT
Development of Regional Impact # 1933
COBB COUNTY, GEORGIA

Prepared for:

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A&R Project No: 08-097

EXECUTIVE SUMMARY

The purpose of this study is to determine the traffic impact that will result from the Riverview Mixed-use development located to the northwest of the intersection of US 41 (SR 3 / Cobb Parkway) / Paces Mill Road / River Parkway in Cobb County, Georgia. The development currently includes 90,000 s.f. of retail space and is proposed to be redeveloped to include 15.000 sf. additional retail space (for a total of 105,000 s.f.), 200,000 s.f. of office space and 240 residential townhomes. The traffic analysis evaluated the following scenarios: existing conditions, the year 2011 without additional traffic generated by the site and the year 2011 with the traffic generated by the development. For the purpose of this analysis, the traffic that will be generated by the V at Vinings development proposed to the north of the intersection of Paces Ferry Road / Boulevard Hills Drive / Paces West Commercial Driveway were also included in the analysis.

From the existing condition analysis it was found that three of the external study intersections within the study area are currently not operating at the LOS standard of D. Analysis of the Base Year 2011 revealed that four of the study intersections being analyzed will not meet the required LOS standard.

The Future 2011 traffic including the site-generated traffic was then evaluated using existing lane geometry. Four external study network intersections will not meet the required LOS standard after the project is completed if no roadway improvements are implemented. Improvements were recommended to restore these intersections back to the LOS standard. Additionally, recommendations to allow the site accesses to operate satisfactorily were identified. Details can be found in the site access analysis section of the report.

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1. PROJECT DESCRIPTION

The purpose of this study is to determine the traffic impact that will result from the Riverview Mixed-use development that will be located to the northwest of the intersection of US 41 (SR 3 / Cobb Parkway) / Paces Mill Road / River Parkway in Cobb County, Georgia. The development currently includes 90,000 s.f. of retail space and is proposed to be redeveloped to include an additional 15,000 s.f. retail space (for a total of 105,000 s.f.). The site also proposes the addition of 200,000 s.f. of office space and 240 residential townhomes. The development will have two full access driveways on US 41 (Northern Site Driveway, Southern Site Driveway), one full access driveway on Paces Mill Road (Western Site Driveway) and one right in / right out / left in driveway on Paces Mill Road (Eastern Site Driveway). A location map for the site is shown in Figure 1.

1.1 Site Plan

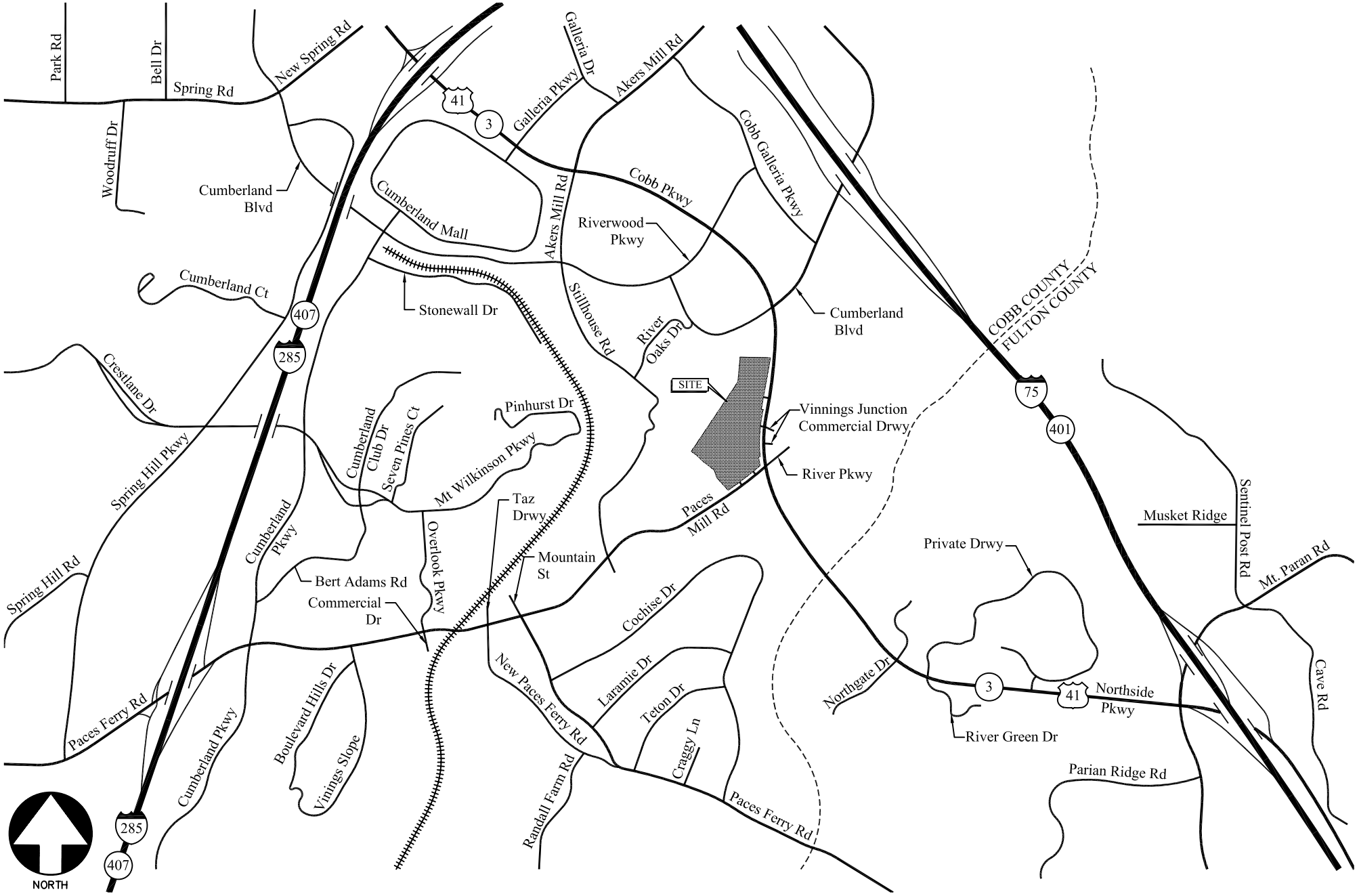
A site plan for this project is shown in Figure 2. A larger size drawing and a digital copy of the site plan are also provided with this report.

1.2 Consistency with Adopted Comprehensive County Plan

The existing zoning for the site is GC (General Commercial). The proposed zoning for the site is RRC (Regional Retail Commercial). The site is located in the Cumberland/Galleria Regional Activity Center; however, the subcategory map indicates Office use for this site.

1.3 Project Phasing

The project's impact has been evaluated in one phase, estimated for completion in the year 2011. This study will evaluate the traffic operations in the vicinity of the site for existing conditions year 2008, the year 2011 without additional traffic generated by the site, and the year 2011 with the additional traffic generated by the development. For the purpose of this analysis, the traffic that will be generated by the V at Vinings development was also included in the analysis.



LOCATION MAP

FIGURE 1

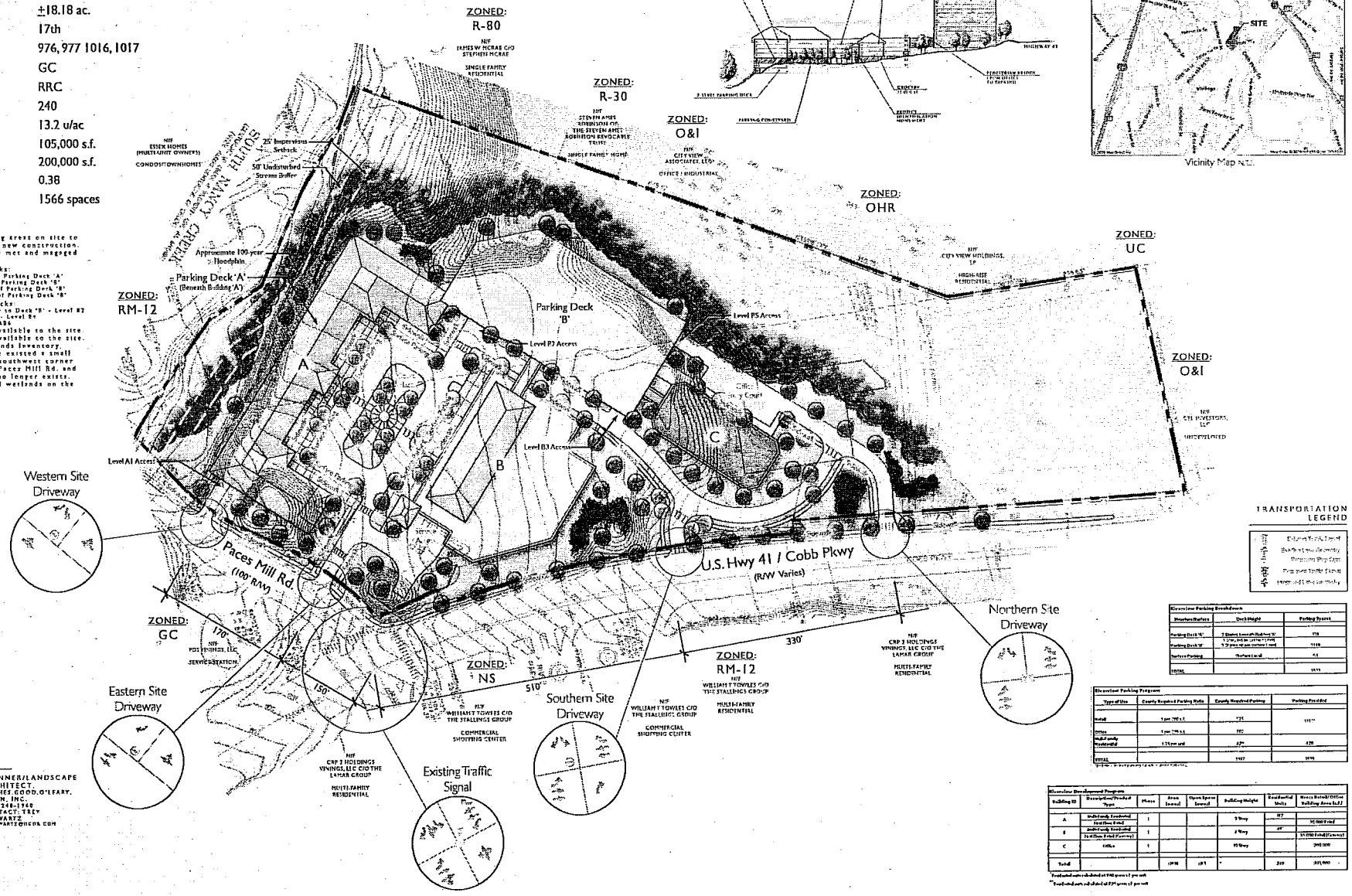
A&R Engineering Inc.

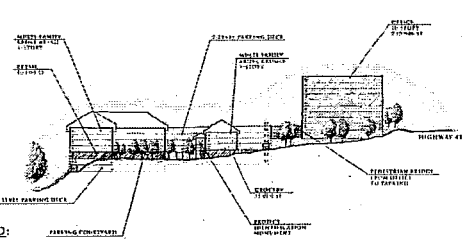
RIVERVIEW

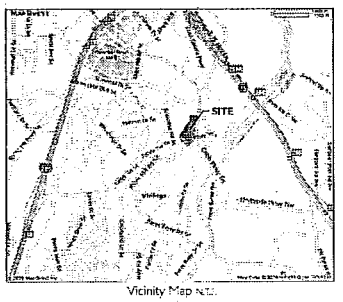
PROJECT SUMMARY

Acreage (Gross)	±18.18 ac.
County District:	17th
Land Lots:	976, 977 1016, 1017
Existing Zoning:	GC
Proposed Zoning:	RRC
Total Residential Units:	240
Residential Density:	13.2 u/ac
Total Retail Area:	105,000 s.f.
Office Area:	200,000 s.f.
Retail/Office FAR:	0.38
Parking Total:	1566 spaces

PROJECT NOTES:
- All existing buildings and parking areas on site to be demolished/removed prior to new construction.
- Stormwater requirements will be met and managed through subsurface detainment.
- Vehicular Access to Parking Decks:
  Western Site Driveway - Level A1 of Parking Deck 'A'
  Eastern Site Driveway - Level B3 of Parking Deck 'B'
  Southern Site Driveway - Level P3 of Parking Deck 'B'
  Northern Site Driveway - Level P5 of Parking Deck 'B'
- Pedestrian Access to Parking Decks:
  Parking Court/Eastern Site Driveway to Deck 'B' - Level B2
  Building 'B' Residential to Deck 'B' - Level B4
  Building 'C' to Deck 'B' - Levels B5&B6
- County water connections are available to the site.
- County sewer connections are available to the site.
- According to the National Wetlands Inventory, historical data shows there once existed a small freshwater pond located at the southwest corner of the site along the corner of Paces Mill Rd. and South Nancy Creek. This pond no longer exists. There are also an known/studied wetlands on the site.







Vicinity Map N.T.S.

LEGEND

- Residential/ First Floor Retail
- Retail (Grocery)
- Office
- Parking Deck

CONTACT INFORMATION

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TRANSPORTATION LEGEND

DRI SITE PLAN (DRI ID: 1933)

COBB COUNTY, GA
September 16, 2008

TRI-KELL INVESTMENTS, INC.

HGOR

2. TRIP GENERATION

Trip generation estimates for the project were based on the rates and equations published in the 7th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. The ITE Trip Generation report contains traffic volume count data collected at similar facilities nationwide. The development currently includes 90,000 s.f. of retail space and proposes at add 15,000 s.f. additional retail space to include a total of 105,000 s.f. of retail space. The site also proposes 200,000 s.f. of office space and 240 residential townhomes. Trip generation calculations for the Riverview development are shown in Table 1.

TABLE 1
TRIP GENERATION

Land Use	Total Size	A.M. Peak Hour			P.M. Peak Hour			24-Hour
		Enter	Exit	Total	Enter	Exit	Total	2-way
820 – Shopping Center	15,000 s.f. (additional)	31	19	50	86	93	179	1,979
710 – General Office	200,000 s.f.	288	39	327	52	251	303	2,275
230 – Residential Condominium / Townhouses	240 units	18	86	104	82	41	123	1,351
Total New Trips		**337**	**144**	**481**	**220**	**385**	**605**	**5,605**
820 – Shopping Center (existing 90,000 s.f. retail)		90	116	147	280	304	584	6,342
Total Trips		**427**	**201**	**628**	**500**	**689**	**1,189**	**11,947**

2.1 Net Trip Ends

Due to the nature of the development mixed-use, pass-by and transit reductions are applicable. The mixed-use and pass-by reductions were based on the equations published in the ITE Trip Generation Handbook. Trip generation with the applied reductions is shown in Table 2.

TABLE 2
NEW TRIP GENERATION WITH REDUCTIONS

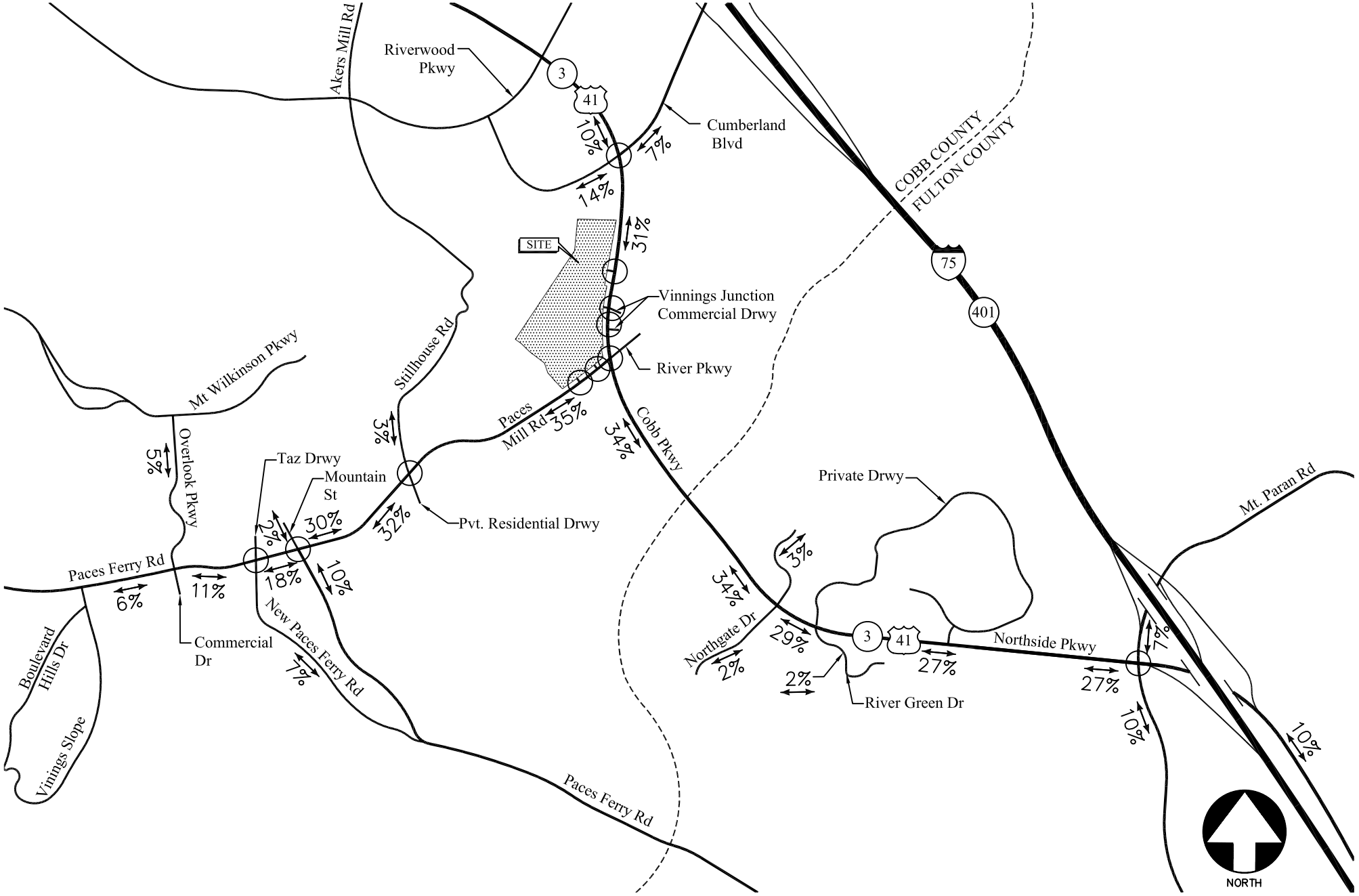
Land Use	A.M. Peak Hour			P.M. Peak Hour			24-Hour
	Enter	Exit	Total	Enter	Exit	Total	2-way
Shopping Center	31	19	50	86	93	179	1,979
- Mixed-Use Reduction	*-1*	*-1*	*-2*	*-9*	*-14*	*-23*	*-267*
*- Pass-By Reduction 0% (34%)**	*0*	*0*	*0*	*-26*	*-27*	*-53*	*-530***
General Office	288	39	327	52	251	303	2,275
- Mixed-Use Reduction	*0*	*-1*	*-1*	*-3*	*-3*	*-6*	*-90*
Residential Condominium / Townhouses	18	86	104	82	41	123	1,351
- Mixed-Use Reduction	*-1*	*-1*	*-2*	*-13*	*-8*	*-21*	*-218*
Transit Reduction – 2%	-7	-3	-10	-3	-7	-10	-90
Totals without reduction	**337**	**144**	**481**	**220**	**385**	**605**	**5,605**
Totals with reduction	**328**	**138**	**466**	**166**	**326**	**492**	**4,410**

* AM Pass-By % (PM Pass-By %)

** 24 hour pass-by reductions have been calculated by assuming the total PM peak hour trip reduction is 10% of the total daily pass-by reduction.

3. TRIP DISTRIBUTION & ASSIGNMENT

The trip distribution is the percentage of the traffic generated by the site that travels to and from the site on each segment of the surrounding roadway network. Separate trip distributions were developed for the retail site traffic and the residential & office site traffic. The retail trip distribution, shown in Figure 3, was estimated based on the residential concentrations and the location of major roadways and highways that will serve the development. The residential & office distribution, shown in Figure 4, were estimated based on major employment centers and the residential concentrations; however, the office distribution is regionally based, while the retail distribution is locally based. The site-generated volumes were then distributed to the surrounding roadway network based on the driver's destination, and the most easily accessible route.



TRIP DISTRIBUTION - RETAIL

FIGURE 3

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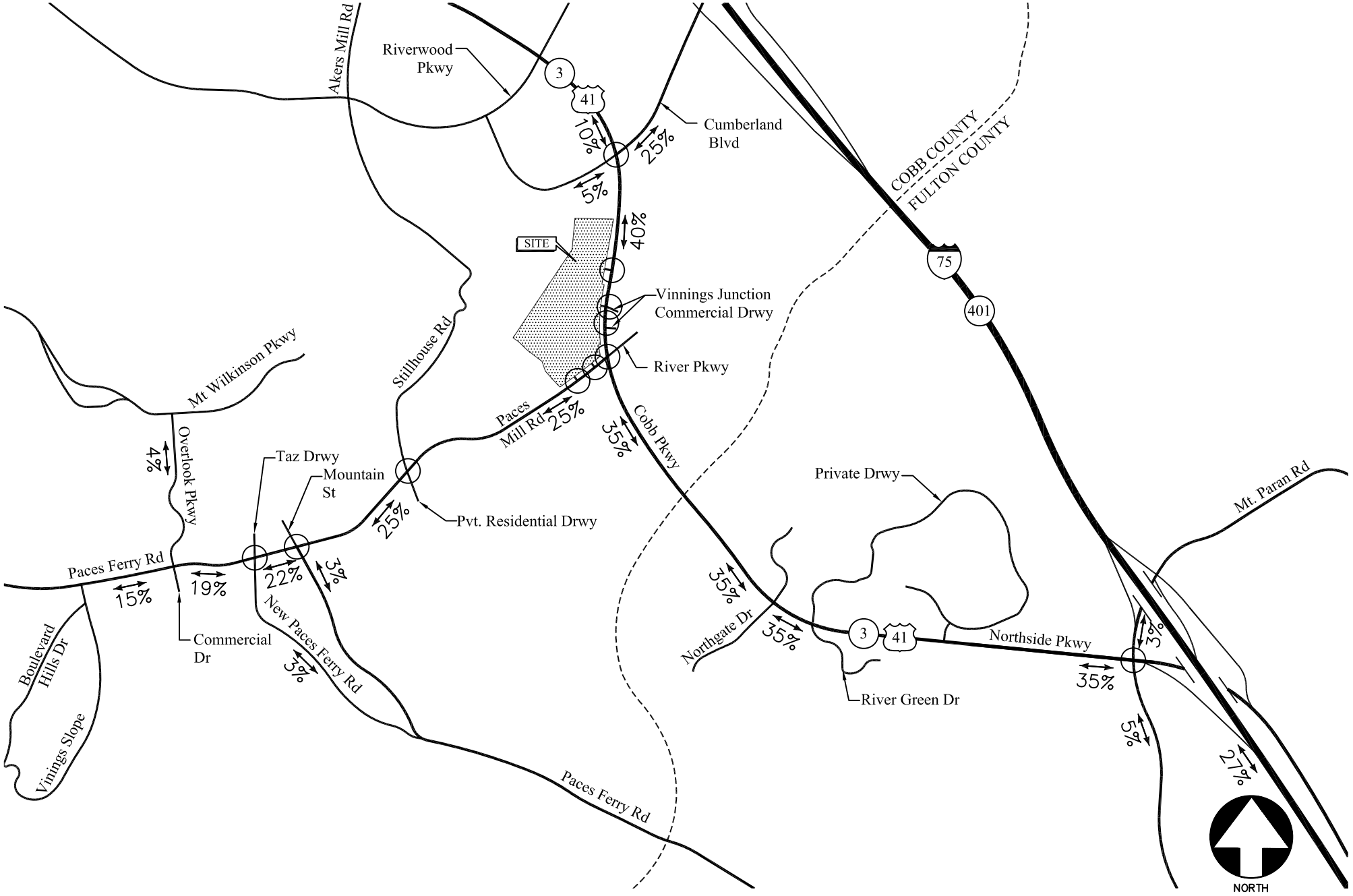

TRIP DISTRIBUTION - RESIDENTIAL AND OFFICE

FIGURE 4

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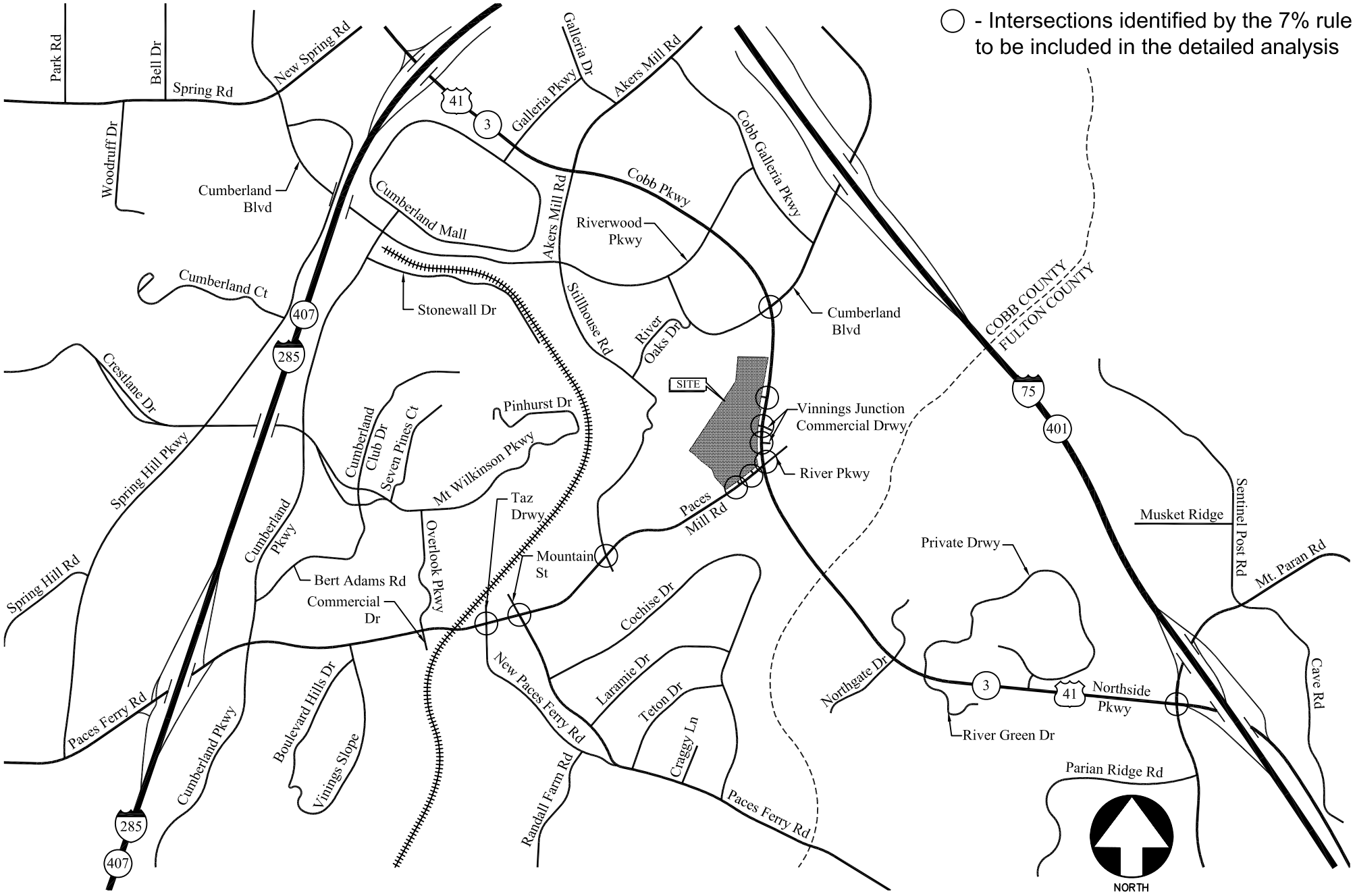
4. STUDY NETWORK DETERMINATION

The study network was determined by evaluating the amount of traffic that the proposed development will add to each roadway segment in the area. According to GRTA requirements, a roadway segment carries a "significant" amount of traffic if the project contributes 7% or more trips to the two-way daily service volumes of the roadway at the appropriate level of service standard. Upon agreement with GRTA a level of service standard of "D" was used for determining the study area network.

The traffic generated by the proposed project was then assigned to the area roadways using the trip distribution to determine the site-generated traffic on each roadway segment. The boundaries of the study network extend to the most distant intersections where at least 7% of the service volumes on the segment are attributed to project traffic. The following intersections fell within the 7% rule and have been included in the traffic study:

1) US 41 (SR 3 / Cobb Parkway) / Cumberland Boulevard
2) US 41 (SR 3 / Cobb Parkway) / Paces Mill Road / River Parkway
3) US 41 (SR 3) / Mt. Paran Road
4) Paces Ferry Road / New Paces Ferry Road / Taz Anderson Realty Co. Driveway
5) Paces Mill Road / Paces Ferry Road / Mountain Street
6) Paces Mill Road / Stillhouse Road / Private Residential Driveway
7) US 41 (SR 3 / Cobb Parkway) / Vinnings Junction Commercial Driveway

The study intersections are shown graphically in Figure 5. Other intersections within this corridor, such as unsignalized side streets, right-in / right-out driveways or private driveways were viewed as insignificant and have not been included in the study network.



STUDY NETWORK

FIGURE 5

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5. PLANNED & PROGRAMMED IMPROVEMENTS

The following improvements have been identified in the Atlanta Regional Commission's Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP). These improvements are within the vicinity of the proposed development. Additional improvements for Cobb County have been identified, but they are not relevant to this project. Details of the planned programs can be found in the Appendix.

- CO-231: US 41 (Cobb Parkway) from Chattahoochee River to Akers Mill Road
  - Includes widening of US 41 (Cobb Parkway) from four lanes to six lanes.
- AT-012: US 41 (Northside Parkway) from Paces Mill Road to Mount Paran Road
  - Includes widening of US 41 (Northside Parkway) from four lanes to six lanes with 20 feet raised median and auxiliary lanes at major intersections. The existing bridge over the Chattahoochee River would be replaced. The proposed bridge would have 3 lanes in each direction with a 4' raised median, 17' multi-use path and 6' sidewalks.
- AR-H-302: I-285 west managed lanes from I-20 west in City of Atlanta to I-75 north in Cobb County
  - Includes addition of two managed lanes in both directions for 9.6 miles between I-20 West and I-75 North.

6. EXISTING CONDITIONS

An inventory was performed of the roadways in the area surrounding the site. The following is a brief description of each of these facilities.

6.1 Description of Transportation Facilities in Study Network

US 41 (SR 3)

US 41 (SR 3) is a north-south four-lane undivided roadway with a posted speed limit of 45 mph in the vicinity of the study area.

Cumberland Boulevard

Cumberland Boulevard is a four-lane median divided roadway with a speed limit of 35 mph. It runs between US 41 (SR 3) and Interstate North Parkway.

Paces Mill Road

Paces Mill Road is an east-west two-lane undivided roadway with a speed limit of 35 mph. It runs between US 41 (SR 3) in the east and Paces Ferry Road in the west.

Mt. Paran Road

Mt. Paran Road is a north-south two-lane undivided roadway with a speed limit of 30 mph. It runs between Paran Place in the north and Paces Ferry Road in the south.

Paces Ferry Road

Paces Ferry Road is a two-lane roadway with a speed limit of 35 mph between West Paces Ferry Road and Overlook Parkway and becomes a four-lane roadway between Overlook Parkway and Paces Ferry Circle.

New Paces Ferry Road

New Paces Ferry Road is a north-south two-lane undivided roadway with a speed limit of 25 mph. It connects to Paces Ferry Road at two points to north and south.

Stillhouse Road

Stillhouse Road is a north-south two-lane undivided roadway with a speed limit of 25 mph. It runs between Cumberland Boulevard in the north and Paces Mill Road in the south.

6.2 Analysis Summary

Existing traffic counts were performed at the intersections listed in Section 4 - Study Area Network. In addition to traffic counts, intersection geometry data was also obtained. Turning movement counts were collected during the agreed upon hours of 7:00 AM – 9:00 AM, and 4:00 PM – 6:00 PM on weekdays. The four consecutive 15-minute interval volumes that summed to produce the highest volume at each intersection during each two-hour period were then determined. These volumes make up the A.M. and P.M. peak hour traffic volumes for the intersections counted. The existing traffic volumes are shown in Figure 6 and the existing intersections traffic control and lane geometry for the study area network is shown in Figure 7.

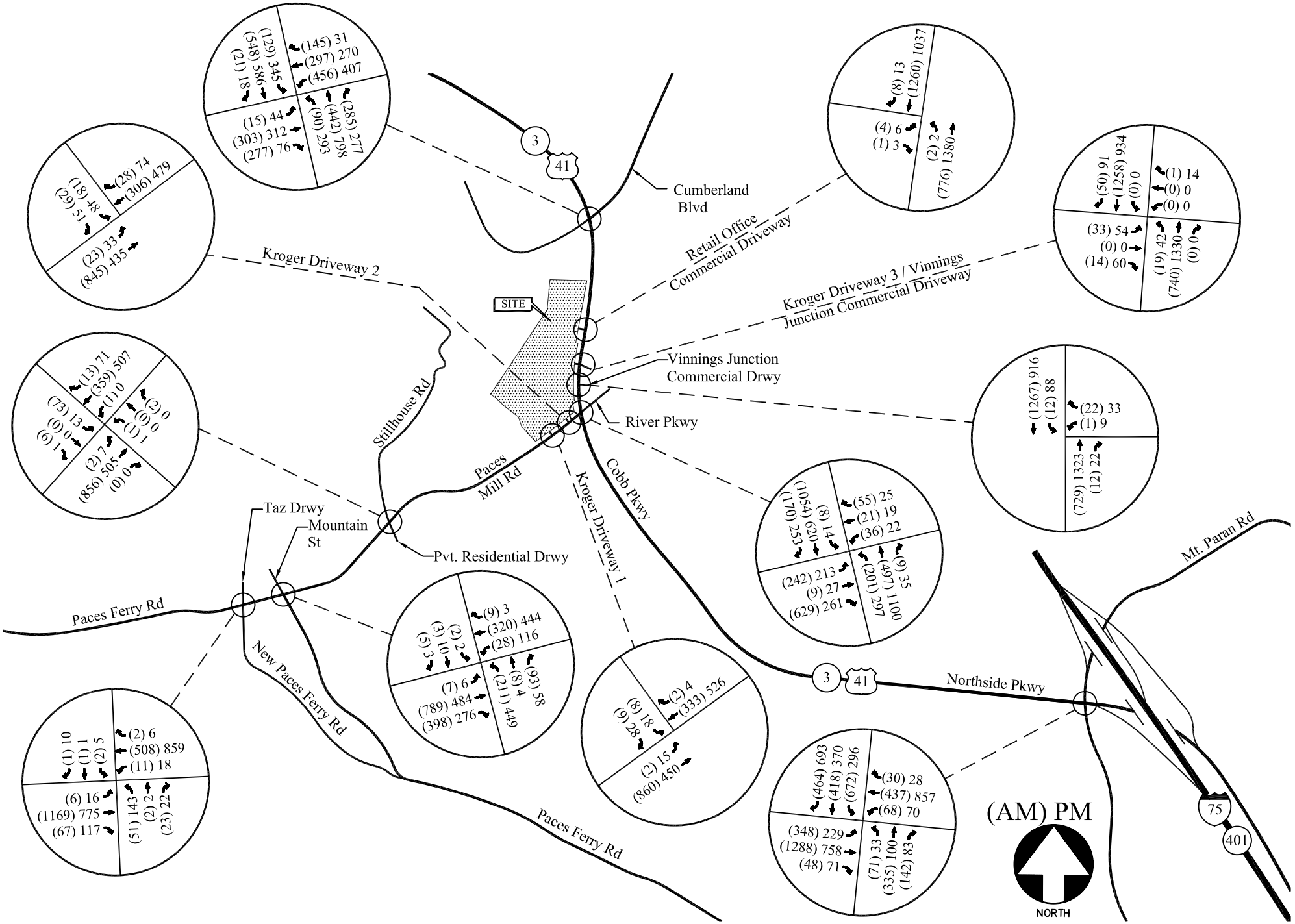
The site-generated volumes shown in Tables 2 were distributed to the surrounding roadway network in accordance with the trip distributions. The site-generated volumes for the study intersections are shown in Figure 8. Existing traffic operations were analyzed at all existing intersections in accordance with HCM methodology using Synchro software. The results of the analysis are shown in Table 3.

TABLE 3

EXISTING INTERSECTION OPERATIONS

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Cumberland Blvd	D / D	Signalized	C (25.9)	0.48	C (33.6)	0.79
US 41 (SR 3) / Paces Mill Rd / River Pkwy	D / D	Signalized	B (15.7)	0.63	B (16.1)	0.58
US 41 (SR 3) / Mt. Paran Rd	D / D	Signalized	C (34.3)	0.88	C (23.2)	0.68
Paces Ferry Rd / New Paces Ferry Rd / Taz Anderson Realty Co. Drwy	D / D	Signalized	B (14.1)	0.81	B (15.5)	0.74
Paces Ferry Rd / Paces Mill Rd / Mountain St	D / E	Signalized	B (19.6)	0.73	E (59.9)	1.03
Paces Mill Rd / Stillhouse Rd / Pvt. Residential Drwy		Stop Controlled on Stillhouse Rd/ Pvt. Residential Drwy				
-Eastbound Left	D / D		A (0.1)	0.00	A (0.2)	0.01
-Westbound Left	D / D		A (0.2)	0.01	A (0.0)	0.00
-Northbound Approach	E / D		E (45.8)	0.08	D (30.8)	0.03
-Southbound Approach	E / D		F (404.4)	1.52	D (31.8)	0.17
US 41 (SR 3) / Vinnings Junction Commercial Drwy		Stop Controlled on Vinnings Junction Commercial Drwy				
-Westbound Approach	D / E		B (13.9)	0.03	F (50.6)	0.38
-Southbound Left	D / D		A (9.3)	0.02	B (14.7)	0.21

As shown in Table 3, three of the study intersections are not operating at the LOS standard.



EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 6

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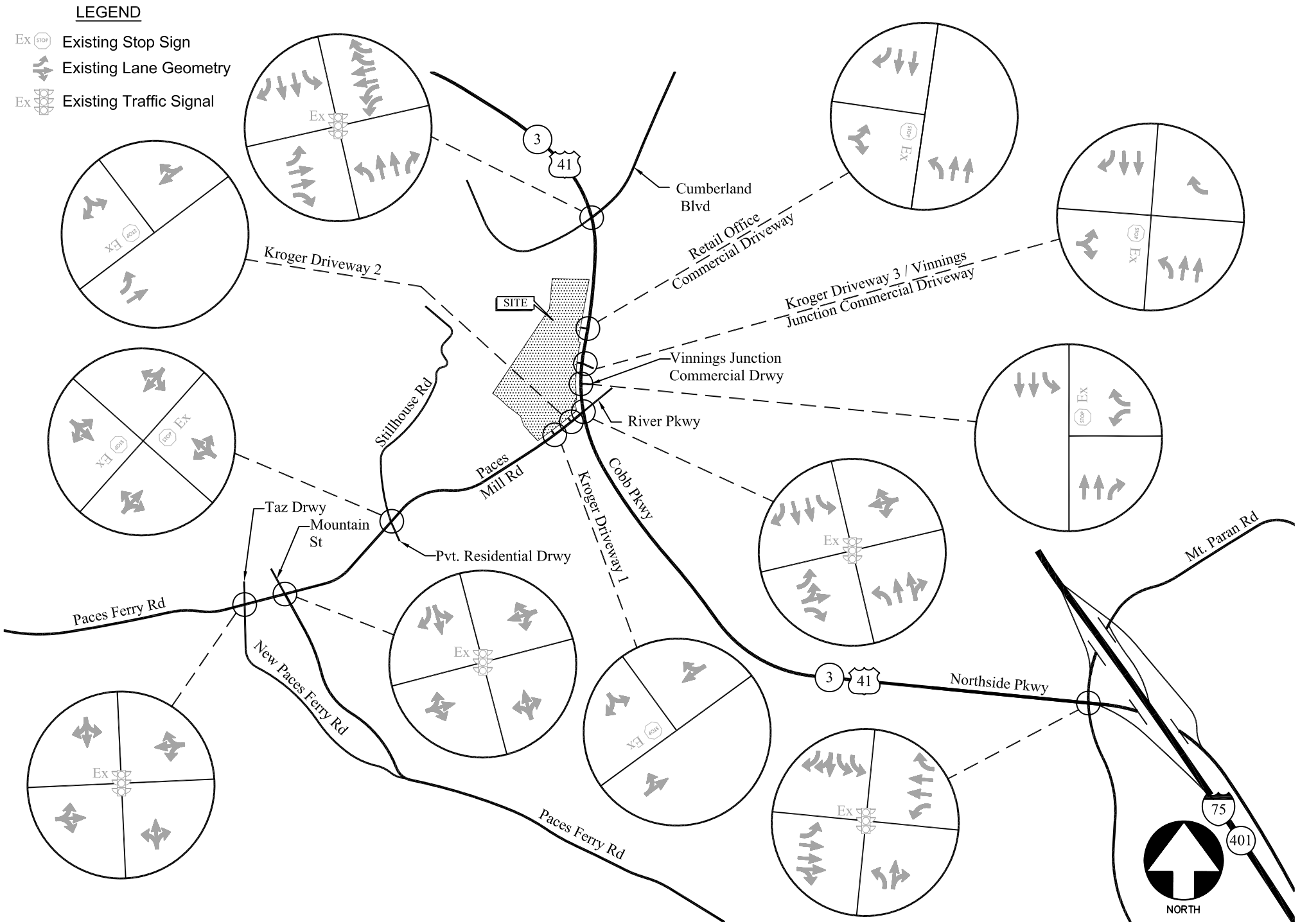

EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 7

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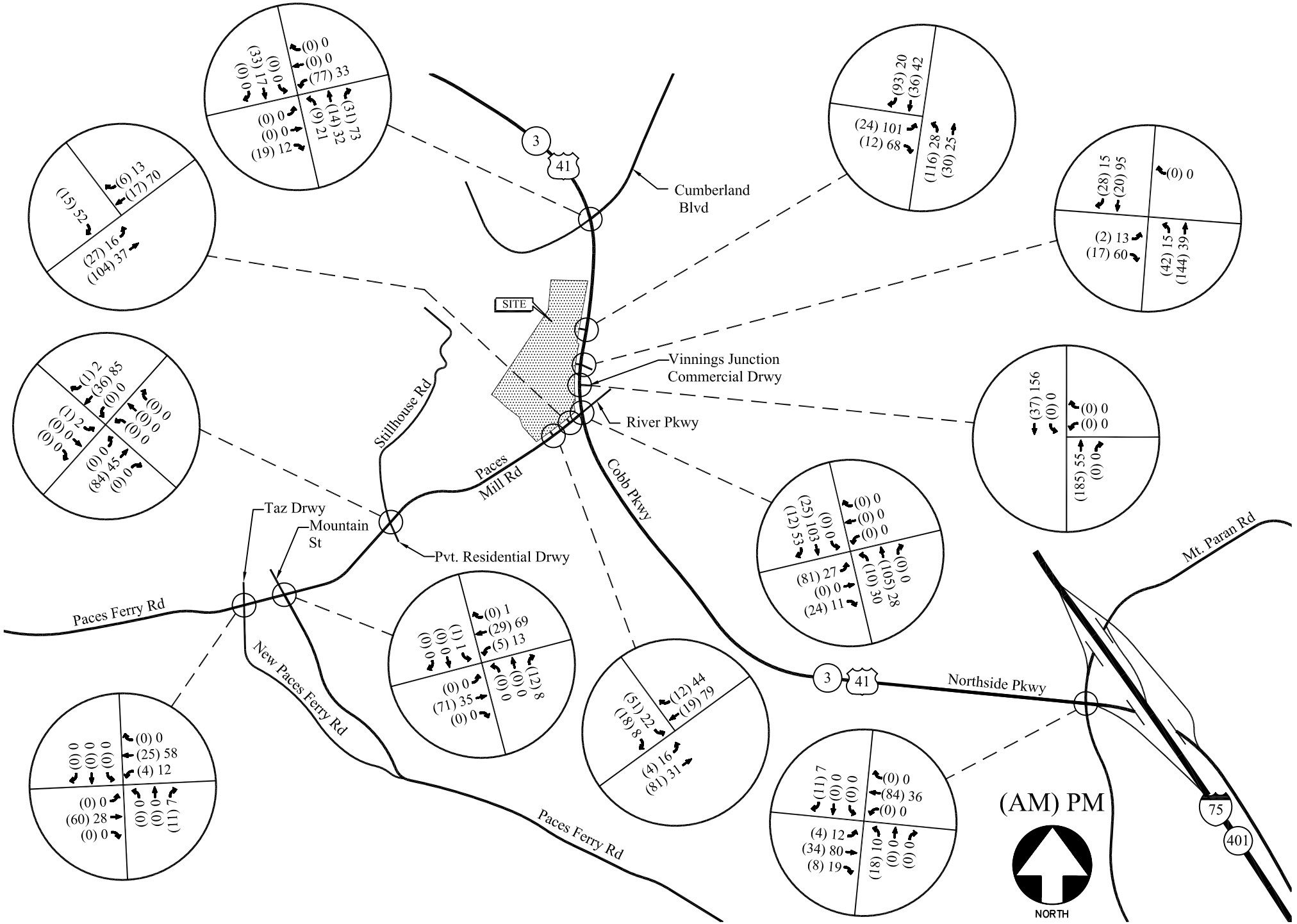

SITE-GENERATED WEEKDAY PEAK-HOUR VOLUMES

FIGURE 8

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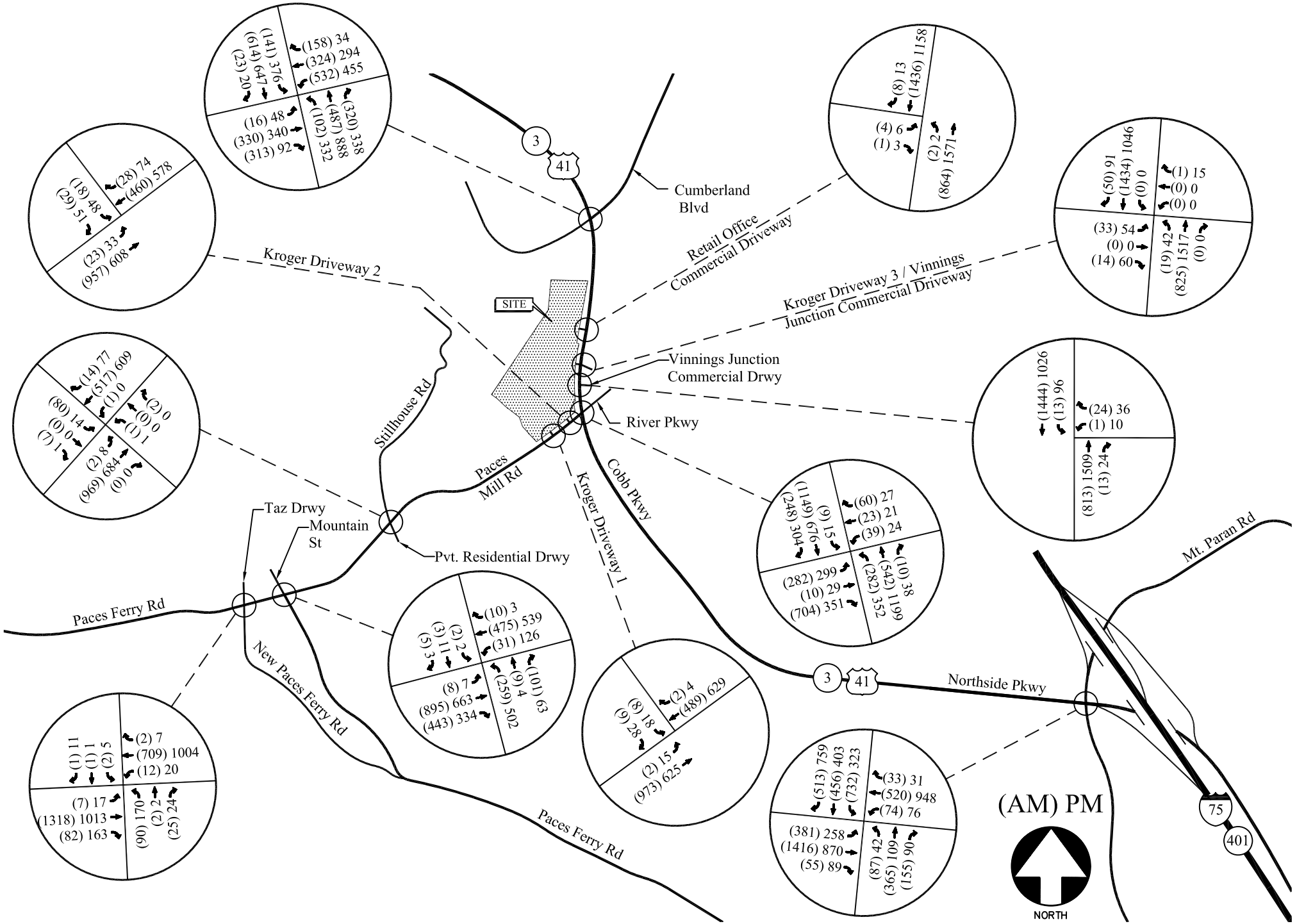
7. FUTURE YEAR BACKGROUND TRAFFIC

In order to evaluate future traffic operations in this area, a projection was made of future base year traffic volumes. It was agreed upon with GRTA to use a growth factor of 3.0% per year up to 2011. This growth factor was applied to the existing traffic volumes on the roadways to estimate the future year 2011 traffic volumes prior to the addition of the site-generated volumes. As agreed upon in the methodology meeting and GRTA letter of understanding, the trips that will be generated by the V at Vinings Development proposed to the north of the intersection of Paces Ferry Road / Boulevard Hills Drive / Paces West Commercial Driveway were also incorporated into the base year 2011 analysis. The estimated trips for this development were taken from the DRI # 1625 completed by A & R Engineering Inc., dated March 24, 2008. The future year (base) traffic volumes for 2011 at all the study intersections are shown in Figure 9.

A traffic operation analysis for the following Base Scenario was performed:

- Base Year 2011 traffic with existing lane geometry.
- Base Year 2011 traffic with recommended improvements to bring all intersections to LOS standard.

Results of the analyses for the above scenarios are shown in Tables 4 and 5. Recommendations to bring the intersections back to the LOS standard are discussed after Table 4.



BASE 2011 WEEKDAY PEAK HOUR VOLUMES

FIGURE 9

TABLE 4 BASE 2011 INTERSECTION OPERATIONS						
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Cumberland Blvd	D / D	Signalized	C (26.1)	0.54	D (40.8)	0.83
US 41 (SR 3) / Paces Mill Rd / River Pkwy	D / D	Signalized	B (18.7)	0.74	B (17.5)	0.66
US 41 (SR 3) / Mt. Paran Rd	D / D	Signalized	E (55.7)	1.22	C (26.0)	0.82
Paces Ferry Rd / New Paces Ferry Rd / Taz Anderson Realty Co. Drwy	D / D	Signalized	C (25.7)	0.95	C (26.8)	0.95
Paces Ferry Rd / Paces Mill Rd / Mountain St	D / E	Signalized	C (20.9)	0.84	F (115.2)	1.34
Paces Mill Rd / Stillhouse Rd / Pvt. Residential Drwy		Stop Controlled on Stillhouse Rd/ Pvt. Residential Drwy				
-Eastbound Left	D / D		A (0.1)	0.00	A (0.3)	0.01
-Westbound Left	D / D		A (0.4)	0.01	A (0.0)	0.00
-Northbound Approach	E / D		F (168.8)	0.27	F (65.9)	0.06
-Southbound Approach	E / D		F (999)	6.18	F (85.9)	0.41
US 41 (SR 3) / Vinnings Junction Commercial Drwy		Stop Controlled on Vinnings Junction Commercial Drwy				
-Westbound Approach	D / E		C (15.3)	0.05	F (123.0)	0.83
-Southbound Left	D / D		A (9.7)	0.02	C (18.5)	0.29

Analysis of the future year (Base 2011) traffic volumes indicates that six of the study intersections will not operate within the LOS standard. The following improvements were identified for those intersections that did not comply with the LOS standard.

- US 41 (SR 3) / Mt. Paran Road
  - Provide protected + permissive signal phasing for the northbound left turn movement on Mt. Paran Road.

- Paces Ferry Road / Paces Mill Road / Mountain Street
  - Add a dedicated westbound left turn lane with protected + permissive signal phasing on Paces Mill Road.

- Paces Mill Road / Stillhouse Road / Private Residential Driveway
  - The northbound and southbound approaches to the intersection will operate at LOS F during both the AM and PM peak hours. It is not uncommon for side streets to experience delays during the peak hours. Installation of a turn lane at any approach will not improve the traffic operations at this intersection. Hence no improvements are recommended at this intersection.

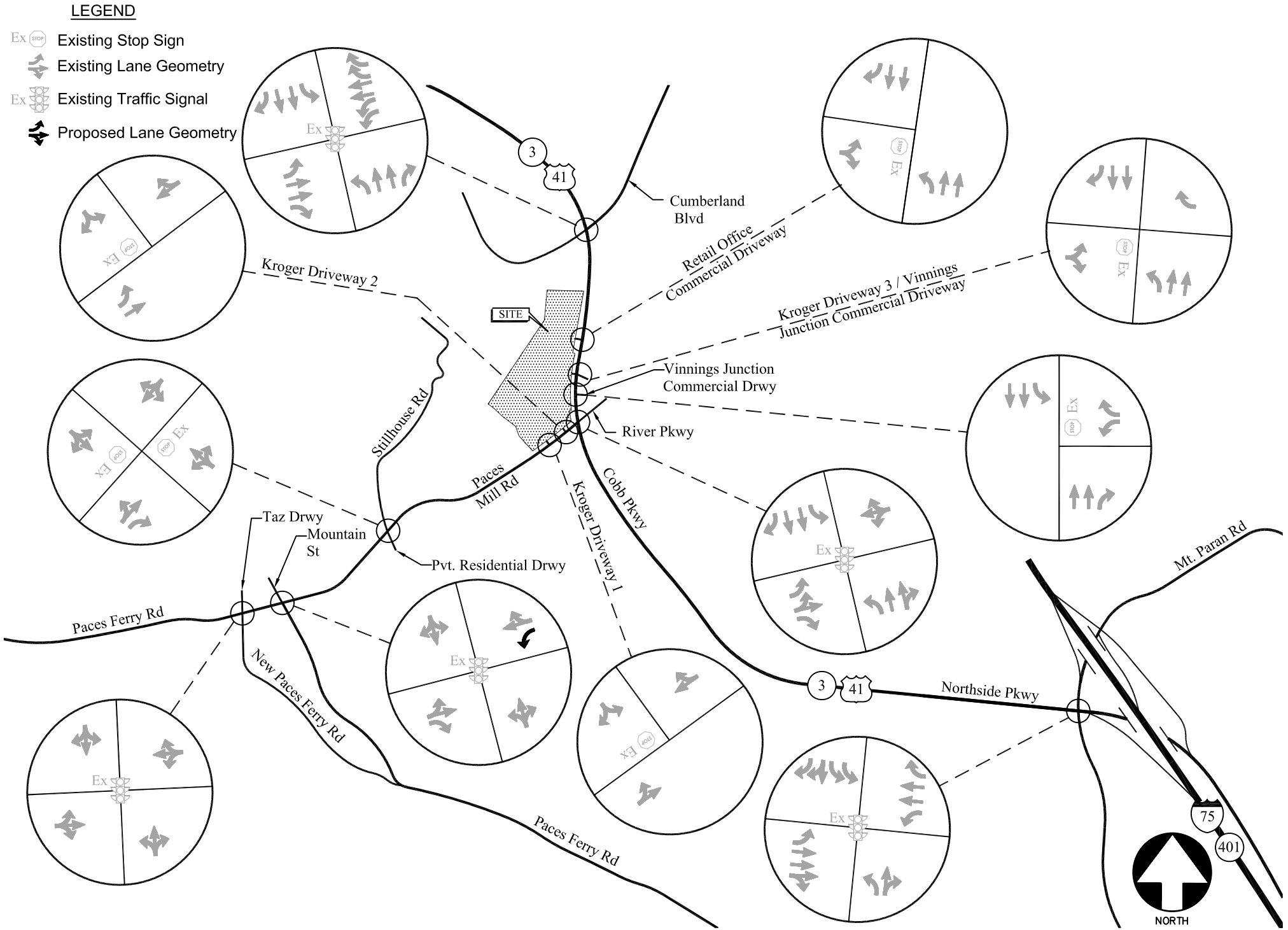
- US 41 (SR 3) / Vinnings Junction Commercial Driveway
    - The westbound approach to the intersection will operate at LOS F during the PM peak hour. It is not uncommon for side streets to experience delays during the peak hours. No improvements can be recommended at the intersection to improve the LOS except installation of a traffic signal; however, the intersection is only 300 feet north of the signalized intersection of US 41 and Paces Mill Road and does not have the necessary volumes to warrant a traffic signal. Therefore, no improvements are recommended for this intersection.

The LOS at the above intersections in the year 2011, with just background traffic, after the above improvements are implemented is shown in Table 5. The recommended base intersections traffic control and lane geometry are shown in Figure 10.

TABLE 5

BASE 2011 INTERSECTION OPERATIONS – WITH IMPROVEMENTS

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Mt. Paran Rd	D / D	Signalized	D (43.0)	0.94	C (26.5)	0.83
Paces Ferry Road / Paces Mill Road / Mountain Street	D / E	Signalized	C (23.1)	0.90	D (46.6)	1.00



BASE 2011 TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 10

A&R Engineering Inc.

8. FUTURE YEAR TOTAL TRAFFIC

The traffic volumes that will be generated by the proposed development were added to the future base year 2011 traffic volumes in order to determine the traffic volumes that will be on the roadway network after completion of the project. The future traffic volumes for the year 2011 including the site-generated volumes for the study intersections are shown in Figure 11.

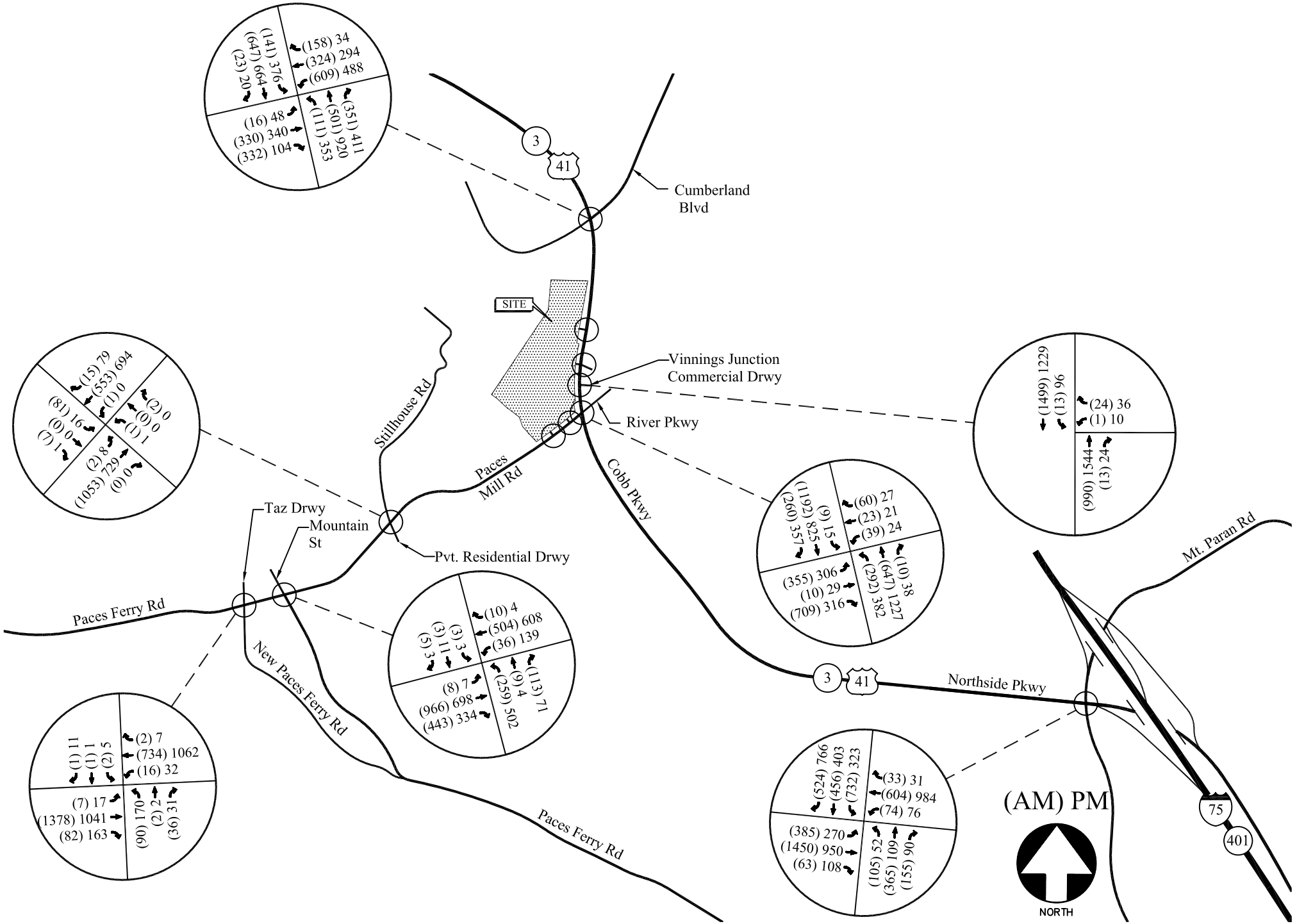
9. FACILITY NEEDS ANALYSIS

9.1 Intersection Analysis

The future year total traffic volumes were used to analyze the study network intersections. Traffic operations analyses for the following scenarios were performed:

- Future Year 2011 Traffic Volumes including site generated traffic with existing lane geometry.
- Future Year 2011 Traffic Volumes including site generated traffic and the recommended improvements to bring all intersections to LOS standard.

The results of the analysis for the above scenarios are shown in Tables 6 and 7. Recommendations to bring the intersections to the LOS standard are discussed after each appropriate section.



FUTURE 2011 WEEKDAY PEAK HOUR VOLUMES

FIGURE 11

A&R Engineering Inc.

TABLE 6 FUTURE 2011 INTERSECTION OPERATIONS						
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Cumberland Blvd	D / D	Signalized	C (27.5)	0.58	D (42.8)	0.89
US 41 (SR 3) / Paces Mill Rd / River Pkwy	D / D	Signalized	C (20.8)	0.79	B (19.2)	0.72
US 41 (SR 3) / Mt. Paran Rd	D / D	Signalized	E (71.2)	1.36	C (24.5)	0.79
Paces Ferry Rd / New Paces Ferry Rd / Taz Anderson Realty Co. Drwy	D / D	Signalized	C (33.3)	0.99	C (30.1)	0.97
Paces Ferry Rd / Paces Mill Rd / Mountain St	D / E	Signalized	C (27.6)	0.89	F (155.3)	1.49
Paces Mill Rd / Stillhouse Rd / Pvt. Residential Drwy		Stop Controlled on Stillhouse Rd/ Pvt. Residential Drwy				
-Eastbound Left	D / D		A (0.1)	0.00	A (0.3)	0.01
-Westbound Left	D / D		A (0.7)	0.02	A (0.0)	0.00
-Northbound Approach	E / D		F (648.1)	0.77	F (95.0)	0.09
-Southbound Approach	E / D		F (999)	18.67	F (168.0)	0.67
US 41 (SR 3) / Vinnings Junction Commercial Drwy		Stop Controlled on Vinnings Junction Commercial Drwy				
-Westbound Approach	D / E		C (18.4)	0.07	F (184.9)	1.14
-Southbound Left	D / D		B (10.6)	0.03	C (19.4)	0.30

The results of the future 2011 conditions analysis indicate that seven of the study intersections will not operate within the LOS standard. The following improvements were identified for those intersections that did not comply with the LOS standard for the future year 2011 traffic:

- US 41 (SR 3) / Mt. Paran Road
  - Provide protected + permissive signal phasing for the northbound left turn movement on Mt. Paran Road.

- Paces Ferry Road / Paces Mill Road / Mountain Street
  - Add a dedicated westbound left turn lane with protected + permissive signal phasing on Paces Mill Road.

- Paces Mill Road / Stillhouse Road / Private Residential Driveway
  - The northbound and southbound approaches to the intersection will operate at LOS F during both the AM and PM peak hours even after implementing the above improvement. Installation of a turn lane will not improve the traffic operations at this intersection. It is not uncommon for side streets to experience delays during the peak hours. Hence no further improvements are recommended at this intersection.

- US 41 (SR 3) / Vinnings Junction Commercial Driveway
    - The westbound approach to the intersection will operate at LOS F during the PM peak hour. It is not uncommon for side streets to experience delays during the peak hours. No improvements can be recommended at the intersection to improve the LOS except installation of a traffic signal; however, the intersection is only 300 feet north of the signalized intersection of US 41 and Paces Mill Road and does not have the necessary volumes to warrant a traffic signal. Therefore, no improvements are recommended for this intersection.

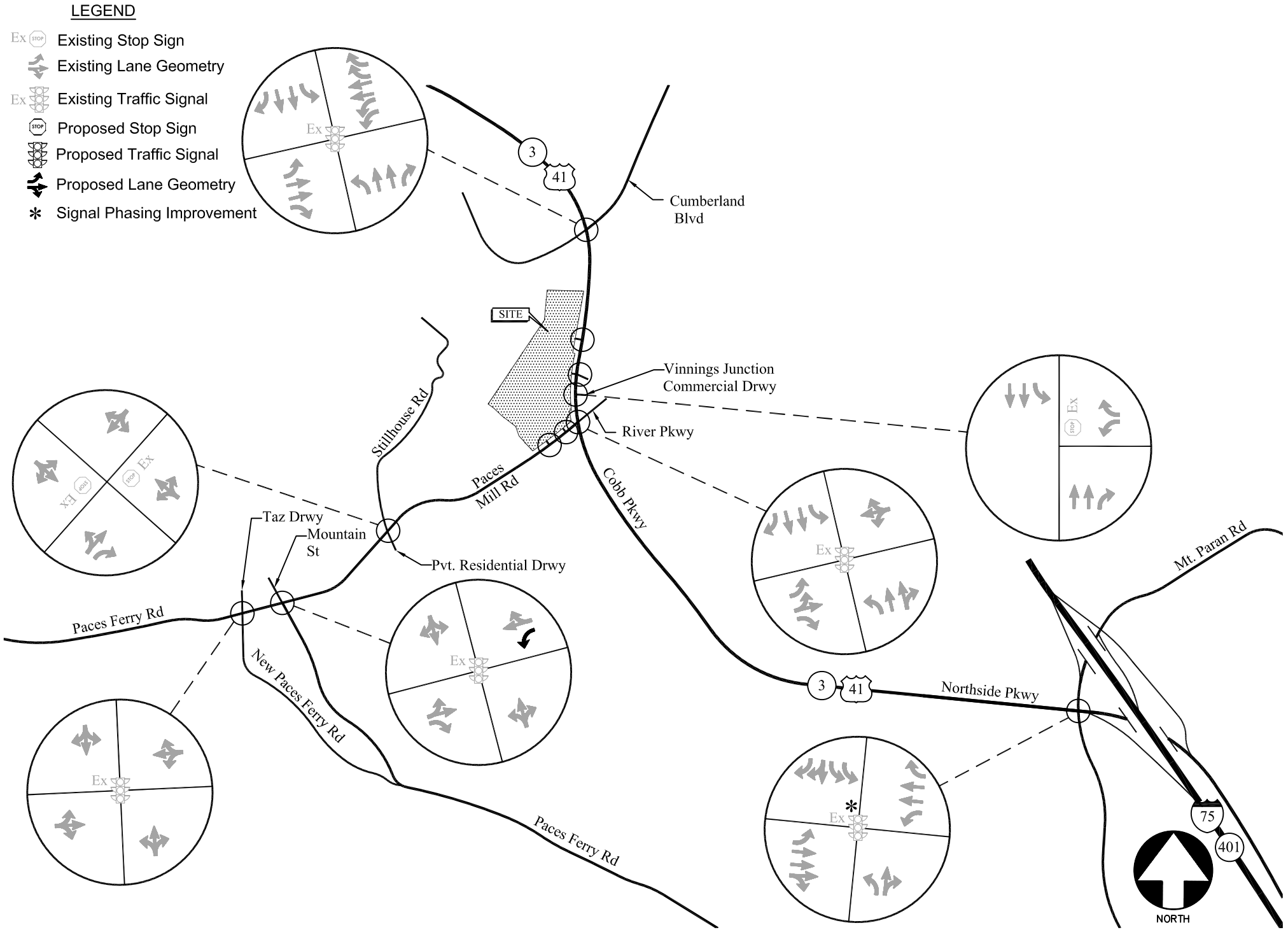
The LOS for the above intersections in the year 2011 with the addition of site-generated traffic after the implementation of the above improvements is shown in Table 7.

TABLE 7

FUTURE 2011 INTERSECTION OPERATIONS – WITH IMPROVEMENTS

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Mt. Paran Rd	D / D	Signalized	D (46.5)	0.96	C (26.6)	0.83
Paces Ferry Road / Paces Mill Road / Mountain Street	D / E	Signalized	C (26.0)	0.95	D (52.9)	1.03

The future intersection traffic control and lane geometry for the study area network needed to bring all intersections to the LOS standard is shown in Figure 12.



FUTURE 2011 TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 12

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9.2 Site Access Analysis

The development has two full access driveways on US 41 and two full access driveways on Paces Mill Road. The easternmost full access driveway (Kroger Driveway 2) on the Paces Mill Road will eliminate the left-out movements in the future. The remaining driveways on US 41 and Paces Mill Road will serve as full access driveways in the future. The future traffic volumes at the site driveways are shown in Figure 13. The recommended traffic control and lane geometry at these driveways are presented in the following sections.

The site access analysis was performed for the Future Year 2011 traffic volumes with recommended lane geometry. Results of the analysis are shown in Table 8. The recommended traffic control and lane geometry for the proposed intersections is discussed in the following pages.

TABLE 8

FUTURE SITE DRIVEWAY OPERATIONS

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
US 41 (SR 3) / Northern Site Drwy	D / D	Signalized	A (7.3)	0.62	A (8.3)	0.61
Paces Mill Rd / Western Site Drwy		Stop Controlled on Western Site Drwy				
-Eastbound Left	D / D		A (0.3)	0.01	A (0.7)	0.03
-Southbound Approach	D / D		F (118.3)	0.91	E (39.1)	0.29
Paces Mill Rd / Eastern Site Drwy		Stop Controlled on Eastern Site Drwy				
-Eastbound Left	D / D		A (8.9)	0.06	A (9.7)	0.09
-Southbound Approach	D / D		B (13.0)	0.14	C (18.3)	0.36
US 41 (SR 3) / Southern Site Drwy / Vinnings Junction Commercial Drwy		Stop Controlled on Southern Site Drwy				
-Eastbound Approach	E / E		F (100.2)	0.98	F (73.9)	1.09
-Westbound Approach	D / D		B (11.4)	0.01	B (14.1)	0.04
-Northbound Left	D / D		C (18.2)	0.22	B (14.0)	0.17

The following lists the recommended lane geometry for the site driveways.

- US 41 (SR 3) / Northern Site Driveway
  - Install a traffic signal.
  - Provide separate left and right turn lanes on eastbound approach (Northern Site Driveway).
  - Provide protected + permissive signal phasing for the northbound left turn movements on US 41 (SR 3).

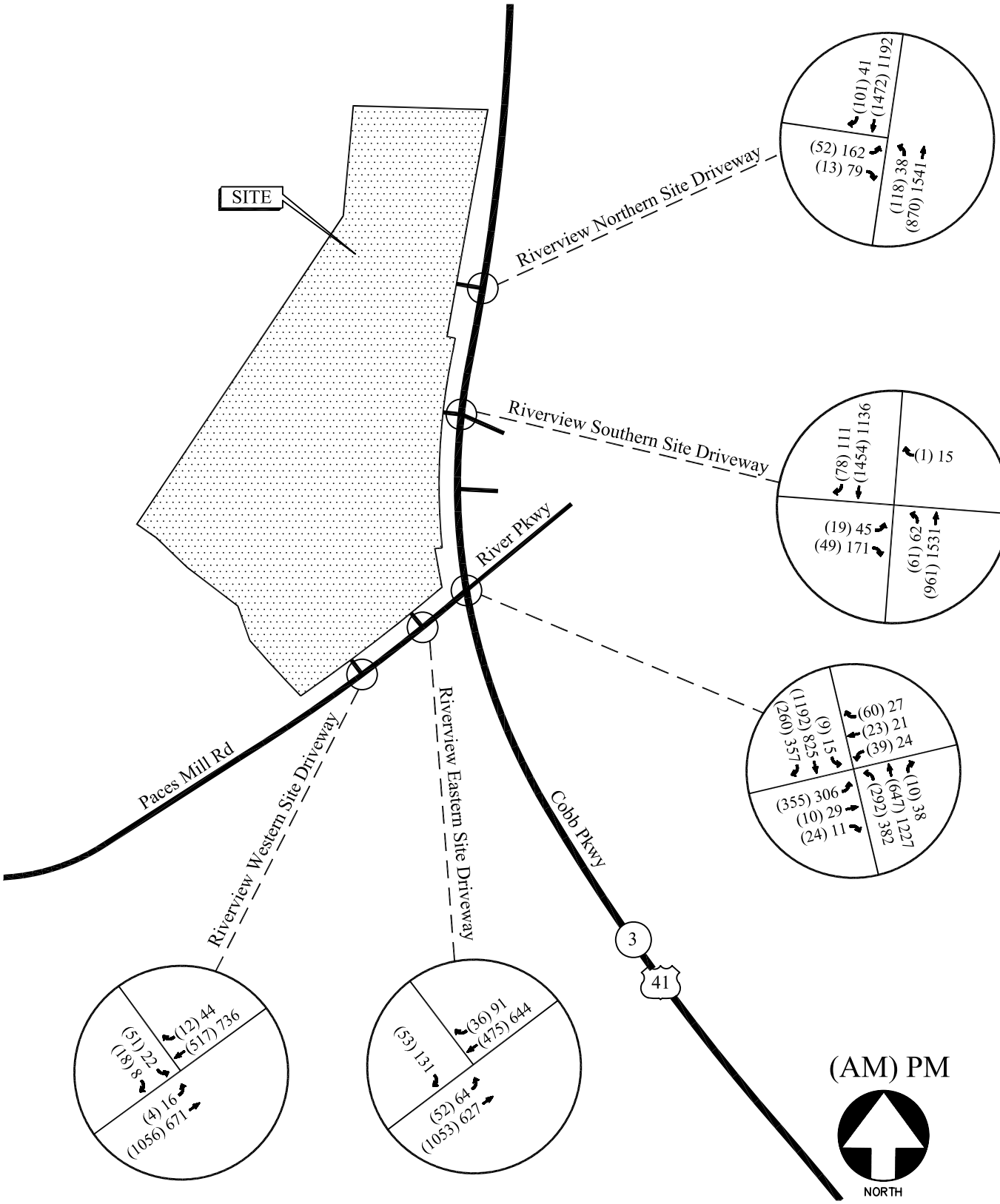
- US 41 (SR 3) / Southern Site Driveway / Vinings Junction Commercial Driveway
    - It is recommended that the intersection have stop controlled side street Southern Site Driveway, with US 41 (SR 3) remaining free flow.
    - Provide separate left and right turn lanes on eastbound approach (Southern Site Driveway).

The eastbound approach to the intersection will operate at LOS F during both the AM and PM peak hours after implementing the above improvements. It is not uncommon for side streets to experience delays during the peak hours. No improvements can be recommended at the intersection to improve the LOS except installation of a traffic signal; however, the intersection does not have the necessary volumes to warrant a traffic signal. Therefore, no further improvements are recommended for this intersection

- Paces Mill Road / Western Site Driveway
    - It is recommended that the intersection have stop controlled side street (Western Site Driveway), with Paces Mill Road remaining free flow.
    - Provide separate southbound left and right turn lanes on Western Site Driveway.
    - The southbound approach to the intersection will operate at LOS F during the AM peak hour and LOS E during the PM peak hour even after implementing the above improvement. It is not uncommon for side streets to experience delays during the peak hours. No improvements can be recommended at the intersection to improve the LOS except installation of a traffic signal; however, the intersection does not have the necessary volumes to warrant a traffic signal

- Paces Mill Road / Eastern Site Driveway
    - The intersection will allow only right in, right out and left in movements.
    - It is recommended that the intersection be stop controlled at the side street (Eastern Site Driveway) with Paces Mill Road remaining free flow.

The recommended traffic control and lane geometry for the site driveways is shown in Figure 14.



FUTURE 2011 SITE ACCESS PEAK HOUR VOLUMES FIGURE 13

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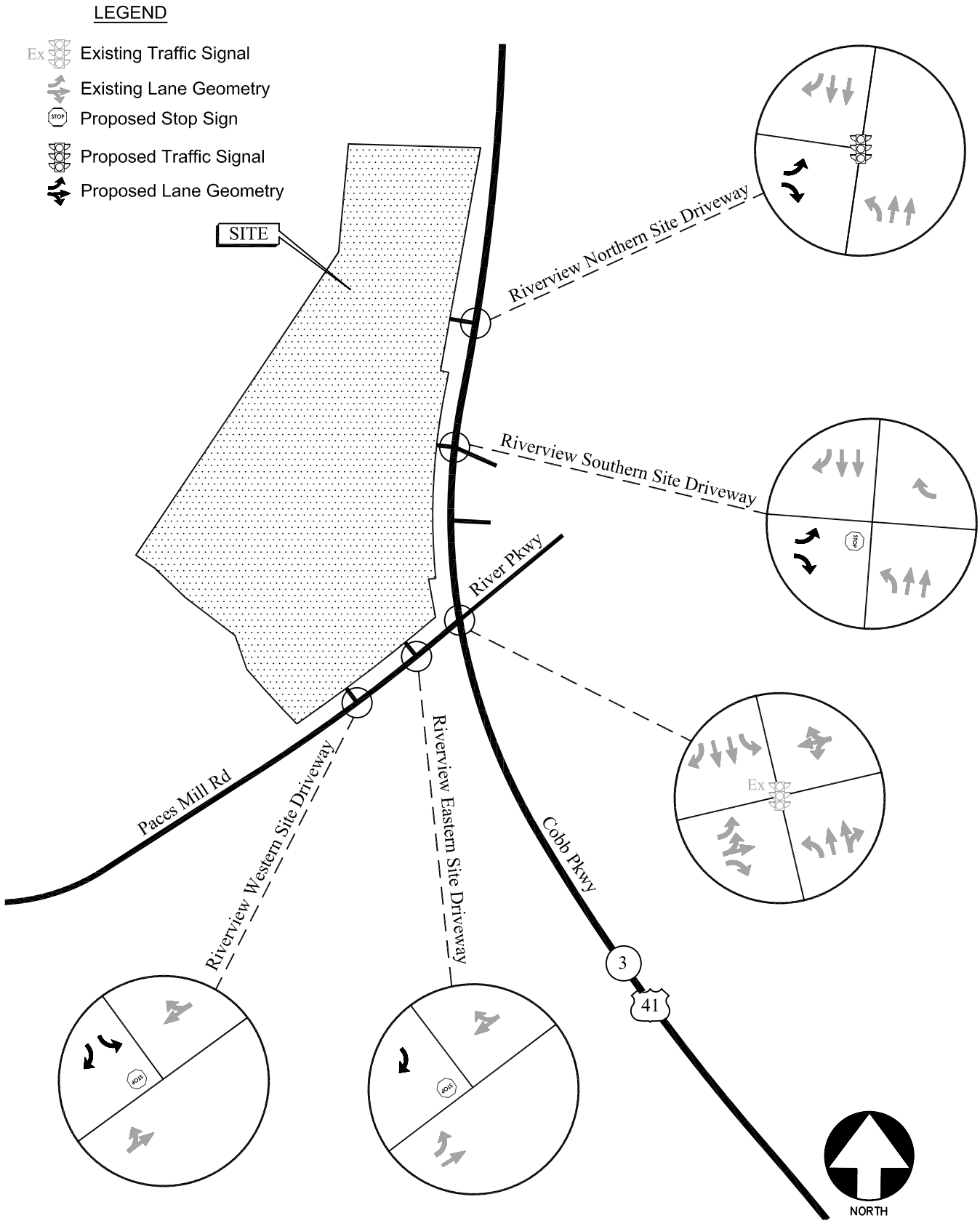

FUTURE 2011 SITE ACCESS TRAFFIC CONTROL AND LANE GEOMETRY — FIGURE 14

A&R Engineering Inc.

10. NON-EXPEDITED CRITERIA

10.1 Regional Mobility and Location

1. Quality, Character, Convenience, and Flexibility of Transportation Options
The proposed development will be comprised of a mixture of retail, office and residential uses. This mixture of uses will provide for significant trip reductions. There will be opportunities for individuals within the project to engage in business or work at the land uses within the project. The development will also provide pedestrians connections between various land use components. These features will provide the quality, character, and convenience that are desired in developments of this magnitude. In addition the location of the site is currently served by CCT bus services. CCT Bus Route 10 runs on US 41 (Cobb Parkway) and includes multiple bus stops in the vicinity of the site. The closest bus stop is located at the northeast and northwest corners of US 41 and Paces Mill Road intersection (the southwest corner of the site).

2. Vehicle Miles Traveled
The table below displays the reductions in trip generation due to mixed-use, pass-by and transit reductions.

24-hour Trip Generation	5,605
- Mixed Use Reductions (internal capture)	-575
- Pass-by reductions	-530
- Transit reductions	-90
Net Trips:	4,410
Reduction Percentage	21.3%

3. Relationship Between Location of Proposed DRI and Regional Mobility
The proposed DRI is currently served by one CCT bus route 10. The closes bus Stop is located at the northwest and northwest corners of the intersection of US 41 and Paces Mill Road.

4. Relationship Between Proposed DRI and Existing or Planned Transit Facilities
CCT bus route 10 currently serves the proposed site and a bus stop is located on US 41 (Cobb Parkway) just north of Paces Ferry Road. Details for CCT bus 10 are included in the Appendix

5. Transportation Management Area Designation
The area around the proposed project is designated as a transportation management area and is managed by the Cumberland CID.

6. Offsite Trip Reduction and Trip Reduction Techniques
Due to the nature of the development, there will be significant mixed-use, pass by and transit trip reductions. These reductions have been applied for the AM, PM peak hours and 24-hour trips

projected to be generated by the site.

7. Relationships between Proposed DRI and Existing Development and Infrastructure
The proposed DRI is located in an area where adequate public facilities will be available to serve the proposed development.

10.2 Pedestrian and Internal Circulation

The proposed project will provide pedestrian walkways along all property frontages to public streets and within the development to connect the site with adjacent developments. The network of sidewalks will provide adequate pedestrian access to the various land uses within and around the development.

Please refer to the site plan for information regarding pedestrian facilities. Regarding internal circulation, as shown in the traffic study, vehicles will be able to access the adjacent roadway efficiently and the site plan provides for sufficient internal circulation.

11. Other Pertinent Information

At this time no other pertinent information is available with regards to this development. All significant characteristics of the proposed development are fully discussed within this report.

12. Significant Impact Analysis

After the implementation of the recommended improvements, all intersections in the study area network will operate at acceptable levels of service with the exception of one unsignalized side street.