



## DACULA PARK MASTER PLANS

THE DACULA PARK SITE IS COMPOSED OF THREE PARCELS ACQUIRED OVER SEVERAL DECADES STARTING IN 1977 THAT COMBINED TOTAL 75.86 ACRES.

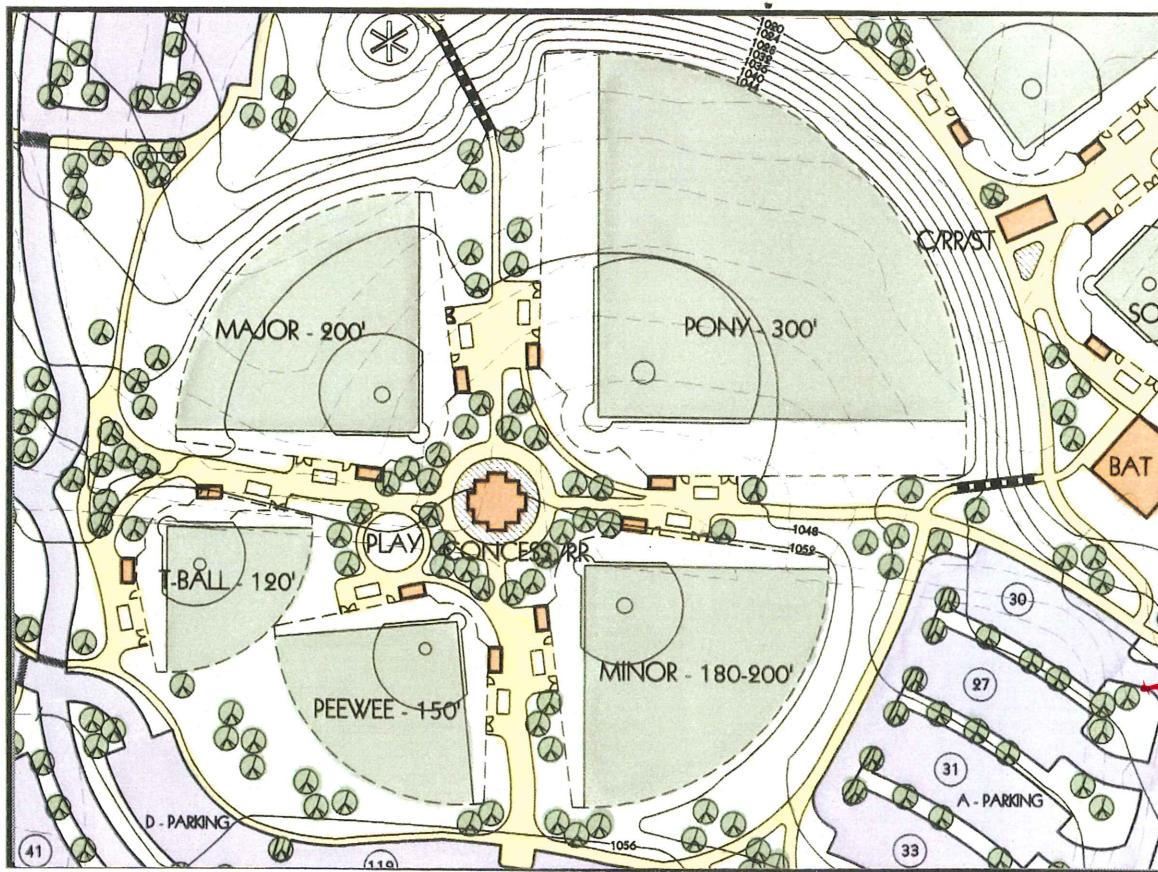
THE FIRST ITERATION OF DACULA PARK WAS A SMALL BASEBALL/SOFTBALL COMPLEX PLUS POOL AND COMMUNITY ROOM CONSTRUCTED WITHOUT A MASTER PLAN ON THE FIRST 26 ACRE +/- PARCEL. THE ACQUISITION OF THE ADJACENT SECOND PARCEL DUE NORTH OF THAT COMPLEX PROVIDED THE OPPORTUNITY TO DEVELOP THE FIRST PARK MASTER PLAN.

THE ORIGINAL MASTER PLAN WAS COMPLETED BY JAEGER IN 1997 TO GUIDE DEVELOPMENT OF THE NEWLY ACQUIRED PROPERTY. THE STEERING COMMITTEE DECIDED TO KEEP THE POOL BUT DEMOLISH THE EXISTING BALLFIELD COMPLEX SO THAT A NEW FACILITY COULD BE PLANNED MEETING CURRENT STANDARDS. THE DACULA LIBRARY BRANCH WAS SUBSEQUENTLY CONSTRUCTED WHERE THE MASTER PLAN PLACED A PROPOSED LIBRARY. ADDITIONAL LAND ACQUISITION TO THE NORTHEAST WAS SUGGESTED BY THE MASTER PLAN AND SUBSEQUENTLY ACCOMPLISHED.

THE 2006 MASTER PLAN REVISION BY EBERLY AND ASSOCIATES PLANNED THE DEVELOPMENT ON THE THIRD PARCEL. THE PLAN EXTENDED THE MULTI-PURPOSE TRAIL SYSTEM AND INTRODUCED AN ACTIVITY BUILDING WITH FUTURE GYM, TENNIS AND PARKING.

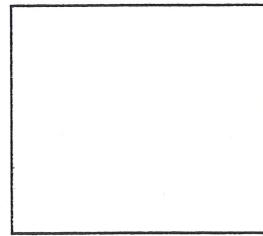
THE  
JAEGER  
COMPANY

FINAL REPORT  
April 1997



**Dacula Park  
Gwinnett County, GA**

Gwinnett County  
Department of Community Services



## DACULA PARK GWINNETT COUNTY, GA

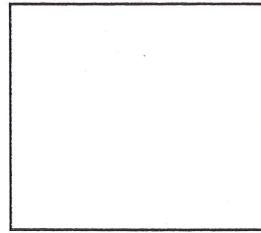
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Gwinnett County  
Department of Community Services

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April 1997

The Jaeger Company  
Gainesville, Georgia



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## ACKNOWLEDGMENTS

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### **Dacula Park Master Plan Steering Committee**

Martha Rogers  
Herb Burrell  
Bobbie Queen  
Steve Sewell  
Faye Brown  
Hank Maxwell  
Libby Hurst  
Alexander Wright  
David Gibson  
Carol Uhlich  
Amy Davenport  
Rosanne Larkins

### **Gwinnett County Board of Commissioners**

Wayne Hill, Chairman  
Tommy Hughes  
Patti Muise  
Judy Waters  
Kevin Kenerly

### **The Jaeger Company**

Dale Jaeger, Principal, Landscape Architect, Preservation Planner  
A. Chester Thomas, Senior Landscape Architect  
Jon Calabria, Landscape Architect  
Emmeline Embry, Graphic Designer

# Dacula Park Master Plan Report

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## 1.0 GOALS AND OBJECTIVES/ THE EXECUTIVE SUMMARY

Dacula Park is an existing park in the northeast portion of the Gwinnett County. Portions of the park are situated within the City of Dacula. Approximately one-half of the fifty-one acre park is currently developed for active recreation uses. The balance of the park is undeveloped and is primarily forested with a small abandoned field. The developed portion of the site has been in the ownership of Gwinnett County since 1977. The undeveloped portion, approximately twenty-five acres, was acquired recently to provide expansion opportunities for the park. An approximately three acre parcel, adjacent to the park and situated on Dacula Road, has been designated for future use as a library.

Dacula Park offers several unique opportunities for development. The close proximity of elementary, middle and high schools allows the park to efficiently serve a variety of school age residents for active recreation as well as environmental studies. The site's location near the Dacula town center also provides easy access to other Dacula residents, institutions, and businesses.

The Master Plan required the redevelopment of the entire site according to the program established by Gwinnett County Park and Recreation staff and members of the Citizen's Steering Committee. The proposed program for the Dacula Park Master Plan includes the addition of baseball, softball, football fields and expansion of the community center and existing pool. Additional proposed program items include an aquatic center at the pool, picnic facilities with associated green space, outdoor environmental classroom, a basketball court and associated wall ball court. Proposed parking for these elements exceeds the minimum standards as required by Gwinnett County.

The Master Planning approach included the following steps:

- Public Information Meeting;
- Citizen's Committee Selection with Strategic Meetings throughout the Planning Process;
- Tour to Similar Park Facilities in Gwinnett County by staff, consultants, and Citizen's Committee;
- Analysis and Inventory Phase including slope analysis, existing vegetation, hydrology, existing pedestrian and vehicular circulation, and existing structures;
- Functional Analysis reflecting the preliminary program as developed by Gwinnett County staff and Citizen's Committee,
- Three concepts depicting the preliminary program, and
- Final master plan and cost estimates.

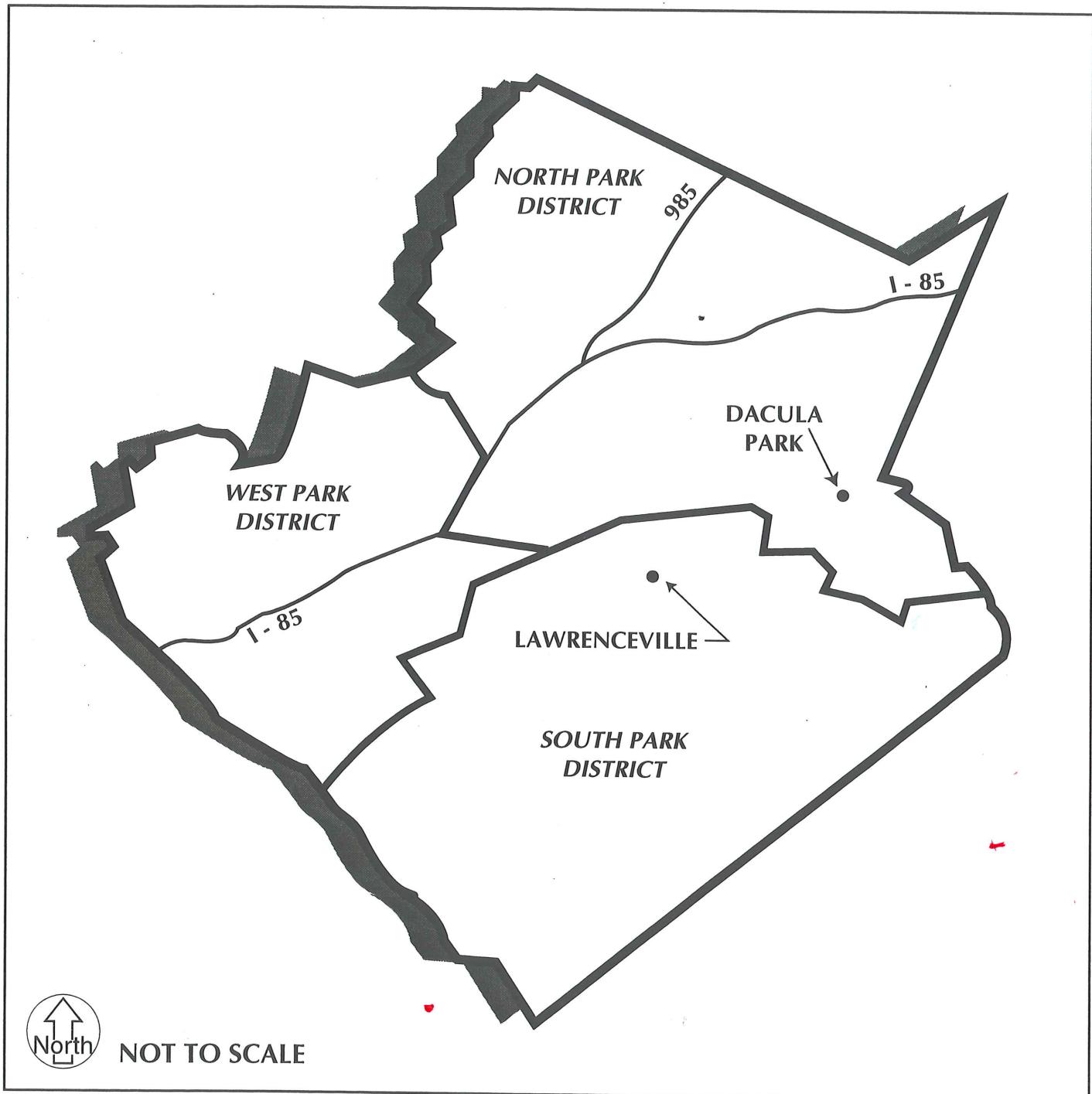


Illustration 1:  
Location Map

## 2.0 SITE CONTEXT

The City of Dacula began as a work camp during the construction of the Seaboard Railroad in 1891. Dacula was originally called "Chinquapin Grove," apparently due to the type of trees located there. The name was later changed to Hoke in honor of a railroad official and was used as a point for shipping cotton and other commodities. The town name was eventually changed to Dacula, supposedly a combination of letters from Atlanta and Decatur, other major points along the railroad.

The Department of Community Services Parks and Recreation Division is guided by the Gwinnett County Comprehensive Parks and Recreation Master Plan, prepared by Lose and Associates in January 1996. The county wide recreation study recommended land acquisition and a master plan for Dacula Park. The park is located in the North Park District in the northeastern portion of the county. Dacula Park is mostly located in the City of Dacula with a small portion located in unincorporated Gwinnett County.

This rural area is quickly becoming suburban as several cluster housing developments were permitted during the same time frame as the master planning process. Dacula Park is considered a "community park" within the Gwinnett County parks system. The park is located (*Location Map: Illustration 1*) on Dacula Road adjacent to the existing middle school and across the street from the existing high school. The existing elementary school is situated on Fence Road, less than a mile from the park and separated by one parcel of land. The park is located in Land Lot 302 of the 5th District.

The park is bounded on the west by Dacula Road and by two parcels which front on Dacula Road. These two parcels are a proposed library parcel and an existing church. The fire station is situated within the park property also fronting Dacula Road. The property is bounded by undeveloped or sparsely developed land to the north and east, but, as noted above, residential development is anticipated to occur in the future. There are also several residences, located on Old Auburn Road, bordering the site on the southeast. The Dacula Middle School is located directly south of the park. There do appear to be opportunities for joint school and park use at the middle school, since the portion of the school site bordering the park contains a large open field.

Dacula is located in the Piedmont province of Georgia. The site is slightly rolling to rolling topography with a steep slope associated with the eastern drainage basin. The south portion of the site is the area currently developed as a park and the north area is the undeveloped section of the park.

Topography varies from approximately 1,076 to 996 feet above sea level. There are two creeks which extend across the property in the eastern and northwestern portions of the site. The northern part of the creek in the east flows through a hardwood forest. The creek in the northwest is bordered by hardwood canopy trees. This area was apparently grazed in the past, then allowed into succession. Photographs taken in Fall 1996 show existing conditions of the fields on the upper plateau and the hardwood forest (*Existing Conditions: Illustration 2*).

Preliminary subsurface investigation discovered rock in the southern end of the site and high water table levels throughout the site. More geotechnical information is located in Appendix A.



Existing Fields



Existing Hardwood Forest

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**Illustration 2:**  
Existing Conditions

### 3.0 INVENTORY AND ANALYSES

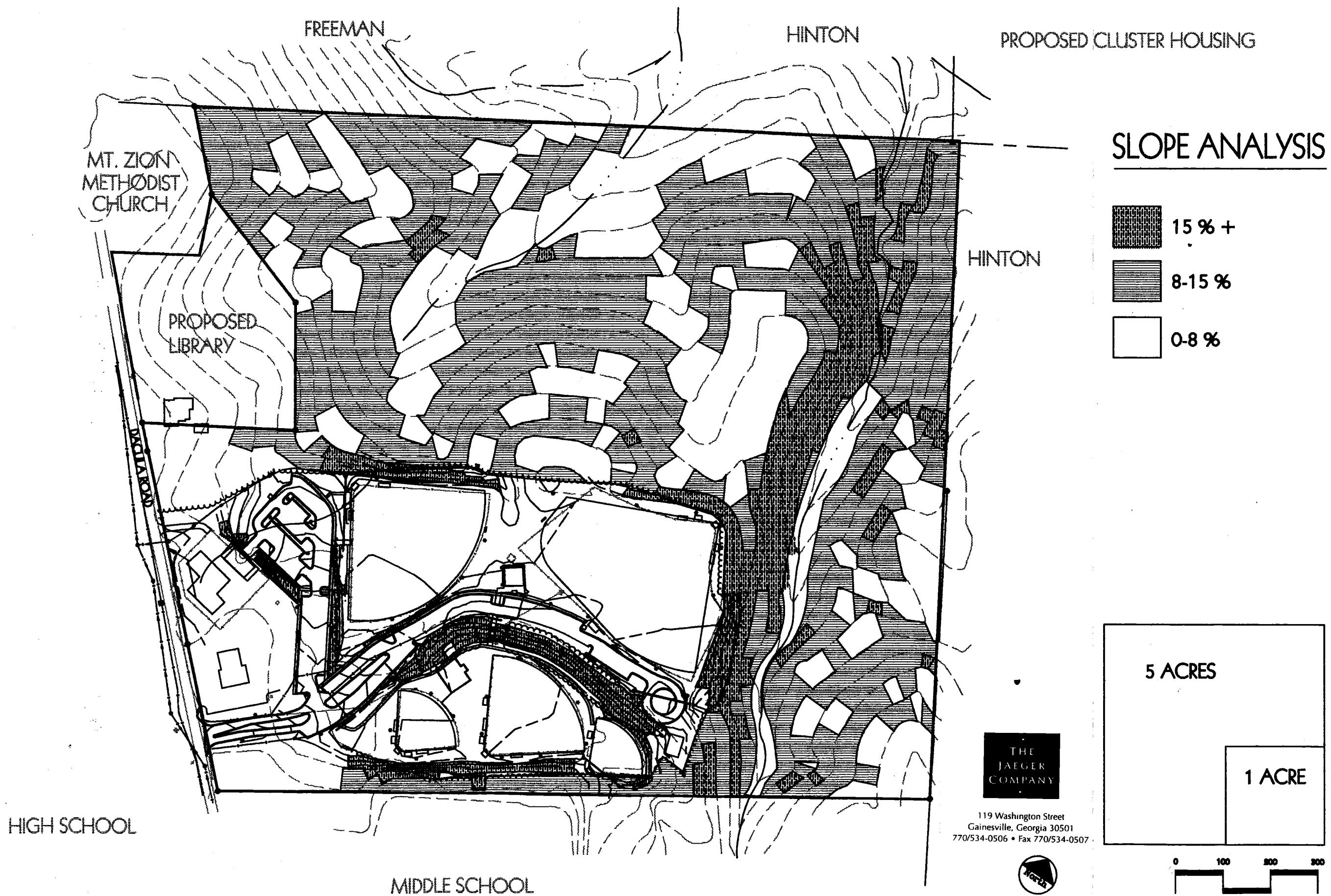
Inventory and analysis information and findings have been illustrated through several maps. These include the following:

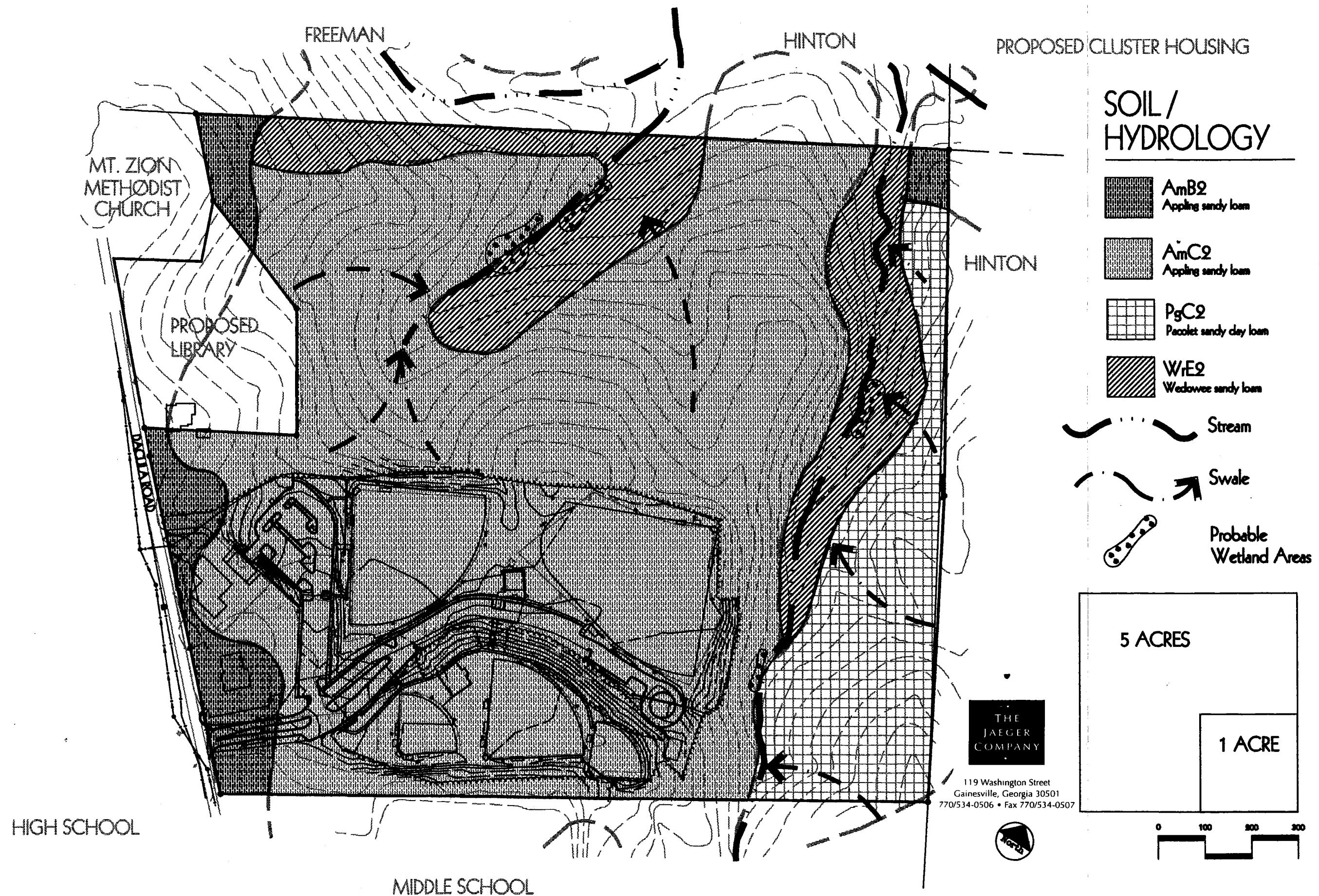
<i>Slope Analysis:</i>	<i>Illustration 3</i>
<i>Soil/Hydrology:</i>	<i>Illustration 4</i>
<i>Vegetation:</i>	<i>Illustration 5</i>

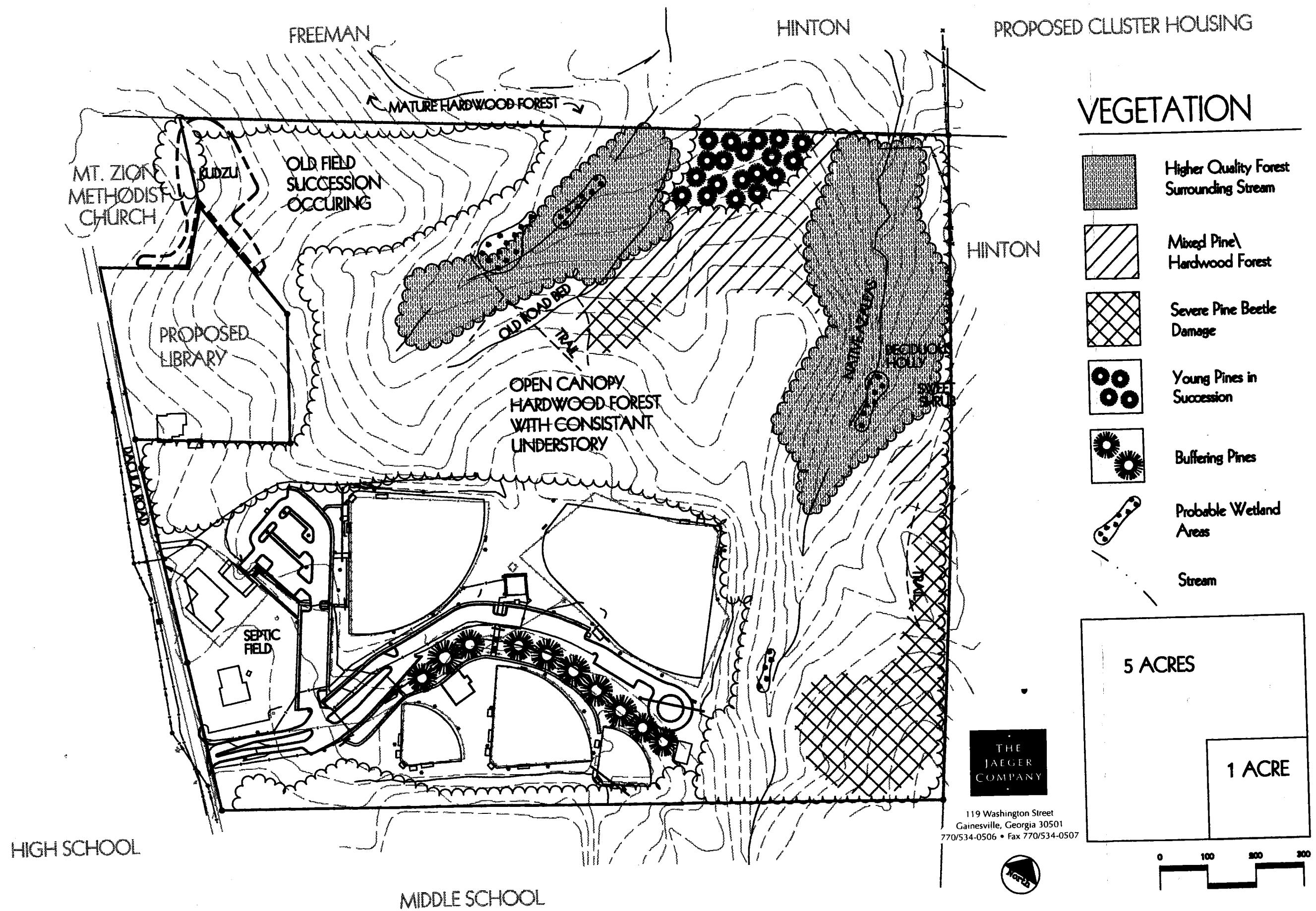
The slope analysis revealed limited areas of over fifteen percent slope. The majority of the site is eight to fifteen percent with very few areas less than eight percent, with the exception of the existing field plateaus. ~~Severe~~ topography was primarily contained on the west bank of the stream corridor in the eastern section of the site and the slopes between the existing field plateaus.

The soil types within the site consist of well drained sandy loam to sandy clay loam soil. Swales within the site drain into two perennial streams, which flow toward the north and extend outside the site. Probable wetland pockets were found adjacent to these two creeks.

Vegetation consists of higher quality hardwood forest in the northeast portion of the site, and mixed pine hardwood forest with signs of beetle damage in the remaining forested areas. A small old field successional area exists on the northwest portion of the site. The higher quality forest is adjacent to the steep western bank of the stream in the eastern section of this site. The quality of the hardwoods in this location illustrate that they have not been logged recently. Hardwoods located between the western stream and central ridge have privet understory or an understory of dense dogwood indicating the ~~area~~ was grazed approximately fifteen years ago, based on the mature size of the dogwood.







## 4.0 MASTER PLAN PROCESS

**4.1 Project Start-up** - A kick-off meeting was held on September 30, 1996 at Dacula High School with over 100 residents in attendance. The large attendance is reflective of the community's interest and support for this project. A variety of topics were discussed at this meeting and the community's interest in various park elements tabulated. Detailed information on the results of this meeting are attached in Appendix B. From this meeting, applications were taken from people interested in serving on the citizens' steering committee.

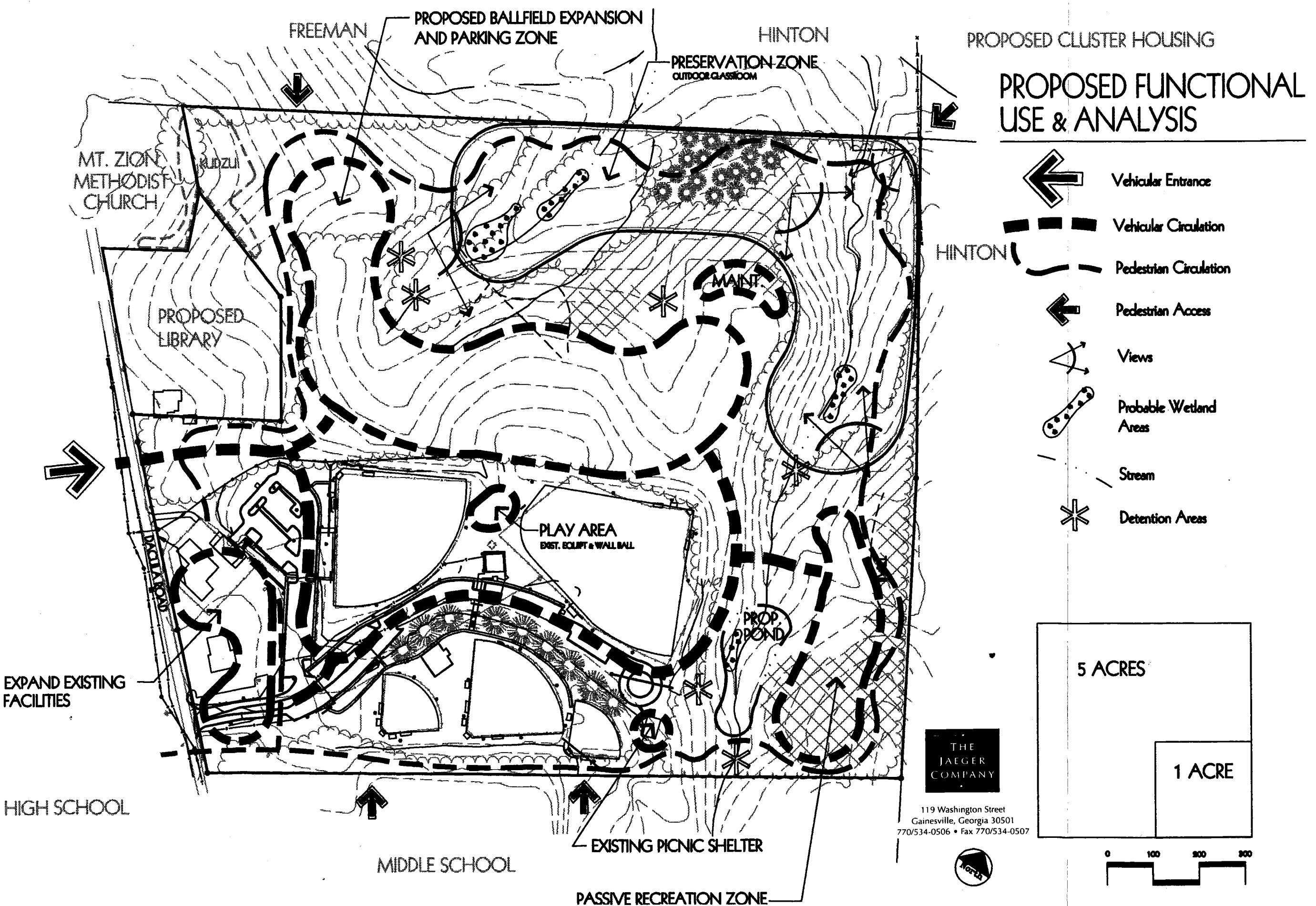
The Park and Recreation Department staff selected steering committee members, based on a desire to have broad-based representation. Members represented such groups as athletic associations, schools, senior citizens, the adjacent church, and other interested citizens. The planning process began with a tour of existing county facilities.

The Jaeger Company received digital base information for the existing park elements from the client and then digitized four foot contour intervals for the remainder of the site. Once the base information was compiled, several field visits were made to gather analysis information.

**4.2 Park Program** - Conceptual park planning began with the development of a preliminary program for the park. The Citizen's Committee and staff relied on community interest forms to prioritize programming requirements. Priorities were based on number of times each element was mentioned. Priorities indicated on the community interest forms included:

1. walking/jogging/nature/skating/biking trail;
2. improved parking;
3. expanded and improved baseball/softball complex;
4. playground-additional, expanded, and improved;
5. football field (overlay acceptable); and
6. Picnic pavilions for both reserved and informal "first-come first-served" use and family picnic areas with grills.

Analysis and base information were combined with the preliminary program requirements to form functional diagrams. The analysis and functional diagrams (*Proposed Functional Use & Analysis: Illustration 6*) were then presented to the Citizen's Committee for review on November 19, 1996.



The functional plan illustrates vehicular and pedestrian circulation opportunities with the park; access points; and physical factors that might limit development, such as wetland areas and stream corridors. Potential detention areas to control future storm water were also noted. The plan also illustrated opportunities for expansion of the ballfields to the north of the existing ballfields and expansion of the pool facilities to the south of the existing pool complex and community building.

**4.3 Alternate Concept Plans** - Three alternative concept plans were developed based on the analysis information and various programming elements. The three concept plans proposed different designs that responded to the same programming. In addition to the programming elements, several site features are common to all alternates and are listed below.

A family aquatic center with an interactive aquatic play feature would be programmed adjacent to the existing pool. The existing pool building would receive a meeting room addition on the lower level to allow adequate space for 102 people.

The existing fire station remains in the same location and is upgraded from septic service to sanitary sewer service. The existing drive is abandoned and a single entrance drive is located near the center of the site, adjacent to the library out-parcel allowing for improved sight distance, stacking, and acceleration and deceleration lanes on Dacula Road, if required.

The areas along the two stream corridors are preserved. The stream corridor in the eastern section of the site is developed with an outdoor classroom to serve the elementary, middle and high school.

A twelve foot wide perimeter trail that encircles the perimeter of the park, with only two vehicular crossings, is suggested. This trail provides linkages to the middle school, high school, church, and proposed library. There is also a trail stub that would link to the elementary school, if additional land is acquired in the future. A potential cluster home subdivision northeast of the site may also link to the trail at the developers' expense.

The reserved picnic area is located in the southeast corner of the site. The large picnic pavilion, restroom, play area, and volley ball courts would be sited above a pond with a naturally vegetated edge. A basketball court and wall ball area is proposed adjacent to the fire station.

Infrastructure for the support of these proposed activities includes a water system, separate fire and domestic lines, sanitary sewer, electrical system with phone and cable, and storm sewer facilities that would allow maximum infiltration into the ground through increased detention.

The different alternates incorporate the remaining aspects of the master plan program. The ballfields, except the football field in one alternate, are grouped together, although they may be on different plateaus. Associated fields are together in most instances so that each sport is grouped. The baseball, softball, and small fields complex consist of: (1) pony, minor, major, (2) two softball fields for girls, (3) peewee, T-ball fields, (4) and football field. Each of these fields have at least sixty associated parking spaces, with approximately eighty spaces associated for the football field. Several concession/restroom/ storage buildings and a batting cage are associated with the various plateaus of the fields. A maintenance facility with a 1,040 square feet building and planned expansion with a maintenance pad and parking is shown. An informal picnic area consists of two small structures, restroom, playground, and a volleyball court.

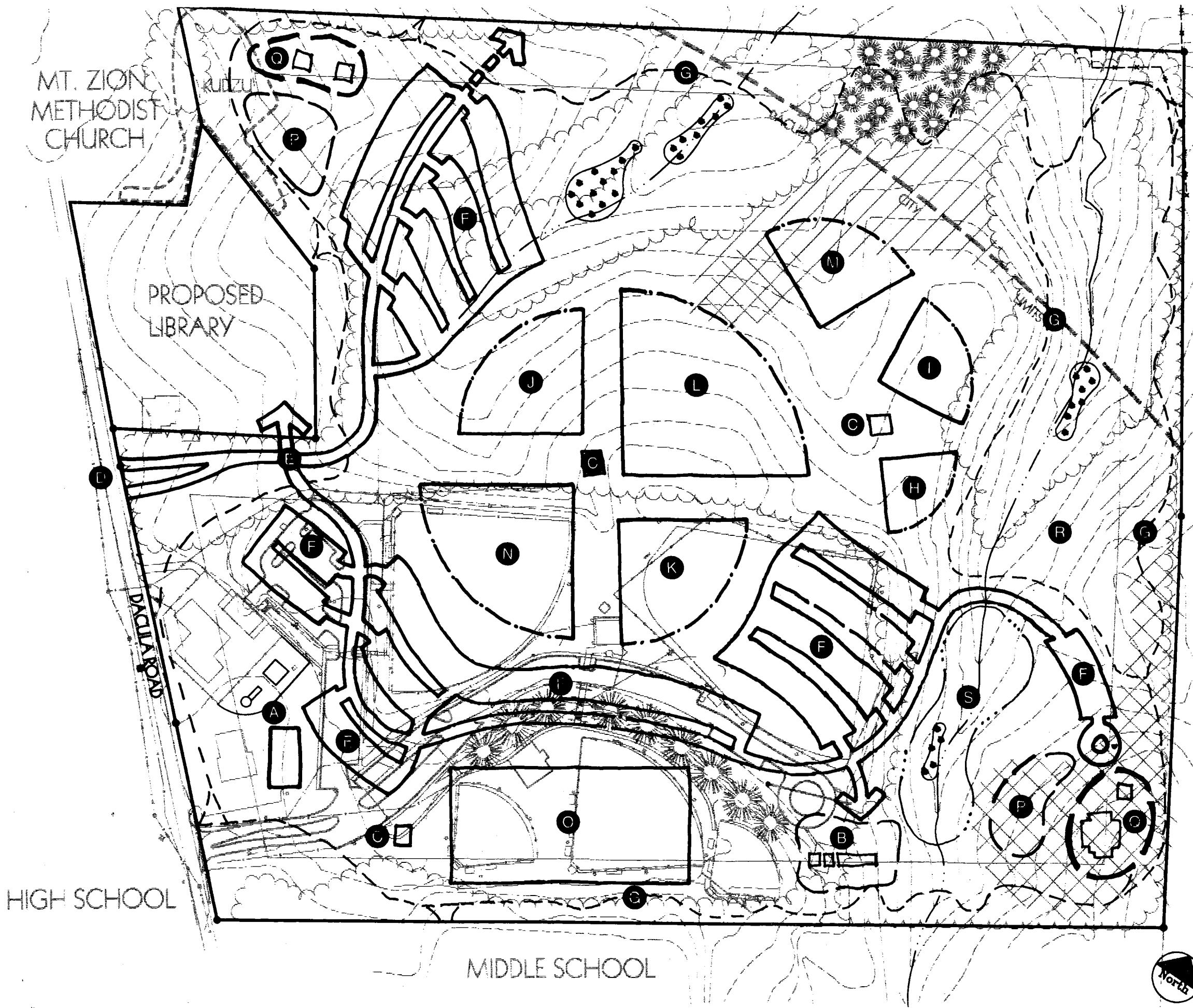
The intent of the conceptual phase of design was to consider three alternates in broad design categories: (1) Utilization of Existing Facilities; (2) No Attempt to Utilize Existing Facilities; and (3) Combination of 1 and 2. Specific information on each concept follows:

**Master Plan Concept - Alternate 1: Illustration 7** - This alternate proposes a layout that maximizes the use of existing plateaus, preserves the greatest amount of green space and provides parking adjacent to the fields. The negatives aspects of this concept include substandard parking at the football field and the separation of softball fields between plateaus.

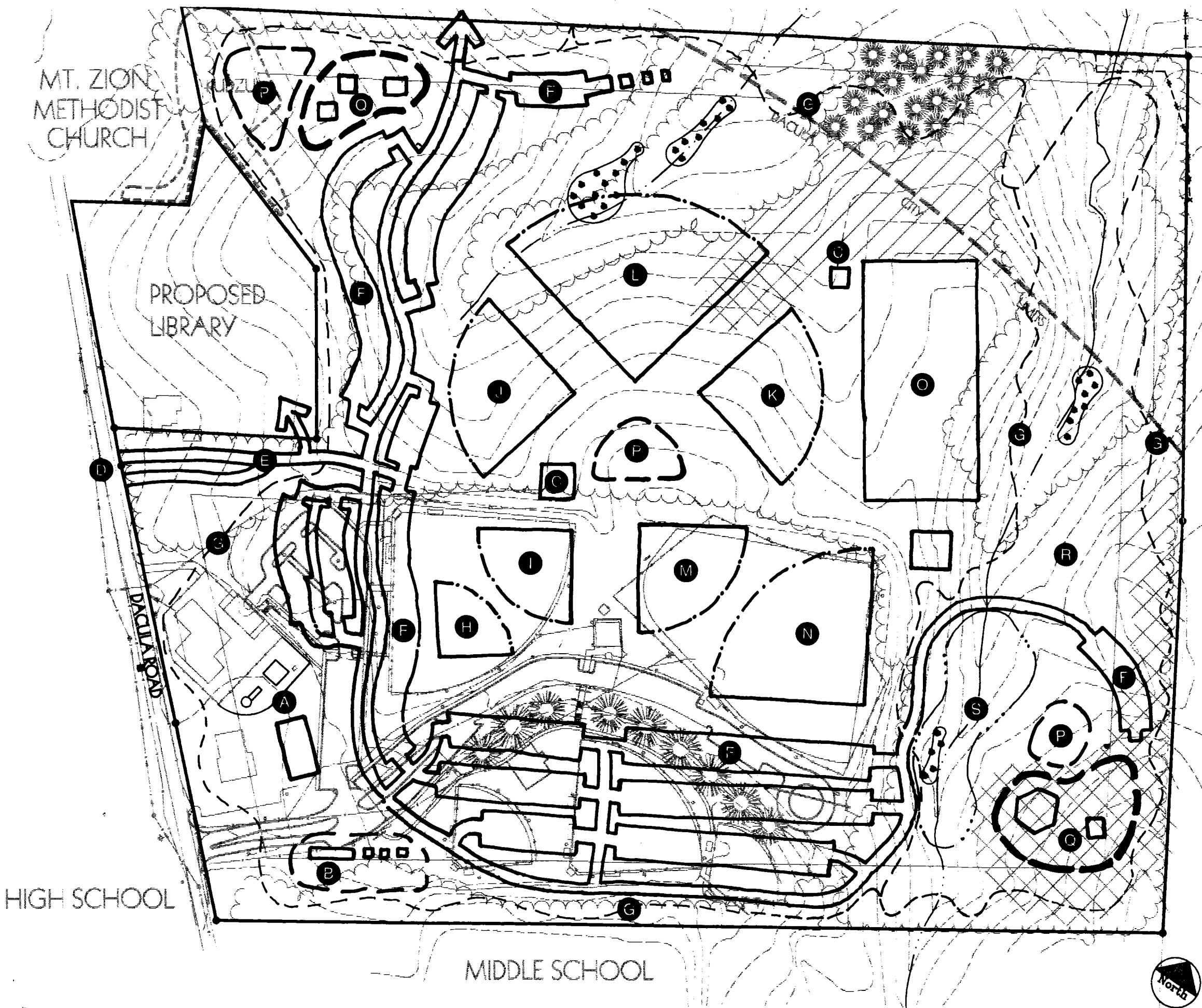
**Master Plan Concept - Alternate 2: Illustration 8** - This layout contains a crescent shaped vehicular configuration and massed parking adjacent to the middle school. Alternate 2 utilized the existing upper plateau as parking and formed a crescent shape around the remaining fields. Negative aspects of this plan include the separation of the middle school from the park by the parking lot and a minimal amount of greenspace.

**Master Plan Concept - Alternate 3: Illustration 9** - This concept proposes crescent parking with fields located in the center. This plan required clearing and regrading of the entire site to various plateaus. One disadvantage of this plan was that some parking was far removed from the ball fields. This concept also provided a minimal amount of greenspace.

These three concepts were presented independently to the staff and the Citizen's Committee on December 19, 1996. The Citizen's Committee recommended that alternate one be developed into the preliminary master plan with a few modifications. The preliminary master plan was presented to the Gwinnett County Board of Commissioners on March 4, 1997. Comments by the Commission, park and recreation staff and Citizen's Committee were used in the refinement of the plan to produce the Final Master Plan. The plan was then recommended for adoption in April, 1997.



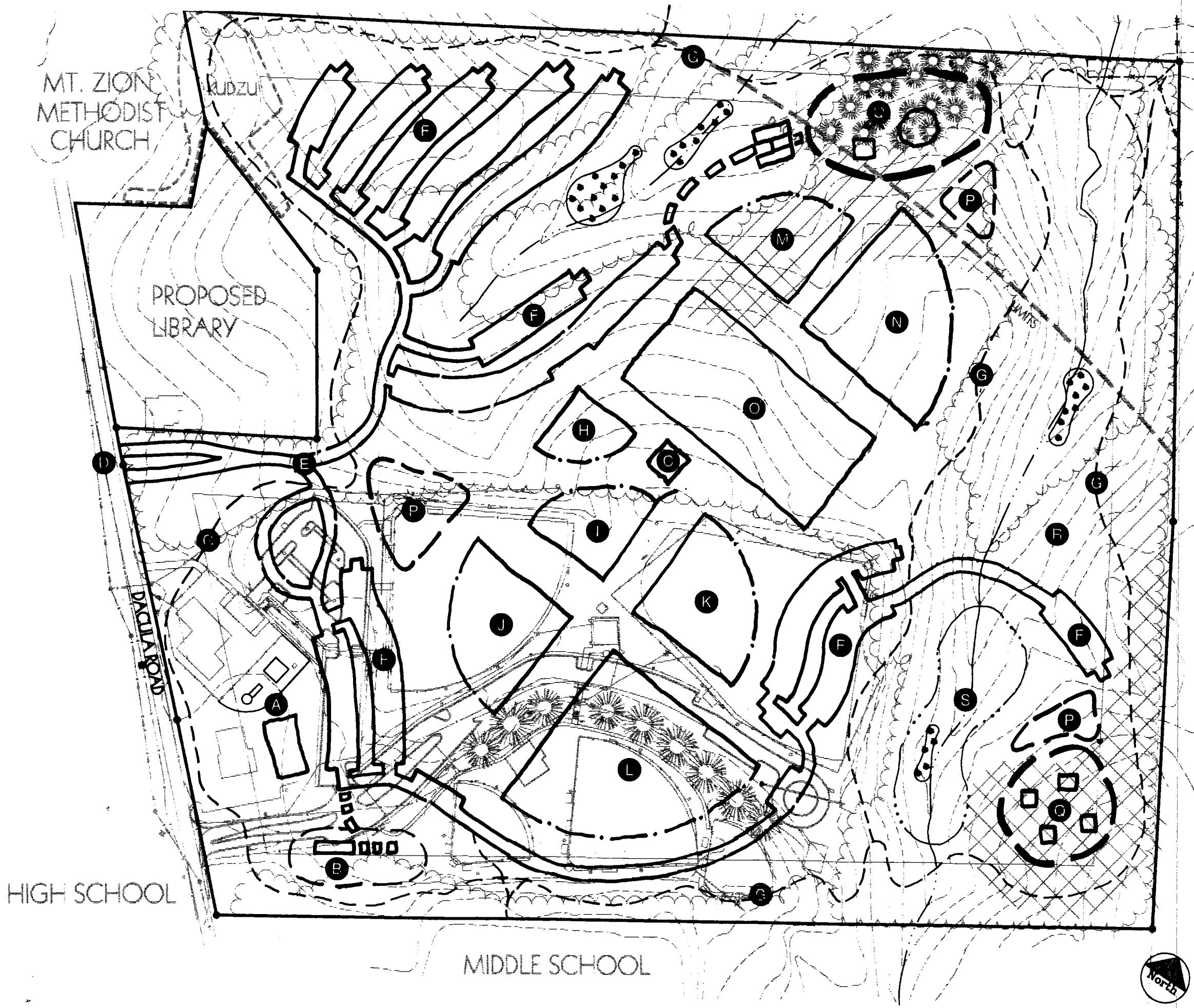
## Master Plan Alternate 1



**Master Plan  
Alternate 2**

- (A) Langley Building/Aquatic Center/Basketball Court
- (B) Maintenance Building
- (C) Concession/Restroom Building
- (D) Park Entrance
- (E) Park Driveway
- (F) Parking
- (G) Walk/Jog Trail
- (H) T-ball Field
- (I) Pee-Wee Field
- (J) Minor Field
- (K) Major Field
- (L) Pony Field
- (M) Girl's Softball
- (N) Girl's Softball
- (O) Football Field
- (P) Playground
- (Q) Picnic Area
- (R) Outdoor Classroom/Green Space
- (S) Pond

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**Master Plan  
Alternate 3**

- (A) Langley Building/Aquatic Center/Basketball Court
- (B) Maintenance Building
- (C) Concession/Restroom Building
- (D) Park Entrance
- (E) Park Driveway
- (F) Parking
- (G) Walk/Jog Trail
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- (Q) Picnic Area
- (R) Outdoor Classroom/Green Space
- (S) Pond

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COMPANY

**Master Plan: Illustration 10-** The Master plan was derived primarily from alternate one. The elements of the plan are described in further detail below.

#### *Utilities and Buffers*

All the demolition, clearing, major site grading, detention basins, and associated erosion and tree protection measures occur in this stage. The detention basin adjacent to the reserved picnic area must be designed to protect and preserve the diverse wildflowers and ferns in the wetlands and stream bank downstream from persistent flooding and sedimentation. Utilities such as storm sewer, sanitary sewer, lift station, fire, domestic water, phone and cable are included. Because the site of the fire station's septic system will be regraded to receive the aquatic structure, the fire station will need to be serviced by sanitary sewer. Landscape planting and associated irrigation occur in this stage. Specifically, an evergreen buffer with associated benches and trash receptacles will be placed at the top of the embankment between the maintenance yard and existing church. Plantings are required between the pool and entrance drive. Steep slopes are to be reforested.

#### *Football Complex*

The fenced football field is on the upper plateau and has separate parking areas (120 stalls) located on the south of the spine road. A restroom/concession building is sited to collect admission at the football field. A small dining area with seatwalls and elevated eating surfaces are located adjacent to the building.

#### *Family Aquatic Center*

The family aquatic center and support building for the aquatics are located adjacent to the existing pool. A similar structure exists at Best Friend Park, in Gwinnett County, and has high usage. The meeting room is to be expanded at the Langley Building.

#### *Baseball Complex*

The field complex consists of a pony, major, and minor fields composing the baseball complex with tee ball and pee-wee fields and an adjacent play area that form the small fields complex. This play area is to contain one of the smaller play structures designed for toddlers and younger children. It should be buffered from any out of play balls from surrounding fields. Fields are sited in a wheel pattern around the concession/restroom area that has a small dining area with seat walls. Storage, concession, restroom space and a small meeting room are available at this building. Adjacent to the parking lot are several storage bins for field materials such as brick dust and sand. Parking (202 stalls) is provided for the baseball fields.

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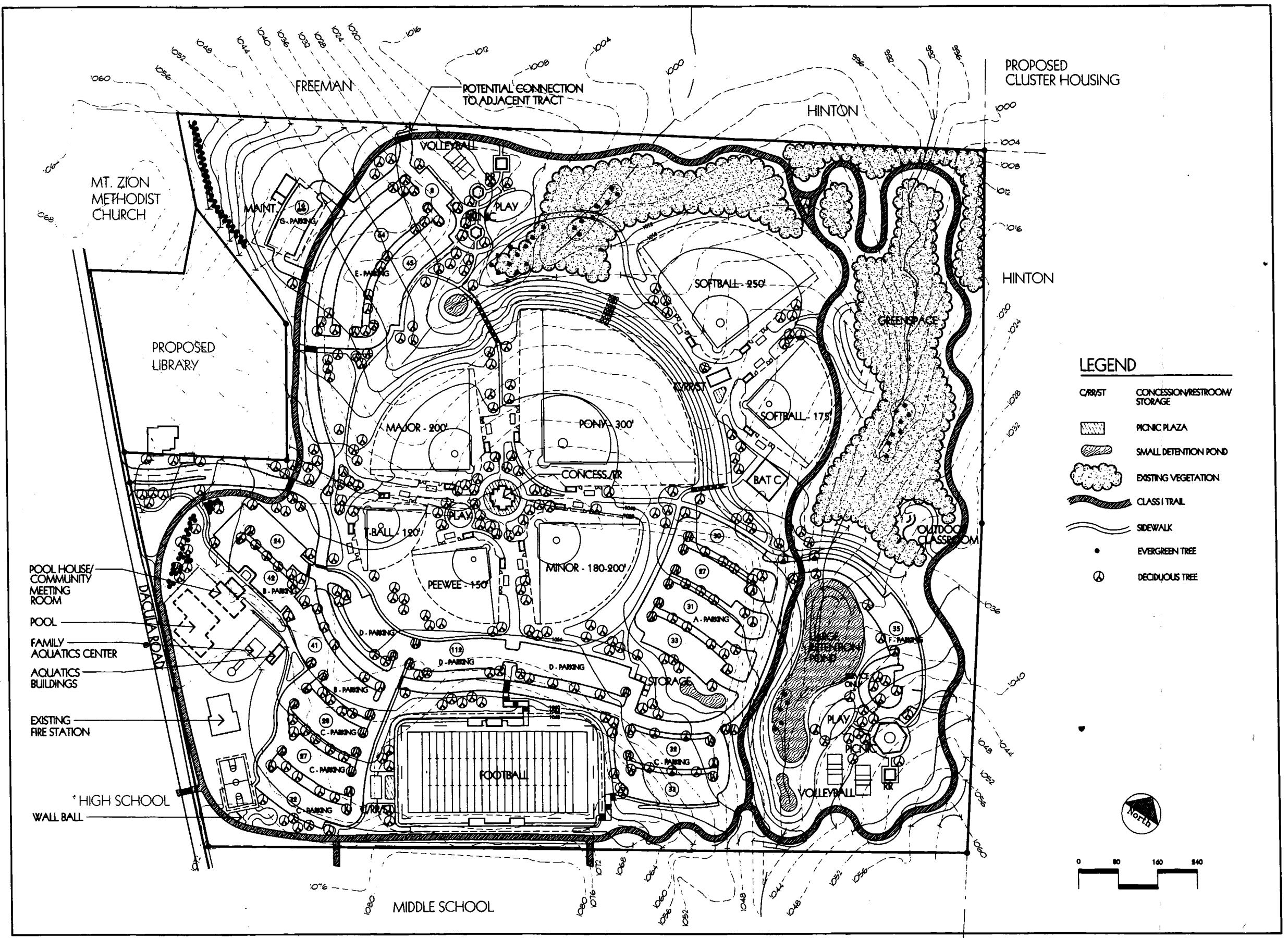
## **Illustration 10:** Master Plan

# DOACULA PARK Master Plan Gwinnett County, GA

## Gwinnett County, GA

Date: 1 APR 1997

Sheet 1 of 1



### *Softball Complex*

The softball complex consists of two fields on a lower plateau served by their own concession, restroom and storage building with a small dining area. This area includes the batting cages for the park. Parking (121 stalls) is provided for the softball fields.

### *Basketball Court, Wallball*

A regulation, fenced, lighted basketball court and wall ball area is planned adjacent to the fire station. The wall ball area consists of a freeform wall with openings set on a hard surface. Parking (10 stalls) is provided for basketball and wallball courts.

### *Reserved Picnic Area*

The reserved picnic area includes a large picnic shelter, associated parking (31 stalls), playground, and volleyball courts. The play area is intended to accommodate many different ages of children. It should serve as one of the two larger play areas in the park that includes a two play structures and swings. One play structure should be suited for toddlers and the other play structure for older children. These structures and swings should be sufficiently spaced to comfortably accommodate simultaneous use. The detention pond, situated adjacent to the reserved picnic zone, will be enhanced with planting along the pool's edge to make this feature a focal point in the park. The design of the pond needs to incorporate several functions. Water exiting the pond should be virtually free of sediment and flow as a natural stream to preserve the sensitive streamside vegetation within the hardwood forest downstream.

### *Woodland Preserve/Classroom*

The Woodland Preserve and outdoor classroom are downstream from the Reserved Picnic Area. These areas are accessed by the Perimeter multi-use trail. The outdoor classroom is intended to blend into the existing landscape with minimal disturbance to the preserved, mature hardwood forest. Seatwalls focusing on a central point would be used by the surrounding schools and outdoor programs.

The hardwood forest has a small stream, woodland bluff, and a drier upland area that would benefit from well placed interpretive boards. Vegetation that occurs in the area includes: Oak and Hickory species, Red Maple, Deciduous Holly, Jack in the Pulpit, Grass of Parnassus, Phlox, Blue Lobelia, and many ferns. Grape, Cinnamon, Royal (see illustration 2, photo 2), and Christmas Ferns were a few that were found in this area. These plant communities are worthy of protection from heavy sedimentation and persistent flooding.

#### *Informal Picnic Area*

The informal picnic area is sited to take advantage of the woodland edge. Two small pavilions, restroom building, volleyball court, and play area are the major elements that should be sited at the preserved woodland edge. The play area is to serve as a destination play area that appeals to a variety of ages. One play structure should be suited for toddlers and the other play structure for older children. These structures and swings should be sufficiently spaced to comfortably accommodate simultaneous use. Parking (27 stalls) serves the informal picnic area.

#### *Perimeter and Interior Multi-use Trail*

A perimeter trail with an interior loop extends through the park enabling one to make a complete loop adjacent to the field configuration. The perimeter trail is required to be at least one mile long and signed at quarter mile intervals that read from both directions. The interior trail is almost one-half mile long. The portion of the multi-use trail that serves the reserved picnic area should meet all American with Disabilities Act requirements. Parking (22 stalls) serves the trails.

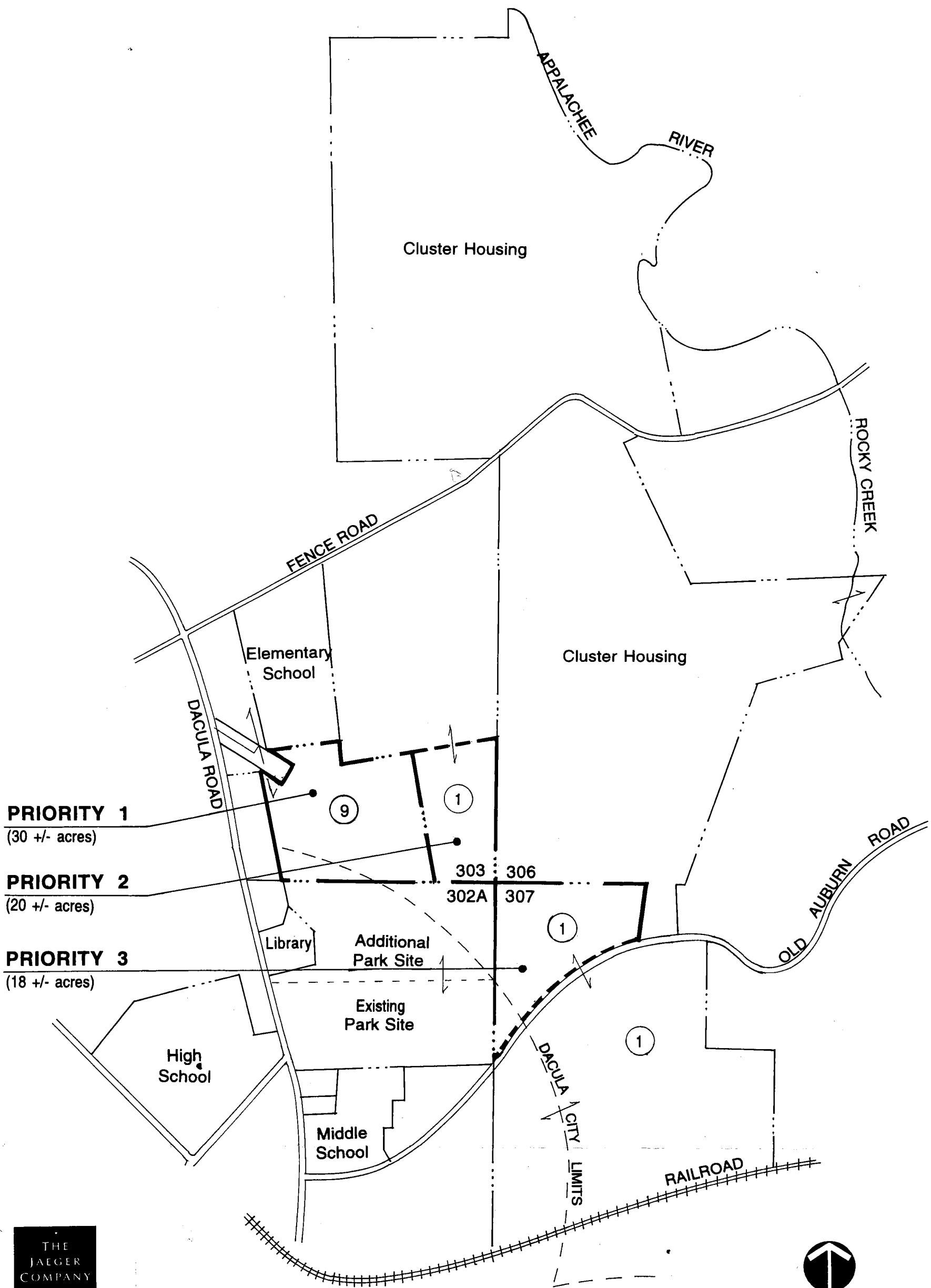
#### *Maintenance Area*

The maintenance area has a building with planned expansion, maintenance yard and parking that is enclosed in fence. The paved parking area accommodates the equivalent of 16 parking stalls and provides for a 50' x 50' maintenance yard.

Although the master plan does not intend to impact wetlands directly, a routine determination of juridical wetlands and waters of the United States should be performed and located by a registered surveyor. A variance from the Georgia Environmental Protection Division Stream Buffer is required prior to construction activities.

The fifty-one acre park is considered small by community park standards. A typical community park is usually in the 150-180 acre range. For that reason, several adjacent parcels were studied as potential candidates for future acquisition. It was not the purpose of this study to incorporate future parcels into the park program, but rather to design the park in a manner that might allow future expansion without disruption to the park elements.

The parcels considered are illustrated on the attached map (*Park Expansion Opportunities: Illustration 11*), with priority recommendations noted. Priority One is an approximate thirty acre tract, located north of the existing park. This parcel would provide a direct connection to the elementary school. This tract contains an existing power line, which might limit its development potential. Two other parcels, noted as priority two and three to the north and east were also considered, but the priority one site is considered the best candidate due to the potential pedestrian connection with the elementary school.



119 Washington Street  
Gainesville, Georgia 30501  
770/534-0506 • Fax 770/534-0507

**Illustration 11:**  
Park Expansion Opportunities

## **5.0 COST ESTIMATE**

A total cost estimate for the entire master plan is also calculated. It is divided into different Construction Specifications Institute divisions that are related to the major elements located within the park. A 7.5% design fee and 12% contingency are added to the cost estimate. The total master plan cost is nearly six million dollars and is estimated at \$5,862,037.

# Dacula Park - Master Plan Cost Estimate The Jaeger Company

**Dacula Park - Master Plan  
Cost Estimate  
The Jaeger Company**

Code		Description		Quantity	Unit Price	Entire Site Utilities, Buffers	Perimeter Multi-use Trail	Reserved Picnic Area	Informal Picnic Area	Family Aquatic Center	Woodland Preserve/ Classroom	Softball Complex	Football Complex	Baseball Complex	Pony/Major/ Minor	Basketball Court/ Wallball	Maintain- ance Area
		Concrete C/G - Parking Area F - 31 Stalls		975	\$ 10.00	LF			\$ 9,750								
		Concrete C/G - Parking Area G - 16 Stalls		380	\$ 10.00	LF											\$ 3,800
02660	Exterior Water Distribution - Potable			1	\$ 81,600.00	LS	\$ 63,600		\$ 7,200								\$ 10,800
	Exterior Water Distribution - Fire System			1	\$ 150,500.00	LS	\$ 115,500		\$ 14,000								\$ 21,000
	Drinking Fountains			1	\$ 8,200.00	LS	\$ 8,200										
02720	Sanitary Sewer Lines - Total System			1	\$ 124,500.00	LS	\$ 124,500										
	Sanitary Sewer - Force Main Allowance			1	\$ 40,000.00	LS	\$ 40,000										
02710	Storm Drainage System			1	\$ 148,000.00	LS	\$ 148,000										
02890	Bridge Crossings @ Path			3	\$ 9,000.00	EA		\$ 27,000									
	Pond Overflow/Weirs			5	\$ 4,125.00	EA	\$ 20,625										
	Irrigation System for Fields /Adjacent Area			1	\$ 118,000.00	LS	\$ 40,000						\$ 22,000	\$ 12,000	\$ 32,000	\$ 12,000	
13120	Phase 1 - Maint.			1	\$ 85,000.00	LS											
13120	Maint. Station (1040sf)			1	\$ 85,000.00	EA											\$ 85,000
	Restroom/Concession/Storage (1600sf)			1	\$ 200,000.00	EA											
	Restroom/Concession/Storage (1000sf)			2	\$ 125,000.00	EA							\$ 125,000	\$ 125,000			
	Restroom (400sf)			2	\$ 50,000.00	EA											
	Langley Prop. Meeting Room (102 persons)			1	\$ 80,300.00	LS			\$ 80,300								
	Aquatics Center Support Building (400sf)			1	\$ 80,000.00	LS											
	Family Aquatic Center - Outdoor Facilities			1	\$ 300,000.00	LS											
	Road/Path Crossing Hardscape Allowance			2	\$ 9,000.00	EA	\$ 18,000										
	Scorekeepers Booth-Reuse Existing			5	\$ 1,000.00	EA											
	Scorekeepers Booth-Fields			2	\$ 5,000.00	EA											
	Scorekeepers Booth-Football			1	\$ 20,000.00	EA											
	Team Dugout			16	\$ 9,000.00	EA							\$ 36,000	\$ 54,000	\$ 36,000		
	Team Bench			2	\$ 2,000.00	EA											
	Picnic Pavilion (375 sf ea)			2	\$ 32,000.00	EA											
	Picnic Pavilion (Custom Design)			1	\$ 110,000.00	EA											
16600	GA Power Lease-Site Lighting/Telephone			1	\$ 55,000.00	LS	\$ 55,000										
16530	Site Lighting - Trail in Greenspace			1	\$ 128,000.00	LS	\$ 128,000										
16540	Sports Lighting/PV/Scoreboards			1	\$ 392,000.00	LS							\$ 95,000	\$ 140,000	\$ 72,000		
	<b>SUB-TOTAL</b>				\$ 1,690,792	\$ 275,200	\$ 274,850	\$ 220,200	\$ 516,880	\$ 24,000	\$ 416,860	\$ 362,610	\$ 621,140	\$ 290,770	\$ 35,440	\$ 140,060	
	Contingency - 12%				\$ 202,895	\$ 33,024	\$ 32,982	\$ 26,424	\$ 62,926	\$ 2,880	\$ 50,023	\$ 43,513	\$ 74,537	\$ 34,892	\$ 4,253	\$ 16,807	
	Design/Engineering Fee - 7.5%				\$ 142,027	\$ 23,117	\$ 23,087	\$ 18,497	\$ 43,418	\$ 2,016	\$ 35,016	\$ 30,459	\$ 52,176	\$ 24,425	\$ 2,977	\$ 11,755	
	<b>SUBTOTALS</b>				\$ 2,035,713	\$ 331,341	\$ 330,919	\$ 265,121	\$ 622,324	\$ 28,896	\$ 501,899	\$ 436,582	\$ 747,853	\$ 350,087	\$ 42,670	\$ 168,632	
	<b>TOTAL PROJECT COST</b>																<b>\$ 5,862,037</b>

## 6.0 PHASE ONE PRIORITIES

The phase one priorities were proposed by the Citizen's Committee and staff. It is important to note that the staff and Citizen's Committee developed independently the first same seven priorities from a list of fifteen potential park elements. The cost of the first seven priorities exceeds the available phase one construction funding; therefore, the Recreation Authority is seeking additional funding. The seven highest ranking priorities, Items 1-7, are described in more detail below.

### **Item 1**

The first level of phasing includes replacing the existing fields so the same level of service is present once the first phase is complete. The large softball field, pony and major baseball fields, tee-ball and pee-wee fields would all be completed in the first phase. Associated fencing, bleachers, booths, lighting, and irrigation are included. The large concession, restroom, meeting and storage building central to the fields is also planned. Utilities will serve the large concession building in the center of the fields. Infrastructure consumes the bulk of the phase one allocation. Most of the road system and 340 parking spaces would be built. The majority of reinforced concrete for pedestrian and maintenance circulation occurs within the field complex and will be built. Approximately one-quarter of the smaller width sidewalks will be constructed to service pedestrian circulation from the parking areas. One-quarter of the landscaping is also accounted for in the first priority.

### **Item 2**

The football complex and its associated parking and utilities comprise the second priority. This item includes the installation of utilities to support an associated concession building that may be constructed in a later phase (Item 5). Utilities will feed from the existing pool building and sanitary sewer will connect to the large concession building. Approximately 152 parking stalls will be added at this phase. Irrigation, lighting, press building, and pedestrian connections to parking are included.

### **Item 3**

The reserved picnic complex is the third priority. The extension of the road and 31 parking spaces with fire vehicle turnaround is included. All utilities are extended from the large central concession building to feed the restroom building and picnic pavilion. Sanitary sewer connects to the lift station with a future connection to the softball concession building that will be built at a later phase. A children's play area, two volleyball courts, and picnic site furnishings are included. Corresponding landscape and pedestrian connections are included.

**Item 4**

The majority of the multi-use trail and a complete outdoor environmental learning area represent this item. Creek crossings and a large portion of the trail grading, separate of the initial site grading, is allocated in this phase. Corresponding landscape and pedestrian connections are included.

**Item 5**

The 1,000 square foot restroom, concession, and storage building for the football field is included in this item. Limited landscaping and pedestrian circulation associated with the building are also included.

**Item 6**

The minor baseball field and a few sidewalks complete this item. Irrigation, fencing, booths, and bleachers are included. Corresponding landscape and pedestrian connections are included.

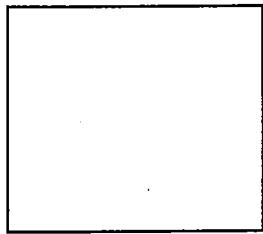
**Item 7**

The extension of utilities, spine road, parking, and maintenance building complete this item. The paved parking area accommodates the equivalent of 16 parking stalls and provides for a 50' x 50' maintenance yard. Utilities and the spine road would be extended from the proposed intersection with the main spine road. Sanitary sewer would connect to the lift station.

Remaining elements not prioritized above, but incorporated into the Final Master Plan are listed below: (1) proposed aquatics complex, (2) informal picnic area and associated parking, (3) small softball field and associated restroom/concession building, (4) remaining perimeter multi-use trail, (5) basketball and wallball courts, (6) limited pedestrian connections in these areas, and (7) Langley Building expansion.

**Dacula Park - Master Plan**  
**Phase 1 Priorities**  
The Jaeger Company

<i>Item</i>	<i>Item Description</i>	<i>Item Cost</i>	<i>Cumulative Cost</i>
1	Large softball field, pony field, tee-ball field, pee-wee field, major field, central concession/restroom building, and associated parking and utilities.	\$ 2,788,709	\$ 2,788,709
2	Football Field and associated parking and utilities.	\$ 438,338	\$ 3,227,047
3	The Reserved Picnic/Playground zone that includes Large Pavilion, Playground with swings and play zones for both toddlers and older children, access drive and parking, restroom building, volleyball and zone lighting.	\$ 527,148	\$ 3,754,195
4	The 12' wide paved multi-purpose trail loop around the woodland preserve and Reserved Picnic area, the Outdoor Classroom facility within the woodland preserve, and the portion of the 12' wide paved multi-purpose trail which links Dacula High School.	\$ 345,794	\$ 4,099,989
5	The Concession/Restroom building associated with the Football Field.	\$ 169,690	\$ 4,269,679
6	The minor baseball field.	\$ 180,734	\$ 4,450,413
7	The Maintenance Complex	\$ 216,234	\$ 4,666,647
	<b>Total Cost</b>		<b>\$ 4,666,647</b>



## APPENDIX A:

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### Geotechnical Report

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**PRELIMINARY GEOTECHNICAL  
ENGINEERING SERVICES  
REPORT**

**Dacula Park Expansion  
Dacula, Georgia**





December 13, 1996

Mr. Rex Lee Schuder, ASLA  
Gwinnett County  
Department of Community Services  
Planning, Development and Special Operations  
75 Langley Drive  
Lawrenceville, Georgia 30245-6900

Preliminary Geotechnical  
Engineering Services Report  
Dacula Park Expansion  
Dacula, Georgia  
PSI Project 472-65054

Dear Mr. Schuder:

Professional Service Industries, Inc. (PSI) is pleased to submit this report for the above referenced project. Included in this report are the results of the exploration and our recommendations concerning general site development. Our services were authorized by Mr. Grant Guess of Gwinnett County Department of Community Services by signature to our memorandum of scope on November 20, 1996.

#### PROJECT INFORMATION

##### Project Description and Location

Information concerning the proposed construction was provided on a composite survey dated August 29, 1996, on a site topographic map and by Mr. Rex Schuder of Gwinnett County Department of Community Services. The proposed development will consist of multi-use ballfields, picnic areas, walking trails, parking areas and an expansion to the existing pool. We understand that the pool expansion will encroach on the septic drain field servicing the fire station along Dacula Road. At the time of our exploration, a final site grading plan was not available.

The site for the proposed Dacula Park Expansion is an approximate 51-acre tract located northeast of Dacula Road in Dacula, Georgia. The approximate location of the site is depicted on the Site Vicinity Map included in the Appendix. The site is bounded to the north and east by undeveloped land, to the west by commercial developments, and to the south by an existing middle school.

*Information To Build On*

## Purpose and Scope of Services

The purpose of this exploration was to evaluate subsurface conditions at the site and to provide preliminary recommendations regarding general site development for the proposed improvements. The scope of the exploration and analysis included the following:

- Contacted the Utility Protection Center to locate existing underground utilities on-site.
- Performed a site reconnaissance and reviewed the geologic subsurface conditions.
- Performed 18 soil test borings at the site, and prepared boring logs for each test location describing the types of soil encountered and other pertinent information.
- Conducted a preliminary geotechnical engineering evaluation of the available data to provide recommendations regarding construction considerations, such as subgrade preparation, excavation characteristics, fill placement, suitability of on-site soils for use in earth dam construction, etc. at the site.
- Prepared an engineering report presenting all data, soil boring records, observations and recommendations.

We note this exploration was preliminary and, therefore, was very limited in scope. The subsurface conditions encountered should not be construed to apply to all areas of the site. A more thorough exploration should be conducted prior to development.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items or conditions are strictly for the information of the client. Prior to development of this site, an environmental assessment is advisable.

## SITE AND SUBSURFACE CONDITIONS

### Site Conditions

At the time of our field operations, the north, east and west portions of the site were covered with trees and underbrush. Ground surface topography in these areas consists of two ridgelines trending down to the north along gentle to steep slopes. The south portion of the site is currently developed for use as a community park, consisting of five ball fields, a concession building, and paved parking and drive areas, situated on two nearly level tiers. The tiers are separated by an approximate 10-foot slope down to the northwest. The ground surface southeast of the upper tier slopes up to the southeast property line. Maximum topographic relief across the site varies from approximately 1076 feet (msl) at the southeast property line to 996 feet (msl) at the north property corner.

Two creeks traverse the project site: The first, located in the west portion of the property, begins at a culvert located at the northwest edge of the existing park, and flows north in a broad, relatively



flat channel. The second creek enters the site near the east property corner and flows northwest in a deep channel. At the time of our field exploration, the ground surface in the vicinity of the creek channel was soft and wet. Surface water runoff at the site flows into the creeks and to the north, away from the site.

### Subsurface Conditions

Eighteen soil test borings were drilled at the site at the approximate locations shown on the Boring Location Diagram presented in the Appendix. Seventeen test borings were performed throughout the site to the depth of auger refusal and one test boring was performed in the proposed pool expansion to a depth of 10 feet. All borings were approximately located in the field by representatives of PSI based on existing topographic features. Elevations at the boring locations were interpolated from the site plan provided to us by Mr. Schuder. In general, the locations and elevations of the test borings should be considered approximate.

Standard penetration testing (ASTM D-1586) was performed at selected intervals in the soil test borings. The soil samples obtained from the drilling operation were classified in general accordance with ASTM D-2488 (Visual-Manual Procedure for Description of Soils). Soil classifications include the use of the Unified Soil Classification System described in ASTM D-2487 (Classification of Soils for Engineering Purposes). In addition, Atterberg Limits tests (ASTM D-4318) and Sieve Analysis tests (ASTM D-422) were performed on selected soil samples to obtain preliminary data on the suitability of on-site soils for use in earth dam core construction. Descriptions of the soils encountered in the test borings are provided on the Boring Logs included in the Appendix. Groundwater conditions, standard penetration resistances, and other pertinent information are also included.

The borings encountered materials as shown below:

<u>Boring</u>	<u>Depth to Partially Weathered Rock (ft)</u>	<u>Depth to Auger Refusal (ft)</u>	<u>Depth to Groundwater (feet)</u>
B-1	22	33	11
B-2	16	37	15.5
B-3	18	35	8.5
B-4	24	32	5
B-5	16	37	20
B-6	22	36	22
B-7	43	56	25
B-8	33	42	10
B-9	17	26	14
B-10	27	32	18.5
B-11	18	22	16.5
B-12	3	7	-
B-13	12-17, 22	31	21
B-14	13	26	4
B-15	12	22	-

<u>Boring</u>	<u>Depth to Partially Weathered Rock (ft)</u>	<u>Depth to Auger Refusal (ft)</u>	<u>Depth to Groundwater (feet)</u>
B-16	2	6	-
B-17	8	16	-
B-18	-		2

\* PWR lens encountered from 12 to 17 feet, underlain by residual soil.

The above subsurface summary is of a generalized nature, provided to highlight the major soil stratifications encountered. The boring logs should be reviewed for more specific information at the individual boring locations. The stratifications shown in the summary and on the Boring Logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the transition may be gradual.

Fluctuation of groundwater levels should be anticipated. We recommend that the Contractor determine the actual groundwater levels at the time of construction to determine groundwater impact on the construction procedures.

#### **PRELIMINARY EVALUATION AND RECOMMENDATIONS**

Based on the results of our test borings and our evaluation, it is our opinion that the subsurface conditions encountered at the site will be generally suitable for the proposed development. Depending on the final grading plan, partially weathered rock and rock will likely be encountered throughout the site, particularly in the southern portion. In addition, ground stabilization in the vicinity of the creeks will likely be required prior to fill placement. We recommend that a more complete exploration be performed once the final development plans are completed.

Laboratory testing consisting of Atterberg Limits tests and sieve analysis tests are being performed on selected soil samples to provide an indication of their plasticity and suitability for use as fill in earth dam cores. The results of the laboratory tests and our evaluation will be provided under separate cover.

The following sections discuss in more detail various geotechnical and construction aspects of this site.

#### **Site Preparation and Fill Placement/Compaction**

Demolition of any existing park facilities (including septic lines behind the fire station) should be completed prior to commencement of construction. In addition, trees, underbrush, topsoil, roots and other deleterious materials should be removed from the proposed construction areas. Site grubbing and stripping should be performed only during dry weather conditions. Operation of

heavy equipment on the site during wet conditions could result in rutting and mixing of organic debris with underlying soils.

All necessary removal or relocation of existing underground utilities should be completed prior to commencement of building construction. Utility pipes greater than 4 inches in diameter should be filled with flowable concrete grout, while the ends of utility pipes less than 4 inches in diameter should be plugged with concrete to prevent the inadvertent introduction of fluids into the construction area. All utility excavations should be backfilled with controlled, compacted fill as outlined in this report.

Where possible, we recommend that areas to receive structural fill be proofrolled prior to fill placement. Areas of proposed excavation should be proofrolled after rough finished subgrade is achieved. Proofrolling should be performed using a loaded dump truck, or similar rubber-tired equipment, weighing at least 15 tons. Proofrolling operations should be observed by a representative of PSI. Unsuitable soils which are revealed by proofrolling and which cannot be adequately densified in place, should be removed under the direction of the PSI representative.

During site preparation, burn pits or trash pits may be encountered. All too frequently such buried material occurs in isolated areas which are not detected by the soil test borings. Any such material which is located during construction operations should be thoroughly excavated and removed from the site.

Based on the visual results of soil classifications, the existing and possible fill, and residual soils at the project site generally appear to be suitable for reuse as structural fill material. In instances where the excavated materials contain large amounts of organics, debris, or rock fragments greater than 6 inches, they will not be suitable for reuse as structural fill. These unsuitable materials should be placed outside building and pavement areas or removed from the site.

Materials selected for use as structural fill should not contain more than 2 percent by weight of organic matter, waste construction debris, and other deleterious materials. Soils classified as ML, CL, SM, SC-SM, SW, and SP will typically be suitable for use as structural fill. Soils classified as OL, OH, and Pt should be considered unsuitable.

Fill material should be placed in individual lifts and compacted by heavy compaction equipment such as a Caterpillar 815 sheepfoot roller. Suitable lift thickness depends on the type of compaction equipment, but in general, lifts of 8 inches loose measurement are recommended for mass fill areas. Within small excavations such as in utility trenches, around manholes, or behind retaining walls, we recommend the use of "wacker packers", "Rammmax" compactors, or vibrating plate compactors to achieve the specified compaction. Loose lift thicknesses of 4 to 6 inches are recommended when using such equipment.

When placing structural fill against steep existing slopes, we recommend that the fill be "benched in" to the existing side slopes to provide a more stable cut-fill interface.



The moisture content of fill soils at the time of placement and compaction should generally be within plus or minus 3 percentage points of their optimum moisture content. More stringent moisture limits may be necessary with certain soil types.

We recommend that structural fill be compacted to a minimum of 95 percent of the standard Proctor maximum dry density (ASTM D-698). The upper 12 inches of soil at finished grade elevations in structural areas should be compacted to at least 98 percent of the standard Proctor maximum dry density (ASTM D-698). The upper 12 inches of pavement subgrade soils should be compacted in accordance with Georgia DOT guidelines. A representative of PSI should observe fill placement operations and perform density tests concurrently to indicate if the specified compaction is being achieved.

### **Construction Considerations**

Test boring B-14, performed in the vicinity of the western creek, encountered approximately 7 feet of soft, compressible alluvial soils. During site grading, other areas in the vicinity of the existing creeks will likely encounter shallow groundwater conditions and soft surficial soils that will require remediation prior to fill placement. Proofrolling and grading operations may result in progressive softening of the subgrade soils. Should this occur, proofrolling and grading operations should be temporarily discontinued. If removal of the soft soils is not deemed possible, it will be necessary to stabilize the existing soils in-place.

The method of stabilization should generally be based on the actual conditions encountered, but will typically include the use of crushed stone materials, geosynthetic stabilization fabric, "french" subsurface drains, or a combination of methods. The extent of the areas that may require stabilization and the optimum stabilization approach should be determined by a representative of PSI at the time of construction.

Based on our field exploration, the soils encountered at the site should generally be excavatable using conventional excavation equipment, such as front end loaders, bulldozers, etc. However, soils having standard penetration resistances greater than 50 blows per foot may require pre-loosening with heavy equipment in order to achieve excavation. Contingency funds for difficult excavation should be set aside for these areas.

The dense soils and partially weathered rock encountered at the project site will require pre-loosening prior to excavation. Ripping should generally be performed using a Caterpillar D-8 or equivalent large bulldozer equipped with a single-tooth ripper blade. Trackhoes or pneumatic jackhammers may be employed in small area excavations, such as utility trenches.

For the purposes of this report, we recommend that subsurface materials causing auger refusal be considered to consist of unriippable rock. Based on the test borings and site reconnaissance, hard lenses of rock or mass rock may be encountered throughout the site, particularly in the southern portion. The depth to partially weathered rock and rock can vary rapidly over short distances in this Geologic region, and should be expected to vary significantly at the subject site.



In Federal Register Volume 54, No. 209 (October, 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P." This document was issued to better insure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that all excavations, whether they be utility trenches, basement excavations, or footing excavations, be constructed in accordance with the revised OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

We are providing this information solely as a service to our client. PSI is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

#### REPORT LIMITATIONS

The recommendations submitted are based on the available soil information obtained by PSI and details furnished by Gwinnett County Department of Community Services for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the recommendations are required. If PSI is not retained to perform these functions, PSI can not be responsible for the impact of those conditions on the performance of the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

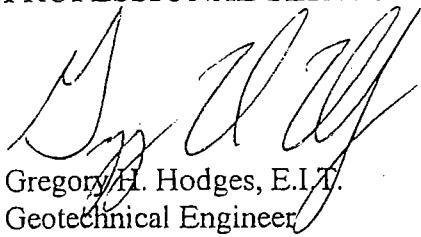
After the plans and specifications are more complete, the geotechnical engineer should be provided the opportunity to review the final design plans and specifications to assure our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to perform supplemental subsurface exploration or to submit supplementary recommendations. This report has been prepared for the exclusive use of Gwinnett County Department of Community Services for the specific application to the proposed Dacula Park located in Dacula, Georgia.



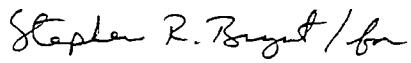
\* \* \* \* \*

We appreciate the opportunity to have provided you with our geotechnical engineering services and look forward to participation in the construction phase of this project. If you have any questions concerning this report or if we may be of further service in any manner, please contact our office.

Respectfully submitted,  
PROFESSIONAL SERVICE INDUSTRIES, INC.



Gregory H. Hodges, E.I.T.  
Geotechnical Engineer



James C. Pegues, Jr., P.E.  
Chief Engineer

GHH/JCP:ep/65054



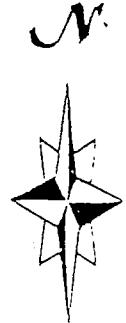
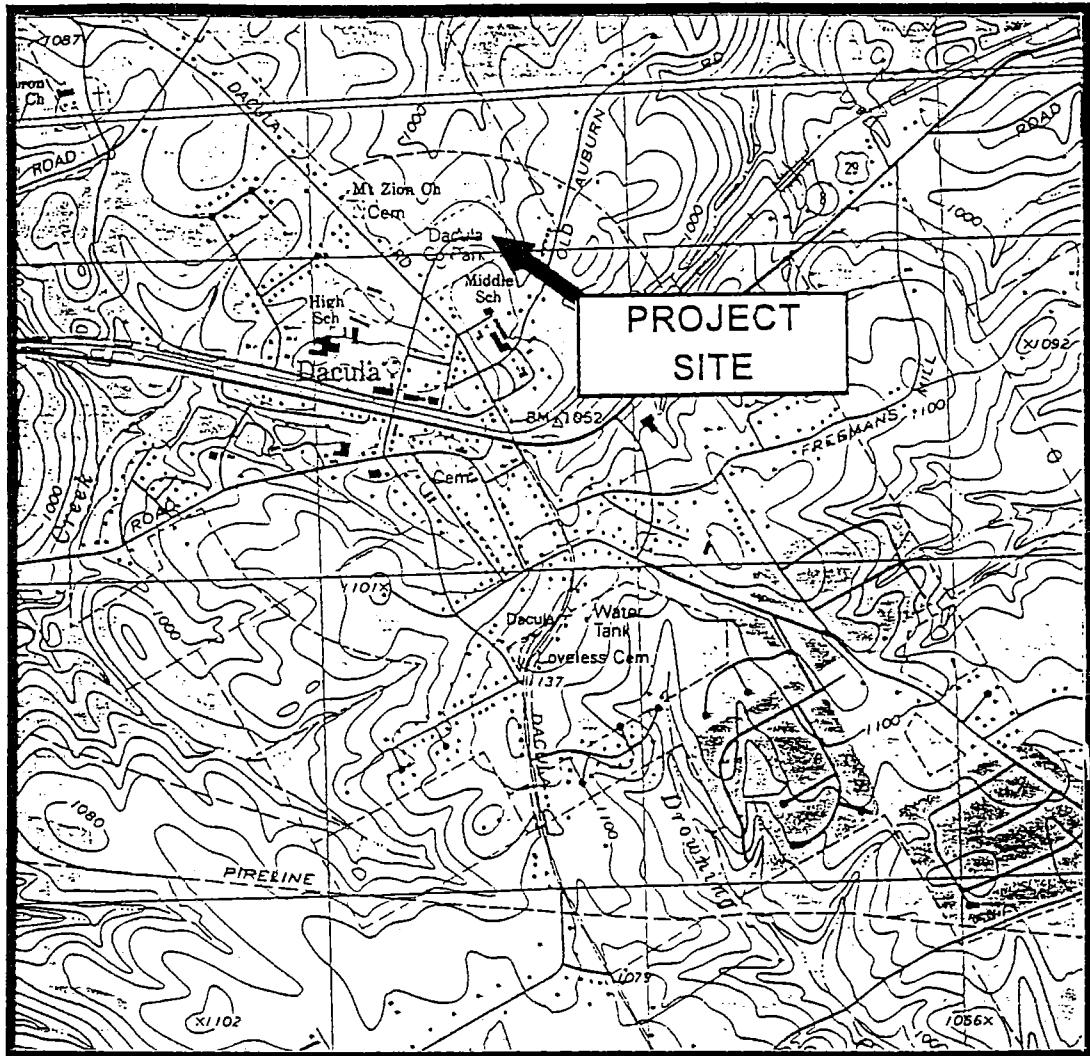
## APPENDIX

Site Vicinity Map

Boring Location Diagram

General Notes

Boring Logs



Approximate Scale, feet

### Project

## Dacula Park Expansion Dacula, Georgia

Figure:

## SITE VICINITY MAP

Project No.:

*Date:* 12/12/96

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-13 (1 of 1) Total Depth 31.0' Elev: 1042 ± Location: See Boring Location Diagram

Type of Boring: HSA

Started: 12/6/96

Completed: 12/6/96

Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)							N	
					PL	2	5	10	20	30	40	50	
1041.8	0.2	Topsoil - 2"	5-7-11										18
		Residuum: Medium Dense, Orange-tan to Tan-gray, Micaceous Silty Fine to Medium SAND (SM)	11-12-16										28
1030.0	12.0		8-8-8										16
1025.0	17.0	Partially Weathered Rock sampled at Gray, Micaceous Silty Fine to Medium SAND (SM)	25-50/6"										100
1020.0	22.0	Dense, Tan-gray, Micaceous Silty Fine to Medium SAND (SM)	25-28-17										45
1011.0	31.0	Partially Weathered Rock sampled as Gray and White, Micaceous Silty Fine to Coarse SAND (SM)	50/6"										100
		Auger Refusal at 31.0 feet	50/0"										100
		Groundwater:											
		Time of boring - Not Encountered After 1 day - 21.0 feet											

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-14 (1 of 1) Total Depth 26.0' Elev: 1023± Location: See Boring Location Diagram

Type of Boring: HSA

Started: 12/6/96

Completed: 12/6/96

Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)						N	
					PL	5	10	20	30	40	50	
1016.0	7.0	Alluvium: Very Loose, Brown to Gray, Fine to Medium Sandy SILT (ML) with trace clay and small roots.	1-1-2		●							3
1010.0	13.0	Residuum: Dense, Tan, Micaceous Silty Fine to Medium SAND (SM)	2-2-2		●							4
997.0	26.0	Partially Weathered Rock sampled as Brown and Gray, Silty Fine to Coarse SAND (SM)	13-27-10						●			37
			50/3"									100
			50/4"									100
			50/2"									100
		Auger Refusal at 26.0 feet										
		Groundwater:										
		Time of boring - 3.0 feet										

BL3 00000 12/12/96  
 \*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-15 (1 of 1) Total Depth 22.0' Elev: 1052± Location: See Boring Location Diagram

Type of Boring: HSA

Started: 11/29/96

Completed: 11/29/96

Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)						N	
					PL	2	5	10	20	30	40	
1049.0	3.0	Fill: Medium Dense, Orange-tan, Slightly Micaceous Silty Fine to Medium SAND (SM)	8-9-16						●			25
			7-8-10						●			18
1040.0	12.0	Residuum: Medium Dense, Brown to Tan, Micaceous Silty Fine to Medium SAND (SM)	8-7-7						●			14
			50/1"									100
1030.0	22.0	Partially Weathered Rock sampled as Gray, Micaceous Silty Fine to Medium SAND (SM)	50/1"									100
		Auger Refusal at 22.0										
		Groundwater:										
		Time of boring 21.0 feet After 1 day - (boring caved at 19.3 feet)										

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-16 (1 of 1) Total Depth 6.0' Elev: 1066 ± Location: See Boring Location Diagram

Type of Boring: HSA Started: 11/29/96 Completed: 11/29/96 Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)						N	
					PL	2	5	10	20	30	40	
1064.0	2.0	Possible Fill: Medium Dense, Orange-brown and Gray, Micaceous Silty Fine to Coarse SAND (SM)	5-11-16							●		27
1060.0	6.0	Residuum: Partially Weathered Rock sampled as Gray, White and Tan, Micaceous Silty Fine to Coarse SAND (SM)		50/6"								100
Auger refusal encountered at 6.0 feet. Boring offset 5.0 feet north and 5.0 feet east of original location; auger refusal encountered at 2.0 feet and 3.5 feet, respectively												
Groundwater:												
Time of boring - Not Encountered												

12/12/96  
BL3  
\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-17 (1 of 1)		Total Depth 16.0'	Elev: 1057±	Location: See Boring Location Diagram			
Type of Boring: HSA		Started: 12/6/96		Completed: 12/6/96		Driller: R. Hunnicutt	
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)		* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)	
		PL	%MC	LL	N		
		2	5	10	20	30	40 50 60 80
1056.7	0.3	Topssoil - 3"					
1054.0	3.0	Residuum: Very Stiff, Brown, Slightly Micaceous Fine to Medium Sandy SILT (ML)	3-8-14				22
1049.0	8.0	Dense, Red-brown, Micaceous Silty Fine to Medium SAND (SM)	16-23-24				47
1041.0	16.0	Partially Weathered Rock sampled as Gray, Slightly Micaceous Silty Fine to Coarse SAND (SM)	50/3"	50/1"			100
		Auger Refusal at 16.0 feet					100
		Groundwater:					
		Time of boring - Not Encountered After 1 day - (caved at 8.0 feet)					

BL3 12/12/96  
 \*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-18 (1 of 1) Total Depth 10.0' Elev: 1066±

Location: See Boring Location Diagram

Type of Boring: HSA

Started: 11/29/96

Completed: 11/29/96

Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)								N	
					PL	2	5	10	20	30	40	50	60	
1063.0	3.0	Residuum: Stiff, Orange-brown and Tan, Fine to Medium Sandy Silty (ML)	6-8-6						●					14
		Medium Dense, Brown, Micaceous Silty Fine to Medium SAND (SM)	6-9-18							●				27
1056.0	10.0	Boring Terminated at 10.0 feet  Groundwater:  Time of boring - Not Encountered After 1 day - 2.0 feet	6-9-10							●				19

3 6: 12/96  
 \*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.



December 31, 1996

Mr. Rex Lee Schuder, ASLA  
Gwinnett County  
Department of Community Services  
Planning, Development and Special Operations  
75 Langley Drive  
Lawrenceville, Georgia 30245-6900

**Addendum to Our Geotechnical  
Engineering Services Report  
Dacula Park Expansion  
Dacula, Georgia  
PSI Project 472-65054**

Dear Mr. Schuder:

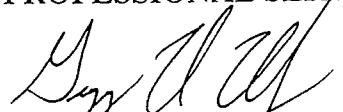
Professional Service Industries, Inc. (PSI) is pleased to submit this addendum to our report for the above referenced project. Included in this addendum are the results of the laboratory testing and our recommendations concerning the suitability of on-site soils for use as earth dam fill materials.

The laboratory testing consisted of Atterberg Limits tests (ASTM D-4318) and Sieve Analysis tests (ASTM D-422) performed on selected soil samples obtained during our field drilling operations. The results of the laboratory testing are included at the end of this addendum.

The results of the laboratory tests indicate that plastic, or clayey soils typically used in earth dam core construction are not readily available at the site. However, the test results indicate that several of the soil samples are slightly plastic in nature, and may be suitable for use in a "homogeneous dam". A homogeneous dam is a dam design that utilizes the entire structure for water retention, as opposed to a design that utilizes only a low-permeability core. In addition, filter drains may be incorporated into the dam design to enhance downstream seepage control and slope stability. Supplemental testing consisting of permeability tests and hydrometer tests will be required to provide specific recommendations for earth dam design using on-site soils.

We appreciate the opportunity to have provided you with our geotechnical engineering services and look forward to participation future phases of this project. If you have any questions concerning this addendum or if we may be of further service in any manner, please contact our office.

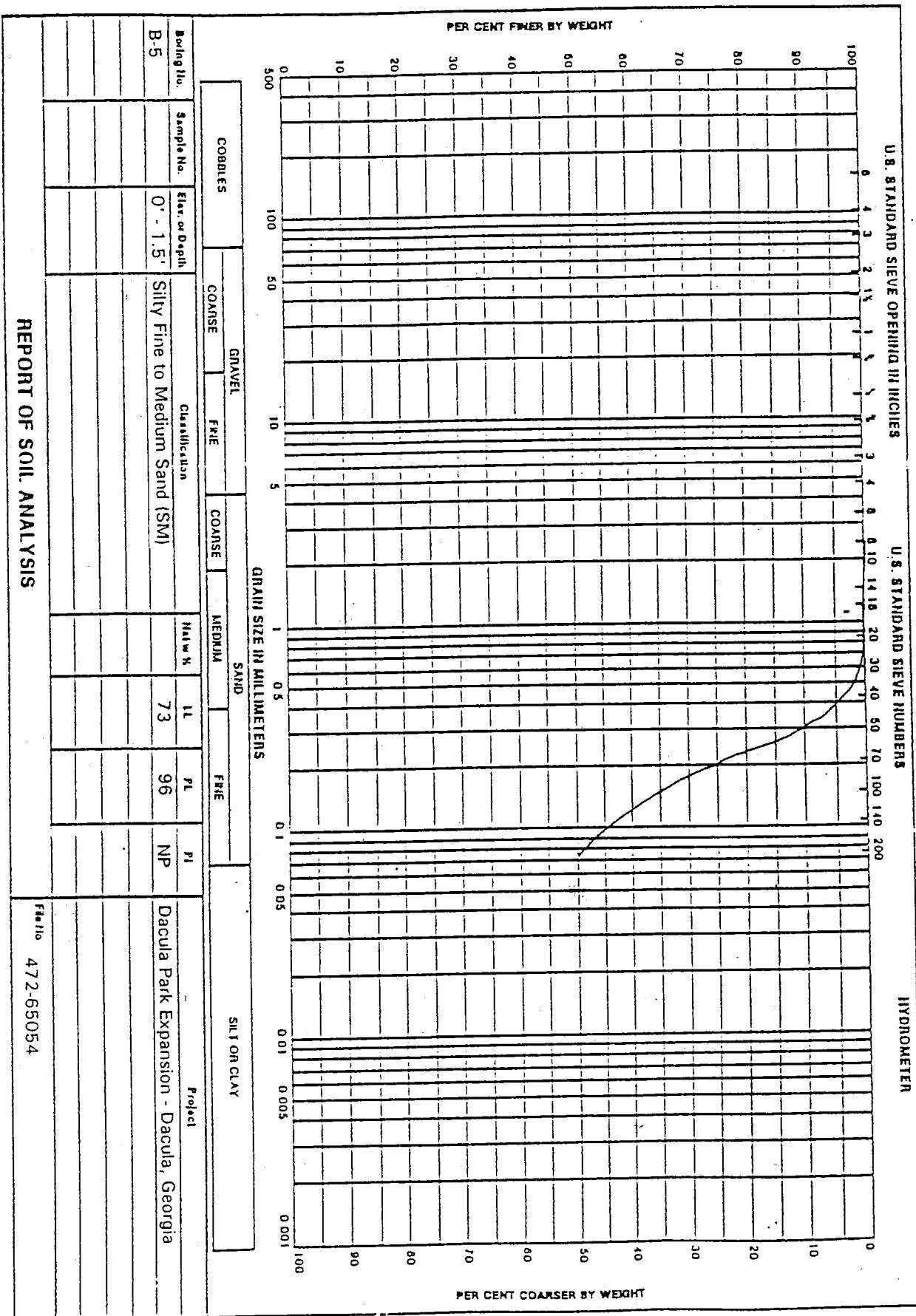
Respectfully submitted,  
**PROFESSIONAL SERVICE INDUSTRIES, INC.**

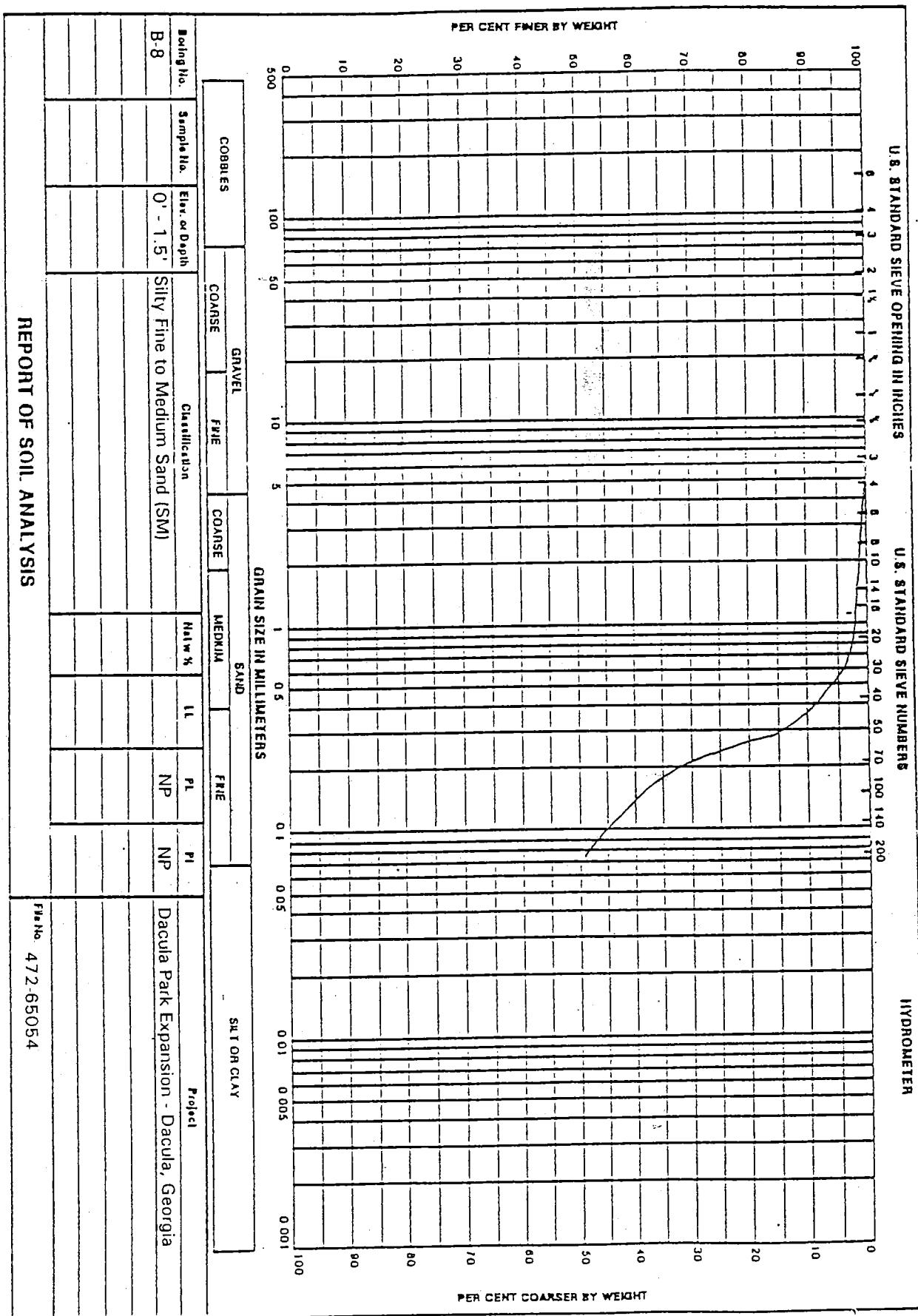
  
Gregory H. Hodges, E.I.T.  
Geotechnical Engineer

  
James C. Pegues, Jr., P.E.  
Chief Engineer

GHH/JCP:ep/65054L1

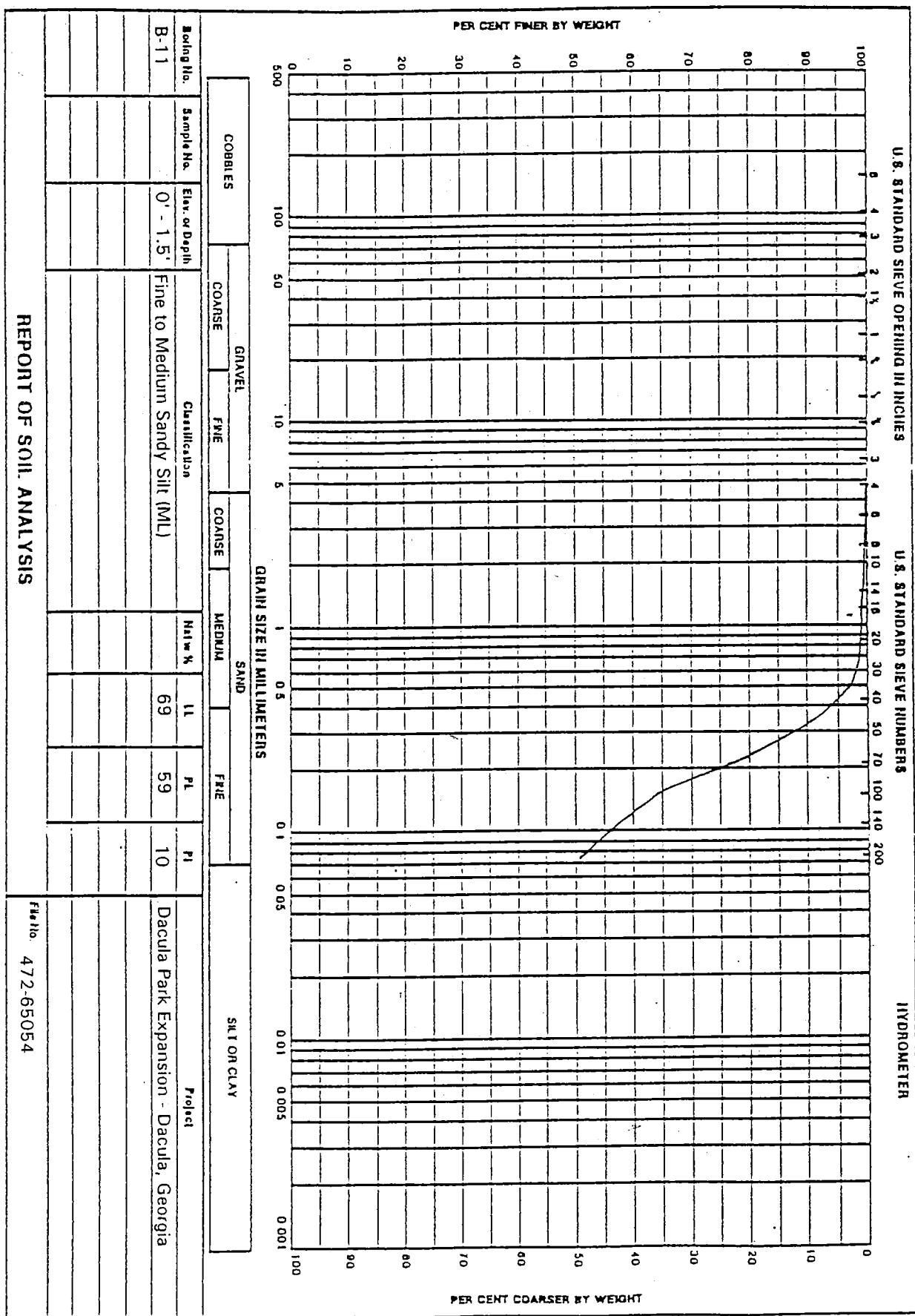
*Information To Build On*

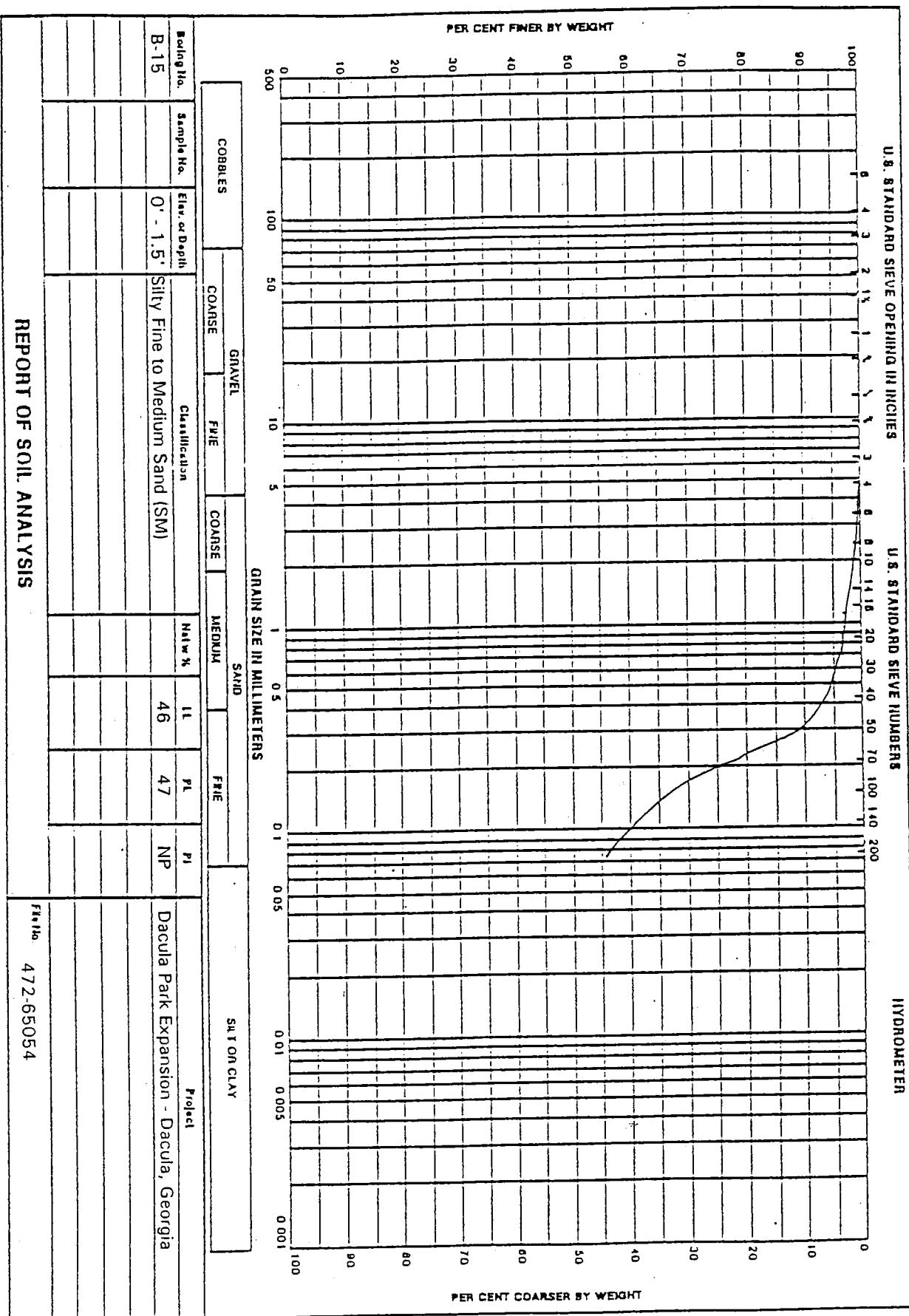




## REPORT OF SOIL ANALYSIS

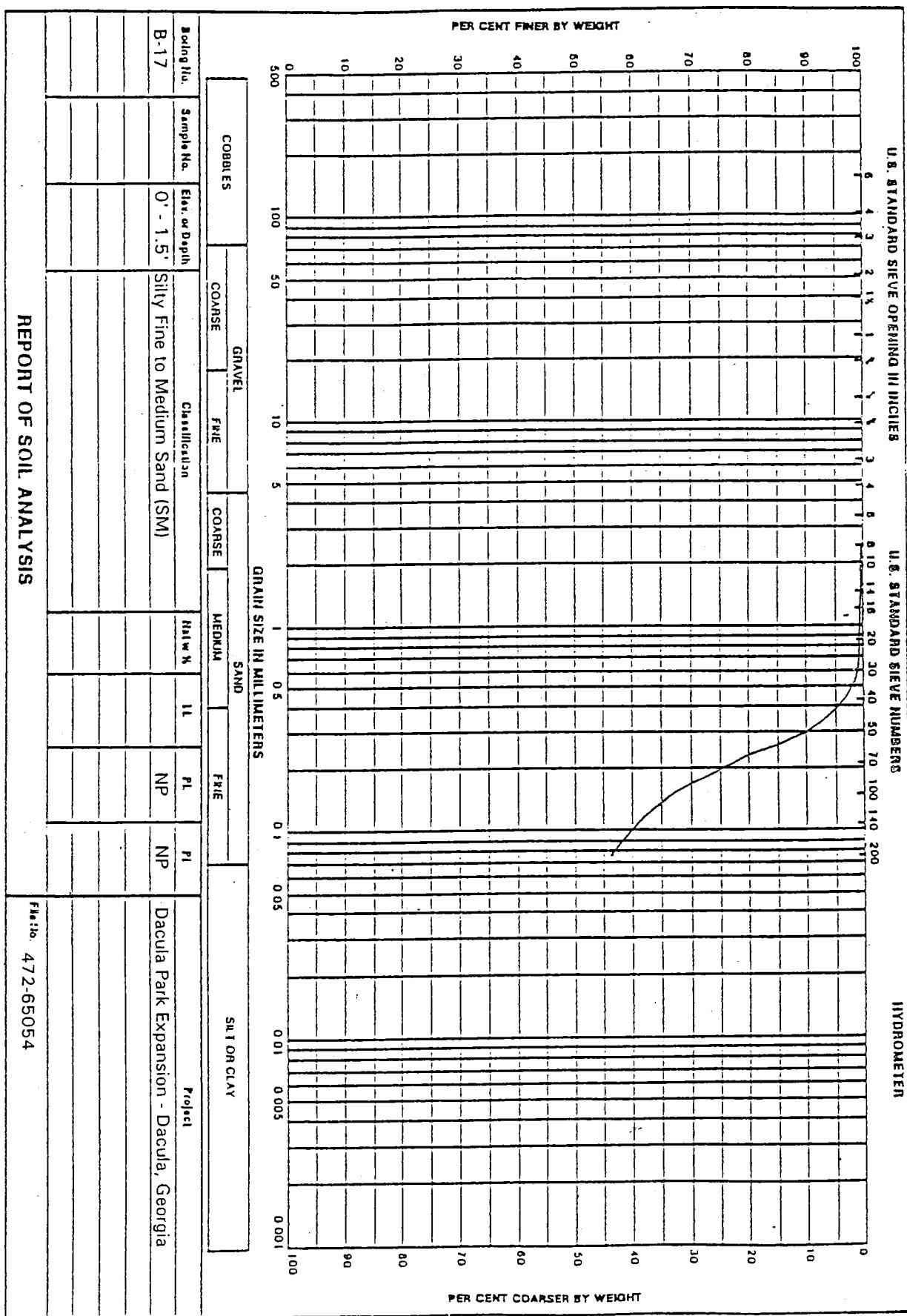
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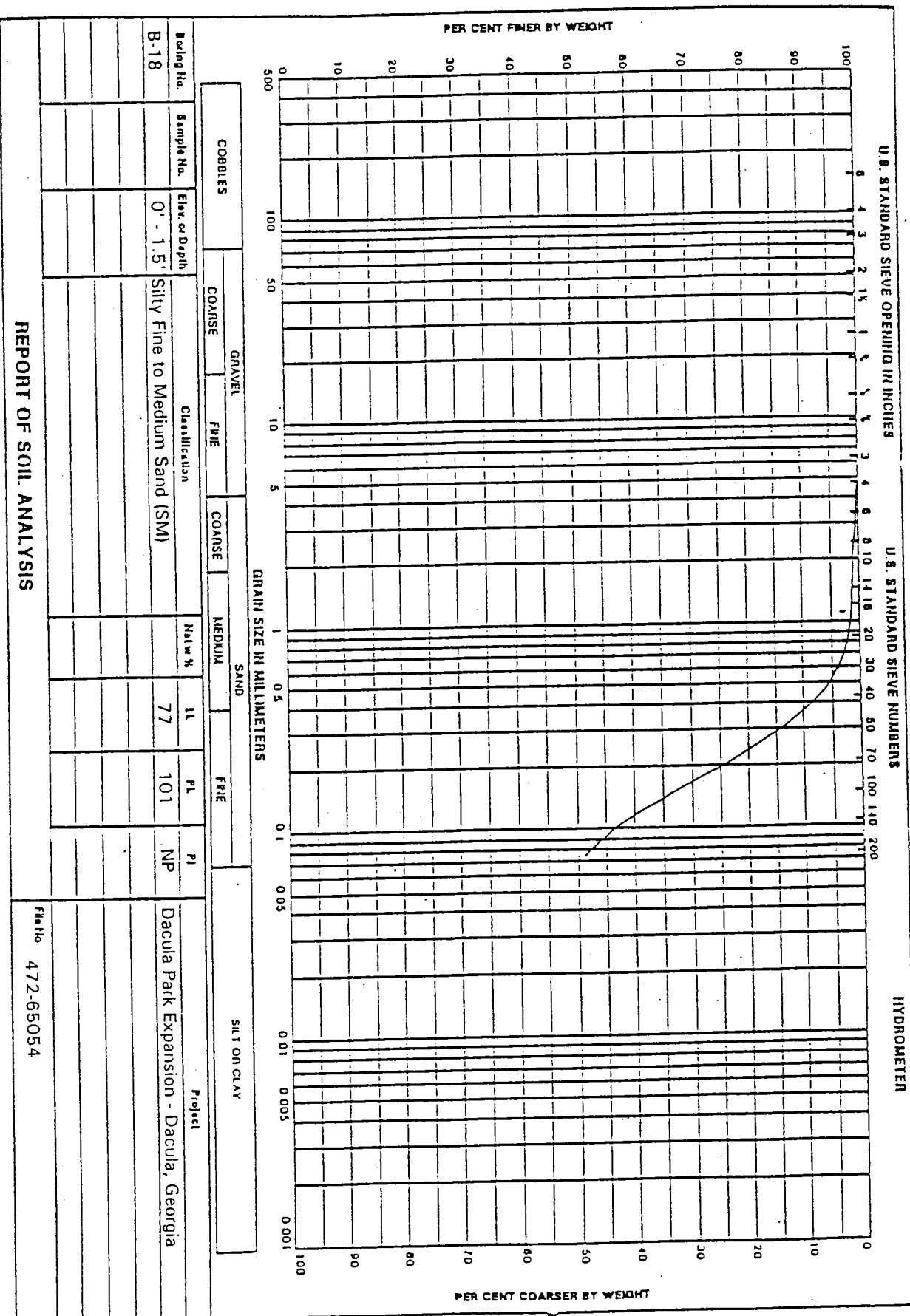




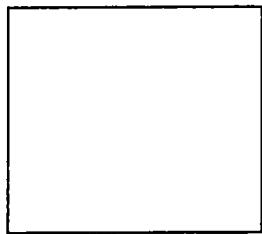
## REPORT OF SOIL ANALYSIS

472-65054





## REPORT OF SOIL ANALYSIS



## APPENDIX B:

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### Kick-off Public Meeting Results

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# DACULA PARK MASTER PLAN

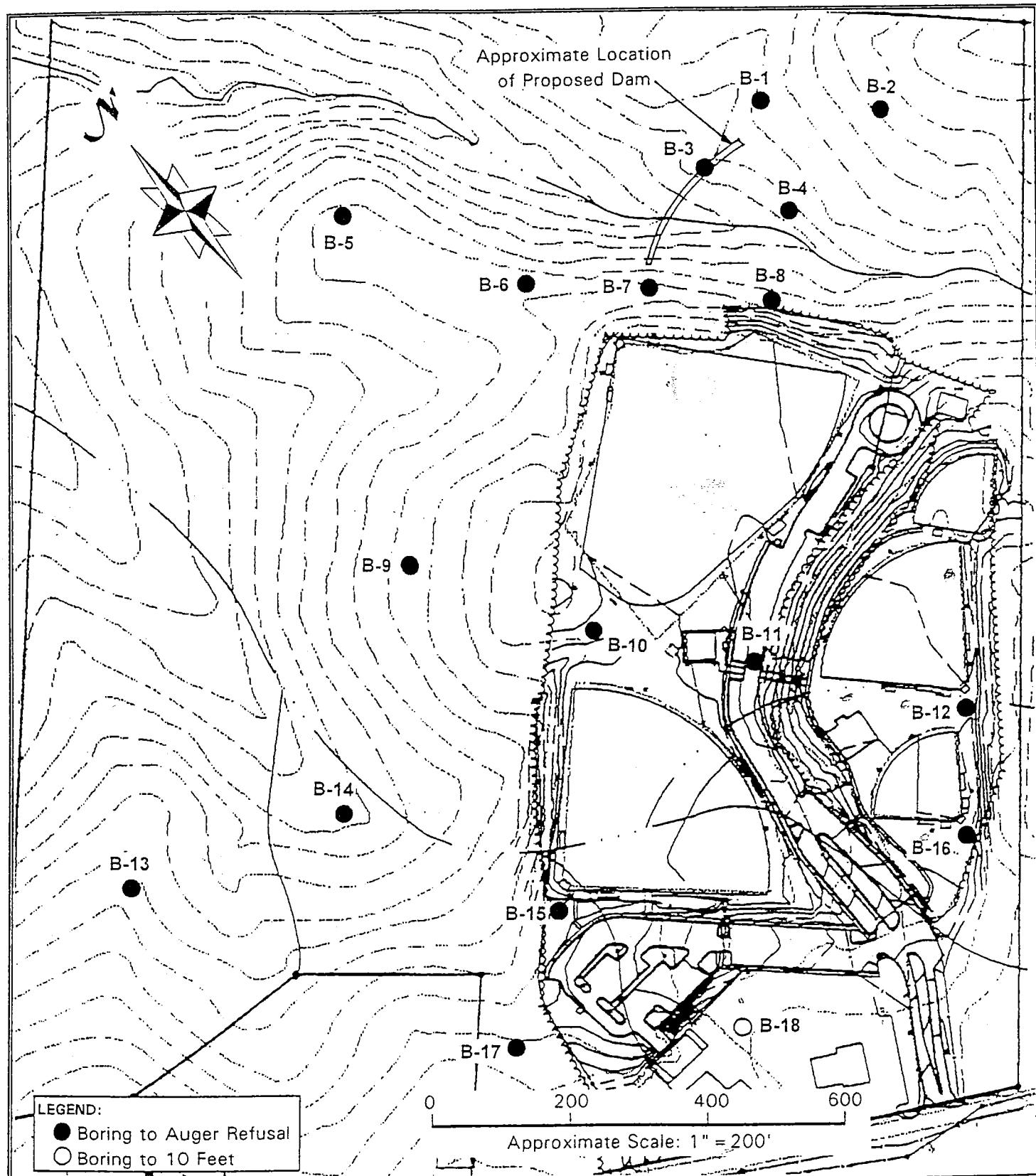
## Community Interest Form Tabulations

The results were tabulated from the 76 Community Interest Forms turned in at the Kick-off Public Meeting 9/30/96

Program or Facility	Times Mentioned	First	Second	Third	Fourth	Fifth	Sixth	greater than sixth or no priority given
Walking/Jogging/ Nature/Skating/Bike Trail	52	4	5	6	14	7	5	11
Improved Parking	51	18	9	12	2	4		6
Expanded/Improved Baseball - Softball Complex	46	19	11	7	2	1	1	5
Playground - additional, expanded & improved	42	3	5	8	6	6	1	13
Football or Stand alone Football Field	39	12	20	4	1		1	1
Picnic Pavilions & Family Picnic Areas with Grills	37	1	4	4	7	6	1	14
Tennis	23	1	1	3	1	4	1	12
Outdoor Basketball	22	2	3	4	2	5		10
Improved or extra Concession Building	19	1	3	3	2	5	1	4
More and Improved Restrooms	15		1	4	3	2		5
Gymnasium - Basketball, Rollerblading, Etc.	15	2	4	1	3	1		4
Teen Facilities - sand volleyball, game room, etc.	15		1	2	3	2		7
Soccer	15	2	2	5	2		1	3
Community Center - Activities Bldg.	13	1	1	2	1	2		6
Expanded, Improved or Indoor Pool Complex	13	1			2	3		7
Open Space - Green Space/benches/swings	11	1		1	1	3		5
Update Fields (Dugouts, backstops, Bleachers, etc.)	9	1		2	3	1		2
Enlarged Langley Bldg. Meeting Room	7	1		1	1	1		3
Provide drinking fountains	7			1	2		1	3
Practice field area - for all sports	6			2	1	1	1	1
Lake or Pond - Scenic & Fishing Uses	6				1		1	4
Batting Cages	5				1	1	2	1
Improve Park Entrance - safety - traffic light	4		2	1				1
Athletic Fields - all kinds	3			1				2
Room for Wrestling Club	2			1				1
Special Events (fireworks, cook offs, concerts)	2							2
Summer camps/after school programs	2	2						
Library	2	1			1			
Decorative water fountain/wishing well	1							1
Improved P.A. for football field	1				1			
More trash cans	1							1
Classes in bridge, crafts, dance, etc.	1				1			
Indoor Cheerleading facility	1					1		
Better field maintenance	1	1						
Purchase additional park land	1					1		
Adult Softball Leagues	1		1					
Senior recreation club	1					1		
Hold arts & crafts show	1				1			1
Amphitheater for concerts and plays	1			1				
Senior Center	1				1			
Fall Cheerleading	1				1			

There is significant interest in facilities to skate/rollerblade, as well as for a winter use pool within the trail and pool categories

The number of request for a bathroom to serve the upper fields reflects problems associated with layout and the drive/parking area separating fields from the concession restroom bldg. Several responses specify girls softball programs or facilities.



Project

Dacula Park Expansion  
Dacula, Georgia

Figure:

## BORING LOCATION DIAGRAM

Project No:

472-65054

Date:

12/12/96

## GENERAL NOTES

### SAMPLE IDENTIFICATION

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

### SOIL PROPERTY SYMBOLS

N: Standard penetration resistance: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch O.D. split-spoon.

REC : Rock Recovery = Percentage of rock core recovered.

RQD: Rock quality index = Percentage of rock core 4 or more inches long.

LL: Liquid Limit, %.

PI: Plasticity index, %.

### DRILLING AND SAMPLING SYMBOLS

HSA = Hollow Stem Auger

DB: Diamond Bit

CB: Carbide Bit

WS: Washed Sample

### RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

#### NON-COHESIVE SOILS      STANDARD PENETRATION RESISTANCE

Very Loose	0-4
Loose	5-10
Medium Dense	11-30
Dense	31-50
Very Dense	Over 50

#### COHESIVE SOILS

Very Soft	0-1
Soft	2-4
Firm	5-8
Stiff	9-15
Very Stiff	16-30
Hard	31-50
Very Hard	Over 50

### PARTICLE SIZE

Boulders	8 in. +	Coarse Sand	5mm-0.6mm	Silt	0.074mm-0.005mm
Cobbles	8 in. - 3 in.	Medium Sand	0.6mm-0.2mm	Clay	less than -0.005mm
Gravel	3 in. - 5mm	Fine Sand	0.2mm-0.074mm		



## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services					
Project: Dacula Park - Gwinnett County, Georgia			Location: See Boring Location Diagram		
Boring No.: B-1 (1 of 1)		Total Depth 33.0'	Elev: 1037 ±		
Type of Boring: HSA		Started: 12/5/96	Completed: 12/5/96	Driller: R. Hunnicutt	
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)
1036.7	0.3	Topsoil - 4"	4-7-9		PL 2 5 10 20 30 40 50 60 80
		Residuum: Very Stiff to Hard, Orange-tan to Gray, Slightly Micaceous Fine to Medium Sandy SILT (ML) with trace clay	11-14-17		● 16
1025.0	12.0		10-10-9		● 31
1020.0	17.0	Medium Dense, Tan-gray, Micaceous Silty Fine to Medium SAND (SM)	10-13-14		● 19
1015.0	22.0	Very Dense, Gary, Highly Micaceous Silty Fine to Medium SAND (SM)	24-28-28		● 27
1004.0	33.0	Partially Weathered Rock sampled as Gray to Brown, Highly Micaceous Silty Fine to Medium SAND (SM)	50/6"		● 56
		Auger Refusal at 33.0 feet	50/6"		● 100
		Groundwater:			● 100
		Time of boring - 13.0 feet			
		After 1 day - 11.0 feet			

\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-2 (1 of 1)		Total Depth 37.0'	Elev: 1048±	Location: See Boring Location Diagram							
Type of Boring: HSA		Started: 12/6/96	Completed: 12/6/96	Driller: R. Hunnicutt							
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)		* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)					
		PL	%MC	LL		N					
		2	5	10	20	30	40	50	60	80	
1047.7	0.3	Topsoil - 4"		6-9-10							19
		Residuum: Medium Dense to Dense, Orange-brown to Gray, Micaceous Silty Fine to Medium SAND (SM)		8-15-15							30
1036.0	12.0			12-13-7							20
1032.0	16.0	Very Loose, Gray, Highly Micaceous Silty Fine to Medium SAND (SM)		3-2-2							4
		Partially Weathered Rock sampled as Gray, Highly Micaceous Silty Fine to Medium SAND (SM)		30-50/1"							100
				50/1"							100
				50/1"							100
				50/2"							100
1011.0	37.0	Auger Refusal at 37.0 feet									
		Groundwater:									
		Time of boring - 17.0 feet									
		After 1 day - 15.5 feet									

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-3 (1 of 1) Total Depth 35.0' Elev: 1030 ± Location: See Boring Location Diagram

Type of Boring: HSA Started: 12/5/96 Completed: 12/5/96 Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)						N	
					PL	2	5	10	20	30	50	
1029.7	0.3	Topsoil - 4"	5-8-11						●			19
1024.0	6.0	Residuum: Medium Dense, Orange-tan, Micaceous Silty Fine to Medium SAND (SM) with trace clay	9-12-16						●			28
1019.0	11.0	Loose, Gray, Micaceous Silty Fine SAND (SM) with trace clay	2-2-3					●				5
1012.0	18.0	Medium Dense, Tan, Silty Fine SAND (SM)	5-7-12					●				19
			28-50/6"									100
			50/2"									100
			50/0"									100
995.0	35.0	Partially Weathered Rock sampled as Tan and Gray, Micaceous Silty Fine to Medium SAND (SM) with quartzite fragments	50/1"									100
		Auger Refusal at 35.0 feet										
		Groundwater:										
		Time of boring - 11.0 feet										
		After 1 day - 8.5 feet										

BL3 6-12-12 12/12/96  
 \* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services					
Project: Dacula Park - Gwinnett County, Georgia					
Boring No.: B-4	(1 of 1)	Total Depth 32.0'	Elev: 1030 ±	Location: See Boring Location Diagram	
Type of Boring: HSA		Started: 12/5/96	Completed: 12/5/96	Driller: R. Hunnicutt	
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)
1029.7	0.3	Topsoil - 4"	2-4-7		PL 2 5 10 20 30 40 50 60 80 N
		Residuum: Medium Dense to Loose, Brown to Tan-gray, Micaceous Silty Fine to Medium SAND (SM) with trace clay	9-12-12		11 24
1018.0	12.0		2-3-4		7
1013.0	17.0	Medium Dense, Gray, Micaceous Silty Fine SAND (SM)	6-6-10		16
1006.0	24.0	Very Dense, Tan, Micaceous Silty Fine SAND (SM)	36-28-32		60
998.0	32.0	Partially Weathered Rock (no sample recovered at 25.0 and 30.0 feet)	50/1"		100
		Auger Refusal at 32.0 feet	50/2"		100
		Groundwater:			
		Time of boring - 8.0 feet			
		After 1 day - 5.0 feet			

\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

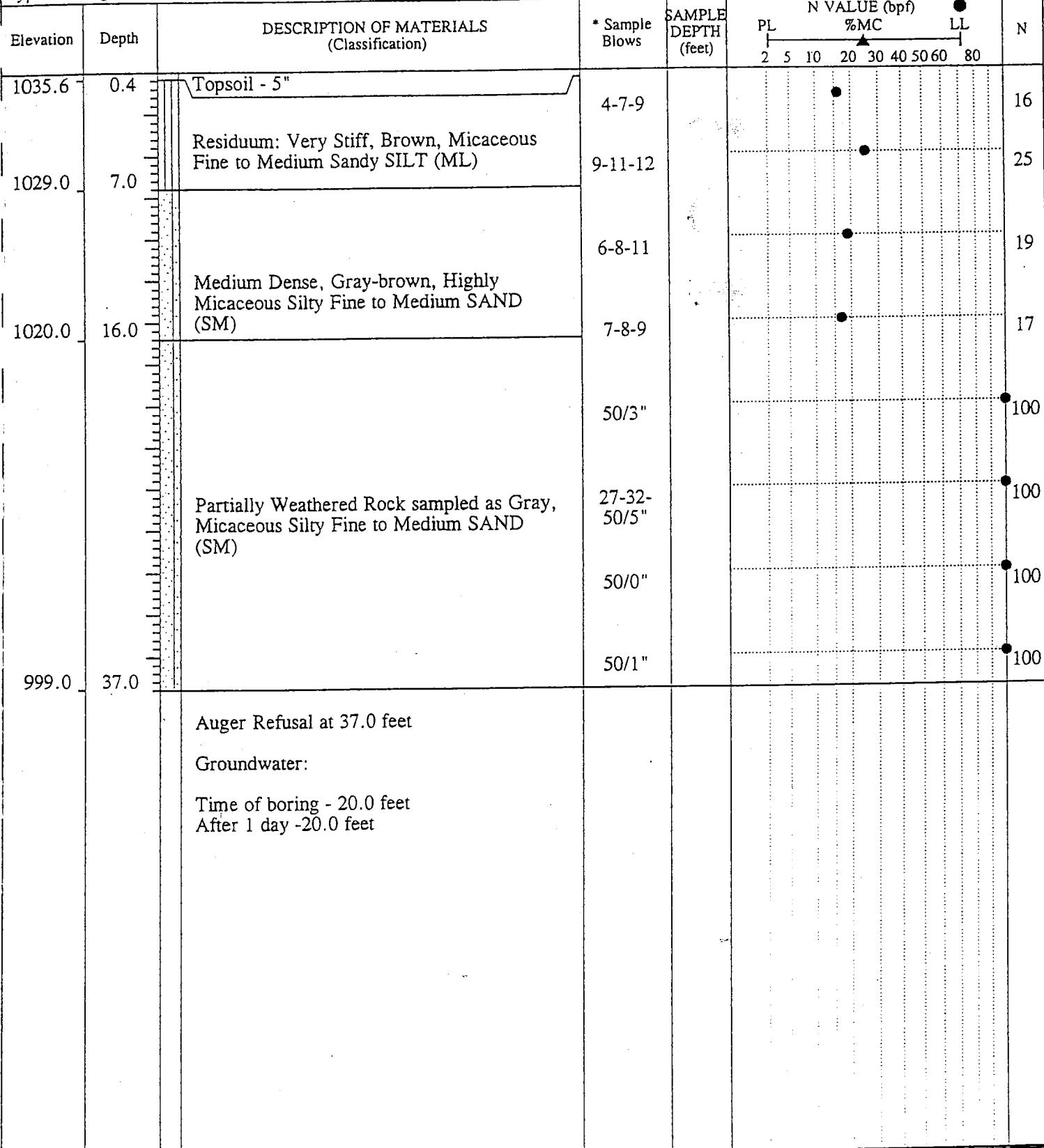
DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-5	(1 of 1)	Total Depth 37.0'	Elev: 1036 ±	Location: See Boring Location Diagram
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Type of Boring: HSA	Started: 11/29/96	Completed: 11/29/96	Driller: R. Hunnicutt
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\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-6 (1 of 1) Total Depth 36.0' Elev: 1038± Location: See Boring Location Diagram

Type of Boring: HSA Started: 11/29/96 Completed: 11/29/96 Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)								N	
					PL	2	5	10	20	30	40	50	60	
1037.2	0.8	Topsoil - 8"												22
1035.0	3.0	Residuum: Very Stiff, Orange-brown, Fine to Medium Sandy CLAY (CL)												36
		Dense to Medium Dense, Orange-tan to Tan-gray, Micaceous Silty Fine to Medium SAND (SM)												21
1016.0	22.0		5-9-13											13
			14-13-23											19
			10-11-10											100
			7-6-7											100
			13-10-9											100
			50/6"											
			50/6"											
			50/0"											
1002.0	36.0	Partially Weathered Rock sampled as Gray, Highly Micaceous Silty Fine to Medium SAND (SM)												
		Auger Refusal at 36.0 feet												
		Groundwater:												
		Time of boring - 25.0 feet												
		After 1 day - 22.5 feet												

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-7	(1 of 1)	Total Depth 56.0'	Elev: 1040 ±	Location: See Boring Location Diagram
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Type of Boring: HSA		Started: 11/29/96	Completed: 11/29/96	Driller: R. Hunnicutt	N VALUE (bpf)		N								
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)		* Sample Blows	SAMPLE DEPTH (feet)	PL	%MC	LL							
				6-10-10	15-15-16	2	5	10	20	30	40	50	60	80	
1039.7	0.3	Topsoil - 4"													20
1037.0	3.0	Residuum: Very Stiff, Orange-brown, Fine to Medium Sandy SILT (ML)													31
		Dense to Medium Dense, Tan to White, Silty Fine to Medium SAND (SM)		8-7-8											15
1023.0	17.0			6-6-7											13
				5-4-5											9
				4-4-5											9
		Loose, Brown-gray to Gray, Highly Micaceous Silty Fine to Medium SAND (SM)		3-3-6											9
1004.0	36.0	Medium Dense, White to Gray Micaceous Silty Fine to Coarse SAND (SM)		4-3-6											9
997.0	43.0	Partially Weathered Rock sampled as Gray, Micaceous Silty Fine to Medium SAND (SM)		13-13-16											29
				15-32-50/2"											100
				32-50/4"											100
984.0	56.0			50/1"											100
		Auger Refusal at 56.0 feet													
		Groundwater:													
		Time of boring - 25.0 feet													
		After 1 day - 24.8 feet													

\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

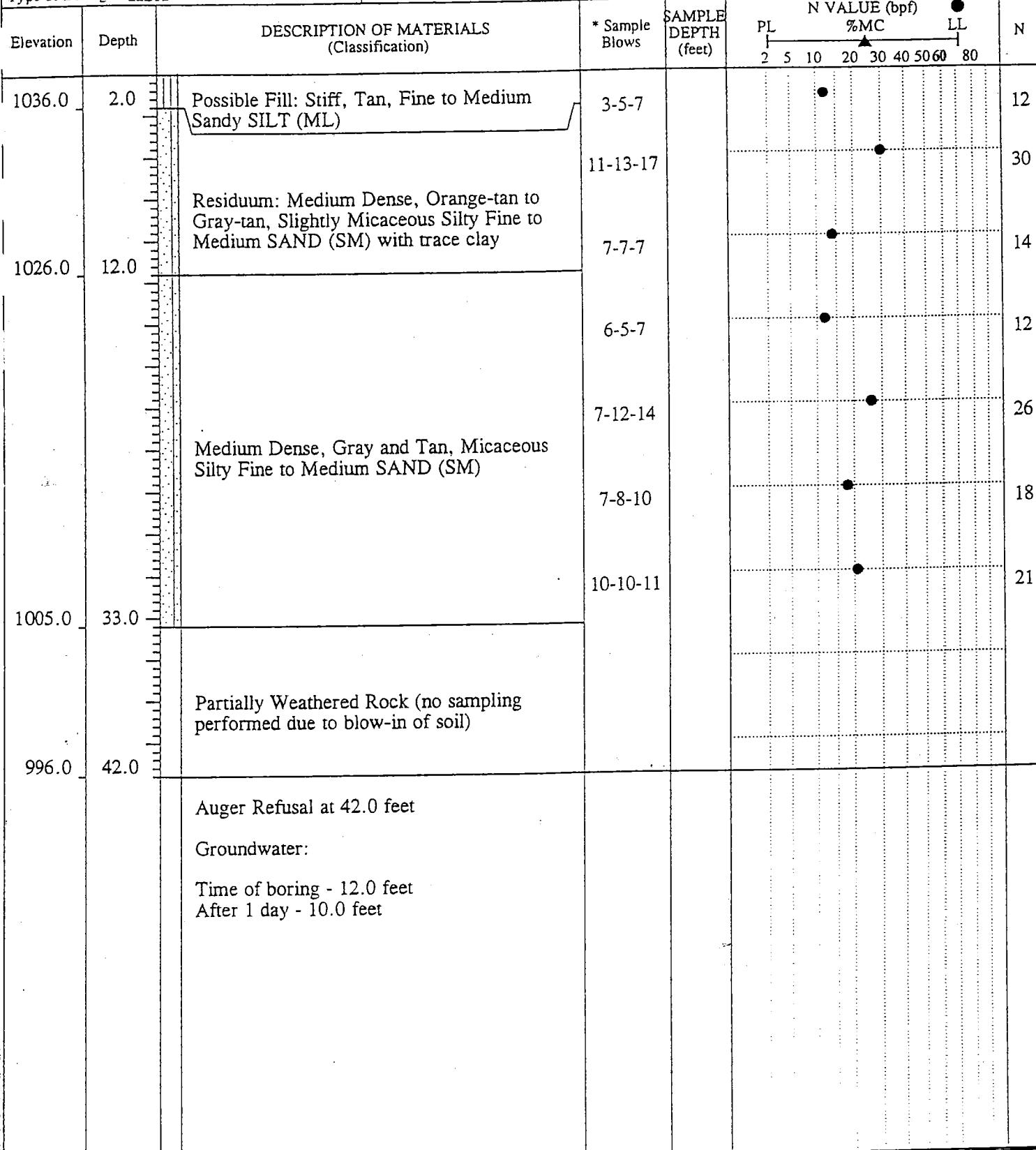
DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-8 (1 of 1) Total Depth 42.0' Elev: 1038 ± Location: See Boring Location Diagram

Type of Boring: HSA Started: 12/5/96 Completed: 12/5/96 Driller: R. Hunnicutt



\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

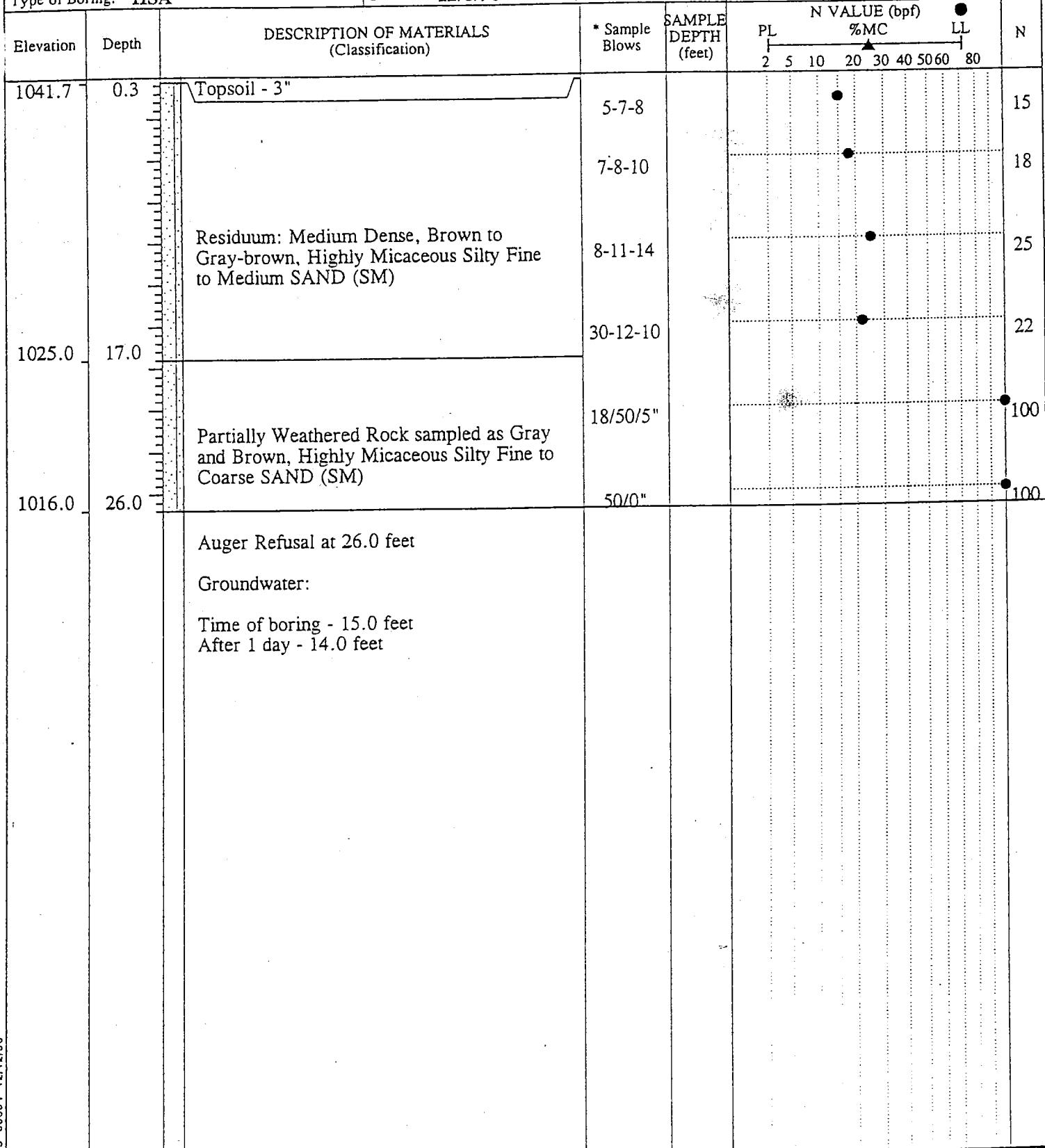
Boring No.: B-9 (1 of 1) Total Depth 26.0' Elev: 1042 ± Location: See Boring Location Diagram

Type of Boring: HSA

Started: 12/6/96

Completed: 12/6/96

Driller: R. Hunnicut



\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.:	B-10	(1 of 1)	Total Depth	32.0'	Elev: 1052±	Location:	See Boring Location Diagram				
Type of Boring:	HSA				Started: 11/29/96	Completed: 11/29/96	Driller:	R. Hunnicutt			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)				* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)			
		PL	2	5	10	20	30	40	50	60	80
1049.0	3.0	Residuum: Very Stiff, Orange-brown, Fine to Medium Sandy SILT (ML)	11-9-11								20
		Medium Dense to Loose, Orange-tan to Orange-tan with Black, Highly Micaceous Silty Fine to Medium SAND (SM)	7-10-13								23
			5-4-6								10
			6-6-6								12
1034.0	18.0		8-14-22								36
		Dense, Gray, Highly Micaceous Silty Fine to Medium SAND (SM)	13-17-19								36
1025.0	27.0	Partially Weathered Rock sampled as Gray, Highly Micaceous Silty Fine to Coarse SAND (SM) with rock fragments	50/6"								100
1020.0	32.0	Auger Refusal at 32.0 feet									
		Groundwater:									
		Time of boring - 21.0 feet									
		After 1 day -18.5 feet									

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

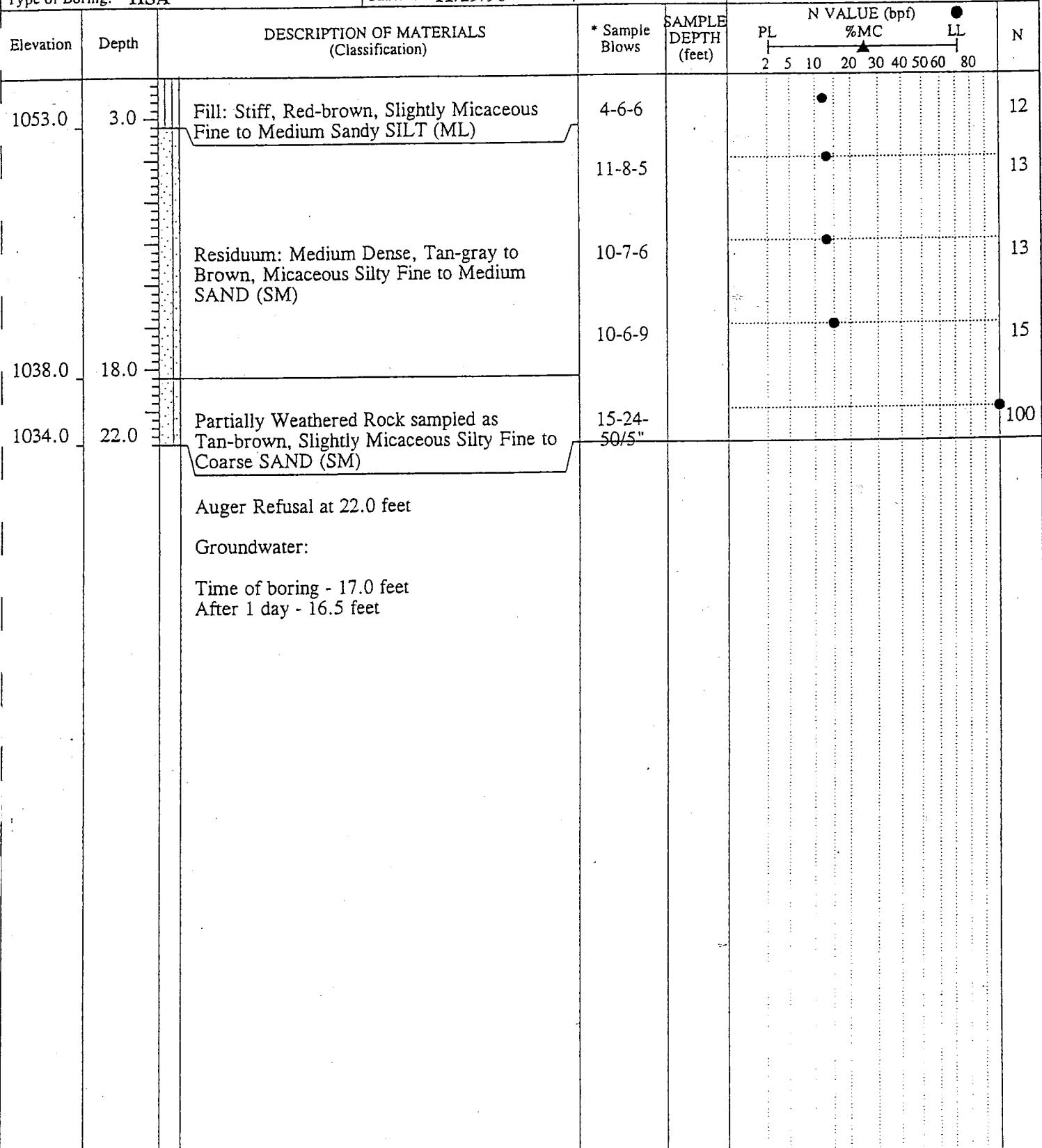
DATE 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-11 (1 of 1) Total Depth 22.0' Elev: 1056 ± Location: See Boring Location Diagram

Type of Boring: HSA Started: 11/29/96 Completed: 11/29/96 Driller: R. Hunnicutt



2/12/96  
1.3.6:  
\* Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

## BORING LOG



Report No.: 472-65054

DATE: 12/12/96

Client: Gwinnett County Department of Community Services

Project: Dacula Park - Gwinnett County, Georgia

Boring No.: B-12 (1 of 1) Total Depth 7.0' Elev: 1066 ± Location: See Boring Location Diagram

Type of Boring: HSA Started: 11/29/96 Completed: 11/29/96 Driller: R. Hunnicutt

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	SAMPLE DEPTH (feet)	N VALUE (bpf)						N	
					PL	2	5	10	20	30	50	
1063.0	3.0	Possible Fill: Medium Dense, Orange-brown, Slightly Micaceous Silty Fine to Coarse SAND (SM) with trace clay	7-8-10						●			18
1059.0	7.0	Partially Weathered Rock sampled as Tan Micaceous Silty Fine to Coarse SAND (SM)	50/5"									100
		Auger Refusal at 7.0 feet										
		Groundwater:										
		Time of boring - Not Encountered										

12/12  
613  
\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

