TRAFFIC IMPACT ANALYSIS

FOR

FRIENDSHIP VILLAGE
FULTON COUNTY, GEORGIA

Prepared For:

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FEBRUARY 16, 2007

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1. INTRODUCTION

Friendship Village is a proposed mixed use development in the Chattahoochee Hill Country (CHC) area of Fulton County, Georgia. This study is an analysis of the expected traffic impact of the project on the surounding road network. Due to the number of homes proposed being more than the 400 units minimum requirement for residential development, the mixed use proposed for the development, and the necessary re-zoning of the property from AG (agriculture) to Mixed Use Village in the CHC Overlay District, the development qualifies as a Development of Regional Impact (DRI). As a DRI, the level of analysis and review of the project will follow the rules and guidelines established by the Georgia Regional Transportation Authority (GRTA), Atlanta Regional Commision (ARC), and the Department of Community Affairs (DCA) and the *GRTA DRI Review Package Technical Guidelines.*

Due to the size and nature of the Friendship Village development, the GRTA and ARC review will be done under the Non-Expedited Review Process. As a part of this review process, an additional required document, an Area of Influence Study (AOI), has been prepared. The AOI will analyze the opportunities of the residents of the proposed development to find employment and the workforce needed in the proposed development to establish residences within a six road mile Area of Influence surrounding the proposed development.

The proposed Friendship development is located on approximately 1998 acres of land on the north and south side of Rivertown Road, between South Fulton Parkway and Cochran Mill Road in the Chattahoochee Hill Country area of South Fulton County. The proposed development will consist of a maximum 5981 residential units consisting of single family detached residences, Townhomes, Condominiums, Apartments, and live-work units. The development will also include a retail village in the southeast corner of the property adjacent to the intersection of Rivertown Road and South Fulton Parkway which will include 236,000 sf of retail, 174,000 sf of office, a charter elementary/middle school, a church, day care facility, YMCA, fire station, 18,000 sf amphitheater, and 20,000 sf community amenity center. The development will include a 27.8 acres of active recreation areas and 810 acres of non-watershed passive open space connected by a system of bike and pedestrian trails along with electric golf cart trails connecting the neighborhoods to the retail village.

Access to the development will consist of 15 entrances along Rivertown Road (10 locations), Cochran Mill Road (4 locations) and SR 154/Cascade Palmetto Hwy (1 Location). There is an additional connection to existing Northcutt Road at the north end of the retail village. Figure 1 shows the Site plan fpr the entire development and Figure 2 shows the site plan for the retail village. Figure 3 shows the aerial of the existing property.

The following steps were undertaken as a part of this study to determine the traffic impact of the proposed Friendship Village development:

- Collection of existing traffic data
- Inventory of the existing roadway network in the area of the proposed development
- Identification of proposed improvements to the existing roadway network and other proposed developments in the area
- Attendance at a Pre-Application Conference with representatives of GRTA.
- Attendance at a Methodology Meeting with representatives of GRTA, ARC, GADOT and Fulton County to establish the criteria and methodology to be used in this study
- Definition of the proposed development, including the type, size, and location of each land use, phasing of the development, location and configuration of external access points, location and configuration of internal intersections and drives, pedestrian crossing locations, transit interface, and parking requirements, including the number and location of parking spaces.

- Determination of the number of gross trips generated by the development and the determination of trip reductions due to multi-use internal capture, pass-by trip capture, and alternate transportation modes to develop a net vehilce trips for the development.

- Assignment and distribution of vehicular trips generated by the development onto the surrounding road network

- Determination of the intersections and roadway segments to be analyzed in the Study Network.

- Analysis of the conditions of the intersections and roadway segments in the Study Network for existing traffic volumes, future volumes for each project phase without the proposed development (No-Build), and future volumes volumes for each project phase with the development (Build) in the build out year for those time periods requested by GRTA to be studied

- Identification of any deficiencies in the road network and the determination of the improvements necessary to correct these deficiancies

- Reporting of the results and conclusions of the traffic impact analysis along with recommendations for proposed improvements to the roadway network.

Figure 1- Site Plan

Figure 2 – Village Site Plan

Figure 3 – Aerial Photo of Property

2. EXISTING TRAFFIC CONDITIONS

Roadway Network

To determine the extent of the study area for analyzing the impact of the proposed development, the 7% rule established in GRTA Guidelines was utilized. The 7% Rule requires the inclusion in the study network of each Roadway Segment on which the number of the Net Trips generated by the development that are assigned to that particular segment constitutes 7% or more of the Service Volume of the segment based on the Level of Service(LOS) standard. For this project, the standard utilized is LOS of "C" for those roads classified as Rural and LOS of "D" for those roads classified as Urban.

In order to apply the 7% rule and to determine the study network for the development, an inventory of the roads surrounding the site was made consisting of the following:

Rivertown Road is a two-lane rural road with a posted speed limit of 45 MPH. This road serves as an east-west collector road in the Chattachoochee Hill Country area of South Fulton County. East of its intersection with SR 154/Cascade Palmetto Hwy, Rivertown Road becomes classified as an Urban Minor Arterial and connects to SR 92 in the City of Fairburn. The traffic control on this roadway consists of two-way stop control at intersections with South Fulton Parkway and SR 154/Cascade Palmetto Hwy and an all way stop control at Cochran Mill Road. The land use along this roadway consists of rural residential and undeveloped tracts.

South Fulton Parkway is a four-lane divided, limited access road with a 44' depressed median and a posted speed of 55 mph. West of Rivertown Road, South Fulton Parkway becomes a two-lane undivided roadway with a posted speed of 55 mph. The road serves as a principal east-west arterial in South Fulton County, connecting from Douglas County to the west to Interstates 85 and 285 south of the City of Atlanta to the east. The traffic control on this roadway consists of signalized intersections at major cross roads including SR 154/Cascade Palmetto Hwy, Cedar Grove Road, and SR 92/Campbellton Fairburn Hwy. The land use along this segment consists of undeveloped parcels. Access to the Parkway is limited to the existing cross roads, with no new access allowed.

Cochran Mill Road is a two-lane rural road with a posted speed limit of 45 MPH. This road serves as an north-south collector road in the Chattachoochee Hill Country area of South Fulton County and is designated as a Scenic Byway. North of its intersection with SR 70/Cedar Grove Road, Cochran Mill Road becomes SR 70 and is classified as an Urban Minor Arterial and connects to SR 154/Cascade Palmetto Hwy. The traffic control on this roadway consists of two-way stop control at intersections with South Fulton Parkway and SR 154/Cascade Palmetto Hwy and all way stop control at Rivertown Road and SR 70/Cedar Grove Road. The land use along this roadway consists of rural residential and undeveloped tracts.

SR 154/Cascade Palmetto Highway is a two-lane undivided, rural road with posted speed of 55 mph. The road serves as a principal north-south major collector and minor arterial in South Fulton County, connecting from US 29 between the cities of Fairburn and Palmetto in the south to Interstate 20 and Fulton Industrial area to the north. The traffic control on this roadway consists of a signalized intersection at South Fulton Parkway. The land use along this segment consists primarily of undeveloped and rural residential parcels.

SR 92/Campbellton Fairburn Highway is a two-lane undivided, rural road with posted speed of 55 mph. The road serves as a north-south minor arterial, connecting from US 29 in the City Fairburn to SR 154/SR 70/Cascade Palmetto Highway in the north. The traffic control on this roadway in the project area consists of a signalized intersection at South Fulton Parkway. The land use along this segment in primarily undeveloped with several new residential developments being constructed north of South Fulton Parkway.

The results of the 7% rule analysis is shown in Table 1 and the 7% Study Area is shown in Figure 4.

Table 1 – 7% rule analysis

Table 1 – 7% rule analysis

Figure 4 – 7% Study Area

In the Methodology Meeting with representatives of GRTA, it was agreed that the following roadway segments would be analyzed for the impact of traffic from the proposed development:

- South Fulton Parkway from Cochran Mill Road to SR 92/Campbellton Fairburn Hwy
- Rivertown Road from Cochran Mill Road to Ono Road
- Cochran Mill Road from Rivertown Road to SR 70/Cedar Grove Road
- SR 154/Cascade Palmetto Highway from Rivertown Road to SR 70/Cochran Mill Road
- SR 70/Cochran Mill Road from Cochran Mill Road to SR 154/Cascade Palmetto Hwy

In the same Methodology Meeting, the following intersections were agreed upon for analysis in the AM and PM peak hours to determine the impact of traffic from the proposed development:

- Rivertown Road at Cochran Mill Road: The existing intersection is four-way stop with single lane approaches on each leg.
- Rivertown Road at South Fulton Parkway: The existing intersection is a two-way stop for Rivertown Road. Rivertown Road is a two-lane roadway with a hatched out area for future left turns on both approaches. South Fulton Parkway is a four lane divided roadway on both approaches. The Eastbound approach has a left turn lane and a right turn lane. The westbound approach has a left turn lane and and the right hand lane striped for right turn and a single thru lane.
- Rivertown Road at SR 154/Cascade Palmetto Hwy: The existing intersection has two-way stop control for Rivertown Road. Both roads are two lane roadways with no turn lanes at the intersection.
- South Fulton Parkway at Cochran Mill Road: The existing intersection is a two-way stop for Cochran Mill Road. Cochran Mill Road is a two-lane roadway with a hatched out area for future left turns on both approaches. South Fulton Parkway is a two lane undivided roadway with right turn lanes on both approachs.
- South Fulton Parkway at SR 154/Cascade Palmetto Highway: The existing intersection is a signalized intersection. South Fulton Parkway is a four lane divided roadway on both approaches with additional left and right turn lanes. The left turns on both approaches have Protected only signal phasing. SR 154/Cascade Palmetto Hwy is a two-lane undivided roadway with additional left turn lanes. The north and southbound left turns have Permitted only signal phasing.
- South Fulton Parkway at Short Road: The existing intersection is a two-way stop for Short Road. Short Road is a two-lane roadway with no additional turn lanes. South Fulton Parkway is a four lane divided roadway on both approaches with additional left and right turn lanes.
- South Fulton Parkway at Cedar Grove Road: The existing intersection is a signalized intersection. South Fulton Parkway is a four lane divided roadway on both approaches with additional left and right turn lanes. The left turns on both approaches have Protected/Permitted signal phasing. Cedar Grove Road is a two-lane undivided roadway with additional left turn lanes. The north and southbound left turns have Protected/Permitted signal phasing.

- South Fulton Parkway at SR 92/Campbellton Fairburn Highway: The existing intersection is a signalized intersection. South Fulton Parkway is a four lane divided roadway on both approaches with additional left and right turn lanes. The left turns on both approaches have Protected only signal phasing. SR 92/Campbellton Fairburn Highway is a four-lane undivided roadway with additional left turn lanes on both approaches. The northbound approach has an additional right turn lane. The northbound left turn has Protected/Permitted signal phasing and the southbound left turn has Permitted only signal phasing.

- SR 154/Cascade Palmetto Hwy at Cedar Grove Road: The existing intersection has two-way stop control for Cedar Grove Road. Both roads are two lane roadways with no turn lanes at the intersection.

- Cochran Mill Road at SR 70/Cedar Grove Road: The existing intersection is four-way stop with single lane approaches on each leg.

- SR 154/Cascade Palmetto Hwy at SR 70/Cochran Mill Road: The existing intersection has stop control for SR 70/Cochran Mill Road only. Both roads are two lane roadways with no turn lanes at the intersection

- All Proposed Site Entrances along Rivertown Road (10 total), Cochran Mill Road (4 total) and SR 154/Cascade Palmetto Hwy: All of the existing roads are two-lane undivided roadway at the proposed site entrances.

Due to the large retail component of the development, the following intersections were agreed upon for analysis in the Saturday peak hour analysis in the final buildout (2022) year only:

- Rivertown Road at Cochran Mill Road
- Rivertown Road at South Fulton Parkway
- South Fulton Parkway at SR 154/Cascade Palmetto Highway
- The Five (5) proposed site entrances along Rivertown Road serving the Retail Village

A review of the 2003-05 State Transportation Improvement Program (STIP), the 25 year Regional Transportation Plan (RTP), and the Georgia Department of Transportation Work Program shows that there are several projects in the area of the proposed development.

FS-140 Cochran Mill Road – Reconstruction of Bridge over Pea Creek (Project Completed)

FS-206 Cascade Palmetto Hwy/Cedar Grove Road – Intersection/Roadway Operations Improvement, Scheduled Completion 2010

FS-196 South Fulton Parkway – Access Management Plan Study

Due to uncertainty of construction status and funding of these projects, none of these projects will be included in capacity analysis of the network.

Transit Service is currently available along South Fulton Parkway in the form of a MARTA Bus line. The proposed development plan includes placement of a bus shelter(s) in both the Village North and Village South areas of the Retail Village with regularly scheduled service. Residential Trips from these two areas for the Final Buildout (2022) phase only have been reduced by 5% for use of transit.

Existing Traffic Conditions (2007)

24-Hour tube counts were collected in November 2006 for Rivertown Road, South Fulton Parkway, Cochran Mill Road, and SR 154/Cascade Palmetto Highway immediately adjacent to the proposed development site. Additional tube counts were made in late January 2007 along South Fulton Parkway East of SR 154/Cascade Palmetto Highway, SR 154 Cascade Palmetto Highway and SR 70/Cochran Mill Road for the segments to be analyzed. At the same time, AM and PM Peak hour turning movement counts were undertaken for the existing intersections to be analyzed as a part of this traffic impact study. These existing turning movements are shown in Figure 5. In addition, Avarage Daily Traffic (ADT) volumes were obtained from the GDOT's count stations in the area for the years 1999 to 2005. This data was used to develop growth rates for future background traffic. Printouts of the traffic counts are included in the Appendices.

Using these traffic volumes the intersections of in the study network were analyzed using the methodology of the ***Highway Capacity Manual, 2003 Edition*** utilizing the ***Synchro, Version 7***, to determine the existing Level of Service (LOS) of the intersections.

In addition, the roadway segments in the study network were analyzed using the methodology of the ***Highway Capacity Manual, 2003 Edition*** utilizing the *Highway Capacity Software*, Version 5.2.1 for two-lane and multilane highways to determine the LOS of these segments.

The results of these analyses are shown in Tables 2 and 3. Printouts of the analysis are included in the Appendices.

Based on the segment analysis, all segments in the study network function at a Level of Service equal to or better than the LOS standard of "C" for rural designation and LOS "D" for urban designation and no deficiencies or mitigation measured have been identified.

The intersection capacity analysis indicates that all intersections studied function at a Level of Service equal to or better than the LOS standard of "D".

The analysis does set the LOS standards that will have to be met by the analysis of the future background and site traffic to the default LOS "D" for intersections, LOS "C" for roadway segments with a rural designation and LOS "D" for roadway segments with an urban designation.

Figure 5 - Existing Turning Movements

Figure 6 - Existing Lane Configuration/Control

Table 2 – Intersection Existing LOS

Table 3 – Segment Existing LOS

3. PROPOSED PROJECT

The proposed Friendship development is located on approximately 1998 acres of land on the north and south side of Rivertown Road, between South Fulton Parkway and Cochran Mill Road in the Chattachoochee Hill Country area of South Fulton County.

The proposed development is a Mixed Use Development consisting of the following uses:

- 2,197 Single Family Residences
- 350 Townhomes
- 1,699 Condominiums/Stack Flats
- 550 Carriage Homes
- 450 Multi-Family Units
- 735 Residential Units Above Mixed Use Retail/Office
- 236,000 sq ft of Retail
- 174,000 sq ft of Office
- 160,400 sq ft of Mixed Use Office/Retail on ground Floor
- 19,000 sq ft Church
- 20,000 sq ft Daycare Center
- 31,000 Sq ft Elementary School
- 12,600 sq ft YMCA
- 4,500 sq ft Fire Station
- 18,000 sq ft Amphitheater
- 20,000 sq ft Community Amenity Centers

The development will include a 27.8 acres of active recreation areas and 810 acres of non-watershed passive open space connected by a system of bike and pedestrian trails.

The development is proposed to be built out in Nine (9) phases over a 15 year period starting in 2007 and completed in 2022 based on the following schedule:

Phase One:	Neighborhoods 32, 33A, 33B
Phase One+:	Neighborhoods 29, 30, 31
Phase Two:	Neighborhoods 18, 34, 35, 36, 37
Phase Three:	Neighborhoods 40, 41, 42, 43
Phase Four:	Neighborhoods 15, 16, 17, 38, 39
Phase Five:	Neighborhoods 1, 2, 3, 9, 10, 11, 12, 13, 14
Phase Six:	Neighborhoods 45, 46, 47, 48
Phase Six+:	Neighborhoods 4, 5, 6, 7, 8
Phase Seven:	Neighborhoods 24, 25, 26, 27, 28
Phase Eight:	Neighborhoods 23
Phase Nine:	Neighborhoods 19, 20, 21, 22

It is expected that the development of the commmetcial and office componets to the project will begin in approximately 2015 and be included in Phases Six through Nine of the development. At the methodology meeting with GRTA it was agreed that the proposed development would be analyzed in two phases. Phase 1 would analyze the traffic conditions in 2015 and encompass first five phases of residential development only with no commercial and office development. Phase 2 would analyze the traffic conditions upon final buildout in 2022. Figures 7 and 8 ouline the areas to be developed during the Phase 1 of the development.

Figure 7 – Phase 1 Overall

Figure 8 – Phase 1 village

The existing zoning of the property is AG (Agricultural). The proposed zoning will be Mixed Use Village in the Chattahoochee Hill Country Overlay District. The site is in Fulton County and the new zoning will be a change in the current county zoning.

The land adjacent to the proposed development is AG (Agricultural). The current Fulton County Future Land Use Plan and the Chattahoochee Hill Country Overlay District shows the area where the project site is located to be developed as a Mixed use Village.

Access to the development will consist of 15 entrances along Rivertown Road (10 locations), Cochran Mill Road (4 locations) and SR 154/Cascade Palmetto Hwy (1 Location). There is an additional connection to existing Northcutt Road at the north end of the retail village. Fulton County is the permitting agency for the access locations on Rivertown Road and Cochran Mill Road. Georgia Department of Transportation is the permitting agency for the site access from SR 154/Cascade Palmetto Highway. The Site Plan shows all internal roadways and internal site access.

The Site plan shows proposed parking areas for the development. Each residential unit will have at least 2 parking spaces (1 or 2 in the garage; 1 or 2 on the driveway). Sidewalks will be provided on all roads in the development. In addition, the development will include a system of off road multi-use pathways, including dedicated electric golf cart paths connecting all of the neighborhoods within the development, and providing connections to the community amenity areas, retail village, and the Cochran Mill Nature Center adjacent to the Southwest Corner of the development.

Trip Generation

As noted above the proposed Friendship Village consists of a mixed use development with the land uses and densities listed above. The density for each Land Use based on the Site Plan prepared by SEC Planning Consultants.

Trip Generation for this project was based on the rates published in the 7th edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*.

Since the development is a mixed use development the number of trips retained within the development by the inclusion of the retail, community, and office land uses was computed using the methodology and worksheets from the Institute of Transportation Engineers (ITE) *Trip Generation Handbook*. Although there is retail and commercial components in the development, pass-by trips were not computed for this development due to the low existing volumes on the roadways adjacent to the site.

A Summary of Trip Generation rates, land uses, density, and trips for Friendship Village is shown in Table 4 for Phase 1 and Table 5 for final buildout of the development. A summary of the mixed use and transit reductions and distribution of internal trips is shown in Table 6. Printouts of the mixed use worksheets are included in the Appendices.

Table 4 – Trip Generation Phase 1

Table 4 – Trip Generation Phase 1

Table 4 – Trip Generation Phase 1

Table 5 – Trip Generation Final Buildout

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Table 5 – Trip Generation Final Buildout

Table 6 – Internal Trip Distribution

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Traffic Distribution

The distribution of trips generated by a development is determined by the distribution of population, the distribution of employment and retail sites, and the surrounding road network. In determining the turning movement of trips generated by the project, the distribution of trips was determined by engineering judgement, based on the following assumptions and observations made about traffic flow in the area:

- Since the primary attraction of trips will be to the east toward the City of Atlanta and to Interstates 85 and 285 with its connection to Atlanta, the distribution of trips will be primarily to the east on South Fulton Parkway with approximately 65% of the site traffic heading in this direction.

- The distribution of site traffic at the intersection of South Fulton Parkway and SR 154/Cascade Palmetto Highway is assumed to closely follow the current distribution of traffic at the intersection. This analysis indicated that about 18-20% of the site generated traffic would utilize SR 154 with about an equal split to the north and to the south on this roadway.

- The remaining 15% of the volumes were distrubuted to Cochran Mill Road, South Fulton Parkway, and Rivertown Road to the south and west of the proposed development.

- Traffic from each subdivision within the proposed development was distrubuted to the adjacent roadways by determining the shortest path to exit and utilizing the intersection that were already or expected to be signalized as a part of the proposed development

These assumptions and percentages were applied to the trips generated by the development using the *WinTASS* software to assign traffic volumes to the road network for each of the two phases of the project for the AM Peak, PM Peak, and Saturday (2022 only). A printout of the WinTASS output is included in the Appendicies.

4. FUTURE TRAFFIC CONDITIONS – PHASE 1(2015)

No Build (Year 2015) Traffic Conditions

In the period between the time this study is being performed, and the completion of Phase 1 of the project in 2015, it is expected that the existing traffic in the area will grow whether or not the proposed project is built, due to the expanding nature of the region and from other identified projects in the area.

There are no current proposed development projects either under way or in the planning stages that have been identified that are close enough to the proposed development to affect the background traffic.

The growth of traffic due to the expanding nature of the region was determined by using the existing Georgia DOT traffic counts from the years 1999 to 2005 for South Fulton Parkway, Rivertown Road, Cochran Mill Road, and SR 154/Cascade Palmetto Highway. These counts show traffic in the region growing at a rate of approximately 3% a year for the State Highways and South Fulton Parkway.

The unincorporated areas of Fulton County west of SR 154/Cascade Palmetto Highway are under the Chattahoochee Hill Country Overlay District which restricts the growth of the district to three Mixed Use Villages of which the proposed Friendship Village is the first. Since the overlay district will restrict the development of the surrounding area, almost all of the traffic growth on the roads adjacent to proposed site will be due to the site itself. In the Methodology Meeting with GRTA, it was agreed to use a growth rate of 1% per year for Rivertown Road, and Cochran Mill Road and a rate of 3% for South Fulton Parkway, SR 154/Cascade Palmetto Highway and all roads in the study network east of SR 154/Cascade Palmetto Highway.

Using these growth rates, future no build traffic volumes were determined by adding the background growth traffic out to the year 2015 to the existing traffic volumes. The resulting AM and PM Peak hour volumes for the Future No Build (Year 2015) condition are shown in Figure 9.

As noted previously, there are no projects planned in the STIP, TRP, or by GDOT in the area that would impact or improve the capacity of the roadway network

Using the capacity analysis methodologies previously described the intersections and segments of the agreed Study Network were analyzed for the Future No Build (Year 2015) traffic condition. This condition does not include the traffic generated by the proposed development. The results of the Capacity Analysis are shown in Table 6 and Table 7 and a detail summary output is located in the Appendices.

The results of the segment analysis for the Future No Build Condition show that all segments in the study network functions at an acceptable LOS. The capacity analysis of the intersections shows that all intersections continue to function at an acceptable LOS. Therefore, for the intersections and segments in the study network, no deficiencies were identified and no mitigation measures need to be developed.

- Figure 9 – 2015 No build Traffic volumes

Table 6

Table 7

Phase 1 Build (Year 2015) Traffic Conditions

The projected volumes for the proposed development were added to the Future No Build Traffic Volumes to develop the total future traffic expected in the area at the completion of Phase 1 of the development. The total Future (2015) Phase 1 Build Traffic Volumes is shown in Figure 10 for the AM and PM Peak Periods.

Using the capacity analysis methodologies previously described the intersections and segments of the agreed Study Network were analyzed for the Future Phase 1 Build (Year 2015) traffic condition for the AM and PM Peak Hour. The analysis of the proposed site entrances was done for the AM and PM peak hours and included the improvements for Rivertown Road, Cochran Mill Road and SR 154/Cascade Palmetto Highway that are programmed to be made as part of the Friendship Village Development. These improvements consist of:

- Widening Rivertown Road to a four-lane divided roadway with a 20' median from South Fulton Parkway to past Site Entrance #5 at the west end of the proposed Retail Village.
- Inclusion of Left and Right turn lanes on Rivertown Road at Site Entrance #1, Site Entrance #2, and Site Entrance #4.
- Signalization of the intersection of Rivertown Road with Site Entrance #2
- Addition of Left and Right Turn Lanes on Rivertown Road at Site Entrances #6, #7, #8, #9, & #10
- Addition of Left and Right Turn Lanes Cochran Mill Road at Site Entrance #14
- Addition of Left and Right Turn Lanes on SR 154/Cascade Palmetto at Site Entrance #15

Figure 11 shows the lane configurations and control measures for all the proposed site entrances to be constructed in Phase 1. The results of the Segment and Capacity Analysis are shown in Table 8 and Table 9 and a detail summary output is located in the Appendices.

The results of the segment analysis for the Future Phase 1 Build (Year 2015) condition show that all segments in the study network functions at an acceptable LOS. The capacity analysis of the intersections shows that all intersections with the exception of the following continue to function at an acceptable LOS:

- South Fulton Parkway at Rivertown Road
- South Fulton Parkway at SR 92/Campbellton Fairburn Road

In addition, all of the Site Entrances are shown to function at an acceptable LOS with the inclusion of the improvements outlined above. Therefore, for the intersections and segments in the study network, except for the two noted, no deficiencies were identified and no mitigation measures need to be developed.

South Fulton Parkway and Rivertown Road: The two-way stop control capacity analysis shows that the intersection would function at an LOS F in the AM Peak. The cause of the reduction in LOS to an unacceptable level is the additional traffic southbound on Rivertown Road from the proposed development turn left onto South Fulton Parkway. The appropriate mitigation for this deficiency will be the addition of a traffic signal at this intersection with the inclusion of left turn lanes on Rivertown Road. Therefore the following improvements are proposed for the intersection of South Fulton Parkway and Rivertown Road for the Future (2015) Phase 1 Build Scenario:

- Install a traffic signal at the intersection including protected/permitted left turn phases on all approaches
- Restripe the Northbound approach on Rivertown Road to include a left turn lane to westbound South Fulton Parkway

- Configure one of the two proposed lanes on the southbound approach of Rivertown Road to function as a left turn lane to eastbound South Fulton Parkway with the other functioning as a shared thru/right lane.

South Fulton Parkway and SR 92/Campbellton Fairburn Highway: The signalized capacity analysis shows that the intersection would function at an LOS F in the AM Peak. The cause of the reduction in LOS to an unacceptable level is due primarily to a heavy left turn movement (383 vehicles) from Southbound SR 92/Campbellton Fairburn Highway. Therefore the following improvements are proposed for the intersection of South Fulton Parkway and SR 92/Campbellton Fairburn Highway for the Future (2015) Phase 1 Build Scenario:

- Add a second southbound left turn lane to SR 92/Campbellton Fairburn Highway. This is justifiable since the left turning volume is greater than 383 vehicles. The addition of a second left turn lane will require upgrading the signal to Protected Only Phasing for the southbound left turn.

Since these mitigation measures will need to be implemented in order for these intersections to function at an acceptable LOS in the Phase 1 Build (2015) scenario, these improvements will become part of the base system to be analyzed in the Final Build (2022) scenario.

Figure 10 – Phase 1 Build (2015) Turning Volumes

Figure 11 – Phase 1 Build (2015) Intersection Configurations

Table 8 – Phase 1 Build (2015) intersection analysis

Table 9 - Phase 1 Build (2015) segment analysis

5. FUTURE TRAFFIC CONDITIONS – FINAL BUILDOUT(2022)

No Build (Year 2022) Traffic Conditions

In the period between the time this study is being performed, and the Buildout of the project in 2022, it is expected that the existing traffic in the area will grow whether or not the proposed project is built, due to the expanding nature of the region and from other identified projects in the area.

Using the growth rates identified in the previous section, future no build traffic volumes were determined by adding the background growth traffic out to the year 2022 to the existing traffic volumes. The resulting AM, PM and Saturday Peak hour volumes for the Future No Build (Year 2022) condition are shown in Figure 12.

As noted previously, there are no projects planned in the STIP, TRP, or by GDOT in the area that would impact or improve the capacity of the roadway network

Using the capacity analysis methodologies previously described the intersections and segments of the agreed Study Network were analyzed for the Future No Build (Year 2022) traffic condition. This condition does not include the traffic generated by the proposed development. The results of the Capacity Analysis are shown in Table 10 and Table 11 and a detail summary output is located in the Appendices.

The results of the segment analysis for the Future No Build Condition show that all segments in the study network functions at an acceptable LOS. The capacity analysis of the intersections shows that all intersections continue to function at an acceptable LOS except for the intersection of South Fulton Parkway and SR 92/Campbellton Fairburn Road which is reduced to a LOS "E" in the AM Peak. Therefore, for the intersections and segments in the study network except the one noted, no deficiencies were identified and no mitigation measures need to be developed.

South Fulton Parkway and SR 92/Campbellton Fairburn Highway: The signalized capacity analysis shows that the intersection would function at an LOS E in the AM Peak. The cause of the reduction in LOS to an unacceptable level is due primarily to a heavy left turn movement (470 vehicles) from southbound SR 92/Campbellton Fairburn Highway to eastbound South Fulton Parkway. Therefore the following improvements are proposed for the intersection of South Fulton Parkway and SR 92/Campbellton Fairburn Highway for the Future (2022) No-Build Scenario:

- Add a second southbound left turn lane to SR 92/Campbellton Fairburn Highway. This is justifiable since the left turning volume is greater than 383 vehicles. The addition of a second left turn lane will require upgrading the signal to Protected Only Phasing for the southbound left turn.

- Figure 12 – 2022 No build Traffic volumes

Table 10

Table 11

Final Build (Year 2022) Traffic Conditions

The projected volumes for the final buildout of the proposed development were added to the Future No Build Traffic Volumes to develop the total future traffic expected in the area at the final buildout of the development. The total Future Build (2022) Traffic Volumes is shown in Figure 13 for the AM, PM and Saturday Peak Periods.

Using the capacity analysis methodologies previously described the intersections and segments of the agreed Study Network were analyzed for the Future Build (Year 2022) traffic condition for the AM, PM and Saturday Peak Hour including all the proposed Site Entrances with the improvements to Rivertown Road, Cochran Mill Road, and SR 154/Cascade Palmetto Highway previously identified. The analysis also included the improvements to the South Fulton Parkway intersections with Rivertown Road and with SR 92/Campbellton Fairburn Road identified in the Phase 1 (2015) analysis. Figure 13 shows the lane configurations and control measures for all the proposed site entrances to be constructed in Phase 1. The results of the Segment and Capacity Analysis are shown in Table 12 and Table 13 and a detail summary output is located in the Appendices.

The results of the segment analysis for the Future Phase 1 Build (Year 2015) condition show that all segments in the study network functions at an acceptable LOS. The capacity analysis of the intersections shows that all intersections with the exception of the following continue to function at an acceptable LOS:

- South Fulton Parkway at Rivertown Road
- South Fulton Parkway at SR 154/Cascade Palmetto Highway
- South Fulton Parkway at Cedar Grove Road
- South Fulton Parkway at SR 92/Campbellton Fairburn Road
- Rivertown Road at SR 154/Cascade Palmetto Highway
- SR 154/Cascade Palmetto Highway at Cedar Grove Road

In addition, all of the Site Entrances are shown to function at an acceptable LOS. Therefore, for the intersections and segments in the study network, except for those noted above, no deficiencies were identified and no mitigation measures need to be developed.

South Fulton Parkway and Rivertown Road: The signalized capacity analysis shows that the intersection, including the mitigation improvements identified in the Phase 1 (2015) analysis, would function at an LOS F in the AM, PM and Saturday Peak Hours due to the continued increase in traffic to and from the proposed development. The following improvements are proposed for the intersection of South Fulton Parkway and Rivertown Road to improve the intersection to an acceptable LOS.

- Add a second left turn lane from Rivertown Road southbound. This will also require the upgrade of the traffic signal to a Protected Only phasing for the southbound left.

- Add a right turn lane to Rivertown Road northbound.

- Add a second right turn lane from South Fulton Parkway westbound to Rivertown Road northbound. Rivertown Road in front of Retail Village is proposed to have two northwest bound lanes making this solution possible to implement.

South Fulton Parkway and SR 154/Cascade Palmetto Highway: The signalized capacity analysis shows that the intersection would function at an LOS F in the AM and PM Peak Hours due to heavy thru and turning volumes on both roadways. The following improvements are identified to improve the intersection to an acceptable LOS.

- Add right turn lanes to SR 154/Cascade Palmetto highway on both northbound and southbound approaches.

- Add a second thru lane to SR 154/Cascade Palmetto highway on both northbound and southbound approaches.

- Upgrade the Signal to include Protected/Permitted Left Turn Phasing on SR 154/Cascade Palmetto highway on both northbound and southbound approaches.

- Add a second left turn lane to South Fulton Parkway Eastbound.

South Fulton Parkway and Cedar Grove Road: The signalized capacity analysis shows that the intersection would function at an LOS F in the AM and LOS E in the PM Peak Hours due to heavy thru volumes on South Fulton Parkway and heavy turning volumes on Cedar Grove Road. The following improvements are identified to improve the intersection to an acceptable LOS.

- Add a northbound right turn lane to Cedar Grove Road.

- Add a second southbound left turn lane to Cedar Grove Road and upgrade the signal to Protected Only phase for SB Left.

South Fulton Parkway and SR 92/Campbellton Fairburn Road: The signalized capacity analysis shows that the intersection, including the mitigation improvements identified in the Phase 1 (2015) analysis, would function at an LOS F in the AM and PM Peak Hours due to the heavy thru and turning volumes on both roadways. The following improvements are proposed to improve the intersection to an acceptable LOS.

- Add a southbound right turn lane to SR 92/Campbellton Fairburn Road.

- Add a second northbound thru lane to SR 92/Campbellton Fairburn Road.

- Add a third thru lane to South Fulton Parkway at the intersection in both directions.

Rivertown Road and SR 154/Cascade Palmetto Highway: The two-way stop capacity analysis shows that the intersection would function at an LOS E in the PM Peak Hour. The following improvements are identified to improve the intersection to an acceptable LOS.

- Add right turn lanes Rivertown Road on both approaches.

While this would improve the intersection to an acceptable LOS, the Rivertown Road approaches would operate at an LOS F. The only mitigation that would improve the LOS of these approaches would be to signalize the intersection. However, the expected volumes on Rivertown Road are not expected to warrant a traffic signal and could result in the significant reduction in the LOS of SR 154/Cascade Palmetto Highway.

SR 154/Cascade Palmetto Highway at Cedar Grove Road: The two-way stop capacity analysis shows that the intersection would function at an LOS E in the PM Peak Hour due to a heavy thru and turning volumes on Cedar Grove Road westbound. The following improvements are identified to improve the intersection to an acceptable LOS.

- Add right turn lane to westbound Cedar Grove Road.

Figure 13 – Final Build (2022) Turning Volumes

Figure 14 – Final Build (2022) Intersection Configurations

Table 12

Table 13

6. CONCLUSIONS

Based on the analysis of anticipated conditions, the impact of the proposed development of the Friendship Village, while increasing the volume of traffic, will not result in a significant reduction in operation of the surrounding road network due to the large amount of unused capacity in the existing network.

Based on the anticipated traffic conditions generated by the Friendship development and the capacity and segment analysis for the Existing (2015), Future (2015) No Build, Future Phase 1(2015) Build, Future (2022) No Build, and Future Final (2022) Build condition, the following is recommended:

Existing

- *No Improvement Necessary*

Future (2015) No-Build

- *No Improvement Necessary*

Future Phase 1 (2015) Build

- Rivertown Road at Site Entrances
    - Widening Rivertown Road to a four-lane divided roadway with a 20' median from South Fulton Parkway to past Site Entrance #5 at the west end of the proposed Retail Village.
    - Add left and right turn lanes on Rivertown Road at Site Entrance #1, Site Entrance #2, and Site Entrance #4.
    - Signalize the intersection of Rivertown Road with Site Entrance #2
    - Add left and right turn lanes on Rivertown Road at Site Entrances #6, #7, #8, #9, & #10
- Cochran Mill Road at Site Entrance #8
    - Add of left and right turn lanes Cochran Mill Road
- SR 154/Cascade Palmetto Highway at Site Entrance #15
    - Add left and light turn lanes on SR 154/Cascade Palmetto Highway
- South Fulton Parkway and Rivertown Road
    - Install a traffic signal at the intersection including protected/permitted left turn phases on all approaches
    - Restripe the Northbound approach on Rivertown Road to include a left turn lane to westbound South Fulton Parkway
    - Configure one of the two proposed lanes on the Southbound approach of Rivertown Road to function as a left turn lane to eastbound South Fulton Parkway with the other functioning as a shared thru/right lane.

- South Fulton Parkway and SR 92/Campbellton Fairburn Highway
    - Add a second southbound left turn lane to SR 92/Campbellton Fairburn Highway.
    - Upgrade the signal to Protected Only Phasing for the southbound left turn.

Future (2022) No-Build

- South Fulton Parkway and SR 92/Campbellton Fairburn Highway
    - Add a second southbound left turn lane to SR 92/Campbellton Fairburn Highway.
    - Upgrade the signal to Protected Only Phasing for the southbound left turn.

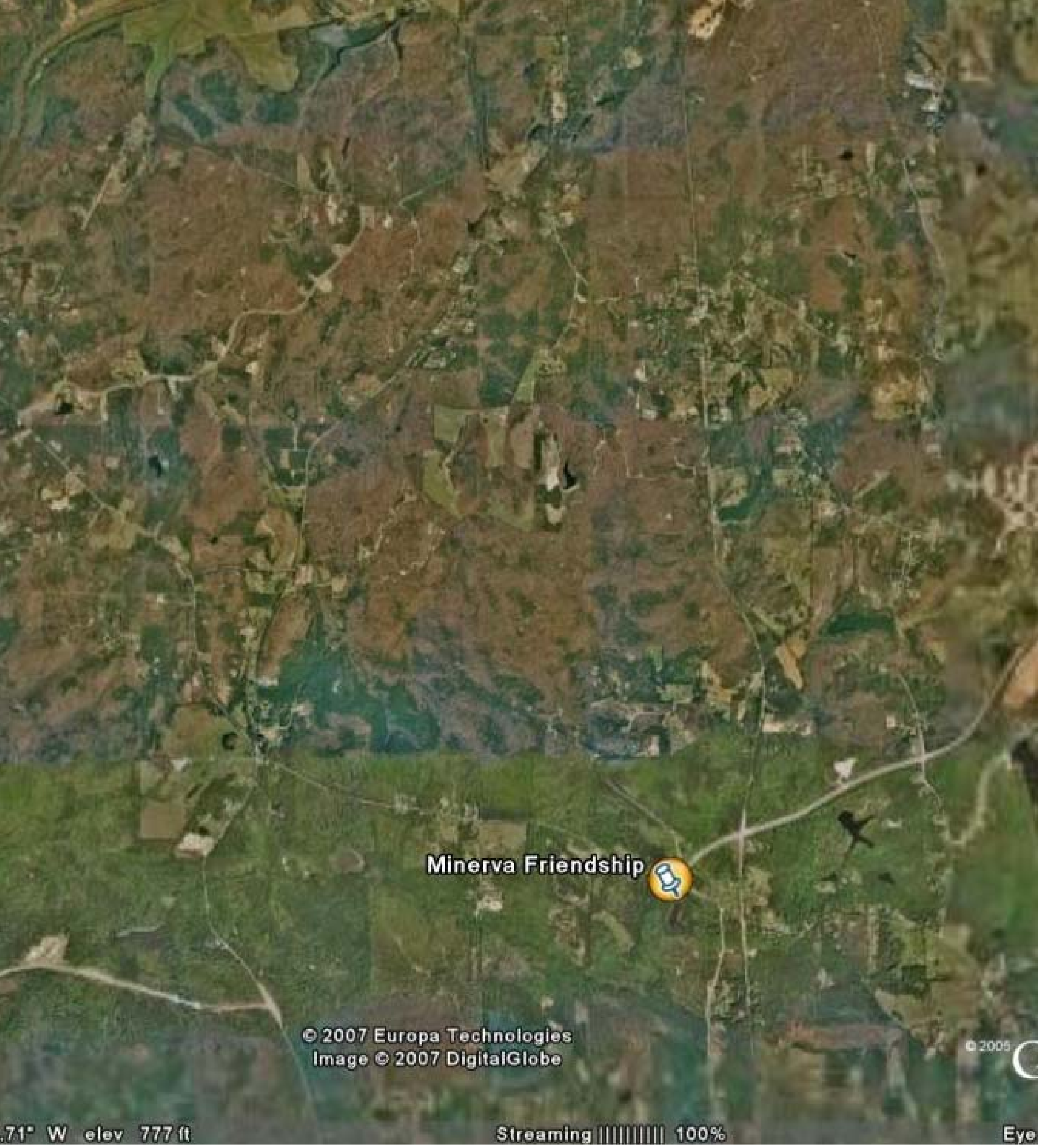
Future Final (2022) Build

- South Fulton Parkway and Rivertown Road
    - Add a second left turn lane from Rivertown Road southbound
    - Upgrade of the traffic signal to a Protected Only phasing for the southbound left.
    - Add a right turn lane to Rivertown Road northbound.
    - Add a second right turn lane from South Fulton Parkway westbound to Rivertown Road northbound.

- South Fulton Parkway and SR 154/Cascade Palmetto Highway
    - Add right turn lanes to SR 154/Cascade Palmetto highway on both northbound and southbound approaches.
    - Add a second thru lane to SR 154/Cascade Palmetto highway on both northbound and southbound approaches.
    - Upgrade the Signal to include Protected/Permitted Left Turn Phasing on SR 154/Cascade Palmetto highway on both northbound and southbound approaches.
    - Add a second left turn lane to South Fulton Parkway Eastbound.
- South Fulton Parkway and Cedar Grove Road
    - Add a northbound right turn lane to Cedar Grove Road.
    - Add a second southbound left turn lane to Cedar Grove Road and upgrade the signal to Protected Only phase for SB Left.

- South Fulton Parkway and SR 92/Campbellton Fairburn Highway
    - Add a southbound right turn lane to SR 92/Campbellton Fairburn Road.
    - Add a second northbound thru lane to SR 92/Campbellton Fairburn Road.
    - Add a third thru lane to South Fulton Parkway at the intersection in both directions.

- Rivertown Road and SR 154/Cascade Palmetto Highway
    - Add right turn lanes Rivertown Road on both approaches.
- SR 154/Cascade Palmetto Highway at Cedar Grove Road
    - Add right turn lane to westbound Cedar Grove Road.



Existing Land Use

Friendship Village

Fulton County, Georgia

MINERVA

LOWE

ENGINEERS

NEIGHBORHOOD SUMMARY

Parcel		Units
Neighborhood	1	33 units
Neighborhood	2	88 units
Neighborhood	3	31 units
Neighborhood	4	224 units
Neighborhood	5	27 units
Neighborhood	6	197 units
Neighborhood	7	93 units
Neighborhood	8	33 units
Neighborhood	9	29 units
Neighborhood	10	300 units
Neighborhood	11	17 units
Neighborhood	12	14 units
Neighborhood	13	57 units
Neighborhood	14	28 units
Neighborhood	15	13 units
Neighborhood	16	25 units
Neighborhood	17	47 units
Neighborhood	18	275 units
Neighborhood	19	100 units
Neighborhood	20	80 units
Neighborhood	21	115 units
Neighborhood	22	13 units
Neighborhood	23	138 units
Neighborhood	24	38 units
Neighborhood	25	92 units
Neighborhood	26A	100 units
Neighborhood	26B	100 units
Neighborhood	26C	150 units
Neighborhood	26D	300 units
Neighborhood	27	25 units
Neighborhood	28	37 units
Neighborhood	29	80 units
Neighborhood	30	22 units
Neighborhood	31	44 units
Neighborhood	32	136 units
Neighborhood	33A	112 units
Neighborhood	33B	30 units
Neighborhood	34	38 units
Neighborhood	35	14 units
Neighborhood	36	13 units
Neighborhood	37	42 units
Neighborhood	38	57 units
Neighborhood	39	15 units
Neighborhood	40	89 units
Neighborhood	41	136 units
Neighborhood	42	11 units
Neighborhood	43	148 units
Neighborhood	44	52 units
Neighborhood	45	91 units
Neighborhood	46	22 units
Neighborhood	47	48 units

AMENITY SUMMARY

PRIMARY AMENITY CENTER
FITNESS CENTER, POOL, CONFERENCE ROOMS, PLAYGROUND, TRAILS

SECONDARY AMENITY CENTER
POOL, PLAYGROUND, RECREATION FIELDS, TRAILS, BASKETBALL COURT

NEIGHBORHOOD PARKS
TRAILS, OPEN PLAY AREAS

LOCATION MAP

LEGEND

- STREAMS
- 75' STREAM BUFFER
- 25' STREAM BUFFER SETBACK
- WETLANDS
- FEMA FLOODPLAIN
- 300 FT. PERIPHERAL SETBACK
- DETENTION FACILITIES
- EXISTING ROCK OUTCROPPING
- NATURE TRAIL (TRAILS WILL BE PERVIOUS AND IMPERVIOUS)
- SERVICE/LOADING AREA

NOTE:
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2. ALL FUTURE STREETS AND R.O.W. WILL CONFORM TO FULTON COUNTY STANDARDS UNLESS OTHERWISE NOTED.
3. ALL STREETS TO BE PUBLIC UNLESS OTHERWISE NOTED.
4. ALL ALLEYS TO BE PRIVATE

LAND USE SUMMARY

Land Use	Units / Building Area	Acreage
Residential		
Single Family Detached	2,197 units	
Townhomes	350 units	
Condos/Stacked Flats	1,699 units	
Carriage Houses	550 units	
Apartments	450 units	
Residential above Retail (Mixed Use)	735 units	
Residential subtotal:	5,981 units	682.8 acres
Commercial		
Retail	238,300 s.f.	
Mixed Use	160,400 s.f.*	
Mixed Use	421,200 s.f.**	
Office	174,000 s.f.	
Commercial subtotal:	993,900 s.f.	
Community Uses		
Church/Daycare	39,000 s.f.	
Future School	31,000 s.f.	
Civic (Includes Fire Station)	26,500 s.f.	
Community Amenity Centers	20,000 s.f.	
Community Uses subtotal:	116,500 s.f.	
Community Green Space		
Active Recreation		27.8 acres***
Watershed Protection/Undevelopable		428.9 acres****
Passive Open Space		819.2 acres*****
Community Green Space subtotal:		1,275.9 acres
Total:	5,981 units	1,997.6 acres

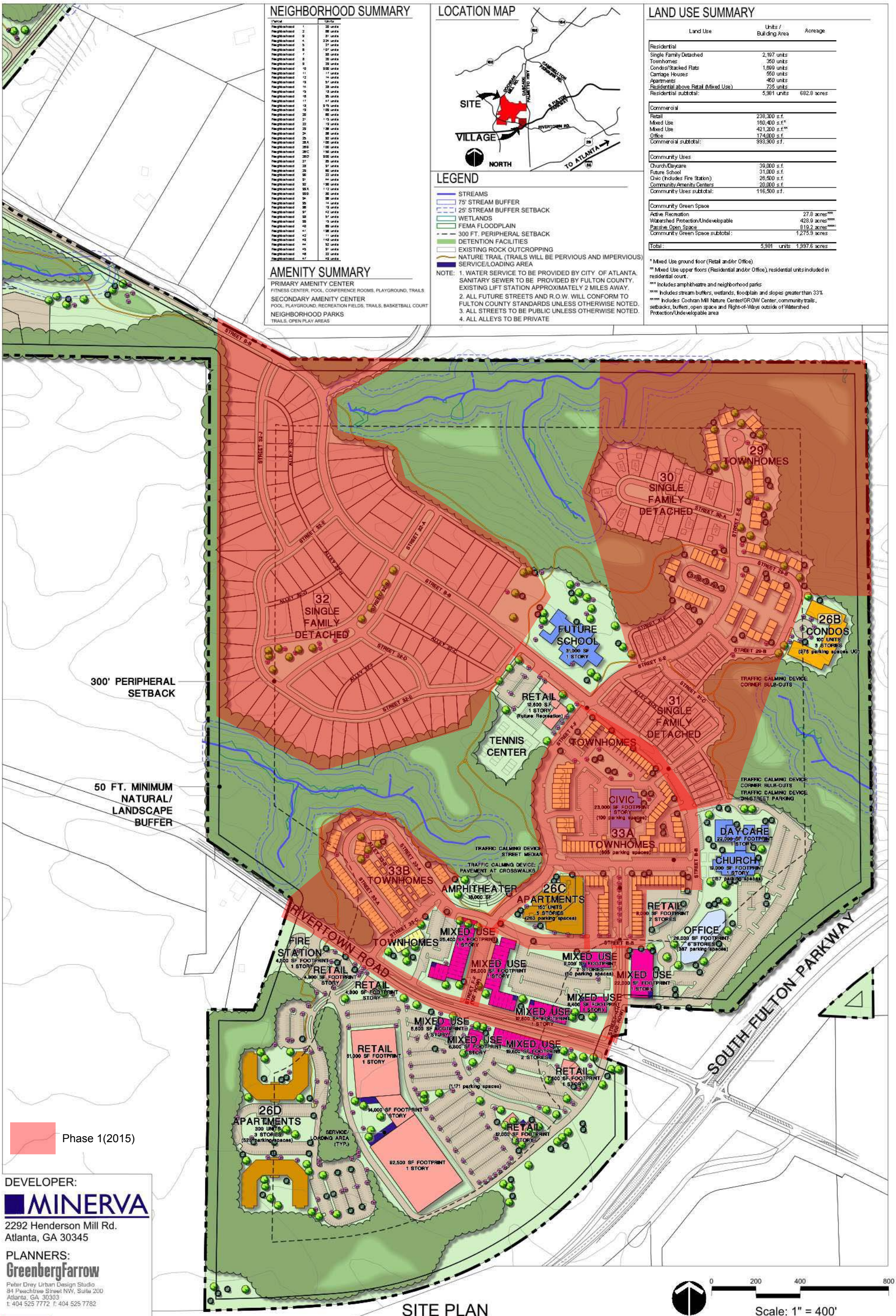
* Mixed Use ground floor (Retail and/or Office)

** Mixed Use upper floors (Residential and/or Office), residential units included in residential count.

*** Includes amphitheatre and neighborhood parks

**** Includes stream buffers, wetlands, floodplain and slopes greater than 33%

***** Includes Cochran Mill Nature Center/GROW Center, community trails, setbacks, buffers, open space and Right-of-Ways outside of Watershed Protection/Undevelopable area



DEVELOPER:
MINERVA
2292 Henderson Mill Rd.
Atlanta, GA 30345

PLANNERS:
GreenbergFarrow
Peter Drey Urban Design Studio
84 Peachtree Street NW, Suite 200
Atlanta, GA 30303
t: 404 525 7772 f: 404 525 7782

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www.secplanning.com ▪ info@secplanning.com

North

0 200 400 800

Scale: 1" = 400'

Date: January 10, 2007

SITE PLAN
VILLAGE CENTER

FRIENDSHIP VILLAGE
FULTON COUNTY, GEORGIA

SHEET FILE: T:\2005 Jobs\050936-MINE\cadfiles\lotting\Master Plan\Master Plan-I\Master Plan-I.dwg

Base mapping compiled from best available information. All map data should be considered as preliminary, in need of verification, and subject to change. This land plan is conceptual in nature and does not represent any regulatory approval. Plan is subject to change.

PROTOTYPICAL DEVELOPMENT STANDARDS

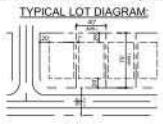
SINGLE FAMILY RESIDENTIAL:

Minimum Lot Width at building line:	40'
Minimum Lot Frontage:	40'
Minimum Lot Depth:	75'
Minimum Lot Size:	3,000 s.f.
Street R.O.W. Width:	50'
Front Yard Setback:	20' (10' if alley fed)
Side Yard Setback:	7' (0' if alley fed, 7' min. between structures)
Corner Yard Setback:	20'
Rear Yard Setback:	25' (5' if alley fed)
Minimum Heated Floor Area:	1,000 s.f. (850 s.f. if alley fed)

MULTIFAMILY MINIMUM HEATED FLOOR SUMMARY:

Condominium/ Stacked Flats:	800 s.f.
Apartment:	600 s.f.
Townhome:	1000 s.f.
Carriage Lot:	600 s.f.

TYPICAL LOT DIAGRAM:



PROPOSED DEVELOPMENT PHASING

PHASE ONE: Neighborhoods 32, 33A, 33B
PHASE ONE + (AS NEEDED): Neighborhoods 29, 30, 31
PHASE TWO: Neighborhoods 18, 34, 35, 36, 37
PHASE THREE: Neighborhoods 40, 41, 42, 43
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NEIGHBORHOOD SUMMARY

Parcel		Units
Neighborhood	1	20 units
Neighborhood	2	66 units
Neighborhood	3	31 units
Neighborhood	4	224 units
Neighborhood	5	27 units
Neighborhood	6	107 units
Neighborhood	7	38 units
Neighborhood	8	20 units
Neighborhood	9	29 units
Neighborhood	10	500 units
Neighborhood	11	17 units
Neighborhood	12	14 units
Neighborhood	13	57 units
Neighborhood	14	28 units
Neighborhood	15	18 units
Neighborhood	16	26 units
Neighborhood	17	47 units
Neighborhood	18	376 units
Neighborhood	19	103 units
Neighborhood	20	60 units
Neighborhood	21	115 units
Neighborhood	22	19 units
Neighborhood	23	196 units
Neighborhood	24	86 units
Neighborhood	25	32 units
Neighborhood	26A	100 units
Neighborhood	26B	100 units
Neighborhood	26C	150 units
Neighborhood	26D	300 units
Neighborhood	27	86 units
Neighborhood	28	37 units
Neighborhood	29	60 units
Neighborhood	30	22 units
Neighborhood	31	44 units
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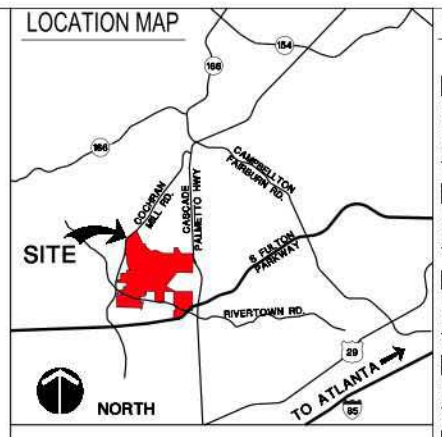

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Carriage Houses	660 units	
Apartments	450 units	
Residential above Retail (Mixed Use)	735 units	
Residential subtotal:	6,651 units	882.8 acres
Commercial		
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Mixed Use	160,400 s.f.*	
Mixed Use	421,200 s.f.**	
Office	174,000 s.f.	
Commercial subtotal:	993,900 s.f.	
Community Uses		
Church/Daycare	35,000 s.f.	
Future School	31,000 s.f.	
Civic (Includes Fire Station)	26,500 s.f.	
Community Amenity Centers	20,000 s.f.	
Community Uses subtotal:	116,500 s.f.	
Community Green Space		
Active Recreation		27.5 acres***
Neighborhood Protection/Undevelopable		428.9 acres****
Passive Open Space		819.2 acres*****
Community Green Space subtotal:		1,276.8 acres
Total:	6,651 units	1,997.8 acres

* Mixed Use ground floor (Retail and/or Office)
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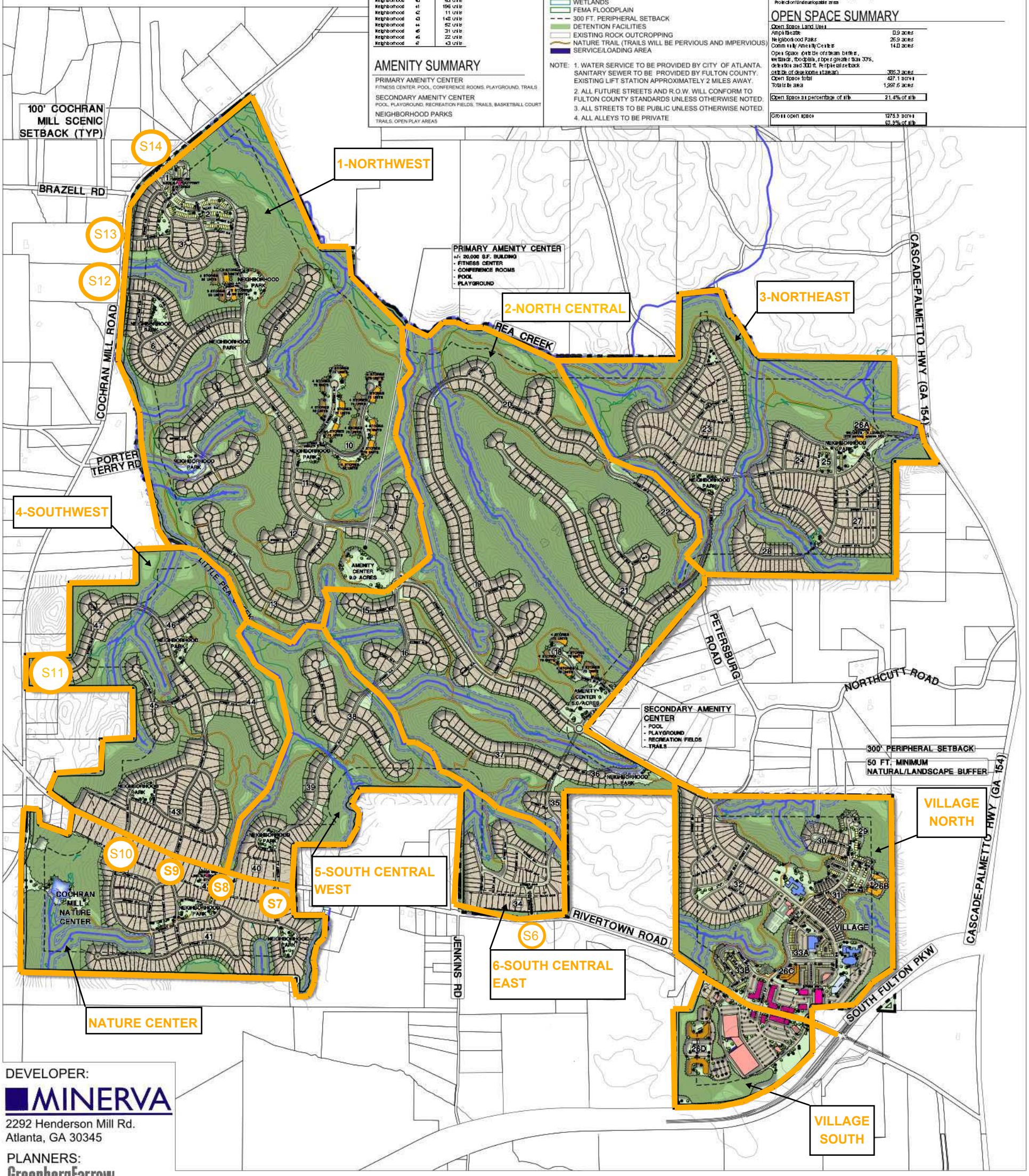
***** Includes Cochran Mill Nature Center/GROW Center, community trails, setbacks, buffers, open space and Right-of-Ways outside of Watershed Protection/Undevelopable area

OPEN SPACE SUMMARY

Open Space Land Uses	
Amphitheatre	0.9 acres
Neighborhood Parks	26.9 acres
Community Amenity Centers	14.0 acres
Open Space (outside of stream buffers, wetlands, floodplain, slopes greater than 33%, detention and 300 ft. Peripheral setback	
outside of developable areas)	385.3 acres
Open Space total	427.1 acres
Total site area	1,997.8 acres
Open Space as percentage of site	21.4% of site
Gross open space	1275.9 acres 63.8% of site



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North

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SITE PLAN

FRIENDSHIP VILLAGE

FULTON COUNTY, GEORGIA

SHEET FILE: T:\2005 Jobs\050936-MINE\cadfiles\lotting\Master Plan\Master Plan-I\Master Plan-I.dwg

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- Rear Yard Setback: 25' (5' if alley fed)
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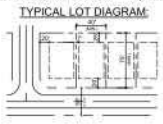

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Neighborhood	13	57 units
Neighborhood	14	28 units
Neighborhood	15	18 units
Neighborhood	16	26 units
Neighborhood	17	47 units
Neighborhood	18	375 units
Neighborhood	19	103 units
Neighborhood	20	60 units
Neighborhood	21	115 units
Neighborhood	22	19 units
Neighborhood	23	196 units
Neighborhood	24	86 units
Neighborhood	25	32 units
Neighborhood	26A	100 units
Neighborhood	26B	100 units
Neighborhood	26C	150 units
Neighborhood	26D	300 units
Neighborhood	27	86 units
Neighborhood	28	37 units
Neighborhood	29	60 units
Neighborhood	30	22 units
Neighborhood	31	44 units
Neighborhood	32	100 units
Neighborhood	33A	112 units
Neighborhood	33B	80 units
Neighborhood	34	96 units
Neighborhood	35	14 units
Neighborhood	36	13 units
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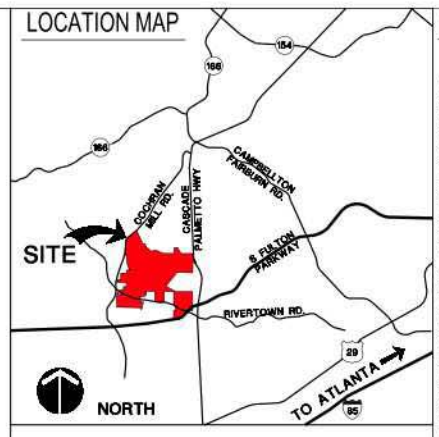
SECONDARY AMENITY CENTER
POOL, PLAYGROUND, RECREATION FIELDS, TRAILS, BASKETBALL COURT

NEIGHBORHOOD PARKS
TRAILS, OPEN PLAY AREAS

LOCATION MAP



LEGEND

- STREAMS
- 75' STREAM BUFFER
- 25' STREAM BUFFER SETBACK
- WETLANDS
- FEMA FLOODPLAIN
- 300 FT. PERIPHERAL SETBACK
- DETENTION FACILITIES
- EXISTING ROCK OUTCROPPING
- NATURE TRAIL (TRAILS WILL BE PERVIOUS AND IMPERVIOUS)
- SERVICE/LOADING AREA

NOTE:
1. WATER SERVICE TO BE PROVIDED BY CITY OF ATLANTA. SANITARY SEWER TO BE PROVIDED BY FULTON COUNTY. EXISTING LIFT STATION APPROXIMATELY 2 MILES AWAY.
2. ALL FUTURE STREETS AND R.O.W. WILL CONFORM TO FULTON COUNTY STANDARDS UNLESS OTHERWISE NOTED.
3. ALL STREETS TO BE PUBLIC UNLESS OTHERWISE NOTED.
4. ALL ALLEYS TO BE PRIVATE

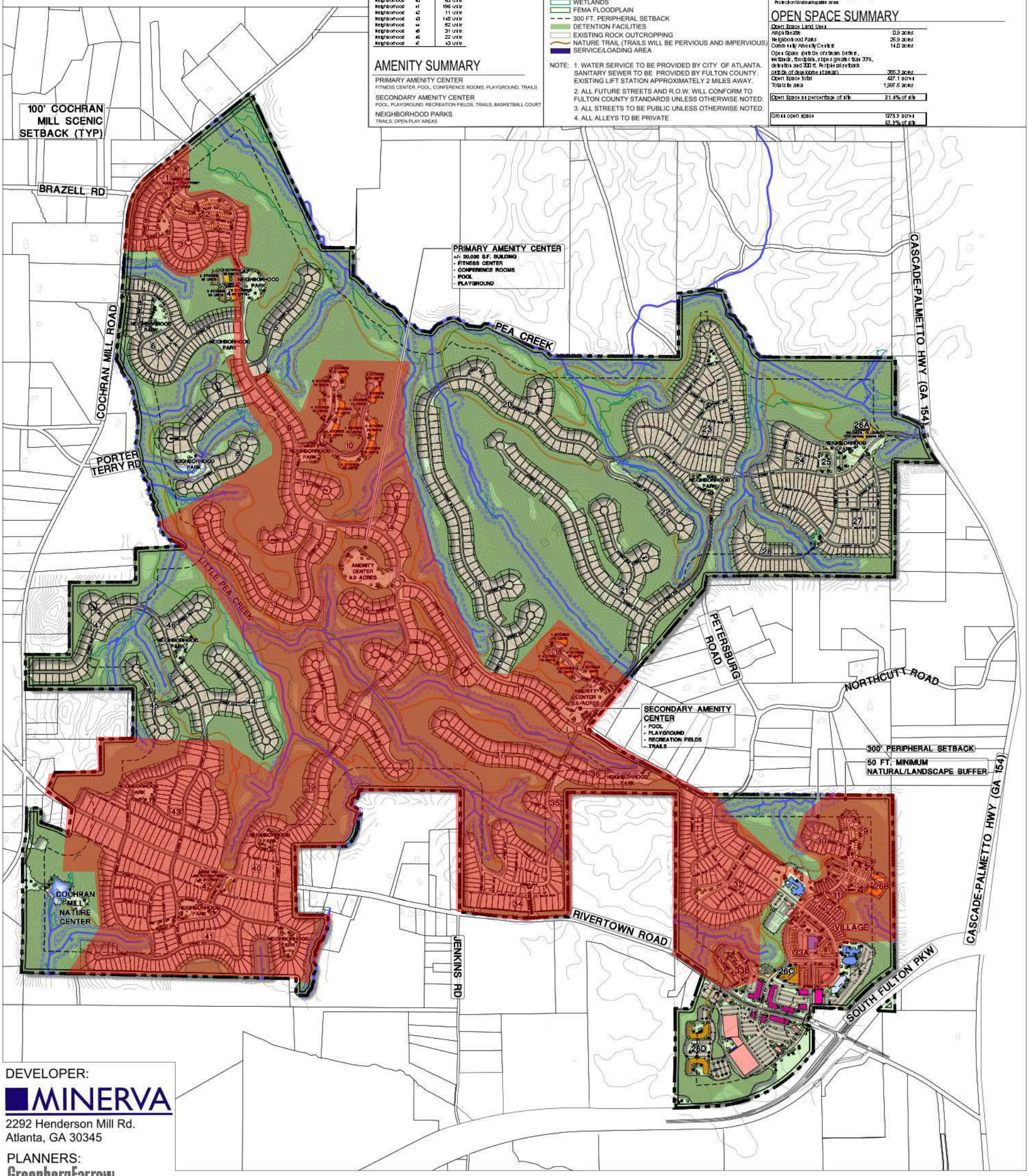
LAND USE SUMMARY

Land Use	Units / Building Area	Acreage
Residential		
Single Family Detached	2,157 units	
Townhomes	260 units	
Condos/Stacked Flats	1,669 units	
Carriage Houses	660 units	
Apartments	450 units	
Residential above Retail (Mixed Use)	735 units	
Residential subtotal:	6,651 units	852.8 acres
Commercial		
Retail	238,300 s.f.	
Mixed Use	160,400 s.f.*	
Mixed Use	421,200 s.f.**	
Office	174,000 s.f.	
Commercial subtotal:	993,900 s.f.	
Community Uses		
Church/Daycare	35,000 s.f.	
Future School	31,000 s.f.	
Civic (Includes Fire Station)	26,600 s.f.	
Community Amenity Centers	20,000 s.f.	
Community Uses subtotal:	116,600 s.f.	
Community Green Space		
Active Recreation		27.5 acres***
Watershed Protection/Undevelopable		428.9 acres****
Passive Open Space		819.2 acres*****
Community Green Space subtotal:		1,276.8 acres
Total:	6,921 units	1,997.8 acres

* Mixed use ground floor (Retail and/or Office)
** Mixed Use upper floors (Residential and/or Office), residential units included in residential count.
*** Includes amphitheatre and neighborhood parks
**** Includes stream buffers, wetlands, floodplain and slopes greater than 33%
***** Includes Cochran Mill Nature Center/GROW Center, community trails, setbacks, buffers, open space and Right-of-Ways outside of Watershed Protection/Undevelopable area

OPEN SPACE SUMMARY

Open Space Land Uses	
Amphitheatre	0.9 acres
Neighborhood Parks	25.9 acres
Community Amenity Centers	14.0 acres
Open Space (outside of stream buffers, wetlands, floodplain, slopes greater than 33%, detention and 300 ft. Peripheral setback outside of developable areas)	385.3 acres
Open Space total	427.1 acres
Total site area	1,997.8 acres
Open Space as percentage of site	21.4% of site
Gross open space	1275.9 acres 63.8% of site



Phase 1(2015)

DEVELOPER:
MINERVA
2292 Henderson Mill Rd.
Atlanta, GA 30345

PLANNERS:
GreenbergFarrow
Peter Drey Urban Design Studio
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Atlanta, GA 30303
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SEC Planning Consultants
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North

0 700 1400 2800

Scale: 1" = 1400'
Date: January 10, 2007

SITE PLAN

FRIENDSHIP VILLAGE

FULTON COUNTY, GEORGIA

SHEET FILE: T:\2005 Jobs\050936-MINE\cadfiles\lotting\Master Plan\Master Plan-I\Master Plan-I.dwg

Base mapping compiled from best available information. All map data should be considered as preliminary, in need of verification, and subject to change. This land plan is conceptual in nature and does not represent any regulatory approval. Plan is subject to change.

NEIGHBORHOOD SUMMARY

Parcel	Units
Neighborhood 1	20 units
Neighborhood 2	88 units
Neighborhood 3	31 units
Neighborhood 4	224 units
Neighborhood 5	27 units
Neighborhood 6	197 units
Neighborhood 7	93 units
Neighborhood 8	20 units
Neighborhood 9	29 units
Neighborhood 10	300 units
Neighborhood 11	17 units
Neighborhood 12	14 units
Neighborhood 13	57 units
Neighborhood 14	28 units
Neighborhood 15	13 units
Neighborhood 16	25 units
Neighborhood 17	47 units
Neighborhood 18	275 units
Neighborhood 19	100 units
Neighborhood 20	80 units
Neighborhood 21	115 units
Neighborhood 22	13 units
Neighborhood 23	139 units
Neighborhood 24	38 units
Neighborhood 25	92 units
Neighborhood 26A	100 units
Neighborhood 26B	100 units
Neighborhood 26C	150 units
Neighborhood 26D	300 units
Neighborhood 27	25 units
Neighborhood 28	37 units
Neighborhood 29	80 units
Neighborhood 30	22 units
Neighborhood 31	44 units
Neighborhood 32	136 units
Neighborhood 32A	112 units
Neighborhood 32B	30 units
Neighborhood 34	38 units
Neighborhood 35	14 units
Neighborhood 36	15 units
Neighborhood 37	42 units
Neighborhood 38	57 units
Neighborhood 39	15 units
Neighborhood 40	89 units
Neighborhood 41	138 units
Neighborhood 42	11 units
Neighborhood 43	148 units
Neighborhood 44	52 units
Neighborhood 45	91 units
Neighborhood 46	22 units
Neighborhood 47	48 units

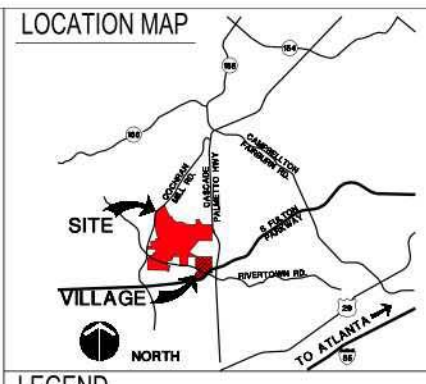
AMENITY SUMMARY

PRIMARY AMENITY CENTER
FITNESS CENTER, POOL, CONFERENCE ROOMS, PLAYGROUND, TRAILS

SECONDARY AMENITY CENTER
POOL, PLAYGROUND, RECREATION FIELDS, TRAILS, BASKETBALL COURT

NEIGHBORHOOD PARKS
TRAILS, OPEN PLAY AREAS

LOCATION MAP



LEGEND

- STREAMS
- 75' STREAM BUFFER
- 25' STREAM BUFFER SETBACK
- WETLANDS
- FEMA FLOODPLAIN
- 300 FT. PERIPHERAL SETBACK
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LAND USE SUMMARY

Land Use	Units / Building Area	Acreage
Residential		
Single Family Detached	2,197 units	
Townhomes	350 units	
Condos/Stacked Flats	1,699 units	
Carriage Houses	550 units	
Apartments	450 units	
Residential above Retail (Mixed Use)	735 units	
Residential subtotal:	5,981 units	682.8 acres
Commercial		
Retail	238,300 s.f.	
Mixed Use	160,400 s.f.*	
Mixed Use	421,200 s.f.**	
Office	174,000 s.f.	
Commercial subtotal:	993,900 s.f.	
Community Uses		
Church/Daycare	39,000 s.f.	
Future School	31,000 s.f.	
Civic (Includes Fire Station)	26,500 s.f.	
Community Amenity Centers	20,000 s.f.	
Community Uses subtotal:	116,500 s.f.	
Community Green Space		
Active Recreation		27.8 acres***
Watershed Protection/Undevelopable		428.9 acres****
Passive Open Space		819.2 acres*****
Community Green Space subtotal:		1,275.9 acres
Total:	5,981 units	1,997.6 acres

* Mixed Use ground floor (Retail and/or Office)

** Mixed Use upper floors (Residential and/or Office), residential units included in residential count.

*** Includes amphitheatre and neighborhood parks

**** Includes stream buffers, wetlands, floodplain and slopes greater than 33%

***** Includes Cochran Mill Nature Center/GROW Center, community trails, setbacks, buffers, open space and Right-of-Ways outside of Watershed Protection/Undevelopable area

VILLAGE 1
VILLAGE 2
VILLAGE 3
VILLAGE 4
VILLAGE 5
VILLAGE 6
VILLAGE 7
VILLAGE 8
VILLAGE SOUTH

32 SINGLE FAMILY DETACHED
29 TOWNHOMES
30 SINGLE FAMILY DETACHED
31 SINGLE FAMILY DETACHED
26B CONDOS 100 UNITS 3 STORIES (275 parking spaces UG)
FUTURE SCHOOL 31,000 SF 1 STORY
RETAIL 12,500 S.F. 1 STORY (Future Recreation)
TENNIS CENTER
TOWNHOMES
CIVIC 23,000 SF FOOTPRINT 1 STORY (100 parking spaces)
33A TOWNHOMES (305 parking spaces)
DAYCARE 22,000 SF FOOTPRINT 1 STORY
CHURCH 19,000 SF FOOTPRINT 1 STORY (157 parking spaces)
33B TOWNHOMES
AMPHITHEATER 15,000 SF
26C APARTMENTS 150 UNITS 5 STORIES (263 parking spaces)
RETAIL 8,000 SF FOOTPRINT 2 STORIES
OFFICE 26,000 SF FOOTPRINT 6 STORIES (387 parking spaces)
MIXED USE 25,400 SF FOOTPRINT 1 STORY
MIXED USE 8,000 SF FOOTPRINT 2 STORIES (50 parking spaces)
MIXED USE 19,600 SF FOOTPRINT 2 STORIES
RETAIL 4,500 SF FOOTPRINT 1 STORY
RETAIL 4,800 SF FOOTPRINT STORY
RETAIL 4,800 SF FOOTPRINT STORY
RETAIL 31,000 SF FOOTPRINT 1 STORY
14,000 SF FOOTPRINT STORY
82,500 SF FOOTPRINT 1 STORY
RETAIL 7,600 SF FOOTPRINT 1 STORY
RETAIL 12,000 SF FOOTPRINT 1 STORY
26D APARTMENTS 300 UNITS 3 STORIES (525 parking spaces)
SERVICE/ LOADING AREA (TYP.)
TRAFFIC CALMING DEVICE: CORNER BULB-OUTS
TRAFFIC CALMING DEVICE: STREET MEDIAN
TRAFFIC CALMING DEVICE: PAVEMENT AT CROSSWALKS
S1
S2
S3
S4
S5
300' PERIPHERAL SETBACK
50 FT. MINIMUM NATURAL/ LANDSCAPE BUFFER
SOUTH FULTON PARKWAY

DEVELOPER:
MINERVA
2292 Henderson Mill Rd.
Atlanta, GA 30345

PLANNERS:
GreenbergFarrow
Peter Drey Urban Design Studio
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North

0 200 400 800

Scale: 1" = 400'
Date: January 10, 2007

SITE PLAN
VILLAGE CENTER

FRIENDSHIP VILLAGE

FULTON COUNTY, GEORGIA

SHEET FILE: T:\2005 Jobs\050936-MINE\cadfiles\lotting\Master Plan\Master Plan-I\Master Plan-I.dwg

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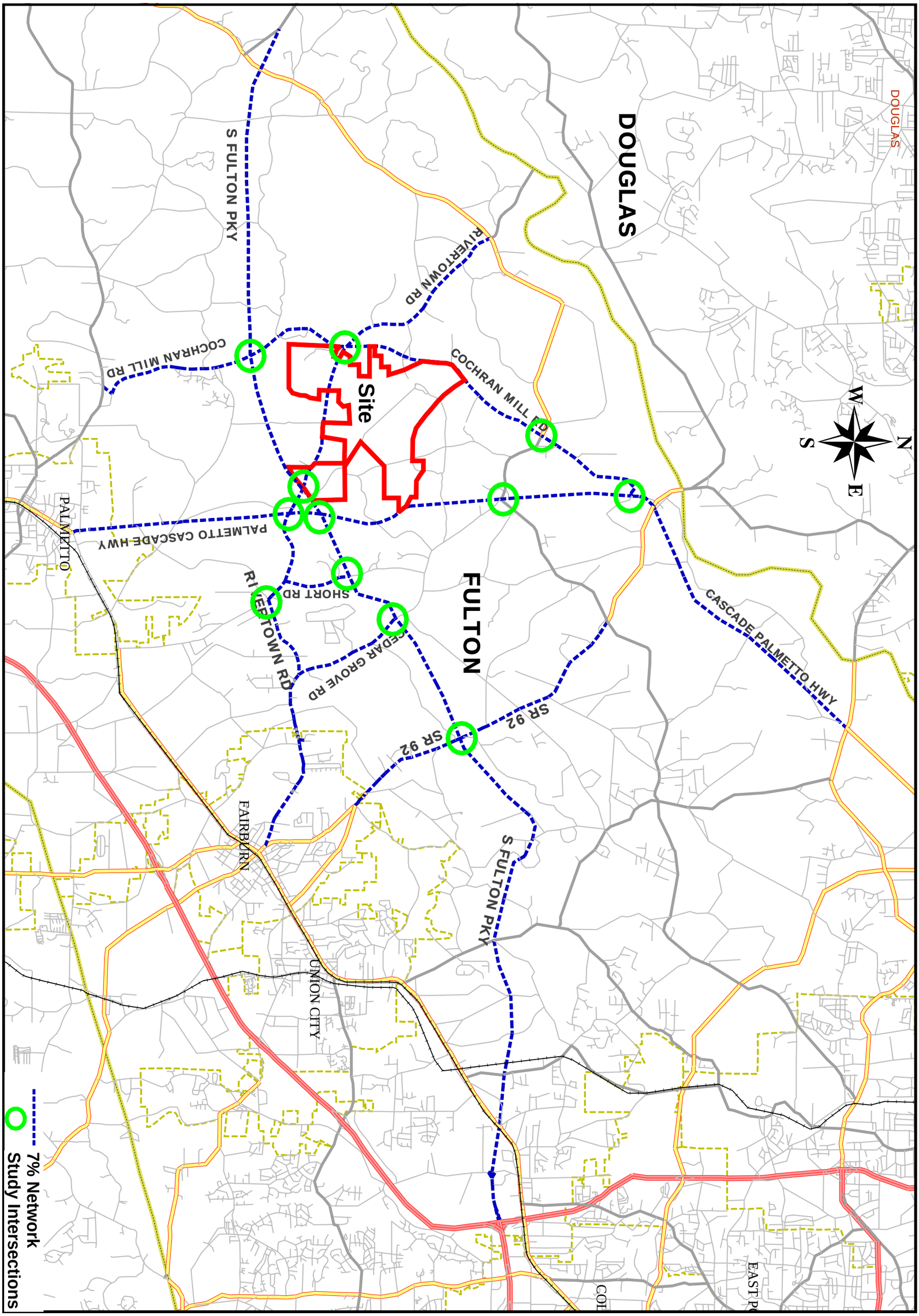

7% Study Network
Firendship Village
Fulton County, Georgia

MINERVA

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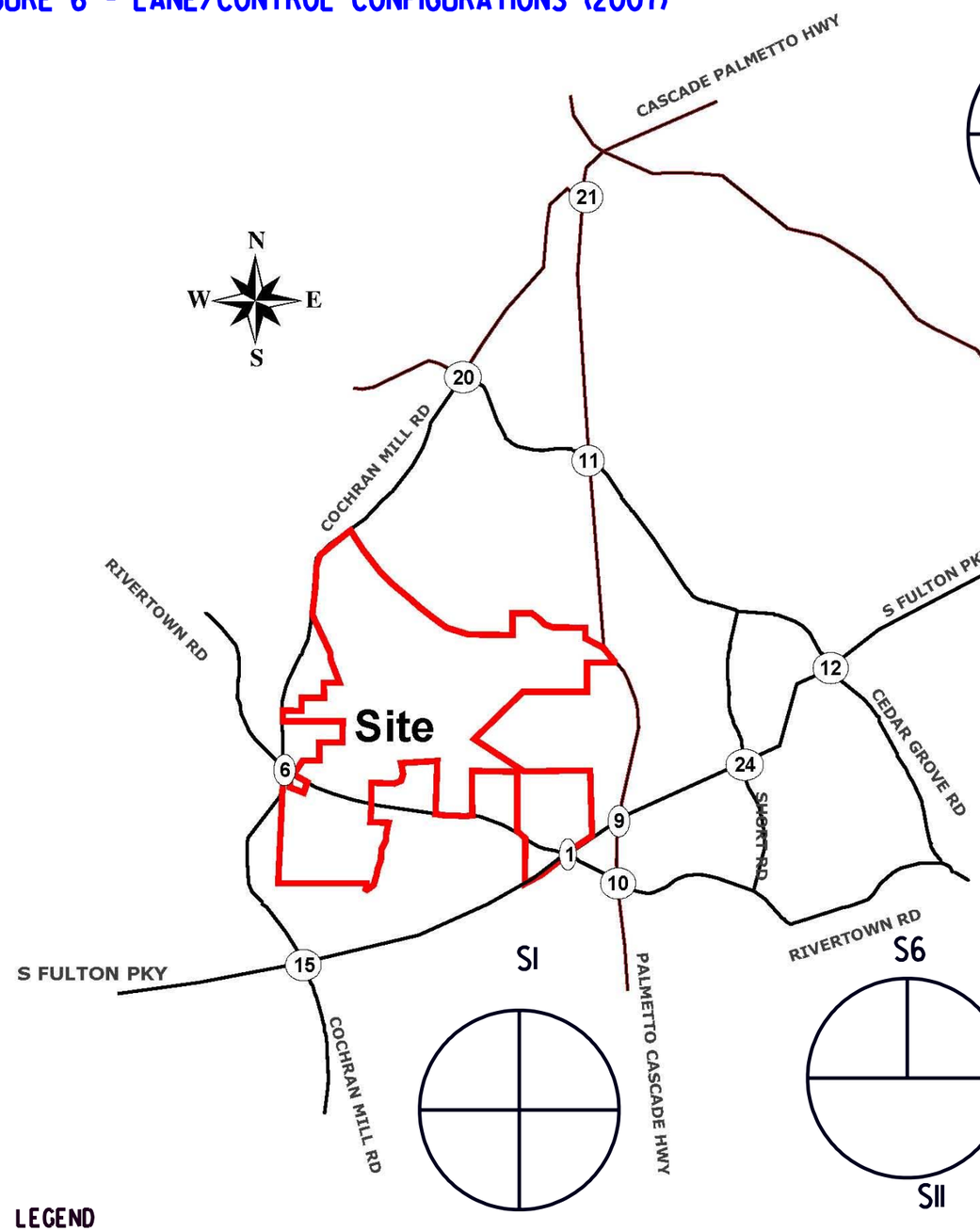
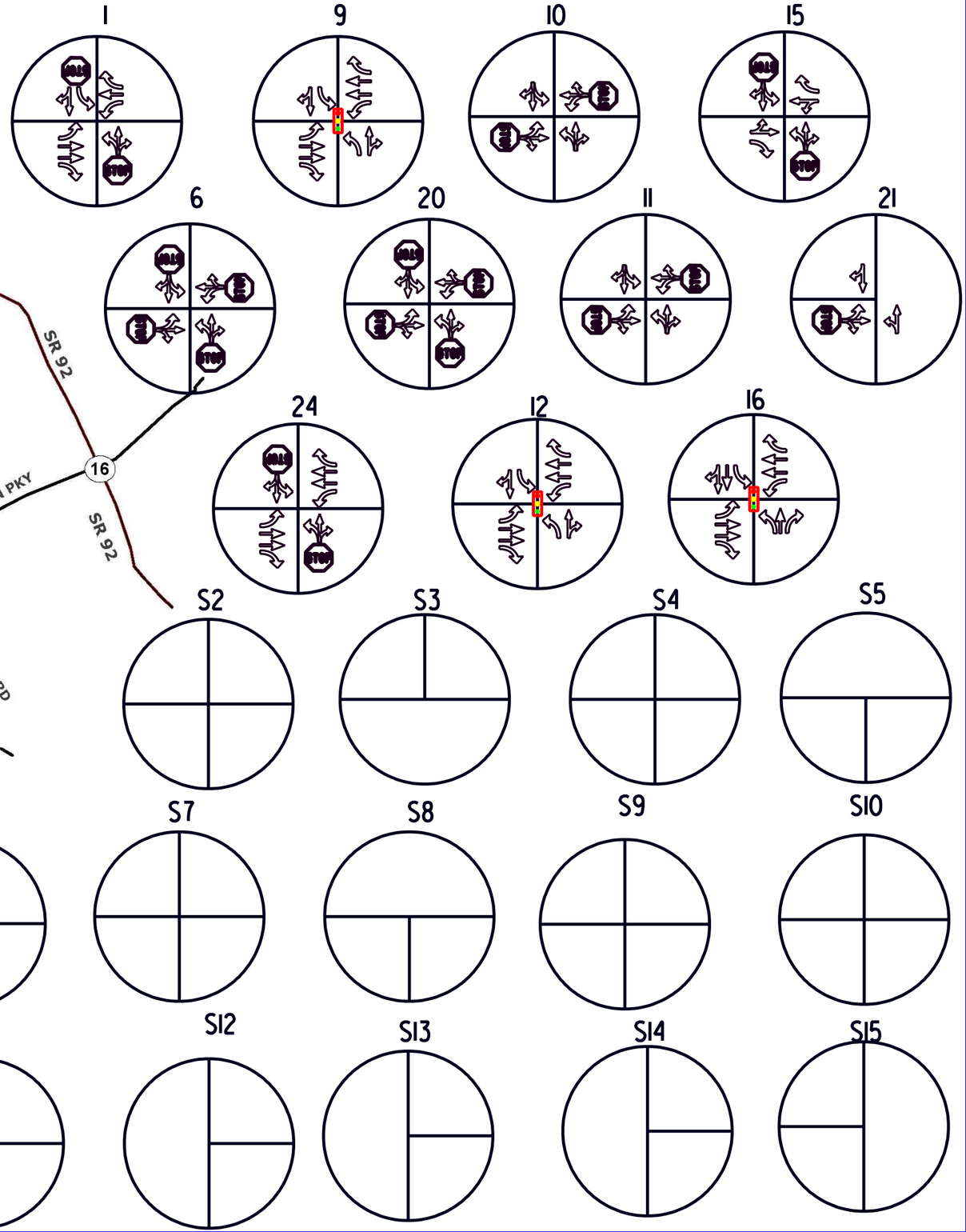
FIGURE 6 - LANE/CONTROL CONFIGURATIONS (2007)





LEGEND

- Existing Traffic Signal
- Existing Stop Sign
- Proposed Traffic Signal
- Proposed Stop Sign
- Existing Lanes 2007
- Scheduled Impovements
- Proposed Improvements

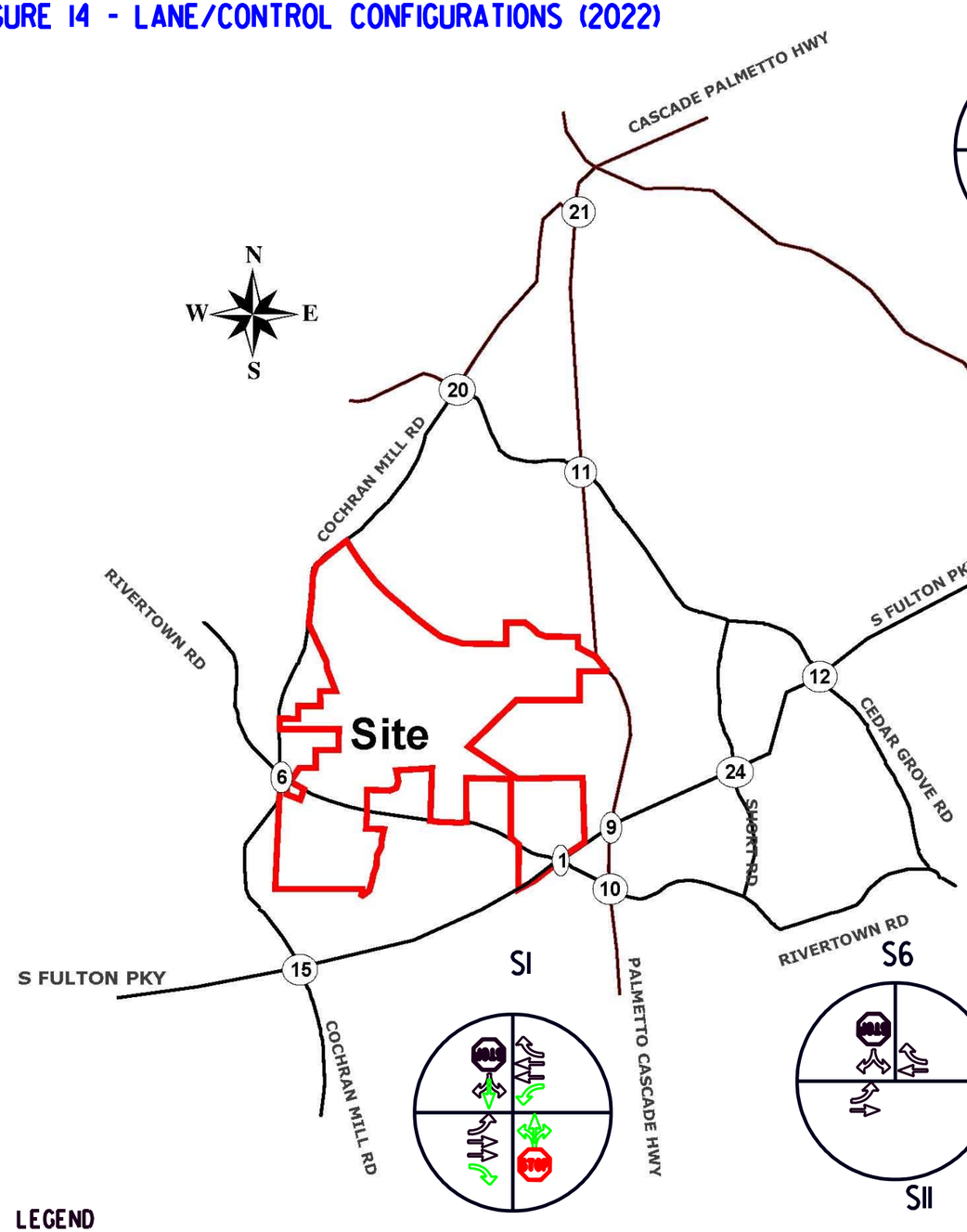
LOWE ENGINEERS

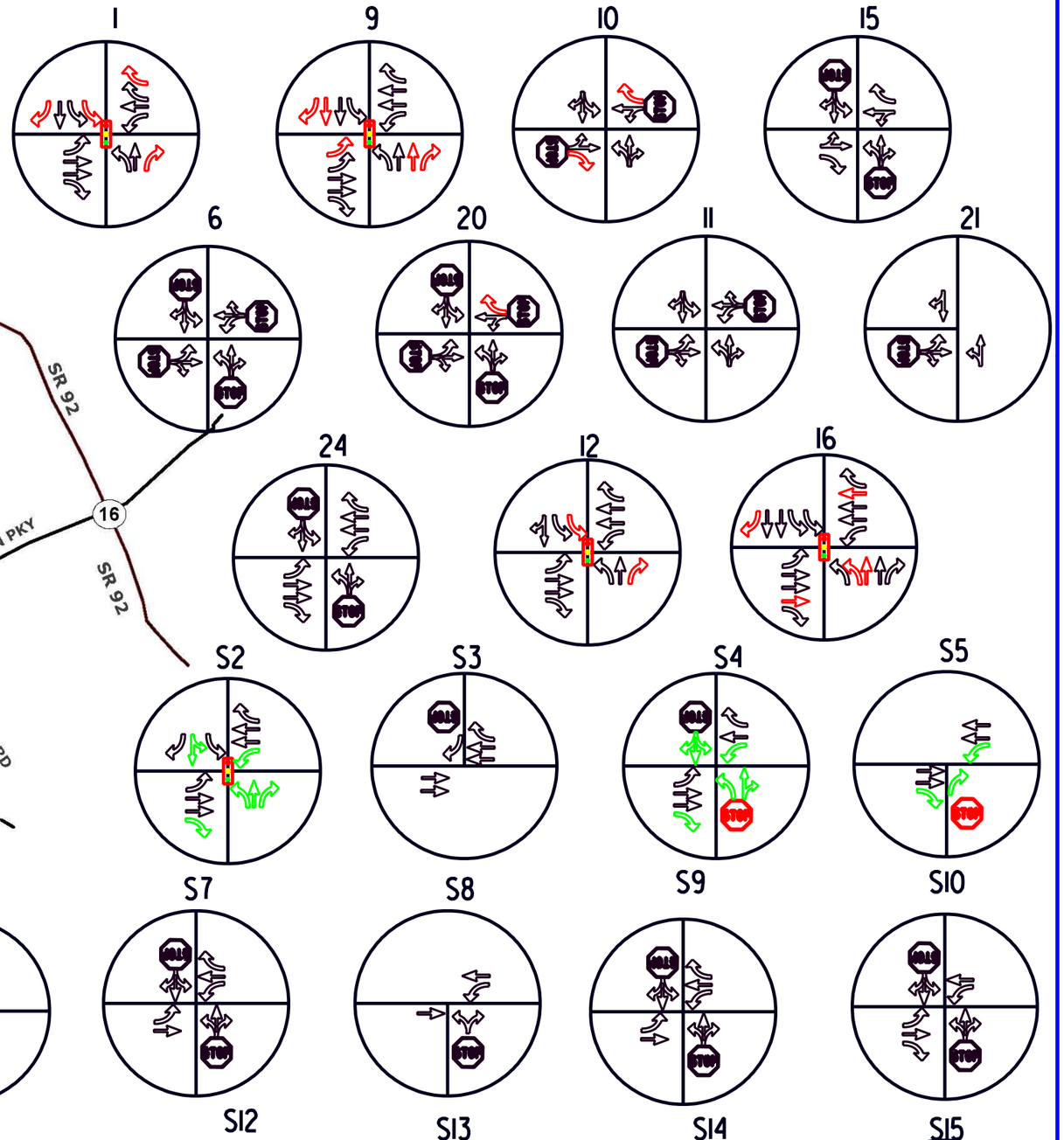
Firendship Village

Fulton County, Georgia

MINERVA

FIGURE 14 - LANE/CONTROL CONFIGURATIONS (2022)





LEGEND

- Existing Traffic Signal
- Existing Stop Sign
- Proposed Traffic Signal
- Proposed Stop Sign
- Existing Lanes 2007
- Scheduled Impovements
- Proposed Improvements

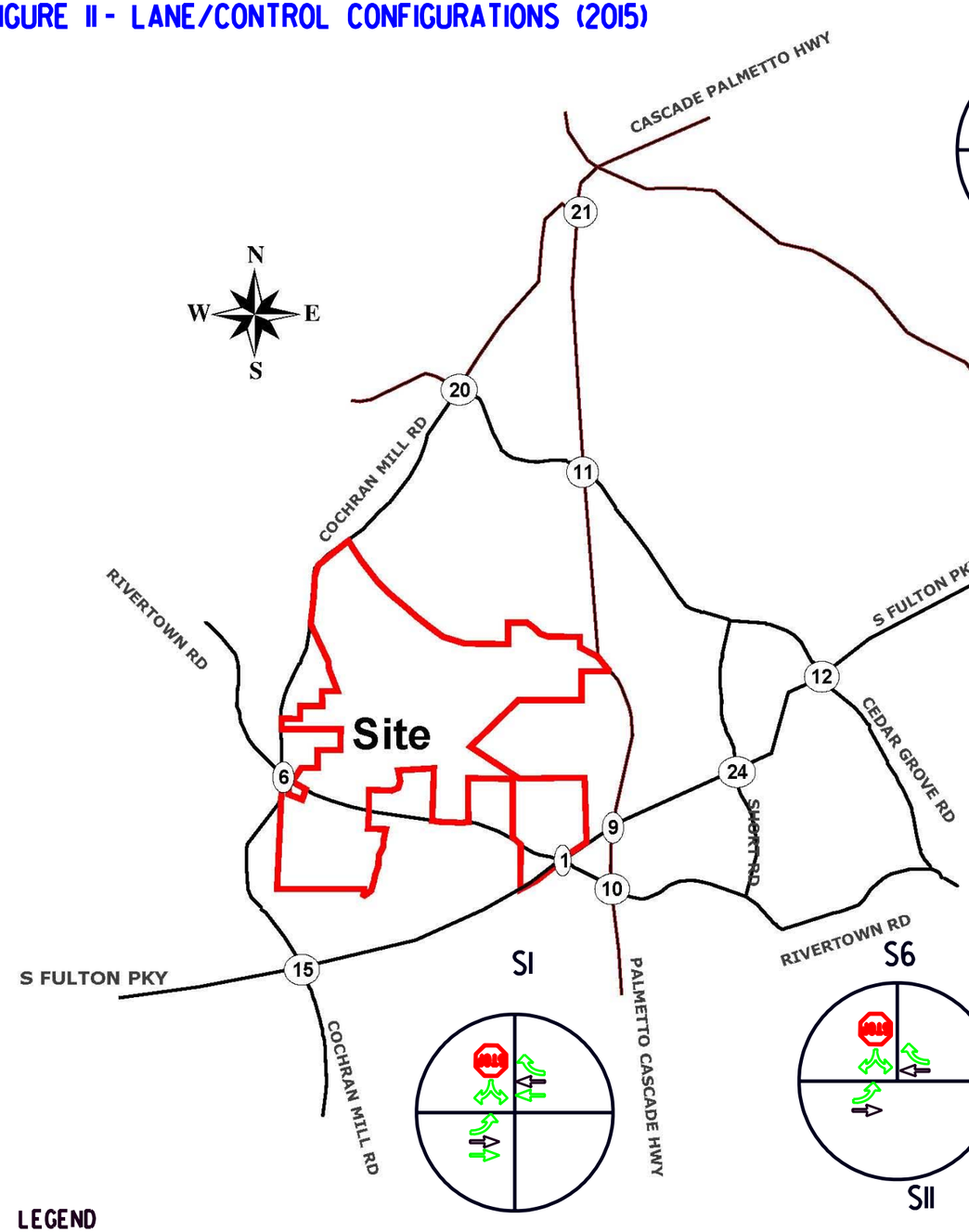
LOWE ENGINEERS

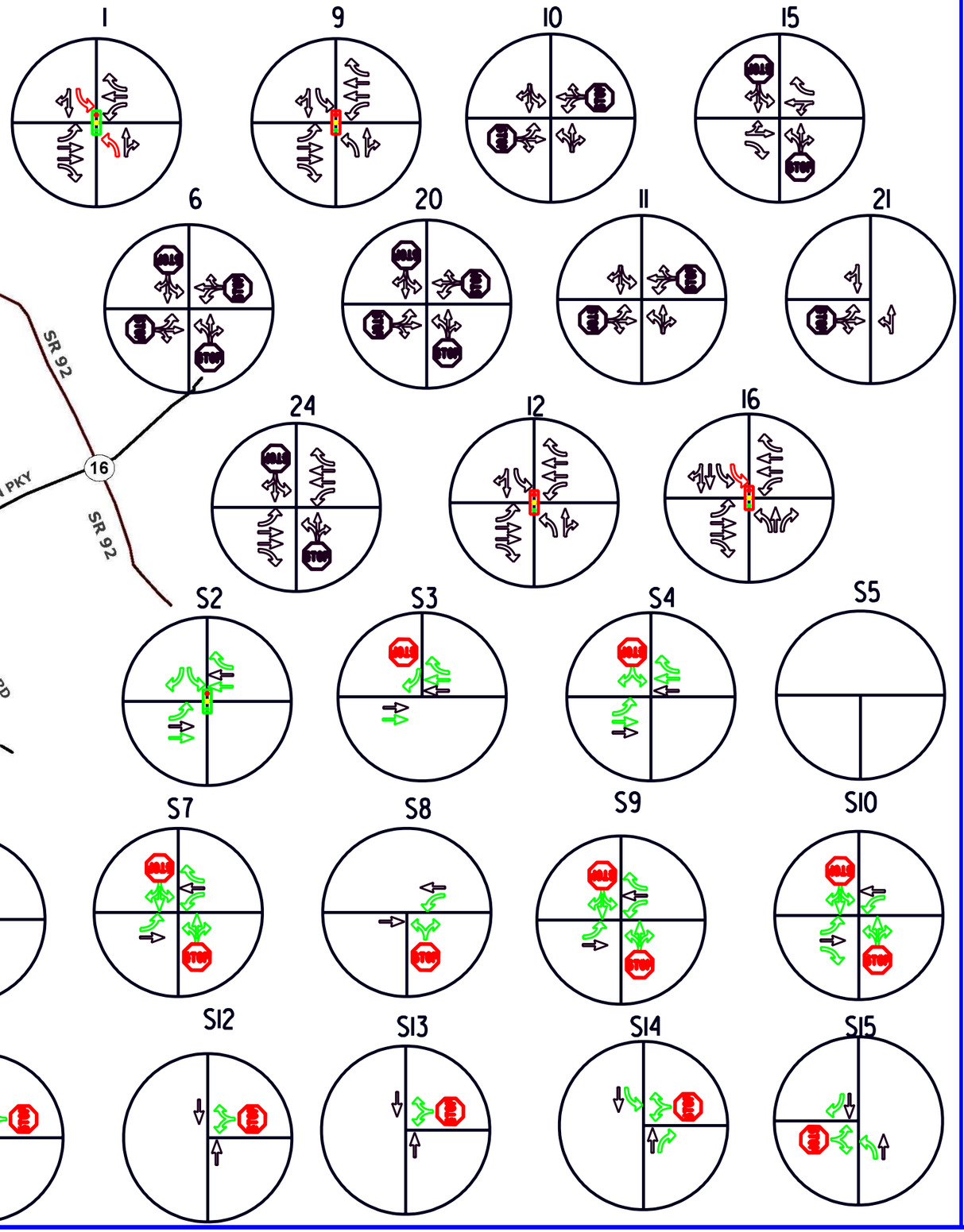
Firendship Village

Fulton County, Georgia

MINERVA

FIGURE 11 - LANE/CONTROL CONFIGURATIONS (2015)





LEGEND

- Existing Traffic Signal
- Existing Stop Sign
- Proposed Traffic Signal
- Proposed Stop Sign
- Existing Lanes 2007
- Scheduled Impovements
- Proposed Improvements

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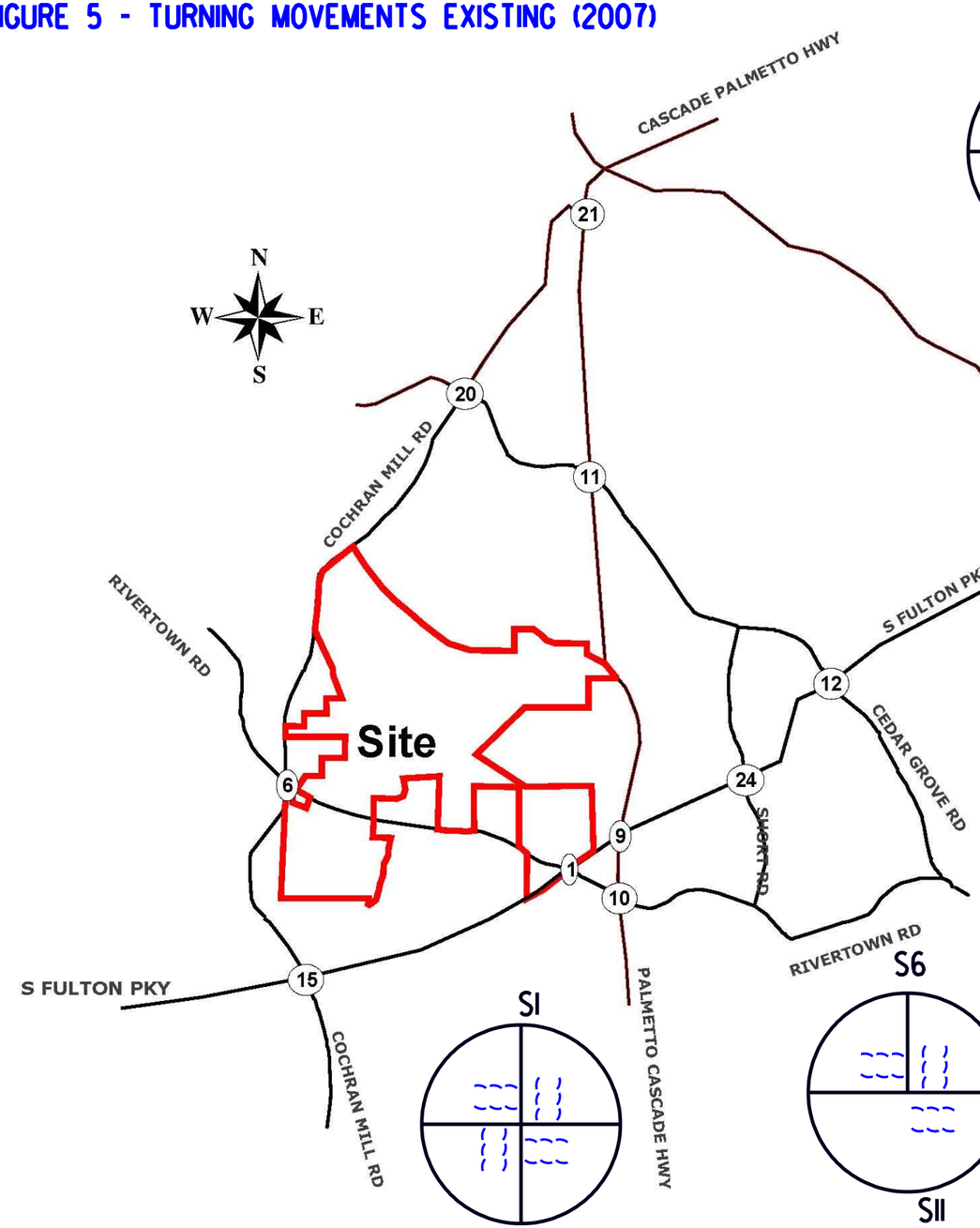
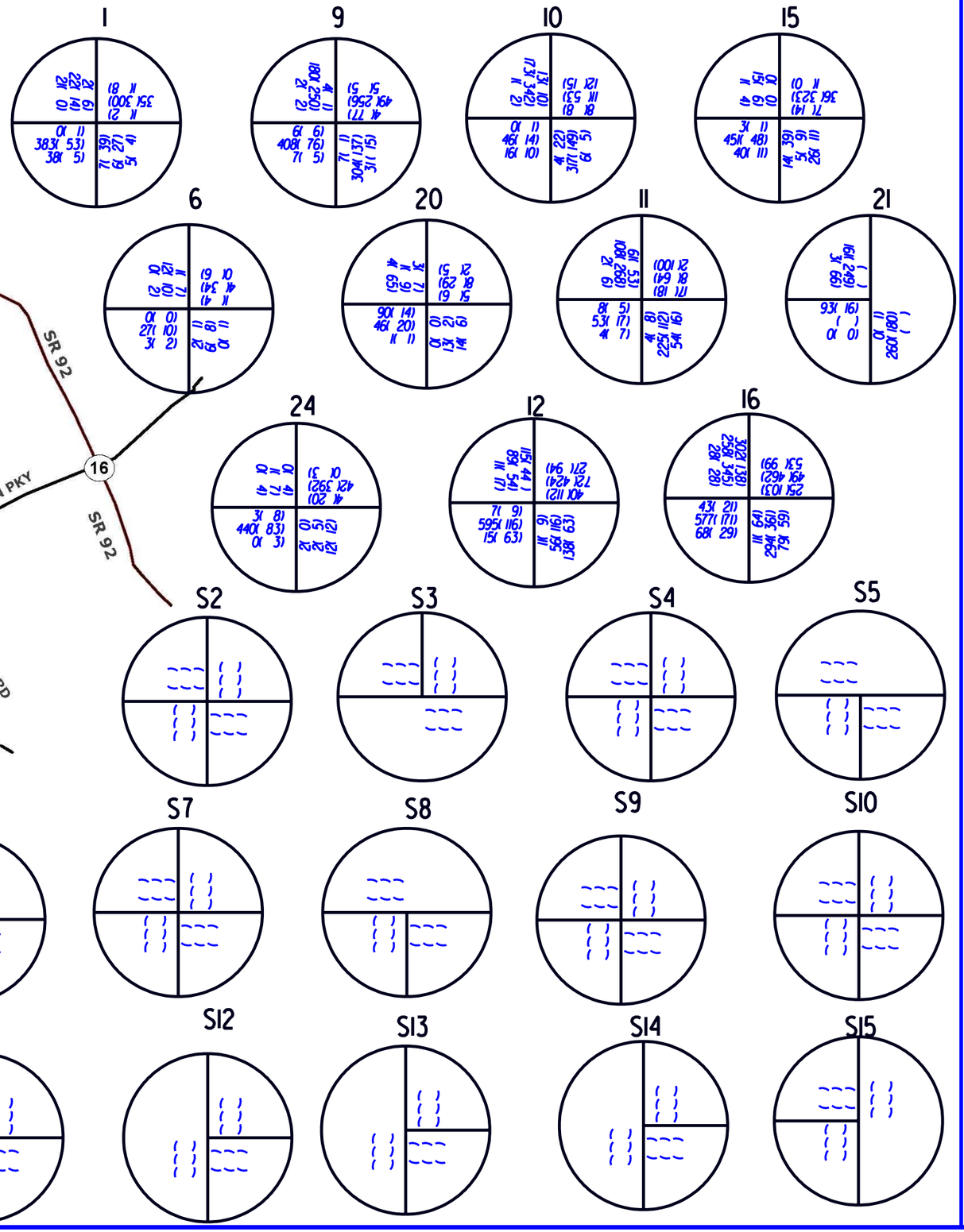
Firendship Village
Fulton County, Georgia

MINERVA

FIGURE 5 - TURNING MOVEMENTS EXISTING (2007)





LEGEND

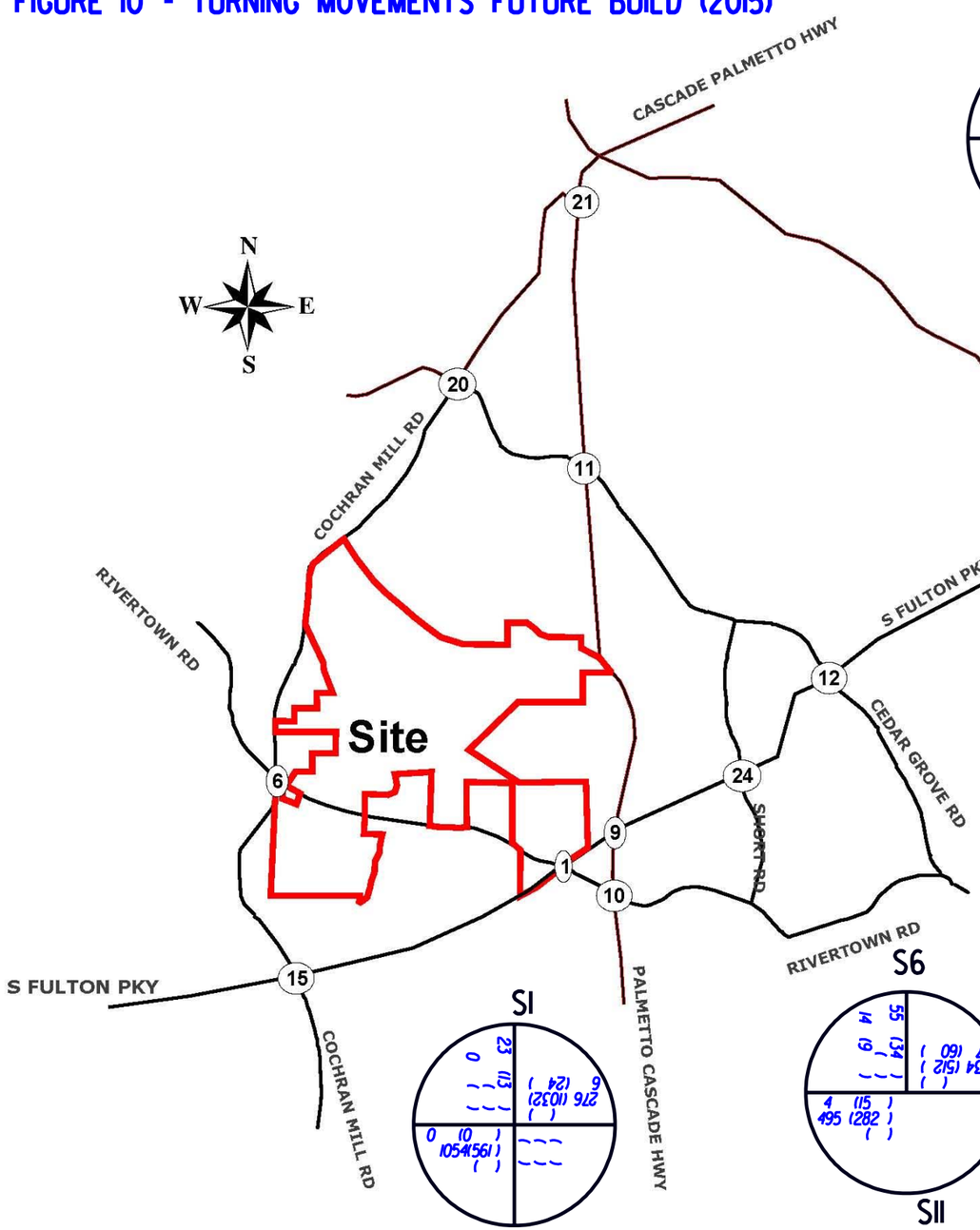
AM(PM) Volumes XX (YY)
Turning Movements

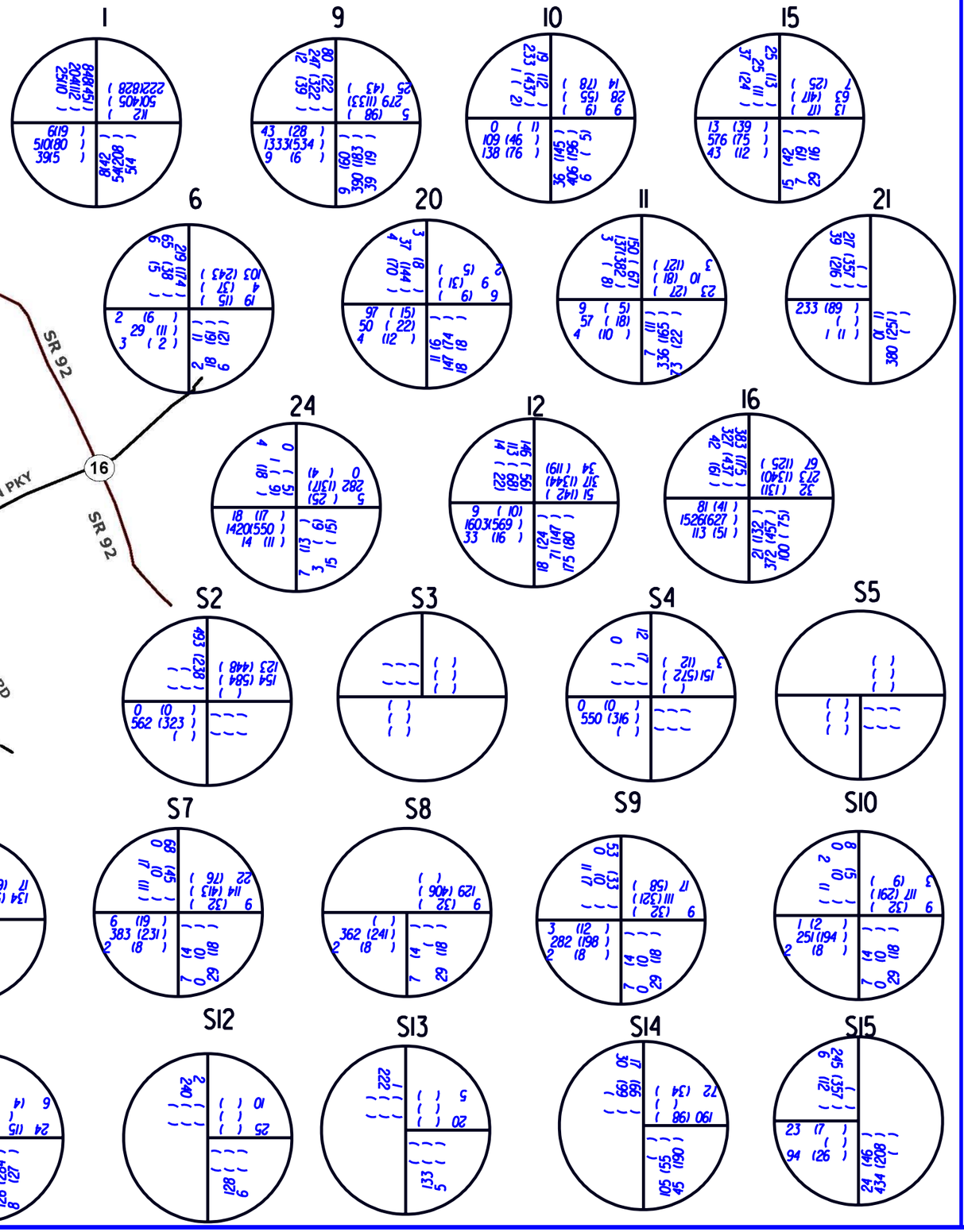
LOWE ENGINEERS

Firendship Village
Fulton County, Georgia

MINERVA

FIGURE 10 - TURNING MOVEMENTS FUTURE BUILD (2015)





LEGEND

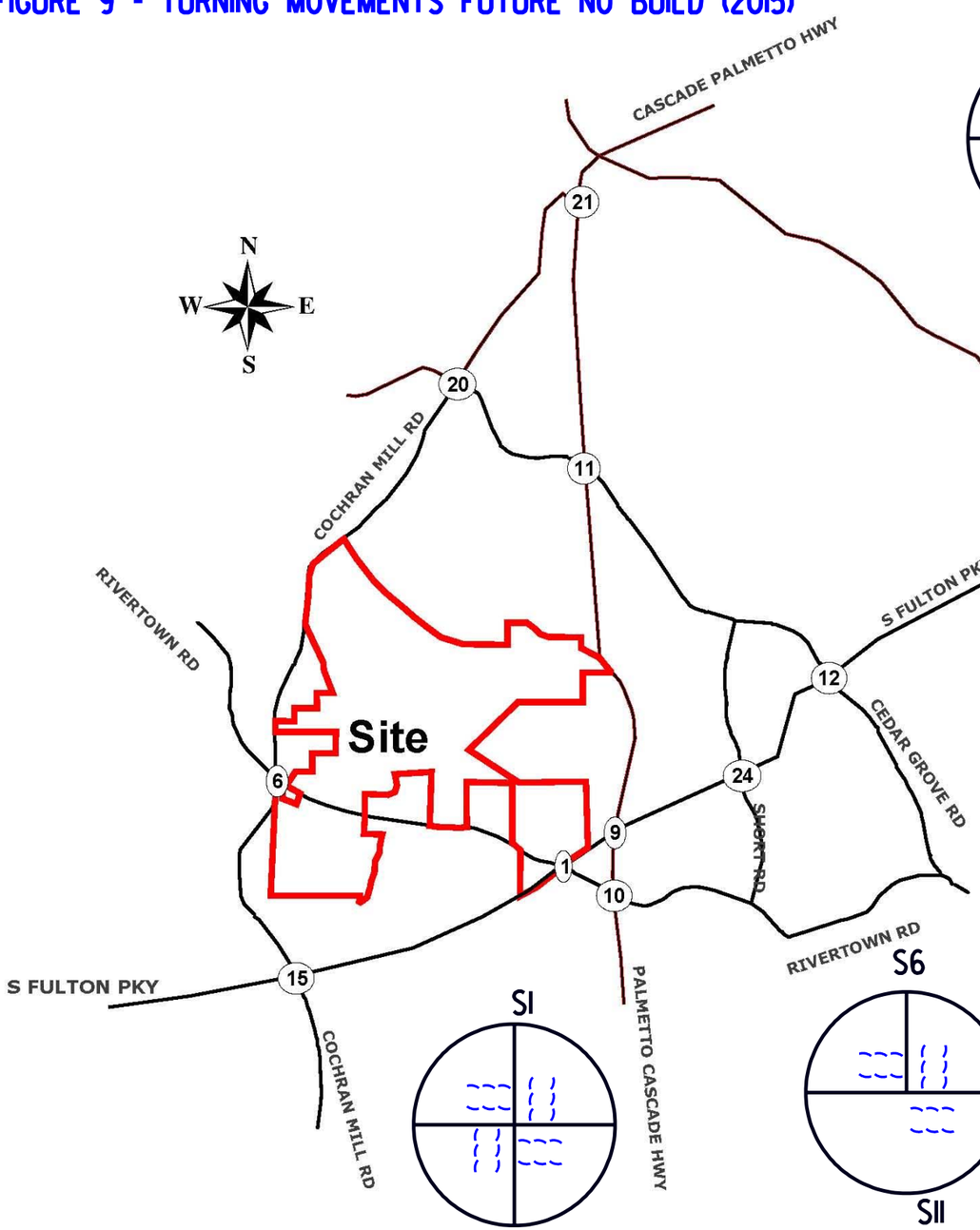
AM(PM) Volumes XX (YY)
Turning Movements

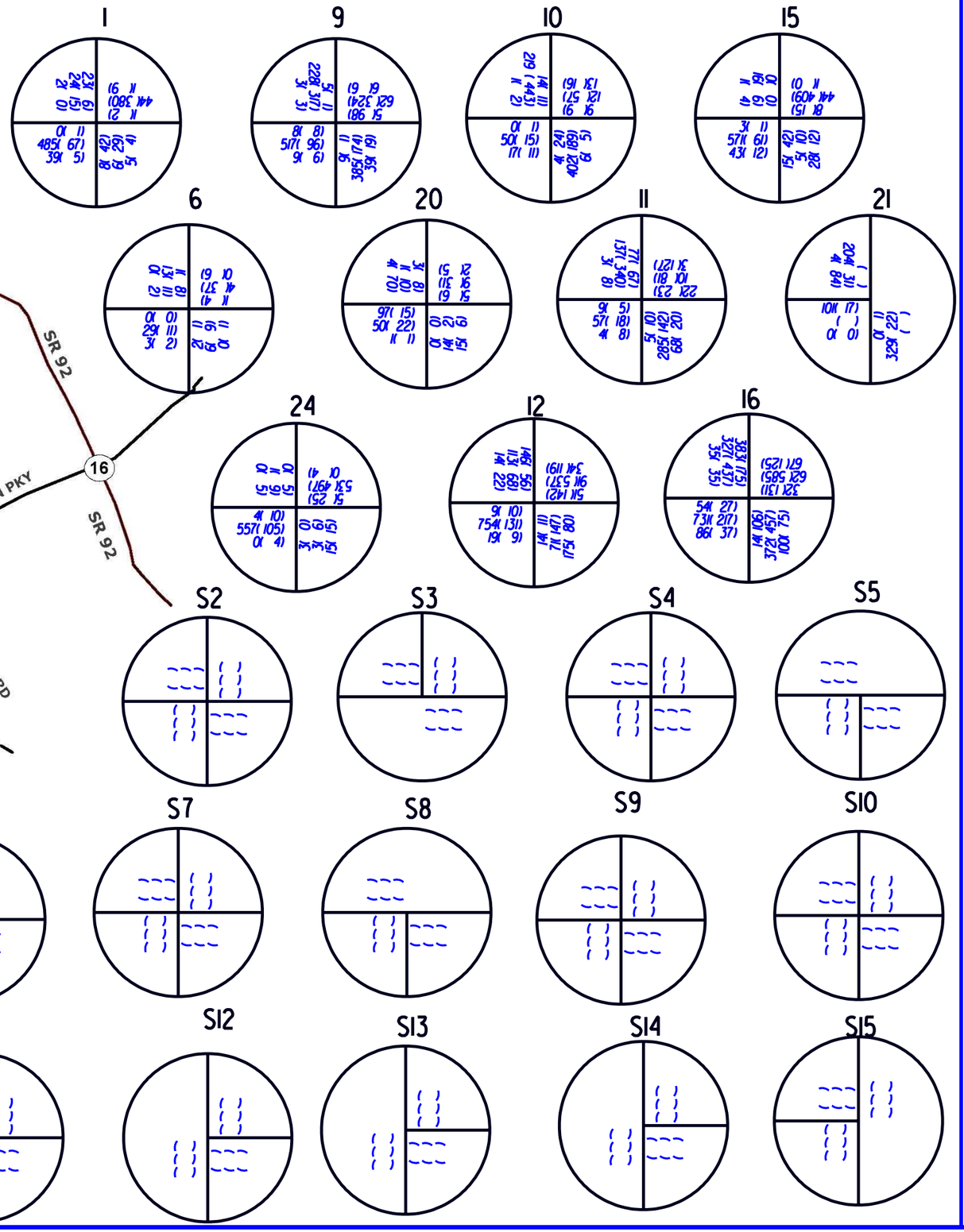
LOWE ENGINEERS

Firendship Village
Fulton County, Georgia

MINERVA

FIGURE 9 - TURNING MOVEMENTS FUTURE NO BUILD (2015)





LEGEND

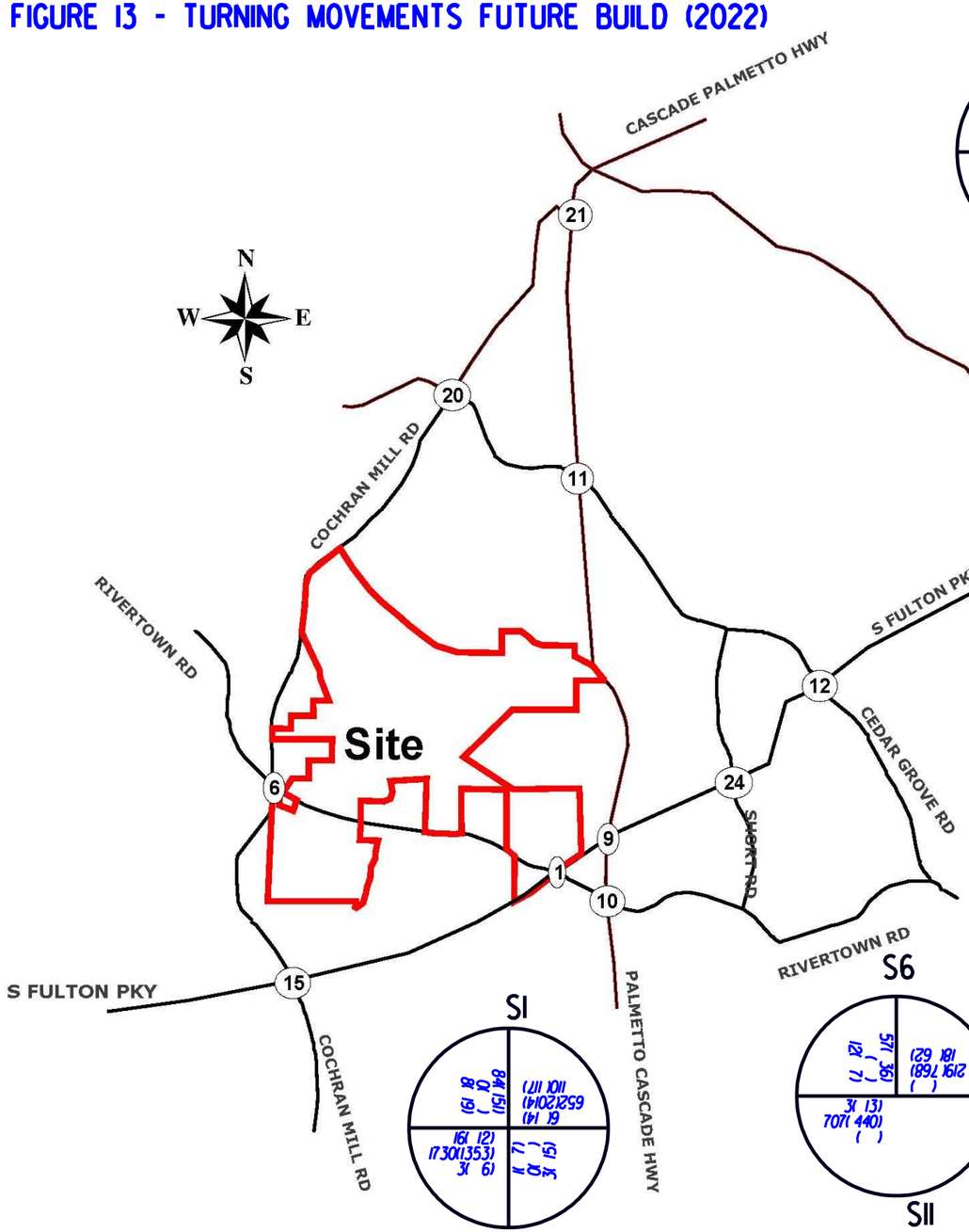
AM(PM) Volumes XX (YY)
Turning Movements

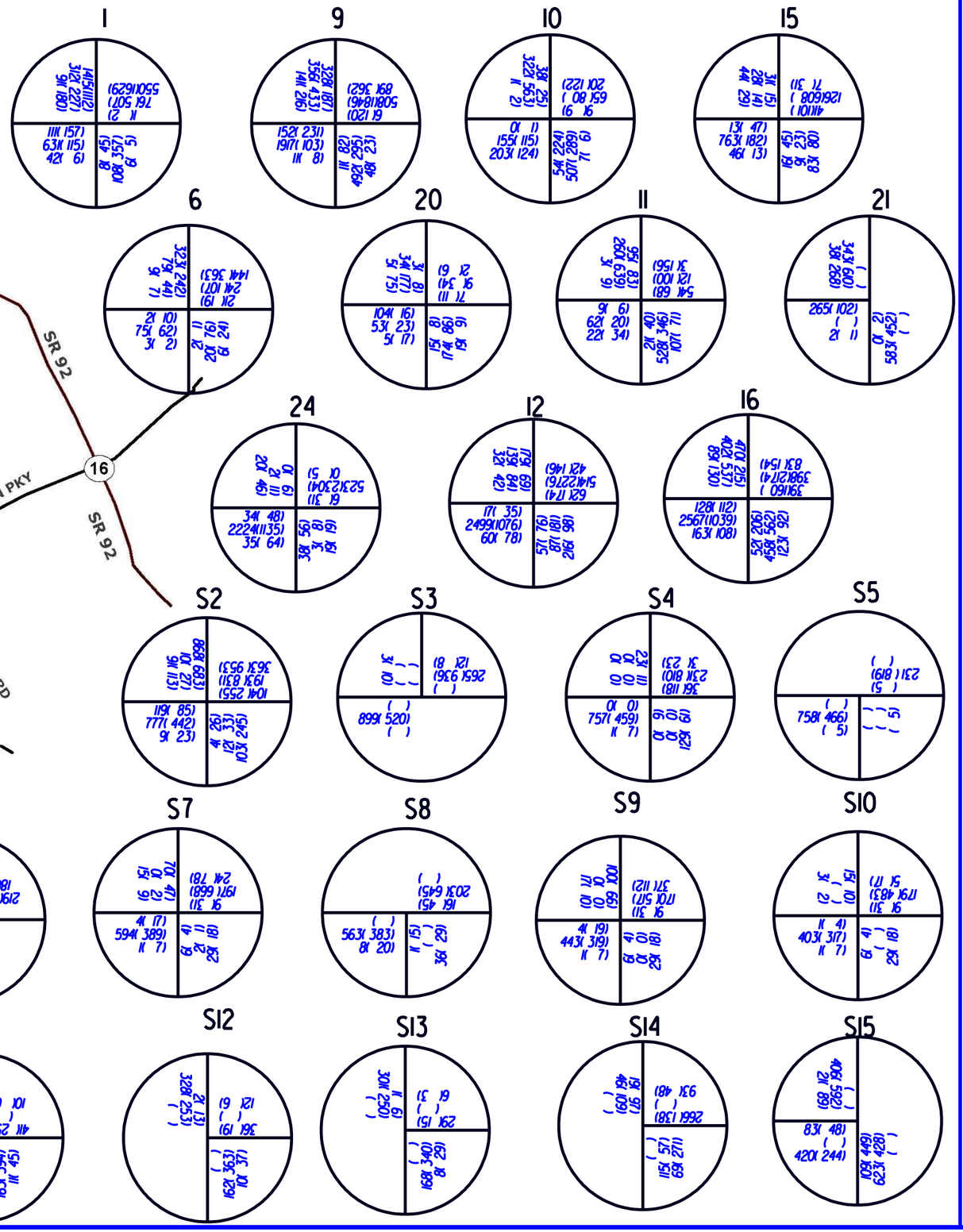
LOWE ENGINEERS

Firendship Village
Fulton County, Georgia

MINERVA

FIGURE 13 - TURNING MOVEMENTS FUTURE BUILD (2022)





LEGEND

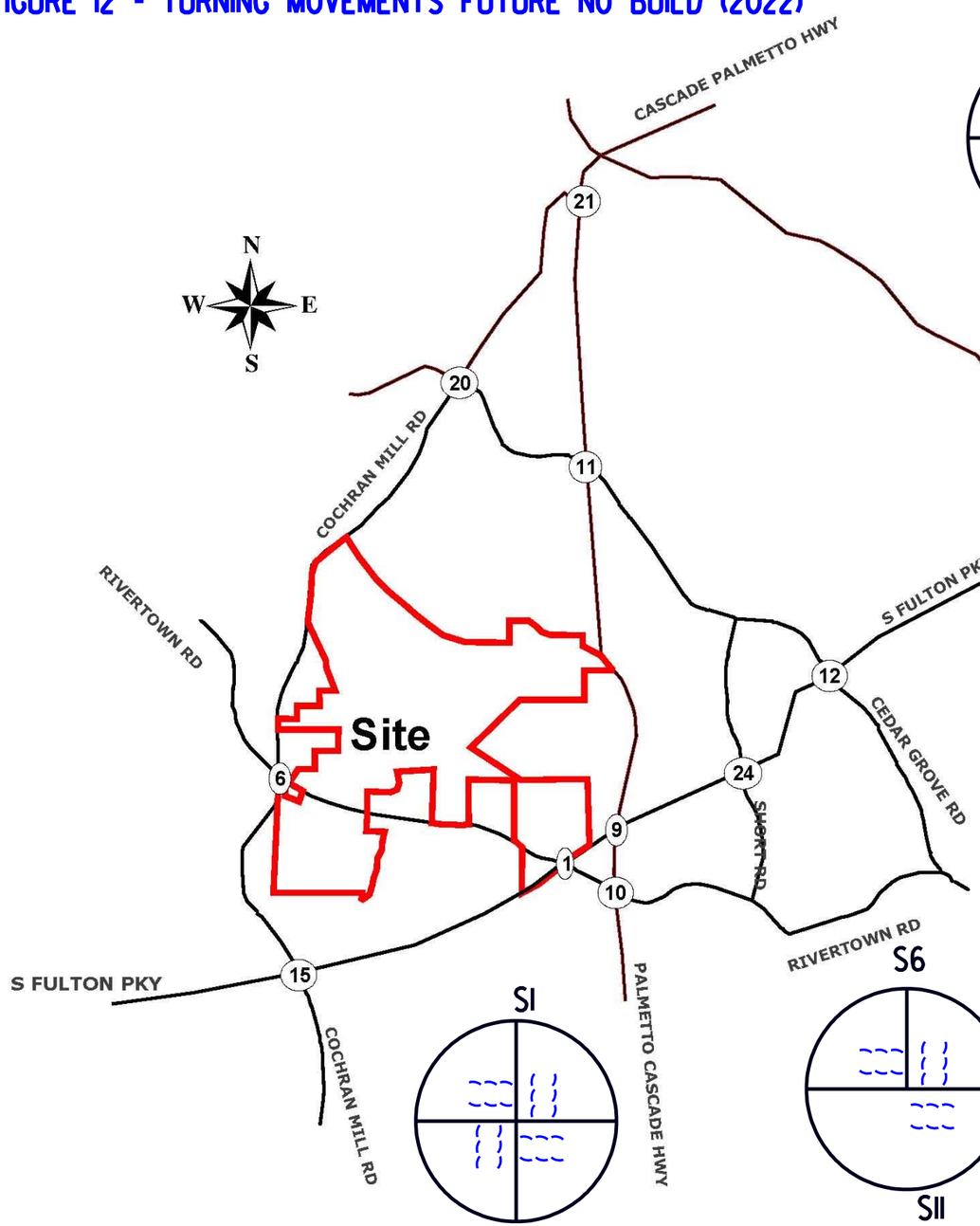
AM(PM) Volumes XX (YY)
Turning Movements

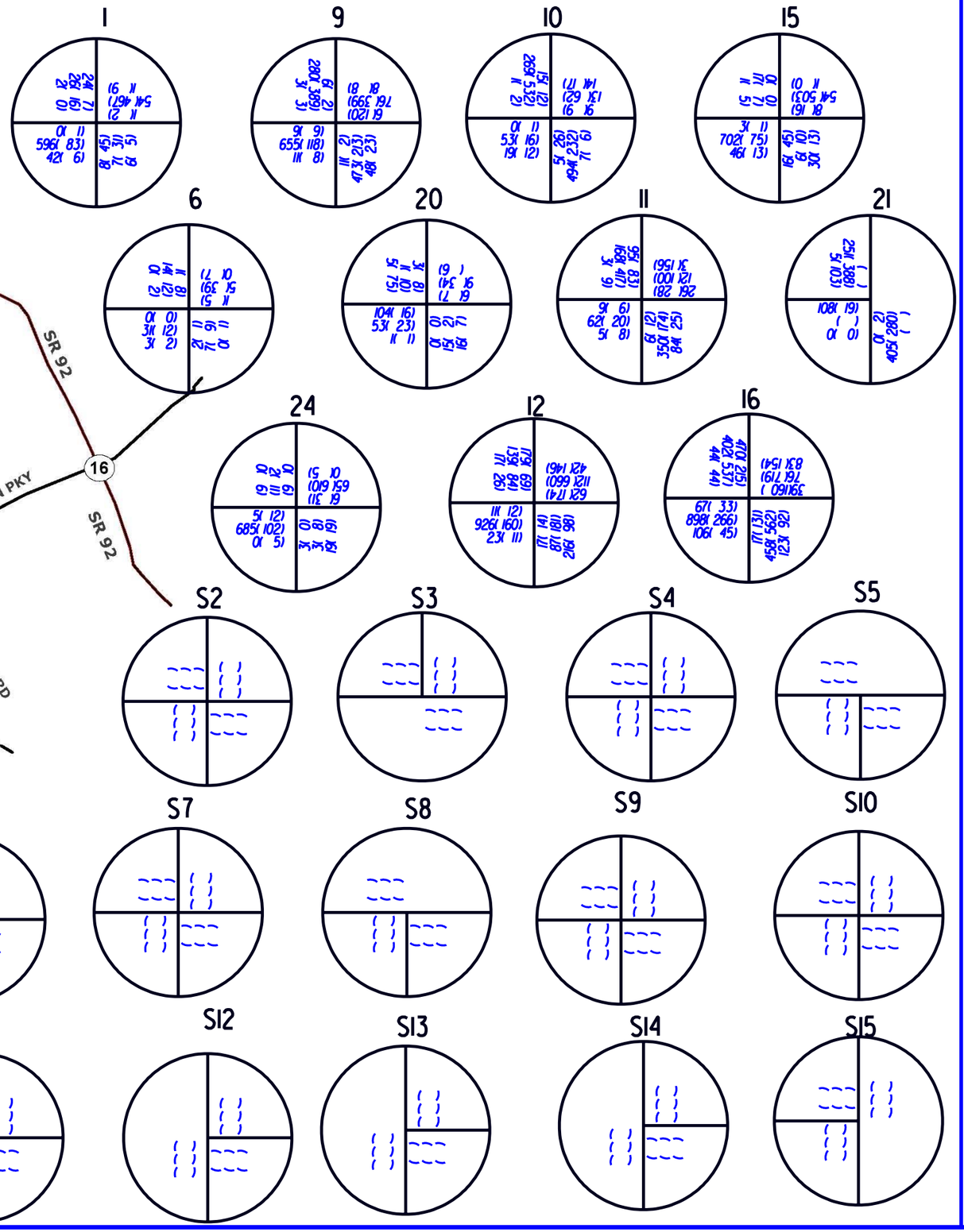
LOWE ENGINEERS

Firendship Village
Fulton County, Georgia

MINERVA

FIGURE 12 - TURNING MOVEMENTS FUTURE NO BUILD (2022)





LEGEND

AM(PM) Volumes XX (YY)
Turning Movements

LOWE ENGINEERS

Firendship Village
Fulton County, Georgia

MINERVA