LUCKY SHOALS PARK MASTER PLANS

LUCKY SHOALS PARK IS 68.25 ACRES ACQUIRED IN THE LATE 1980'S. THE INITIAL MASTER PLAN BY HEERY WAS TITLED "BRITT ROAD" AS THE FINAL PARK NAME WAS AS YET UNKNOWN. THE 5-FIELD BASEBALL/SOFTBALL COMPLEX, MAINTENANCE COMPOUND, PICNIC/PLAYGROUND AREA, TENNIS AND BASKETBALL COURTS AND DIRT PERIMETER TRAIL WERE INCLUDED IN THE PARK'S FIRST PHASE. THE SECOND PHASE OF WORK PAVED THE PARK'S PERIMETER TRAIL TO CREATE A MULTI-PURPOSE LOOP.

THE DEVELOPMENT OF THE 2004 MASTER PLAN BY jB+a WAS NEEDED TO SEE WHAT CHANGES TO THE PARK COULD BETTER MATCH FACILITIES TO COMMUNITY NEEDS. THE ENTRANCE DRIVE WAS RE-ROUTED TO PROVIDE THE SPACE NEEDED BY A COMMUNITY CENTER WITH GYM. THE GRADING AND OTHER SITE WORK NEEDED TO CHANGE SOME BASEBALL FIELDS TO SOCCER WAS ASSESSED. THIS PLAN DIRECTED THE SUBSEQUENT THIRD PHASE OF CONSTRUCTION INCLUDING THE PARK'S COMMUNITY CENTER AND REVISED ENTRANCE DRIVE.

MASTER PLAN

BRITT ROAD

Community Park Site

GWINNETT COUNTY

Board of Commissioners
Recreation Authority
Parks and Recreation Division

HEERY

HEERY ENGINEERING, INC.
ATLANTA, GEORGIA

MASTER PLAN

FOR

BRITT ROAD COMMUNITY PARK SITE

MAY 1989

PREPARED FOR

GWINNETT COUNTY BOARD OF COMMISSIONERS

GWINNETT COUNTY RECREATION AUTHORITY

AND

GWINNETT COUNTY AND PARKS AND RECREATION DIVISION

BY

HEERY ENGINEERING, INC.
ATLANTA, GEORGIA

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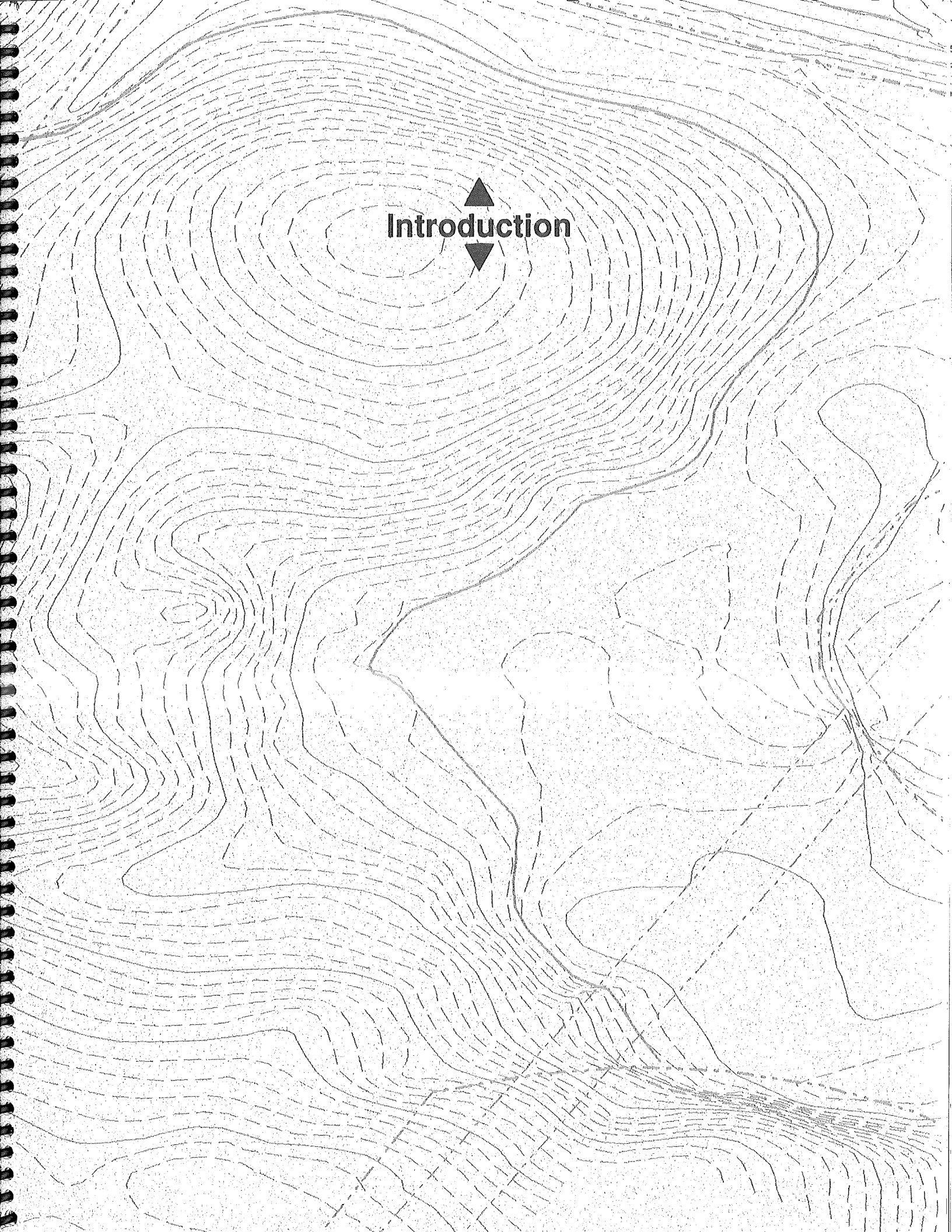

Introduction

I. INTRODUCTION

Location

Britt Road Community Park Site consists of 68.5 acres located in southeast Gwinnett County on Britt Road just west of Jimmy Carter Boulevard in District 6, Land Lots 164 and 165. The property is a combination of the 18 acre Blackwood Property, previously given to the County, and an adjacent 50 acre tract recently purchased. The site is bordered by property owned by Mr. Lloyd Burns, Royal Oak Property, Inc., Shemin Nurseries and Summit Limited Partnership. Nearby Subdivisions include Smoketree, Blackwood Heights, and the Trails.

The land is located in Commission District 2, Gwinnett County Planning Area 4 and Service Area B as defined by the County-wide Recreation Master Plan. The property has been identified by the County to serve as a Community Park Site for this service area.

Community Park Definition

A Community Park has been defined by the County-wide Recreation Master Plan as 50 to 100 acres that will serve the full range of community recreation needs and provide both active and passive activities for the area it serves.

The following list shows the activities that should be included in each Community Park if possible:

- Lighted Softball Fields
- Lighted Youth Baseball Fields
- Lighted Tennis Courts
- Football/Soccer Field
- Basketball/Multipurpose Courts
- Horseshoe Court
- Picnic Area
- Children's Play Area
- Apparatus Area
- Community Center
- Maintenance Building
- Lake
- Parking
- Landscaping
- Utilities
- Swimming Pool

However, the Community wishes and needs as well as site opportunities and constraints will influence which of these activities are appropriated for a specific site.

Master Planning Process

The Master Planning Process for the Britt Road Park Site required research and input by the entire Design Team including the County Staff, Consultant and Community. The steps of the Process are as follows:

- Set Goals and Objectives: Before any work was done on the Project, the Project Goals and Objectives were set by the Design Team to monitor the success of the effort.

- Research Site Analysis Data: This information included research of manmade and natural features of the site which influence its development.

- Receive Community Input About Program and Site: At a Community meeting, neighbors provided information on needs, desires and concerns.

- Define Final Program: Based on site analysis data and Community input, the Design Team formulated the final list of elements to be designed into the park site.

- Develop Design Concepts and Plan: These concepts were based on the data obtained about the site, the feelings of the Community and basic philosophy of the Staff and entire Design Team.

- Develop Master Plan: The Design Team combined the concepts with the Program and developed a Plan which accommodates all the Program elements on the site while maintaining the Goals and Objectives for the Project.

- Develop Cost Estimate: The Design Team confirmed that the Final Program and Plan are compatible with the Budget set by the County.

- Identify Phase I Elements: By assessment of needs, desires and budget parameters, the Design Team designated what part of the Plan will be built in Phase I.

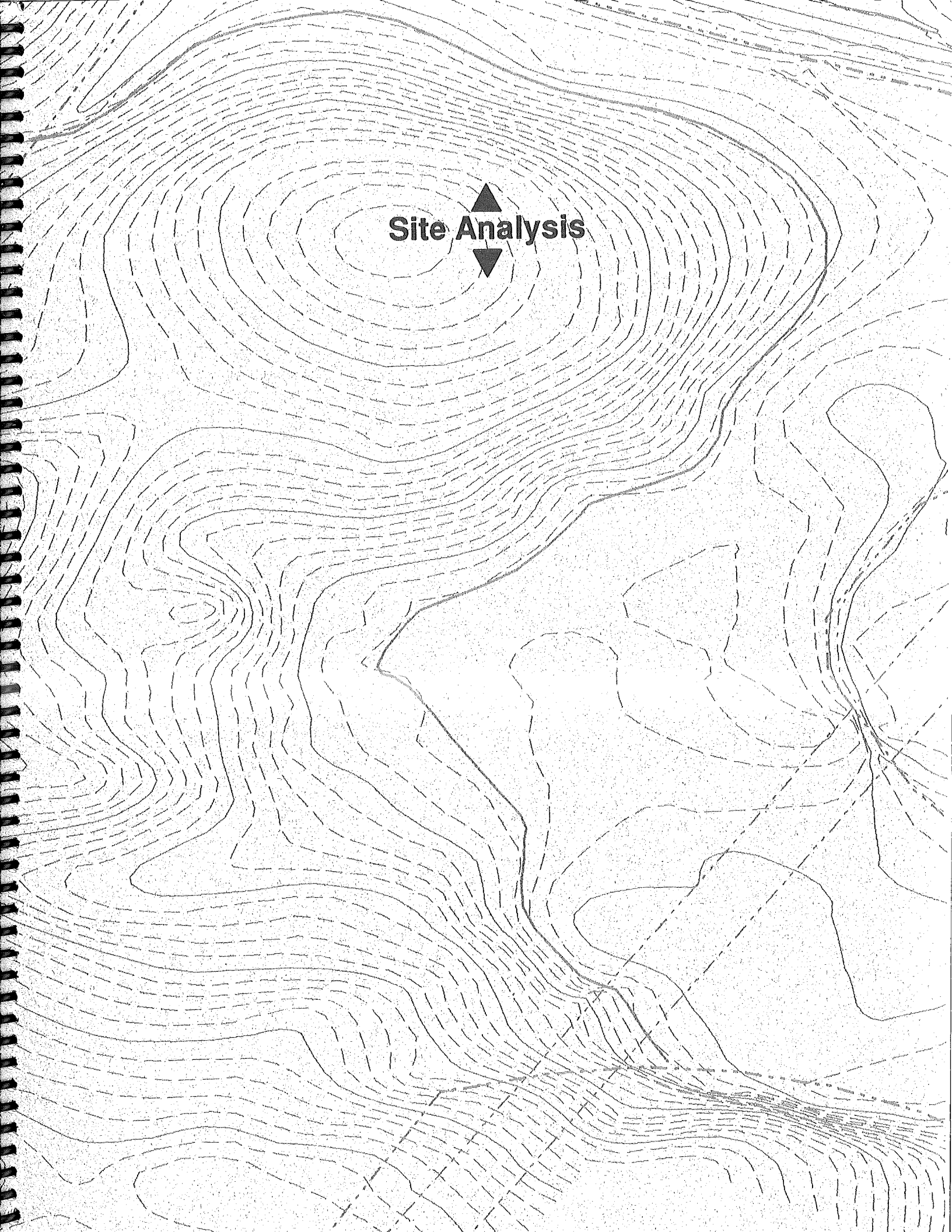
- Present Plan to Community, Recreation Authority and Board of Commissioners for approval.

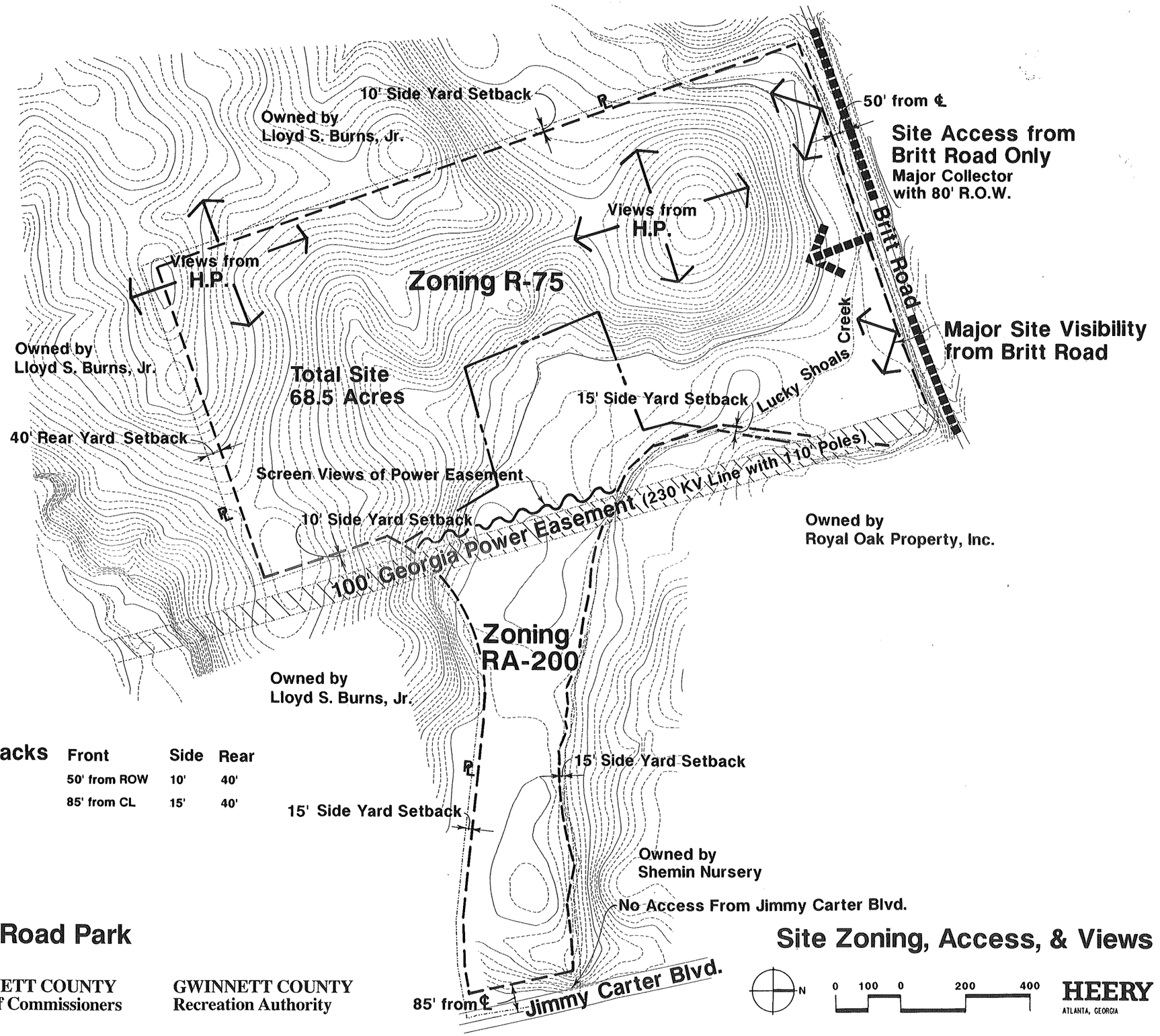
Goals and Objectives

Development of guidelines for the design of the Master Plan is an important first step. Prior to any design work, the Design Team met to discuss expectations, procedures and to set Goals and Objectives for the Britt Road Park Site. These guidelines were based on the County-wide Recreation Master Plan and general philosophy of the Design Team. The Goals and Objectives developed for the Project are:

- Preservation and enhancement of the environment
- Efficiency of operation and maintenance
- Aesthetics
- Safety
- Budget
- Compliance with prototype Community Park

All subsequent design ideas will be measured against these Goals and Objectives to insure the Design Team remains on target.


Site Analysis



Yard Setbacks	Front	Side	Rear
R-75	50' from ROW	10'	40'
RA-200	85' from CL	15'	40'

Britt Road Park

GWINNETT COUNTY
Board of Commissioners

GWINNETT COUNTY
Recreation Authority

Site Zoning, Access, & Views

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SITE VEGETATION, TOPOGRAPHY AND SOILS

Vegetation

The site is heavily wooded with the exception of the Georgia Power easement which is grassed. The upland forest of the western portion of the site consists of a mix of hardwoods including white oaks, red oaks, post oaks, hickory, yellow poplar, sweetgum, sassafras, dogwood and pines. The Wetlands and lower areas to the east and north consist of red maples, green ash, sycamore, sweetgum, yellow poplar, beech, alder, water oaks, willow, elm, and pines with a thick understory of privet and honeysuckle. Existing trees should be protected as much as possible to preserve the character of the site.

Topography & Slopes

The topography on the site is rolling with an overall change in elevation of 80 feet. The high points of elevation 1000.0 and 975.0 are located on the southern boundary. The land gradually falls to the flood plain and creek. There is also a knoll at elevation 969.0 located at the northwest corner of the site. The slopes shown on the drawing represent those slopes over 10%, and this indicates that on 17% of the site steep grades may be a concern. The area along the creek is very flat and standing water can be expected.

The slopes along the Britt Road boundary will be of special concern because of the need to access the site and should be considered when locating the access point.

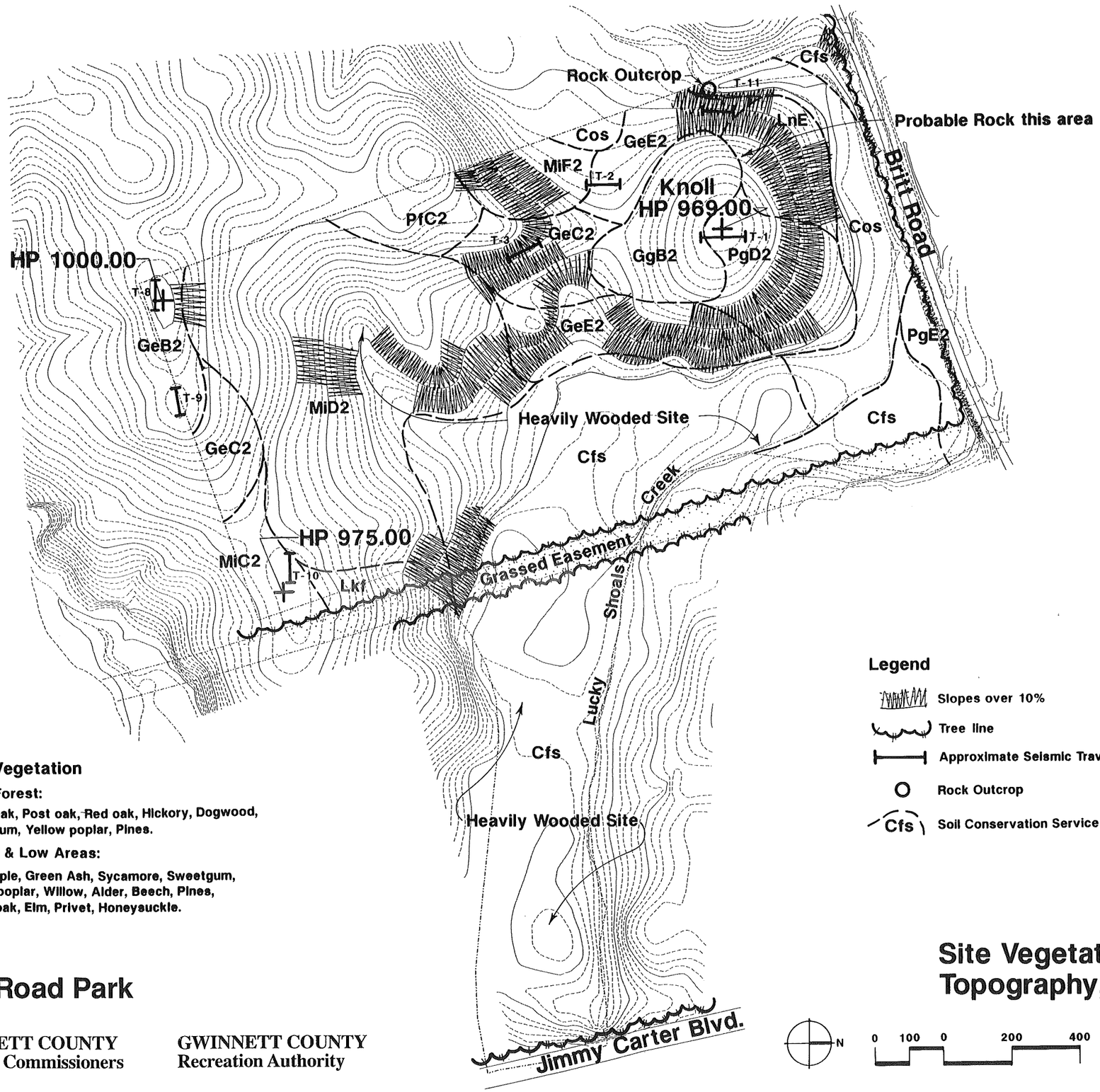
Soils

The soils on site, as classified by the Soil Conservation Service, are shown on the drawing and on the attached chart. This indicates that the soils in the lower areas of the site will be a problem due to flooding and that development of other areas may be restricted due to steep slopes.

Also, seismic traverses, as a part of the Preliminary Seismic Exploration prepared by Atlanta Testing and Engineering and dated January 21, 1988, are located on the drawing. This report is included in the Appendix and basically states that with the exception of probable rock in the area of the northern knoll, the site appears to be developable for the intended uses.

SOIL CHARACTERISTICS PER SOIL CONSERVATION SERVICE , SOIL SURVEY, GWINNETT COUNTY, GEORGIA

SYMBOL	NAME/SLOPE	INTENSIVE PLAY AREA DEVELOPMENT RISK	RECREATIONAL BUILDING DEVELOPMENT RISK	TRAFFICWAY DEVELOPMENT RISK
Cfs	Chewacla soils, frequently flooded	Severe: very frequent flooding	Severe; very frequent flooding	Severe: very frequent flooding
Cos	Congaree soils, frequently flooded	Severe: frequent brief flooding	Severe: frequent brief flooding	Severe: frequent brief flooding
GeB2	Gwinnett clay loam, 2 to 6% slopes, eroded	Slight	Slight	Moderate: traffic support, erosion
GeC2	Gwinnett clay loam, 6 to 10% slopes, eroded	Moderate: slopes	Slight	Moderate; traffic support
GeE2	Gwinnett clay loam, 10 to 25% slopes, eroded	Severe: slopes	Severe: slopes	Moderate: traffic support, erosion, slopes
GgB2	Gwinnett loam, 2 to 6% slopes, eroded	Slight	Slight	Moderate: traffic support
LkF	Louisa gravelly sandy loam, 15 to 45% slopes	Severe: rock, slopes	Severe: slopes	Severe: rock, slopes
LnE	Louisburg loamy sand, 10 to 25% slopes	Severe: rock, slopes	Severe, rock, slopes	Severe: rock, slopes
MhC2	Madison gravelly sandy loam, 6 to 10% slopes, eroded	Moderate: slopes	Slight	Moderate: traffic support
MiD2	Madison sandy clay loam, 10 to 15% slopes, eroded	Severe: slopes	Moderate: slopes	Moderate: slopes
MiF2	Madison sandy clay loam, 15 to 45% slopes, eroded	Severe: slopes	Severe: slopes	Severe: moderate traffic support, slopes
PfC2	Pacolet sandy loam, 6 to 10% slopes, eroded	Moderate: slopes	Slight	Moderate: traffic support
PgD2	Pacolet sandy clay loam, 10 to 15% slopes, eroded	Severe: slopes	Moderate: slopes	Moderate: slopes
PgE2	Pacolet sandy clay loam, 15-25% slopes, eroded	Severe: slopes	Severe: slopes	Moderate: traffic support, erosion, slopes



Typical Vegetation

Upland Forest:

White oak, Post oak, Red oak, Hickory, Dogwood, Sweetgum, Yellow poplar, Pines.

Wetland & Low Areas:

Red maple, Green Ash, Sycamore, Sweetgum, Yellow poplar, Willow, Alder, Beech, Pines, Water oak, Elm, Privet, Honeysuckle.

Legend

- Slopes over 10%
- Tree line
- Approximate Seismic Traverse Location
- Rock Outcrop
- Cfs — Soil Conservation Service Classification

Britt Road Park

GWINNETT COUNTY
Board of Commissioners

GWINNETT COUNTY
Recreation Authority

Site Vegetation, Topography, & Soils

N

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SITE HYDROLOGY, WETLANDS AND UTILITIES

Hydrology

The site is in the upper reaches of the Yellow River drainage basin located on Jackson Creek at the confluence with Lucky Shoals Creek. Because of the size of these merging subbasins, consideration should be given to locating the driveway upstream from this confluence. The 100 year flood zone as designated by the Flood Insurance Risk Map has been shown on the drawing. Development within the 100 year flood zone requires special approvals and is not encouraged.

Wetlands

The land along Lucky Shoals Creek is also classified and protected as Wetlands by the Corps of Engineers who prohibit any development in excess of one acre without a permit. The permitting process is long and complicated. Further data on the Wetlands status of this site is contained in a special site report prepared by Law Environmental, Inc. and included in the Appendix of this report. Both flood zone and Wetlands should be left undisturbed if possible since regulatory review, impacts on the natural environment and development costs are a concern.

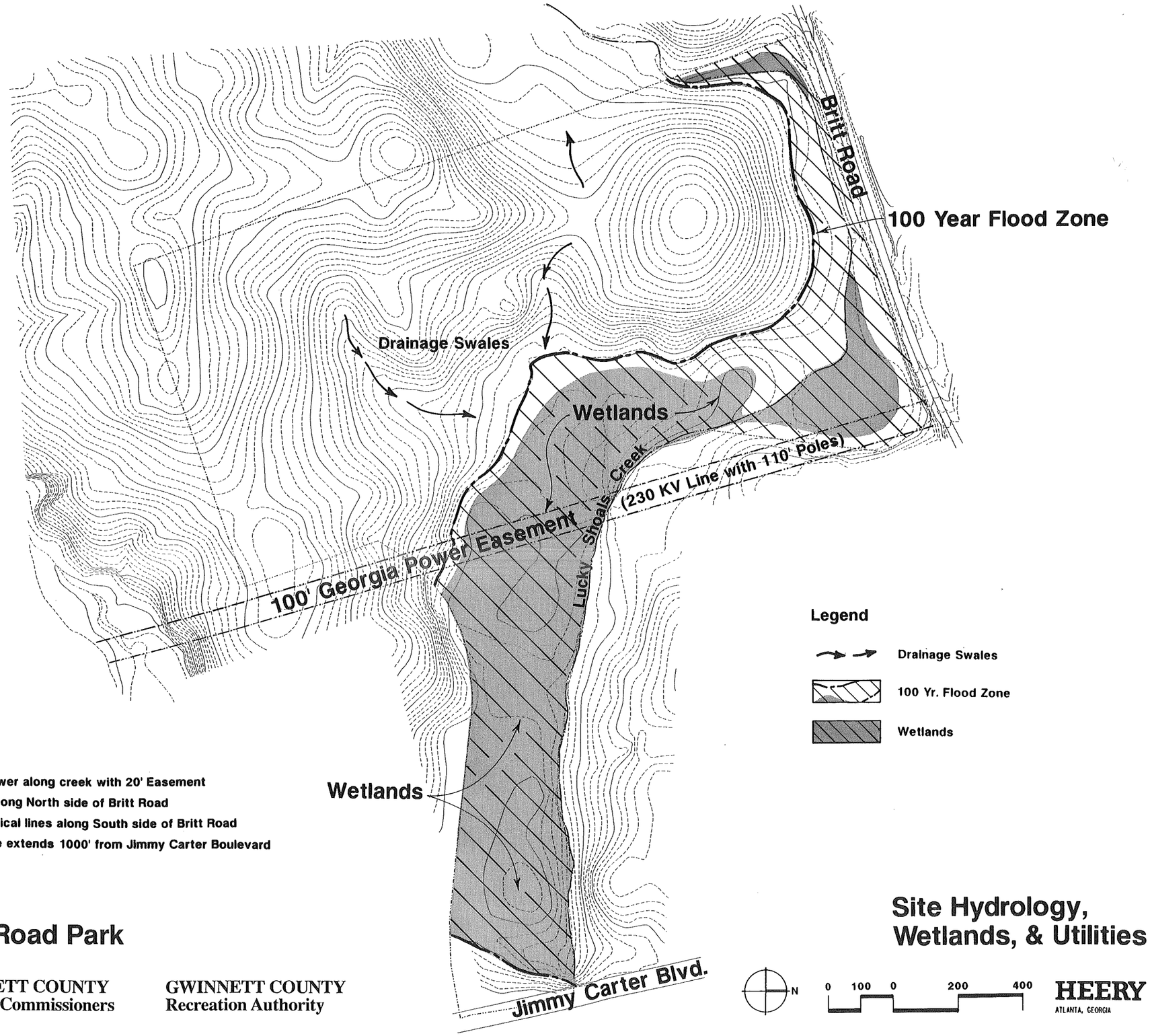
Utilities

A 21" County sanitary sewer line and 20' easement cross the site in the flood plain area and turn to parallel Britt Road. This line flows to the Jackson Creek Sewage Treatment Plant. Information provided by the County officials indicates that the capacity and structure locations of this line will not be a problem for development of the Park.

The County has a 16" water line which runs along the north side of Britt Road. Flow test data available for the intersection of Jimmy Carter Boulevard and Britt Road indicates that this line will be sufficient for the uses required by the Park.

Overhead Georgia Power electrical lines located on the southside of Britt Road are available for use by the site, and a 4" steel gas line extends toward the site on Britt Road for 1000' from the intersection with Jimmy Carter Boulevard. This line has additional capacity and can be utilized by the site if extended.

Additionally, a 100' wide Georgia Power Easement is located on part of the site. This line is a 230 KV line with 110' high, metal poles. There are restrictions to development within this easement, and an Encroachment Agreement must be submitted to Georgia Power for 90 day review.



Utilities

21" Sanitary Sewer along creek with 20' Easement
16" Water line along North side of Britt Road
Overhead Electrical lines along South side of Britt Road
4" Steel Gas line extends 1000' from Jimmy Carter Boulevard

Legend

- Drainage Swales
- 100 Yr. Flood Zone
- Wetlands

Britt Road Park

GWINNETT COUNTY
Board of Commissioners

GWINNETT COUNTY
Recreation Authority

Site Hydrology, Wetlands, & Utilities

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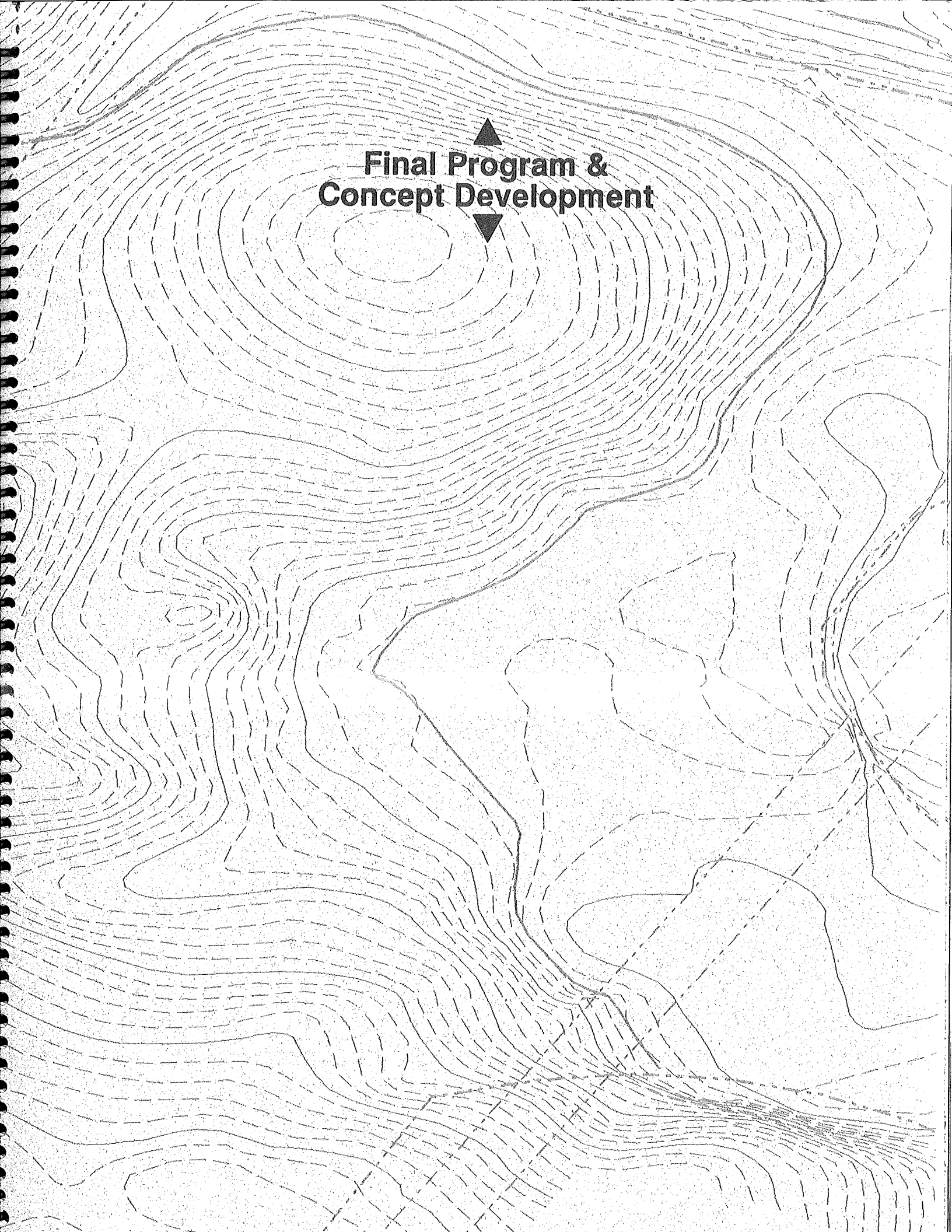

Final Program &
Concept Development

III. FINAL PROGRAM AND CONCEPT DEVELOPMENT

FINAL PROGRAM

Upon completion of the site analysis, a public meeting was held to solicit comments, ideas, needs and desires of the community to be served by the proposed park. The minutes of this meeting are contained in the Appendix.

The large turn-out of interested neighbors provided much insight for the development of the Final Program for the park site. Their strong interest in the park site remaining a natural 'oasis' in their rapidly developing area was compatible with the site's own restrictions for development presented by the Wetlands issue. Their comments concerning the types of activities were also compatible with the prototype Community Park. They requested a variety of elements that serve all age groups and included both active and passive, structured and unstructured activities. In short, they requested a balanced development. Their overall major concern was that the park site to be left as green and natural as possible.

This input and the site analysis data were combined to produce the Final Program which is a list of elements to be included in the park. The Final Program is listed below:

- Community Center & Gymnasium (+/- 13,000 s.f.)
- Outdoor Swimming Pool
- 4 Tennis Courts (with possible expansion to 6)
- 1 Multipurpose Court (with possible expansion to 2)
- 1 Lake
- 1 Maintenance Building (+/- 1000 s.f.) with outdoor storage yard.
- 1 Concession Stand/Restroom Building
- 1 Softball Field
- 1 Tee Ball Field

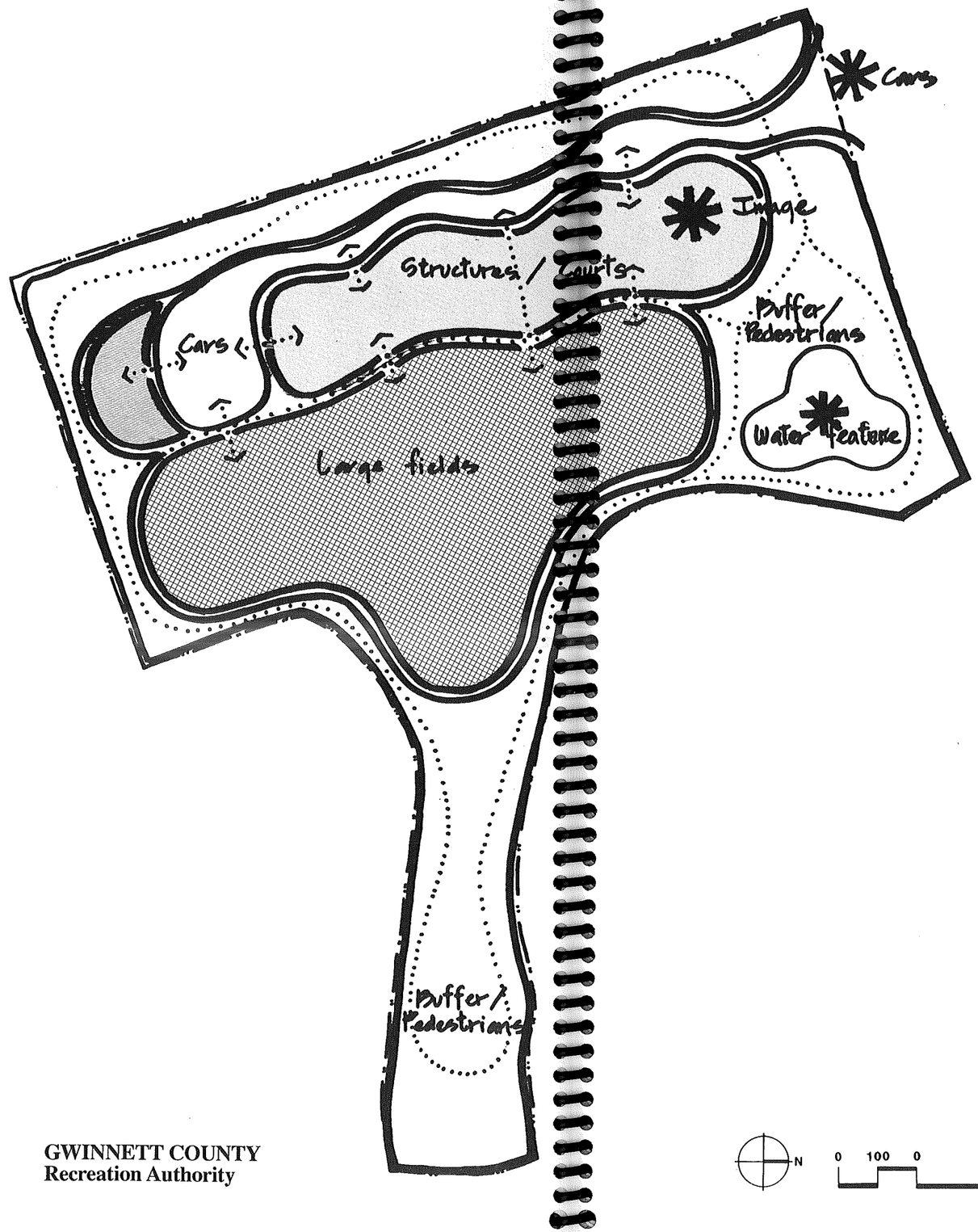
- 1 Pee-Wee Field
- 1 Major/Minor Baseball Field
- 1 Pony Baseball Field
- Free-play Field
- Trails with exercise stations, distance markings and educational signage
- Picnic Pavilions
- Picnic Tables and Grills
- 2 Playground/Apparatus Areas
- 350 to 375 Parking Spaces
- Potential 80 yard and 100 yard Football Field to utilize Softball and Pony Field areas in off season

DESIGN CONCEPTS

As the Final Program developed, major design concepts were also formulated. These are directly related to the Goals and Objectives of the Project. The following list of design ideas are graphically reflected on the Concept Plan.

- Maintain the Wetlands as a nature area.
- Preserve existing trees over the entire site where possible.
- Minimize disturbance of the site by locating activities where the topography is best suited.
- Provide only one entrance/exit drive to minimize drive-through activity.
- Design driveway to minimize grading and maintain gentle slopes.
- Minimize pedestrian/vehicular traffic conflicts.
- Locate field lights and parking in an area of the site that will minimize neighborhood disturbance.

- Be good neighbors and retain buffers on all sides.
- Create park-like image for the Project.
- Provide sufficient parking located near each activity.
- Provide service in a convenient location, but screened from the public view.
- Make the Community Center the image of the park since it serves all ages and types of activities.



Britt Road Park

GWINNETT COUNTY
Board of Commissioners

GWINNETT COUNTY
Recreation Authority

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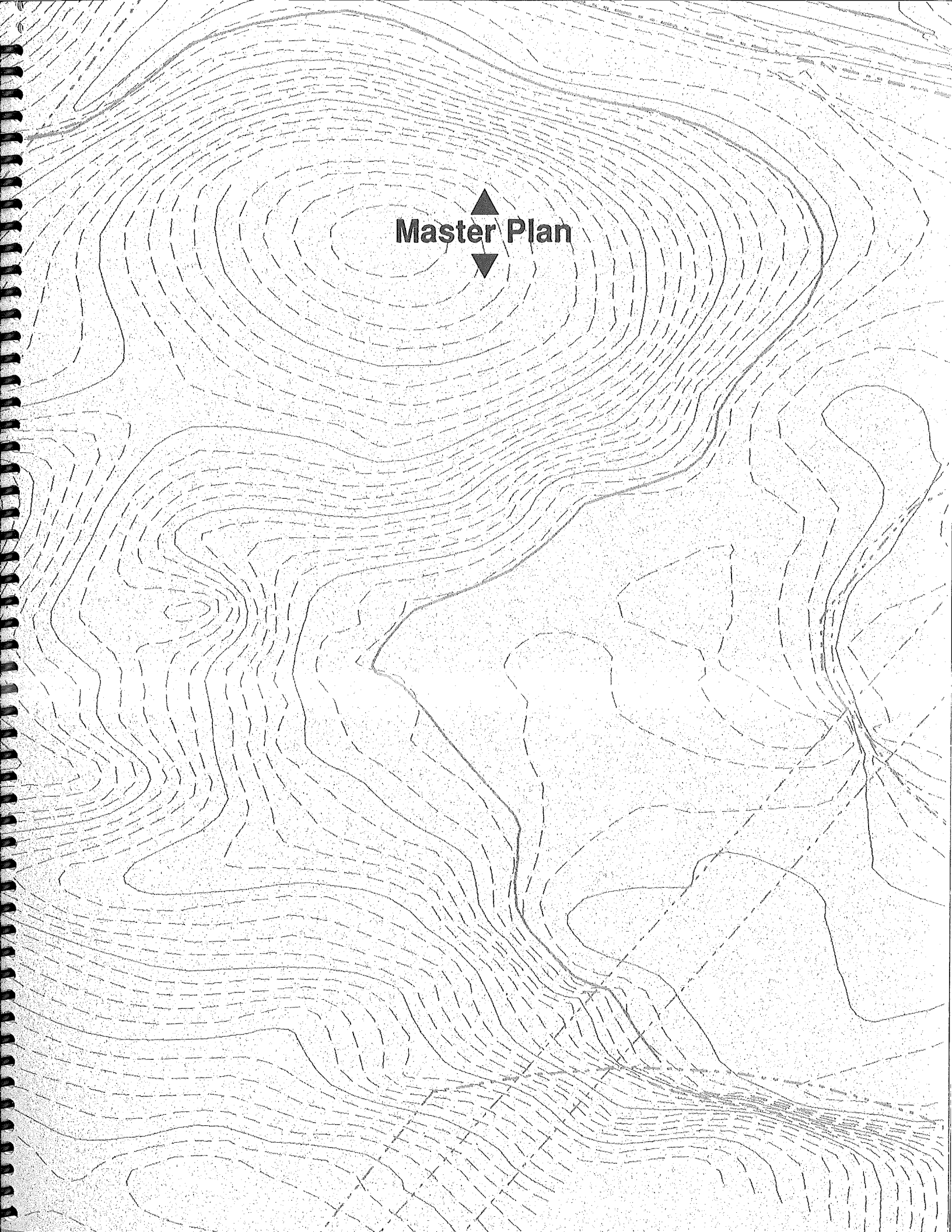

Master Plan

IV. MASTER PLAN

The Master Plan for the Britt Road Community Park Site was developed by locating all the Final Program elements on the site in accordance with the ideas established by the Concept Plan.

The result is a park that shows sensitivity to the site's opportunities and constraints as well as the needs and desires of the Community it will serve.

The major components of the Master Plan are described below and illustrated on the drawing.

Site Image

The area of the site adjacent to Britt Road will be maintained as a wooded area with trails and a +/- 2 acre lake for viewing. This will provide the natural green image and pleasant views that the Community requested as the major site image. However, the development of the lake in the Wetlands will require approval and permitting by the Corps of Engineers.

Entry Drive

The drive is located near the center of the Britt Road frontage in order to minimize conflicts with development of adjoining properties. It is also located just above the point where Lucky Shoals Creek is joined by another stream flowing under Britt Road. Since this point has less severe slopes and less water flow, it will be easier to provide access at this location, although some type of bridge will be required.

Community Center and Gymnasium

This building will be located on the knoll near Britt Road in order to minimize disturbance of the site and to help establish the image for the park as a mixed use facility by its location on this prominent spot. The parking for the center will be located adjacent to the 13,000 s.f. facility which will contain 4 meeting rooms, large assembly room, concession area, restrooms, gymnasium, weight/exercise room, locker rooms, and storage. This facility will serve approximately 250 people.

Outdoor Pool
The outdoor swimming pool will be 25 meters long and 6 to 8 lanes wide with a diving well. A wet activity area will also be provided. The pool is located adjacent to the community center to allow for shared locker rooms, concessions, and parking facilities, and will accommodate approximately 450 users.

Multipurpose Court
This court is designed and marked to be used for either basketball or volleyball. It is 114' x 80' and is located in a wooded area near the gymnasium and other facilities. Although only one court is shown for the Final Program, the dashed lines of the drawing indicate the potential location of another court in the future.

Tennis Courts
The four tennis courts are located on an area of the site where the gentle topography allows for their placement with minimal disturbance. The dashed lines on the plan indicate the location of two more tennis courts if they are ever needed. The tennis courts will be provided with 30 parking spaces, seating and landscaping to screen the courts from traffic and headlights.

Maintenance Building
A structure of approximately 1,000 s.f. and a fenced outdoor storage area will serve the maintenance needs for the park. This building is located near the fields for easy access to this high maintenance area. It is also located in an area that will be separated from the majority of the pedestrian traffic and can be screened with landscaping.

Group Picnic Area & Pavilions
The group picnic area is located in the wooded southwest corner of the site to allow for its own idenity and a level of privacy. It will also be adjacent to the largest parking lot which will accommodate approximately 144 cars. Additionally, it is located with immediate access to a playground and the free-play field for easy utilization by family reunions, company or club picnics.

One of the 3 pavilions located in the group picnic area will have restrooms. All will have grills and tables.

Additionally, two other pavilions will be provided at the park. One will be located in the wooded area next to the tennis courts and another, with restrooms, will be adjacent to the pool to provide picnic facilities for users of the community center complex.

Other picnic tables and grills will be provided along the extensive trail and walkway system.

Playgrounds and Apparatus Area

Two playground areas have been designated for the site. Each area will be approximately 1/2 acre and serve children from 1 to 14 years of age. With each playground, distinction will be made between the playground equipment for ages 1 to 6 and the apparatus equipment for ages 6 to 14.

The playgrounds are located for easy access from ball fields and the group picnic area. They are also sheltered from the road for safety reasons.

Free-play Field

A large open space of approximately an acre has been provided for unstructured play, including frisbee, ball tossing, kite flying or volleyball. This field has been located on a flat area of the site which will require minimal disturbance and allow the existing trees to remain as a buffer between this area and the fields designed for organized sports.

The group picnic area is located adjacent to the free-play field and is seen as a major related use. Also, the trail system will pass through this area allowing easy access and opportunities for enjoyment of other site features.

Ball Fields

The organized ball fields are located in an area of the site which represents response to the concerns of the neighborhood users about noise, lights and traffic. The topography in this area is also less restrictive for the large flat areas required for locating these fields adjacent to each other. They are also placed in proximity to both large parking areas. The fields will be terraced to prevent grading in the flood zone and also to preserve trees along the site property line. The fields have been oriented to provide spectators maximum protection from foul balls and to provide the proper sun orientation.

The fields that will be provided are:

- 1 Softball field with 300' foul line
- 1 Pony baseball field with 275' foul line
- 1 Major/Minor baseball field with 200' foul line
- 1 Pee-Wee baseball field with 120' foul line
- 1 Tee Ball baseball field with 120' foul line

An eighty yard football field can be provided in the area of the softball outfield and a hundred yard football field provided in the area of the pony/tee ball fields if fences are designed to be removable.

A Concession stand with restrooms and storage will be provided in an area centrally located to all fields.

Trails/decks

The features of the site are linked by an extensive trail system which is over 2.5 miles long. This system will include fitness stations, distance markings and educational/interpretive signage. The trails will become boardwalks in the Wetlands and decks will be built as destination points, classroom or picnic areas.

These trails provide activity for all age groups and allow for the sensitive use of the otherwise unusable Wetlands.

Driveway/Parking

The entry drive is designed in a curvilinear manner to discourage fast driving. It is also designed to follow grades to minimize the earthwork and tree disturbance required. However, even with the vertical curvature required to stay close to grade, the road slopes do not exceed 4%. Only one entrance to the site has been provided to minimize drive-through traffic. The road has been located along the western edge of the site to minimize the need to cross the road to reach activities and to avoid splitting the usable property in half, thus reducing the adjacency possibilities for the required activities.

Parking has been located in lineal lots parallel to the road to minimize disturbance of large areas that are better utilized for other activities. This arrangement also allows the parking to be located in close proximity to each activity and with a minimal amount of road crossing required. A total of 368 spaces has been provided per the following breakdown:

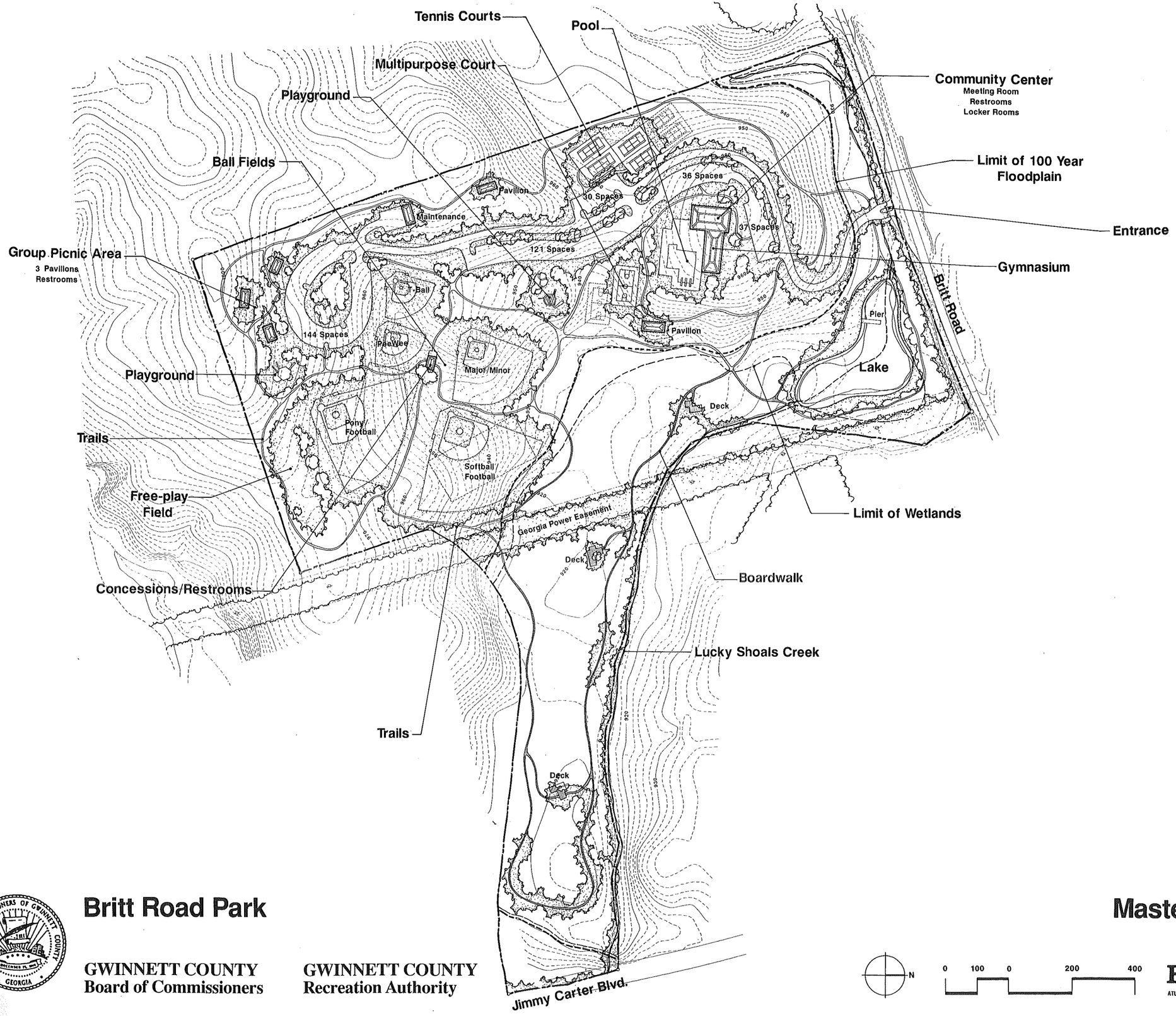
- Community Center: 83 spaces
- Tennis Court/Multipurpose Courts: 30 spaces
- Picnic Areas: 40 spaces
- Athletic Fields: 215 spaces

Summary

This Master Plan for the Britt Road Community Park site was presented to the Community, Recreation Authority and Board of Commissioners and accepted as a plan that would meet their needs and desires.

Additionally the plan presented has met the Goals and Objectives set by the Design Team for the Project:

- Preservation and enhancement of the Environment
- Efficiency of Operating and Maintenance
- Safety
- Aesthetics
- Budget
- Compliance with the prototype County Park



Britt Road Park

GWINNETT COUNTY
Board of Commissioners

GWINNETT COUNTY
Recreation Authority

Master Plan

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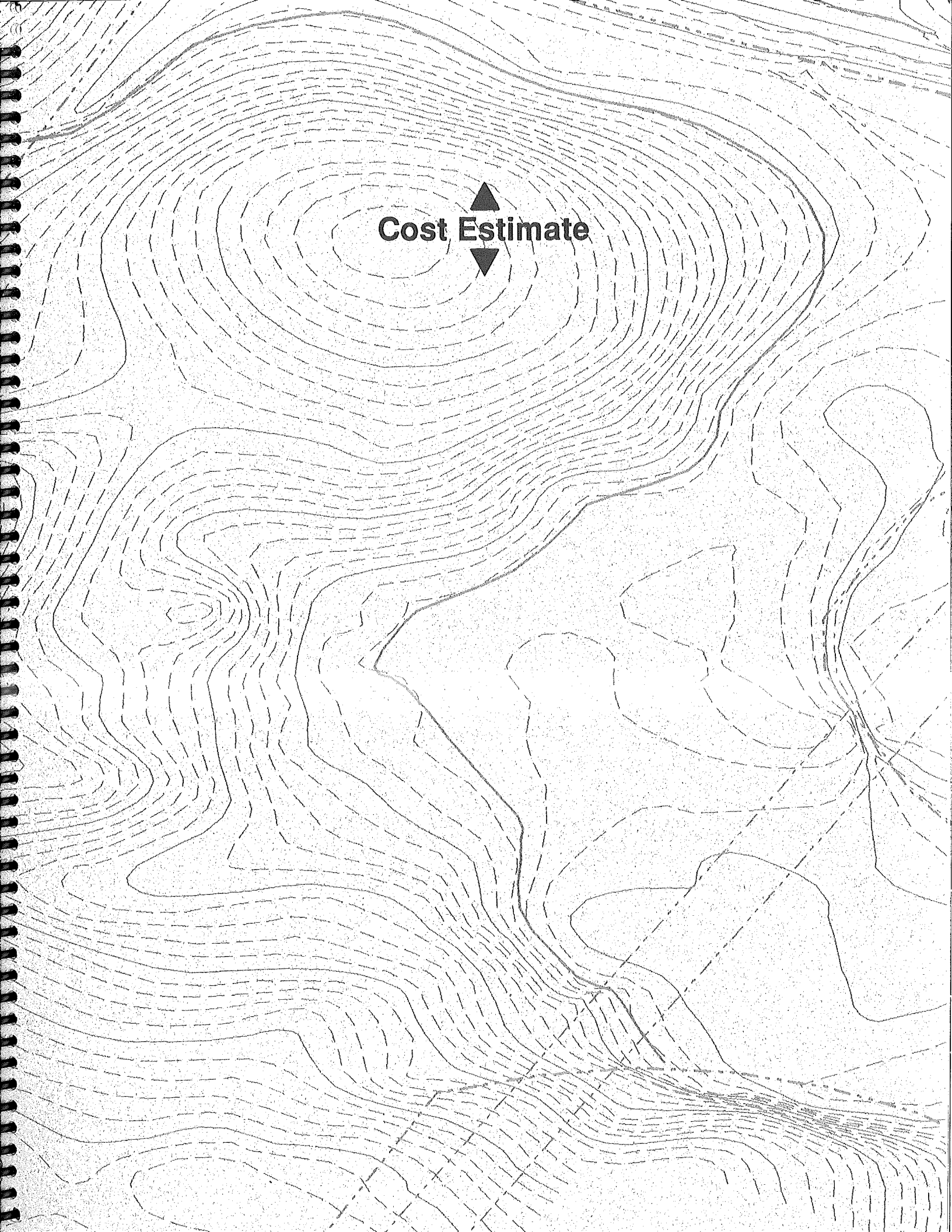
Phase I

The elements to be included in Phase I development were determined by the Design Team's assessment of Community needs, desires, and budget parameters.

It is planned that the following items will be constructed as a part of Phase I and will provide the balanced park desired by the Community and Design Team in Phase I:

- 2 Tennis Courts
- 1 Multi-purpose Court
- 2 Playgrounds (to be added to in subsequent phases)
- 3 Picnic Pavilions including one with restrooms
- 5 Covered picnic tables
- 25 Picnic Tables (purchased by annual operations budget)
- 20 Grills (purchased by annual operations budget)
- 6,000 l.f. of Trails with distance markings
- Free-Play Field
- Lighted Tee Ball Field
- Lighted Pee-Wee Baseball Field
- Lighted Major/Minor Baseball Field
- Lighted Pony Baseball Field
- Lighted Softball Field
- Concession Stand with Concessions, Maintenance Storage & Restrooms
- 234 Parking spaces
- Infrastructure and Driveway (including Bridge to access site)
- Entry Sign
- Fenced Maintenance Yard


Cost Estimate

V. COST ESTIMATE

The Master Plan Cost Estimates for site development and for the overall project have been developed on the basis of current design detail. Though conceptual in nature, we feel the project is comfortably in the range of the budget established by the County.

Subsequent phases of this project will allow us to develop more definitive and refined costs for the specific park facilities.

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL PROJECT COST	PHASE I COST
1.	Clear and Grub Site	32	Acre	$4,000	$128,000	$ 90,000
2.	Erosion Control	--	LS	-	20,000	15,000
3.	Earthwork	70,000	CY	2.70	189,000	140,000
4.	Fine Grading - General	260,000	SF	.10	26,000	18,000
5.	Asphalt Paving (6" + 2") Roads & Parking	21,000	SY	10.00	210,000	120,000
6.	Miscellaneous Concrete Paving	4,000	SF	2.50	10,000	5,000
7.	Storm Drainage	--	LS	--	50,000	38,000
8.	Water Service	--	LS	--	70,000	50,000
9.	Sanitary Sewer	--	LS	--	50,000	40,000
10.	General Site Electrical Service	--	LS	--	50,000	40,000

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL PROJECT COST	PHASE I COST
11.	Site Lighting Road and Parking area (GA Power)	100	EA	500	50,000	36,000
12.	Landscape Development	--	LS	--	50,000	20,000
13.	General Grassing	260,000	SF	.05	13,000	10,000
14.	Athletic Fields					
	Tee-Ball & Pee Wee (120')	2	EA	8,000	16,000	16,000
	Minor/Major (200')	1	EA	15,000	15,000	15,000
	Pony/Softball (275')	1	EA	16,500	16,500	16,500
	Softball/Baseball (300')	1	EA	18,500	18,500	18,500
15.	Athletic Field Irrigation	--	LS	--	50,000	50,000
16.	Athletic Field Lighting	5	EA	35,000	175,000	175,000
17.	Tennis Courts	4	EA	18,000	72,000	36,000
18.	Multi-purpose Court	1	EA	9,500	9,500	9,500
19.	Children's Playground (1-6 yrs.& up)	1	EA	25,000	25,000	10,000
20.	Apparatus Playground (6 yrs.& up)	1	EA	25,000	25,000	7,000

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL PROJECT COST	PHASE I COST
21.	Picnic Areas					
	Large Shelter with Restrooms	2	EA	25,000	50,000	25,000
	Large Shelter	3	EA	12,000	36,000	24,000
	Table Shelter	5	EA	1,500	7,500	4,500
**	Picnic Tables	25	EA	600	15,000	10,800
**	Charcoal Grills	20	EA	200	4,000	3,000
22.**	Trash Receptacles	50	EA	400	20,000	12,000
23.	Drinking Fountains	10	EA	1,500	15,000	7,500
24.	Bridge Culvert	1	EA	50,000	50,000	50,000
25.	Road/Security Gate	1	EA	2,000	2,000	2,000
26.	Site Signs & Graphics	--	LS	--	20,000	15,000
27.	Trails	10,000	LF	10.00	100,000	60,000
28.	Boardwalks	4,000	LF	40.00	160,000	12,000
29.	Wood Decks	4,000	SF	10.00	40,000	10,000
30.	Concession Stand (Concessions, Restrooms, Maintenance Storage)	3,500	SF	43.00	150,500	150,500
31.	Maintenance Building	1,000	SF	20.00	20,000	--

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL PROJECT COST	PHASE I COST
32.	Community Center Building (meeting rooms, gym, offices, restrooms)	13,000	SF	55.00	715,000	--
33.	Outdoor Swimming Pool	--	LS	--	500,000	--
34.	Miscellaneous Site Development	--	LS	--	60,000	30,000
35.	Sub-Total				$3,303,500	$1,391,800
36.	General Conditions (5% of Subtotal)				165,175	69,590
37.	Project Contingency (15% of Subtotal)				449,525	208,770
38.	Total Cost Estimate				*$3,964,200	*$1,670,160

* Estimated Costs in 1989 Dollars
** Purchased by annual operations budget ($ 39,000) ($ 25,800)

Appendix

atlanta testing & engineering

REPORT OF

PRELIMINARY SEISMIC EXPLORATION

PROPOSED GWINNETT COUNTY PARK

JIMMY CARTER/BRITT ROAD TRACT

GWINNETT COUNTY, GEORGIA

JOB NO. 7840, REPORT NO. 2060

atlanta testing
& engineering
geotechnical & material engineers

January 21, 1988

Hayes, James & Associates
P. O. Box 1077
Lawrenceville, Georgia 30246

Attention: Mr. Steve Davis

Re: **Preliminary Seismic Exploration**
Proposed Gwinnett County Park
Jimmy Carter/Britt Road Tract
Gwinnett County, Georgia
Job No. 7840, Report No. 2060

Gentlemen:

Atlanta Testing & Engineering has completed a preliminary seismic survey of the approximate 50-acre tract on Britt Road just west of Jimmy Carter Boulevard in Gwinnett County, Georgia. The exploration was performed to obtain a general assessment of rock levels and potential excavation difficulty along the higher elevation portions of the site. Contained in this report is a brief description of our understanding of the available development information, the results of the seismic exploration, and our preliminary conclusions and recommendations regarding excavation difficulty and site development.

SUMMARY

Below is a summary of our findings and recommendations regarding this site. More detailed discussions are contained in the text of this report.

1. It appears that the site can be developed without major excavation difficulties, except for the northern knoll.

2. Partially weathered rock was indicated at a depth of approximately four feet on the northern knoll with hard rock indicated at 14 to 31 feet. Elsewhere the depth to rock indicated by the seismic traverses was quite deep.

3. Several rock outcrops are in and along the creek channel to the north, and boulders were observed in the central portion of the site.

PRELIMINARY DESIGN INFORMATION

No specific development plans are available at this time. However, we understand from conversations with the civil engineer that the site may be developed for a Gwinnett County park. The very preliminary mass grading concept is to excavate the extreme northern knoll to approximate Elevation 936 with excavation on the other main ridge lines extending to about Elevation 955. Proposed utility locations and depths are unknown at this time. Access to the site will be provided from Britt Road; thus a bridge or culvert will need to be constructed to accommodate Lucky Shoals Creek.

FIELD EXPLORATION

The field exploration included a visual site reconnaissance by a registered geologist and the performance of 11 seismic traverses. Several traverse lengths were chosen for this study; dependent on the anticipated cut in the specific area explored by each traverse. Traverse lengths of 90, 120, or 150 feet were selected; providing subsurface information to depths of about 30, 40, and 50 feet, respectively. Both the site reconnaissance and traverses were concentrated in higher topographic portions of the site where excavation is expected to be greatest.

The seismic traverse locations were established in the field by utilizing the provided apparent aerial topographic site plan and referencing land features. Due to the methods used in layout, the traverse locations indicated on the Site Plan in the Appendix to this report should be considered approximate. Also contained in the Appendix are seismic data summary sheets presenting the results of the exploration and a brief description of our procedures.

In the seismic data interpretation, we divide the subsurface materials into three zones. The upper soil overburden generally has velocities of 3,000 feet per second (fps) or less. On the data sheets, the soil overburden is subdivided into low to very high consistency. Between the soil overburden and underlying bedrock is a transitional zone. This transition zone may consist of relatively uniform partially weathered rock; or may be an irregular zone of hard soils, partially weathered rock, discontinuous rock layers, and boulders. These materials generally exhibit velocities between 3,000 and 4,500 fps. On the data sheet, these materials are generally termed partially weathered rock. Hard rock is defined as material exhibiting velocities greater than 4,500 fps, with the rock usually becoming harder and more massive as velocities increase. Rock which displays velocities on the lower end of the rock velocity range usually is more fractured or weathered.

To interpret the seismic information, the average subsurface conditions beneath the traverse are considered. Therefore, conditions at any one point beneath the traverse may not be exactly as indicated on the data sheet. Also, data interpretation becomes more complex when discontinuous rock layers or boulders are present within the soil overburden and transition zone. It is not possible to distinguish between discontinuous rock layers or boulders, and their size or depth beneath the traverse cannot be discerned. In addition, it is sometimes hard to differentiate a steeply sloping rock surface from discontinuous rock layers, particularly deep within the depth explored.

SITE AND SUBSURFACE CONDITIONS

SITE DESCRIPTION

The approximate 50-acre site is located on Britt Road west of its intersection with Jimmy Carter Boulevard in Gwinnett County, Georgia. Britt Road is the northern property boundary with a transmission line easement forming most of the east property line (there is a small out-parcel extending into the site about midway along the east property line). Lucky Shoals Creek flows adjacent to Britt Road and exits the site to the northeast. Another creek flows along the southern property line. This creek merges with Lucky Shoals Creek to the east of the site. There are three homes bordering the site to the southwest with the remaining portion of the western boundary fronted by undeveloped property.

This site basically consists of two prominent ridges radiating to the north and east from the southwest portion of the site. The northernmost portion of the north trending ridge line is a distinct, nearly separate knoll. The highest elevation on site is at the intersection of the two ridge lines to the southwest, approximate Elevation 1004. The east/west ridge line crest elevations range from 1,004 to 974. Most of the north-trending ridge line crest is at about Elevation 986 up to Elevation 1004 in the south. The crest of the independent northern knoll is near Elevation 968.

Surface drainage of the site is handled by numerous wet weather drainage features along the ridge flanks. These drainage features flow to Lucky Shoals Creek to the north and northeast, and the smaller creek to the south. The northeast corner of the site appears to be floodplain of Lucky Shoals Creek as does the small outparcel. Lucky Shoals Creek was carrying a fairly large volume of water during the time of this exploration. Lakes to the west of the property feed this creek. The smaller creek was not observed during this exploration.

The site is generally covered with second growth pine trees with some hardwoods along the flanks of the ridge lines, particularly near the drainage features. Underbrush thickness is generally moderate. There is no evidence of habitation on the site; however, a recently cleared dirt road cuts across the property along the crest of the east/west ridge line.

Rock was observed at two locations on the property. There is a large rock outcrop along Lucky Shoal Creek at the extreme northwest corner of the property. The outcrop is approximately 400 feet from Britt Road down the west property line where the creek bends and exits the site. Lucky Shoal Creek flows over the rock and perhaps 50 or more feet of the eastern creek embankment is exposed rock. Boulders were also observed on the crest of the north trending ridge line. Both the rock outcrop and boulders observed appear to be gneiss in composition and their approximate locations are indicated on the Site Plan to this report.

AREA GEOLOGY

This site lies within Georgia's Southern Piedmont Province. According to published geologic literature, there may be two rock formations underlying the site. All of

the site but the northern knoll appears to be underlain by the Wahoo Creek Formation. The northern knoll may be underlain by the Clairmont Formation. Both of these formations are units of the Atlanta Group of rocks and consist predominately of gneiss with minor amounts of amphibolite. The Wahoo Creek Formation also contains some interlayering of mica schist. Gneiss generally weathers leaving resistant boulders within the soil overburden and transition zone. Some boulders can be quite massive in size. Usually the transition zone is comprised of more uniform partially weathered rock which increases in hardness with depth. Resistant boulders can exist at any depth and vary in sizes; some can be quite massive. Also characteristic of gneiss are resistant narrow rock ridges, pinnacles, and areas of *nested* boulders. *Nested* boulders are generally boulders that are piled or concentrated in an area. From past experience in the Piedmont area, where there are contacts between rock formations, rock outcrops sometimes exist. This may be the situation on this site in reference to the rock outcrop in the northwest corner.

SUBSURFACE CONDITIONS

The majority of the traverses performed during this exploration did not indicate the existence of rock within the assessed depths. The only rock indicated was in the central and northern portions of the site. To the extreme north, on the knoll, partially weathered rock was indicated at a depth of four feet transitioning to hard rock at 14 feet on the west flank. The partially weathered rock appears to grade to hard rock at 31 feet on the crest. Thus, the top of rock is at about Elevation 930 ±. However, the materials from 4 to 14 feet on the west flank exhibit velocities of 4,500 fps. These materials could be partially weathered rock or more resistant rock that is fractured.

The only other traverse (Traverse 4) to indicate the existence of hard rock was located about midpoint on the north-trending ridge line adjacent to the surficial boulders. Rock was indicated at a depth of 50 feet in this area. This traverse indicated the existence of nested boulders and/or discontinuous rock layers within the soil overburden. Several other traverses also indicated the existence of boulders and rock layers with the soil overburden.

This discussion of subsurface conditions has been relatively general and brief. Please refer to the seismic traverse data sheets in the Appendix for more specific information at the individual traverse locations.

CONCLUSIONS AND RECOMMENDATIONS

BASIS FOR ASSESSMENT

This report has been prepared for the exclusive use of Hayes, James and Associates for specific application to the referenced site using generally accepted standards of geotechnical engineering and engineering geology practice in the State of Georgia. No other warranty is expressed or implied.

These preliminary conclusions are based on the data obtained from this preliminary seismic exploration, the limited development information available, assumptions made

regarding grading of the site, and our past experience. Subsurface conditions will likely vary intermediate of the widely spaced traverse locations due to the normal variability of subsurface conditions in this geologic region.

This exploration is intended to provide only a general assessment of the site for development. A final subsurface exploration will be required to provide more specific site grading or design recommendations. After the development concept and plans are more complete, we will be pleased to review the seismic data with this new information and then formulate a more comprehensive subsurface exploration program.

GENERAL ASSESSMENTS

It appears that the site can be developed without major excavation difficulties, except for the northern knoll. The east/west ridge line can probably be excavated to the desired 955 elevation without encountering massive rock; however, some boulders and discontinuous rock layers do exist and will pose some problems. On the northern knoll, ripping will be required very near the ground surface where partially weathered rock was assessed to exist. It appears that across the crest the materials can be ripped approaching 30 feet deep while more difficulty will probably be encountered on the west flank. In this area, some use of pneumatic tools or blasting could be needed to excavate to Elevation 936.

SITE GRADING CONSIDERATIONS

In general, most of the materials assessed by the traverses can be excavated using conventional grading equipment such as pusher-assisted scrapers and moderate size front-end loaders and backhoes. Where partially weathered rock or discontinuous rock exists, heavy earth-moving equipment such as a Caterpillar D8K equipped with a single-tooth ripper, or a Caterpillar 977 front-end loader will be required to dislodge these materials during mass grading. To the north and northwest where extensive thicknesses of partially weathered rock and continuous rock will be encountered, blasting and/or the use of pneumatic tools should be anticipated.

Utility installation should be fairly routine except where partially weathered rock, boulders, discontinuous rock layers, and continuous rock exist. In areas such as to the north where mass grading will extend into these materials, installation of utilities or foundations will require heavy construction equipment and blasting. Depending on final usage of this area of the site, it may be advisable to overexcavate during mass grading to below building foundations and under-floor utilities to help minimize trench rock excavation. It will also be prudent to minimize deep utility installation such as storm and sanitary sewer lines in this area. We recommend that a heavy crawler-mounted backhoe such as a Caterpillar 215 or larger be used during utility line installation since boulders or discontinuous rock layers are known to exist randomly across the site. These larger backhoes have considerably more success in removing discontinuous rock layers and boulders than lighter rubber-tired equipment.

Although no soil samples were obtained during this study, we expect that most of the overburden soils can be used for structural fill, although some moisture content

adjustment will probably be needed to achieve a high degree of compaction. Materials that require ripping and blasting are not normally placed beneath structures. Boulders need to be selectively raked from the excavated soils prior to its use as fill. Effective use of blast rock, partially weathered rock, boulders, and topsoil, can be addressed when a grading plan has been generated and more subsurface information has been obtained. Typically, these materials can be used in deep fills beneath pavements or in nonstructural areas.

Piping or a bridge over Lucky Shoal Creek will be necessary for access on to the site. If the low-lying, extreme northeast portion of the site is to be filled, Lucky Shoal Creek will require piping. Some form of subgrade stabilization in these areas will probably be necessary. Most of the wet-weather drainage features observed on the site did not appear to contain significant amounts of alluvial material. However, subsurface information will need to be obtained in these low-lying areas before specific comments regarding fill placement in these areas can be made.

FUTURE STUDY

After the preliminary grading plan is developed, a final subsurface exploration should be performed. At that time, it may be advantageous to obtain additional subsurface information on the northern knoll to further assess rock levels in this area. Such information will also be required in other proposed deep cut areas such as utility lines. This additional subsurface exploration will help to enable us to further evaluate rock levels, and soil conditions in the floodplain and drainage features so that more detailed recommendations for site grading can be made. Also, groundwater levels should be obtained; groundwater within proposed excavation depths will create additional problems.

ACKNOWLEDGMENT

Atlanta Testing & Engineering has appreciated the opportunity to be of service to you by performing this preliminary seismic exploration. Please feel free to contact us if you have any questions concerning this report. We hope that this preliminary information will help you in assessing this property for development. We remain available to provide further consultation and services if the project progresses.

Respectfully submitted,

ATLANTA TESTING & ENGINEERING

Deborah Kiel, P.G.
Engineering Geologist
Reg. Ga. 642

Richard Mockridge, P.E.
Senior Geotechnical Engineer
Reg. Ga. 12692

DK/RM/maa
Enclosure

APPENDIX

SITE PLAN

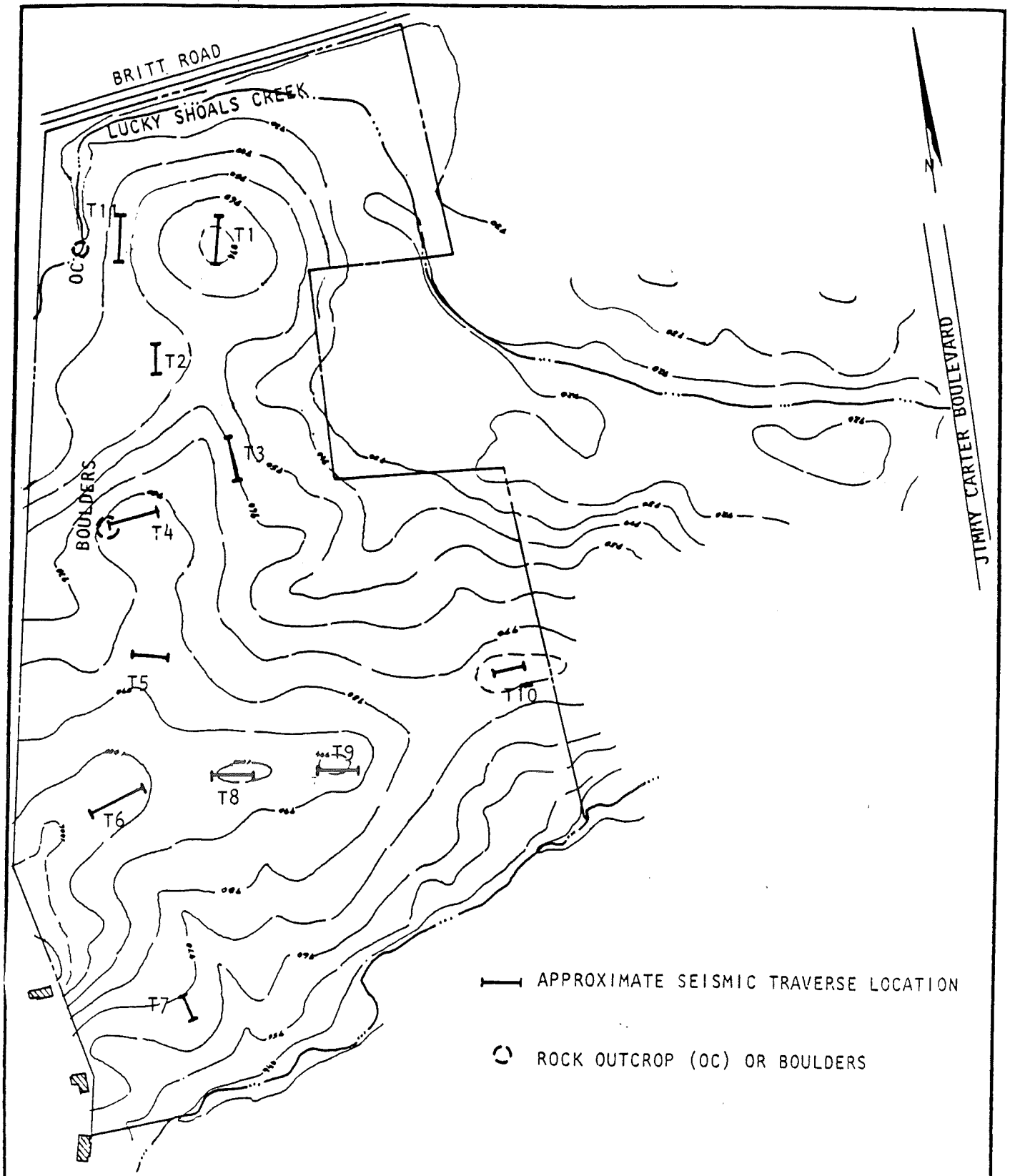
SEISMIC TRAVERSE DATA SHEETS

PROCEDURES

CONSULTING ENGINEERS COUNCIL OF GEORGIA GUIDELINES

ASFE - INFORMATION ABOUT GEOTECHNICAL ENGINEERING REPORT

AP 13055



REPORT=2060	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO	PLATE NO
	1/11/88	KP	DK	1"=200'	7840	1

a.t. & e. consultants inc.
geotechnical and testing engineers
atlanta, greenville, charlotte,
tampa, jacksonville, lakeland, marco island

SEISMIC TRAVERSE LOCATION PLAN
JIMMY CARTER BOULEVARD/BRITT ROAD TRACT
GWINNETT COUNTY, GEORGIA

ATE 108

SEISMIC TRAVERSE DATA SHEET
JIMMY CARTER/BRITT ROAD TRACT
JOB NO. 7840, REPORT NO. 2060

Traverse No.	Traverse Length(ft.)	Depth (ft.) From	Depth (ft.) To	Velocity (fps)	Inferred Soil and Rock Description
T-1	150	0	4	1,200	Moderate consistency soil
		4	31	3,000	Very high consistency soil to partially weathered rock
		31	31+	9,300	Rock
T-2	90	0	9	1,300	Moderate consistency soil
		9	30	1,600	Moderate consistency soil with possible boulders or rock layers
T-3	120	0	40	1,600	Moderate consistency soil
T-4	150	0	15	1,400	Moderate consistency soil with boulders
		15	50	1,900	Moderately high consistency soil
		50	50+	6,000	Rock
	Note: Area of nested boulders at west end of traverse				
T-5	120	0	40	1,500	Moderate consistency soil
T-6	150	0	20	1,600	Moderate consistency soil
		20	50	2,400	High consistency soil with boulders
T-7	90	0	5	1,100	Moderate consistency soil
		5	14	1,500	Mc lerate consistency soil
		14	30	1,800	Moderately high consistency soil
T-8	120	0	40	1,600	Moderate consistency soil with boulders

SEISMIC TRAVERSE DATA SHEET (CONT'D.)
JIMMY CARTER/BRITT ROAD TRACT
JOB NO. 7840, REPORT NO. 2060

Traverse No.	Traverse Length(ft.)	Depth (ft.) From	Depth (ft.) To	Velocity (fps)	Inferred Soil and Rock Description
T-9	120	0	13	1,200	Moderate consistency soil with boulders or rock layers
		13	40	1,600	Moderate consistency soil
T-10	90	0	30	1,300	Moderate consistency soil with boulders
T-11	120	0	4	1,400	Moderate consistency soil
		4	14	4,500	Partially weathered rock or fractured rock
		14	14+	16,000	Rock

SEISMIC EXPLORATION

The basic principle of the refraction seismic method is that the velocity of acoustic compression ("p") waves through any material is an indication of the density or degree of hardness. A traverse is performed by placing geophones (sensing devices) at various intervals along the length of the traverse. Compression waves are induced at each end and at the center of the traverse by striking a steel plate, resting on the ground surface, with a hammer. The time required for a compression wave to reach the geophones is measured on a cathode ray tube of the seismograph, and the resulting data are plotted as a time versus distance graph. The slope of this time-distance graph indicates the velocity of the wave through the material. The depths to higher velocity strata are determined from the locations of the breaks in the velocity plots.

Since the velocity of the compression wave through a material is only an index to other properties, the data generated from the seismic traverse must be correlated with subsurface data from borings and/or test pits. It should be noted that discontinuous layers or boulders of hard rock are often not revealed by the seismic traverses. Also, since the velocities measured along the traverses are actually averages over the distance traveled from the energy source to the geophones, the depth to a particular zone at any location may not be exactly as indicated.

IMPORTANT INFORMATION
ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

More construction problems are caused by site subsurface conditions than any other factor. As troublesome as subsurface problems can be, their frequency and extent have been lessened considerably in recent years, thanks to the Association of Soil and Foundation Engineers (ASFE).

When ASFE was founded in 1969, subsurface problems were frequently being resolved through lawsuits. In fact, the situation had grown to such alarming proportions that consulting geotechnical engineers had the worst professional liability record of all design professionals. By 1980, *ASFE-member consulting soil and foundation engineers had the best professional liability record.* This dramatic turn-about can be attributed directly to client acceptance of problem-solving programs and materials developed by ASFE for its members' application. *This acceptance was gained because clients perceived the ASFE approach to be in their own best interests.* Disputes benefit only those who earn their living from others' disagreements.

The following suggestions and observations are offered to help you reduce the geotechnical-related delays, cost-overruns and other costly headaches that can occur during a construction project.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A geotechnical engineering report is based on a subsurface exploration plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and configuration; the location of the structure on the site and its orientation; physical concomitants such as access roads, parking lots, and underground utilities, and the level of additional risk which the client assumed by virtue of limitations imposed upon the exploratory program. To help avoid costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of his report may affect his recommendations.

Unless your consulting geotechnical engineer indicates otherwise, *your geotechnical engineering report should not be used:*

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified,
- when there is a change of ownership, or
- for application to an adjacent site.

A geotechnical engineer cannot accept responsibility for problems which may occur if he is not consulted after factors considered in his report have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by the geotechnical engineer who then renders an opinion about overall subsurface conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those opined to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. For example, the actual interface between materials may be far more gradual or abrupt than the report indicates, and actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their geotechnical consultant through the construction stage,* to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a geotechnical engineering report is based on conditions which existed at the time of subsurface exploration, *construction decisions should not be based on a geotechnical engineering report whose adequacy may have been affected by time.* Speak with the geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid these problems, the geotechnical engineer should be retained to work with other appropriate design professionals to explain relevant geotechnical findings and to review the adequacy

Consulting Engineers Council of Georgia, Inc.

Geotechnical Engineering/Technician Categories

To achieve uniformity of personnel description the Geotechnical Committee has suggested the following categories of personnel for Engineers and Technicians. The CEC/G Board of Directors has approved these descriptions for publication.

ENGINEERING CATEGORIES

1. ENGINEERING AIDE - Student in accredited engineering school; works under direction of graduate engineers in performing office and field services including routine calculations, boring layout, auger and penetrometer tests, pile inspections, etc.

2. STAFF ENGINEER - Graduate of accredited engineering school; performs Geotechnical Engineering services under direction of Registered Engineer.

3. REGISTERED ENGINEER - Graduate engineer with P.E. license who has more than three years experience in Geotechnical Engineering practice; performs wide range Geotechnical Engineering services and directs other engineers or technicians.

4. SENIOR REGISTERED ENGINEER - Professional engineer who has practiced as a P.E. in Geotechnical Engineering for more than five years, with a total of at least eight years overall experience as a consulting engineer.

5. SENIOR GEOTECHNICAL CONSULTANT - Professional engineer who has practiced as a P.E. in Geotechnical Engineering for more than 12 years.

TECHNICIAN CATEGORIES

1. LEVEL I - Performs routine field and laboratory tests under direct supervision of a Geotechnical Engineer; may report the results of tests but may not independently evaluate the results nor initiate corrective actions. Examples of services provided are field density testing of non-critical fills and backfills, performance of laboratory compaction tests, etc.

2. LEVEL II - Qualified by training and experience to perform a wide range of inspections and tests including compaction tests, field density tests, etc.; may evaluate results and suggest corrective action under direction of Geotechnical Engineer. Must have at least two years of experience and/or technical education. Examples of services provided would be field density testing of structural fills, limited evaluation of fill placement and compaction procedures, performance of laboratory soil tests with limited supervision.

3. LEVEL III - Qualified by training and experience to perform a wide range of evaluations, tests and delegated contract administrative functions such as monitoring of grading operations, supervision of other quality control technicians, etc. Reports to Geotechnical Engineer for judgements of an engineering nature. Must have at least five years of experience and/or technical education. Examples of services provided would be independent monitoring of fill placement and compaction operations on structural or otherwise critical fills, evaluation of undercutting, recommendations regarding corrections of substandard work, with limited guidance by Geotechnical Engineer.

4. LEVEL IV - Qualified by training and experience to perform a wide range of tests, inspections, contact administrative functions and delegated quality control supervising functions with the authority to act in the name of the Geotechnical Engineer in matters for which engineering precedent exists. Capable of providing field judgement on foundation installations, major earthwork projects, etc. Must have at least 10 years of experience and/or technical education. Examples of services provided would be administrative direction of other technicians on major projects, providing of routine technical judgements with respect to foundations, earthwork, etc.

of their plans and specifications relative to geotechnical issues.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE ENGINEERING REPORT

Final boring logs are developed by the geotechnical engineer based upon his interpretation of field logs (assembled by site personnel) and laboratory evaluation of field samples. Only final boring logs customarily are included in geotechnical engineering reports. *These logs should not under any circumstances be redrawn* for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpretating the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, *give contractors ready access to the complete geotechnical engineering report*. Those who do not provide such access may proceed under the *mistaken* impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgement and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical consultants. To help prevent this problem, geotechnical engineers have developed model clauses for use in written transmittals. These are *not* exculpatory clauses designed to foist the geotechnical engineer's liabilities onto someone else. Rather, they are definitive clauses which identify where the geotechnical engineer's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report, and you are encouraged to read them closely. Your geotechnical engineer will be pleased to give full and frank answers to your questions.

OTHER STEPS YOU CAN TAKE TO REDUCE RISK

Your consulting geotechnical engineer will be pleased to discuss other techniques which can be employed to mitigate risk. In addition, the Association of Soil and Foundation Engineers has developed a variety of materials which may be beneficial. Contact ASFE for a complimentary copy of its publications directory.

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LAW ENVIRONMENTAL, INC.

112 TOWNPARK DRIVE
KENNESAW, GEORGIA 30144-5599
404-421-3400

22 February 1989

Mr. George E. Sellers, Senior Associate
Heery Engineering, Inc.
999 Peachtree Street, NE
Atlanta, Georgia 30367-5401

Dear Mr. Sellers:

Subject: **Wetland Delineation and Verification Report**
Britt Road Community Park Site
Law Environmental Job No. 55-9525

As per your request, Mr. John Vermont and Ms. Carol Burns of Law Environmental visited the Britt Road Community Park site on 26 January 1989 to delineate the jurisdictional wetland boundaries on the subject site. Wetland boundaries were later verified on 2 February 1989 by Mr. Butch Register of the Corps of Engineers (COE) Atlanta Field Office, Savannah District.

To determine the applicability of the Nationwide 26 Permit program (33 CFR 330) to the project site, the watershed acreage and average annual flow was calculated for Lucky Shoals Creek by Mr. Scott Heefner of Law Environmental's Water Resources Program. The following discussion is a summary of our findings and subsequent recommendations.

Background

Based on discussions with you, it is our understanding that Heery Engineering has been contracted by Gwinnett County to provide engineering design and landscape planning for a county park to be established southwest of the intersection of Britt Road and Jimmy Carter Boulevard. Lucky Shoals Creek flows along the northern perimeter of the 68.5-acre site.

Before completing a conceptual park master plan, it is the intent of Heery Engineering to determine the wetland acreage associated with the site and the need for the appropriate COE permits necessary for filling of jurisdictional wetlands.

Findings

Wetlands

Jurisdictional wetlands are defined in 33 CFR Part 328.3(b) and are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered and enforced by the U.S. Army COE. Jurisdictional wetlands were delineated using the routine delineation method as defined in the COE Wetland Manual[1]. This technique uses a multi-parameter approach which requires positive evidence of three criteria:

- Hydrophytic vegetation
- Hydric soils
- Wetland hydrology

Areas exhibiting wetland type characteristics for all three parameters were designated as wetlands (Environmental Laboratory 1987). Wetland boundaries were marked during the field survey using surveyor's flagging tape.

During the delineation, the wetland boundaries were sketched on a two-foot contour topographic map of the project area (scale 1 inch=100 feet). After the COE verification visit, the **approximate** wetland acreage was computed by planimetering the wetland boundaries outlined on the field map. We estimate the extent of jurisdictional wetlands to be 17.5 acres. This acreage constitutes 64% of the floodplain acreage (27.3 acres) located on the project site.

Vegetation and Soils

Overstory vegetation within the Lucky Shoals floodplain consisted of sweetgum (Liquidambar styraciflua), green ash (Fraxinus pennsylvanica), yellow poplar (Lirodendron tulipfera), red maple (Acer rubum), sycamore (Platanus occidentalis) and scattered loblolly pine (Pinus taeda). Mid- and under-story vegetation consisted of privet (Ligustrum spp.), willow (Salix spp.), japanese honeysuckle (Lonicera japonica) and corresponding seedlings of the overstory species. Overstory vegetation associated with upland areas is predominantly loblolly pine. Soils in wetland areas were primarily reddish-brown silty clays with evident mottling and iron concretions, characteristic of hydric conditions.

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[1]Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Watershed Delineation

The watershed acreage and average annual flow (cfs) was determined for five locations located upstream of Jimmy Carter Boulevard on Lucky Shoals Creek (Figure 1). Watershed areas were planimetered from Stone Mountain and Norcross, Georgia 7.5 minute United States Geological Survey Quadrangles. The watershed estimates ranged from 0.88 - 3.79 mi^2 (Table 1) depending on location of measurement.

An average annual flow (cfs) of 1.38 cfs/mi^2 was estimated for the project site using Plate 1 from the USGS publication: Water Resources Investigation 82-557. This flow rate was multiplied by the watershed area associated with each point to obtain average annual flow (cfs) estimates at each location. Average annual flow estimates varied from 1.2 - 5.2 cfs (Table 1), depending on location of measurement.

Watershed acreage and average annual flow calculations indicate that most of the waters and streams on the project site are above the headwaters [33 CFR Part 330.2(b)]. The exception is a small stream section between the mouth of tributary 1 and Jimmy Carter Boulevard where the average annual flow exceeds 5.0 cfs (Figure 1).

Recommendations

The above results indicate that a Nationwide Permit program (33 CFR 330) is applicable to the project site, with the exception of the wetland area located between the mouth of tributary 1 and Jimmy Carter Boulevard (Figure 1). The purpose of the Nationwide Program is to authorize activities that cause only minimal individual and cumulative environmental effects with little, delay or paperwork. Activities authorized under this permit do not require a separate individual Department of the Army permit, provided the work is done as per the plans outlined in the pre-discharge notification and in accordance with the conditions listed in 33 CFR 330.5 (b) (1-14).

The Nationwide Permit 26 [33 CFR Part 330.5 (a) (26)] requires predischarge notification to the COE (33 CFR Part 330.7) for fill requirements of 1.0 to 10.0 acres. Fills less than 1.0 acre do not require PDN; however, we recommend such action in order to alleviate any confusion with the COE. Discharges of 1 to 10 acres of fill material are subject to public review/comment and may require mitigative action or further review if desired by the district COE.

Table 1 Watershed acreage and average annual flow rates for five stream/tributary locations on Lucky Shoals Creek, Gwinnett County, Georgia, 1989.

	Location*	Watershed Area (mi^2)	Average Annual Flow (cfs) (Area x 1.38 cfs/mi^2)**
1	Mouth of Tributary 1	0.88	1.2
2	Mouth of Tributary 2	1.22	1.7
3	Jimmy Carter Boulevard	3.79	5.2
4	Upstream of Tributary 1	2.91	4.0
5	Upstream of Tributary 2	1.51	2.1

* See Figure 1 for locations on the project area.
** USGS Water Resources Investigations 82-557 Plate 1.

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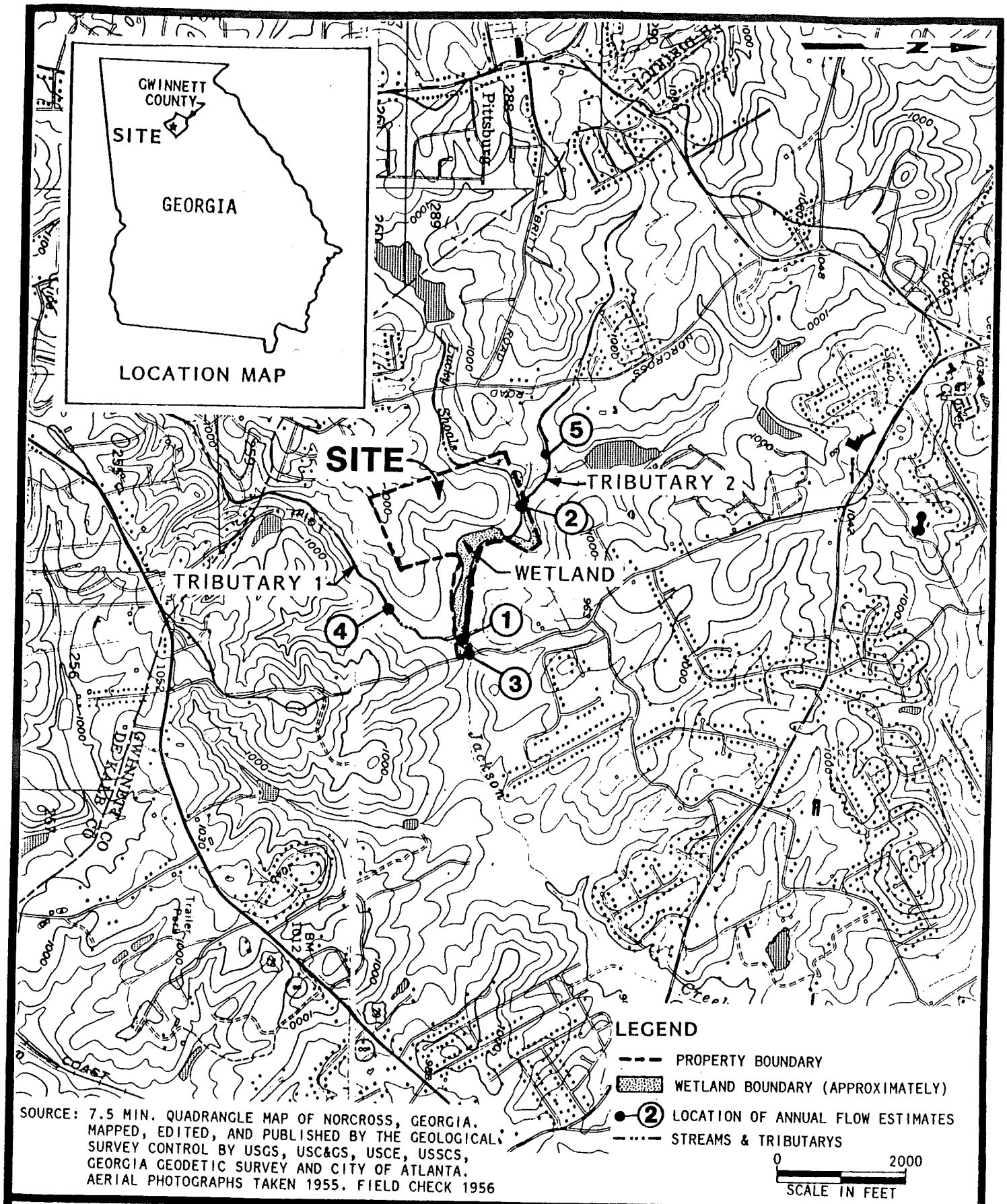


SOURCE: 7.5 MIN. QUADRANGLE MAP OF NORCROSS, GEORGIA. MAPPED, EDITED, AND PUBLISHED BY THE GEOLOGICAL SURVEY CONTROL BY USGS, USC&GS, USCE, USSCS, GEORGIA GEODETIC SURVEY AND CITY OF ATLANTA. AERIAL PHOTOGRAPHS TAKEN 1955. FIELD CHECK 1956

LAW ENVIRONMENTAL INC.

BRITE ROAD COMMUNITY PARK SITE

JOB NO. 55-9525 FIGURE 1

It is entirely appropriate to combine two or more nationwide permits to authorize an activity. For example, a project that involves a fill resulting in up to one acre of impacts above the headwaters, as well as a minor road crossing fill, is authorized under a combination of NWP's 26 and 14 [33 CFR Part 330.5(a) 14] without the requirement for a PDN. Law Environmental recommends the above permit combination if you require an expedient permit process. If you decide to fill between one and ten acres, the permitting process may be more timely and subsequently more costly if the COE requires mitigation and/or alternative site analysis. Whether you will need further assessment will depend upon the COE's review of your final project plans.

If we may be of further assistance to you regarding your project and permit needs, please contact Ms. Carol J. Burns at (404) 399-0832.

Sincerely,

Carol J. Burns
Ecologist

Richard W. Whiteside, Ph.D.
Principal Environmental Scientist

CJB:lc

Enclosure

LAW ENVIRONMENTAL, INC.
112 TOWNPARK DRIVE
KENNESAW, GEORGIA 30144-5599
404-421-3400

22 March 1989

Mr. Steve Osvald
U. S. Army Corps of Engineers
100 W. Oglethorpe
Savannah, GA 31402

Dear Mr. Osvald:

Subject: **Summary of Hydrologic Analysis for the Britt Road Development Site Law Environmental Project No. 55-9525**

On 30 November 1989, Law Environmental was contracted by Heery Engineering to delineate the jurisdictional wetland boundaries and determine the average annual flow rate associated with Lucky Shoals Creek on the Britt Road Community Park site.

On 2 February 1989, Mr. Butch Register visited the Britt Road site to verify jurisdictional wetland boundaries delineated by Law Environmental personnel. At the time of the verification, Law Environmental had not calculated the average annual flow rate for Lucky Shoals Creek. After the verification visit, Mr. Register requested the Savannah COE office to calculate an average annual flow rate for Lucky Shoals Creek. This was calculated to clarify the permit process which would be required if wetlands were to be filled. The subsequent average annual flow results calculated by the Savannah office deviated considerably from Law Environmental's calculated flow rates.

The purpose of this letter is to outline the methods used and present the results of Law Environmental's hydrologic analyses for the Britt Road Development site. The objective of the analysis was to estimate the average annual yield for several locations along Lucky Shoals Creek using available information. No rainfall run-off calculations were performed.

The Britt Road site (68-acres) is located approximately five miles south of Norcross in Gwinnett County, Georgia (Figure 1). Lucky Shoals Creek flows in an easterly direction through the site. The area draining to the creek at Jimmy Carter Boulevard

was planimetered from the U.S. Geological Survey (USGS) 7.5 minute quadrangles "Stone Mountain, Georgia" and "Norcross, Georgia" and was determined to be about 3.79 square miles (mi^2).

Estimates of average annual yield have been made for this region of Georgia by the USGS. These are published in Storage Requirements for Georgia Streams, Water Resources Investigations, Open File Report 82-557. According to data presented in this report, the average annual yield in vicinity of the Britt Road site is about 1.38 cfs/mi^2. The average annual run-off, therefore, is approximately 5.2 cfs at the intersection of Jimmy Carter Boulevard and Lucky Shoals, and $\leq$ 4.0 cfs at locations further upstream (see Table 1 and Figure 1).

According to Mr. Elliotte Russian of the U.S. Corps of Engineers (COE) Savannah District, the Corps uses a different method to estimate average annual yield. It is our understanding that the methodology uses data from USGS stream gaging stations and rainfall data for the area of interest. Using this approach, Mr. Russian apparently estimated a different yield for Lucky Shoals Creek than the USGS (approximately 5.4 cfs).

In order to better understand the approach used by Mr. Russian, Law Environmental identified USGS stream gaging stations in the Norcross area that have similar magnitude drainage areas as Lucky Shoals Creek. The following gaging stations were selected:

Gage No. 02205500 Drainage Area = 2.23 mi^2
Gage No. 02206000 Drainage Area = 0.98 mi^2
Gage No. 02205000 Drainage Area = 1.59 mi^2

The mean annual yield (cfs/mi^2) for these three gages are published in the USGS report cited above and are 1.48, 1.34 and 1.32, respectively.

Based on the information presented above we conclude that an average annual yield of about 1.38 cfs/mi^2 is a reasonable estimate for small drainage area streams in the Norcross, Georgia area.

It is crucial that the discrepancy in the calculated average annual flow rates is resolved in order for Heery Engineering and Gwinnett County to complete their planning. Under the Savannah COE calculation, the site will fall into an individual 404 permitting process, and under Law Environmental's calculations

it could be considered within the Nationwide permit process. We have enclosed the report sent to Heery Engineering and a summary of the methodology and data used by Law Environmental's Water Resources group. We would greatly appreciate your immediate attention on this very important project. Please call if you need any additional information.

Sincerely,

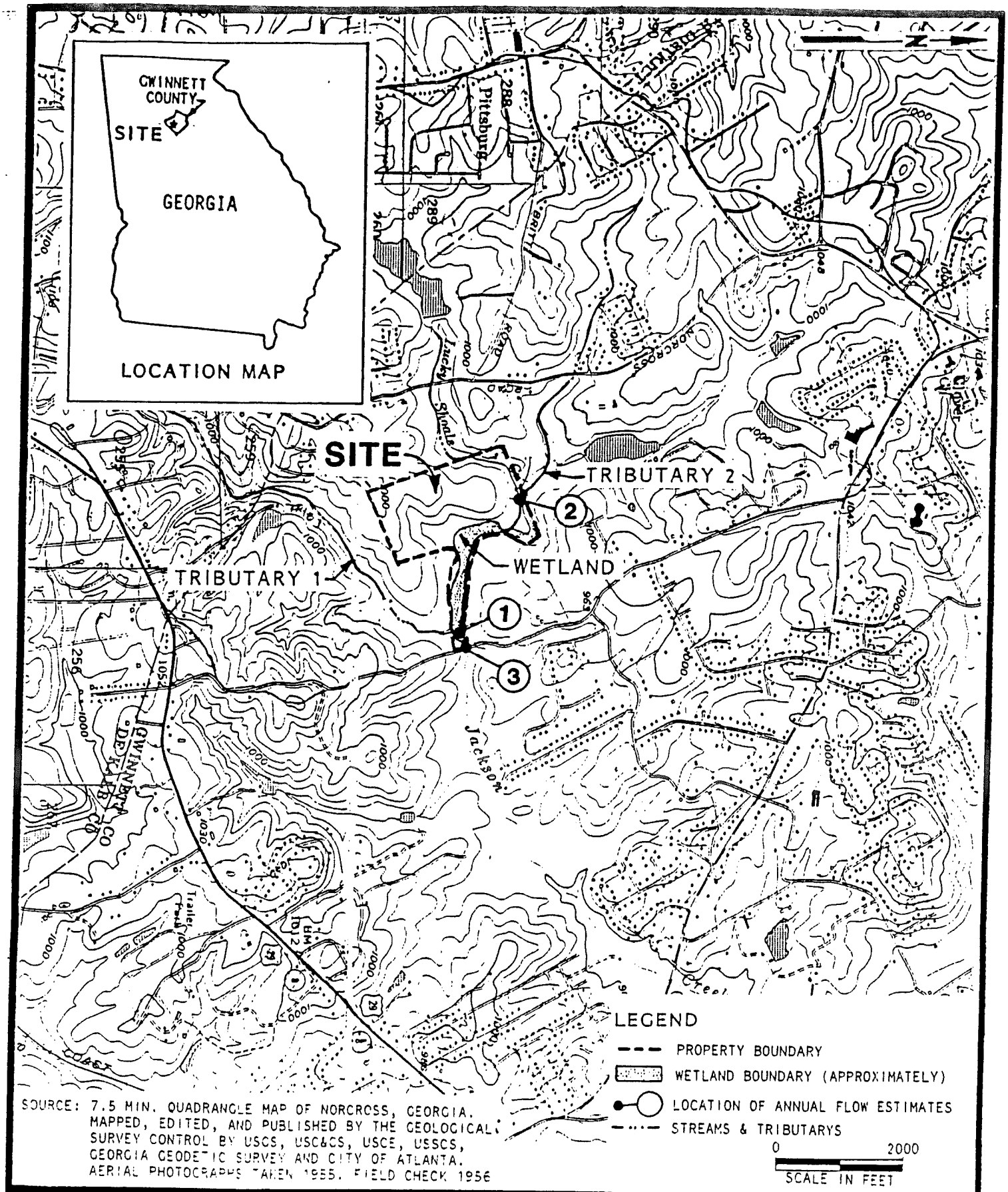
for Carol J. Burns
Ecologist

Richard W. Whiteside, Ph.D.
Principal Environmental Scientist

CJB:lc

cc: G. Sellers - Heery Engineering

Enclosure



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LAW ENVIRONMENTAL INC.

BRITE ROAD COMMUNITY PARK SITE

JOB NO. 88-9828 FIGURE 1

Table 1 Watershed acreage and average annual flow rates for five stream/tributary locations on Lucky Shoals Creek, Gwinnett County, Georgia, 1989.

	Location*	Watershed Area (mi^2)	Average Annual Flow (cfs) (Area x 1.38 cfs/mi^2)**
1	Mouth of Tributary 1	0.88	1.2
2	Mouth of Tributary 2	1.22	1.7
3	Jimmy Carter Boulevard	3.79	5.2
	Upstream of Tributary 1	2.91	4.0
	Upstream of Tributary 2	1.51	2.1

* See Figure 1 for locations on the project area.
** USGS Water Resources Investigations 82-557 Plate 1.

LAW ENVIRONMENTAL, INC.

JOB NO. 55-9525.01 SHEET ____ OF ____

JOB NAME BRITT ROAD

BY BJM DATE 1/31/89

CHECKED BY EJH DATE 2-7-89

ESTIMATION OF AVERAGE ANNUAL FLOW

LAW ENVIRONMENTAL, INC.

JOB NO. 55-95CC.01 SHEET 1 OF 3

JOB NAME PITT ROAD

BY KHM DATE 1/31/89

CHECKED BY [illegible] DATE 2-7-89

SUMMARY OF METHODOLOGY -

Watershed area for Lucky Shoals Creek upstream of Jimmy Carter Boulevard was planimetered from the 7.5 minute U.S.G.S. Quadrangles, Stone Mountain, Georgia and Norcross, Georgia.

An average annual flow rate was estimated using Plate 1 from the U.S.G.S. publication Water Resources Investigation 82-557. This flow rate was multiplied by the watershed area to obtain the estimated average annual flow.

LAW ENVIRONMENTAL, INC.

JOB NO. 55-9525.01 SHEET 2 OF 3

JOB NAME CRITT ROAD

BY CHH DATE 2-7-89

CHECKED BY SNL DATE 2-7-89

DETAILED WATERSHED AREA

SUBAREA	DESCRIPTION	AREA (mi²) TRIAL 1	AREA (mi²) TRIAL 2	AREA (mi²) AVERAGE	AREA (mi²)
1	TRIBUTARY 1	0.8825	0.8744	0.8785	0.5533
2	LUCKY SHEALS CK	0.1918	0.1898	0.1908	0.1917
3	TRIBUTARY 2	1.2056	1.2138	1.2097	1.2164
4	LUCKY SHEALS CK	1.4949	1.5015	1.4982	1.50065
					3.800

Σ SUBAREAS 1-4 = 0.8785 + 0.1908 + 1.2097 + 1.4982 = 3.7772 mi²

FROM PG 2 OF 3 TOTAL WATERSHED AREA = 3.798 mi²

DIFFERENCE IN TOTAL AREA CCT = 3.798 - 3.772 = 0.0205

ADJUST SUBAREA AREAS BY $\frac{\text{AREA X}}{\text{TOTAL AREA}} \times 0.0205$

LAW ENVIRONMENTAL, INC.

JOB NO. 55-9525.01 SHEET 2 OF 3

JOB NAME BRITT ROAD

BY CNM DATE 1/31/89

CHECKED BY CNH DATE 2-7-89

AREA OF THE LUCKY SHOALS CREEK WATERSHED UPSTREAM OF JOHN J. CARTER BLVD. WAS PLANIMETERED FROM THE 7.5 MIN U.S.G.S. QUADS. STONE MOUNTAIN & NORCROSS, GA.

TRIAL	AREA (sq. mi)
1	3.774
2	3.803
3	3.798

AV. AREA OF THE WATERSHED = 3.798 sq. mi.

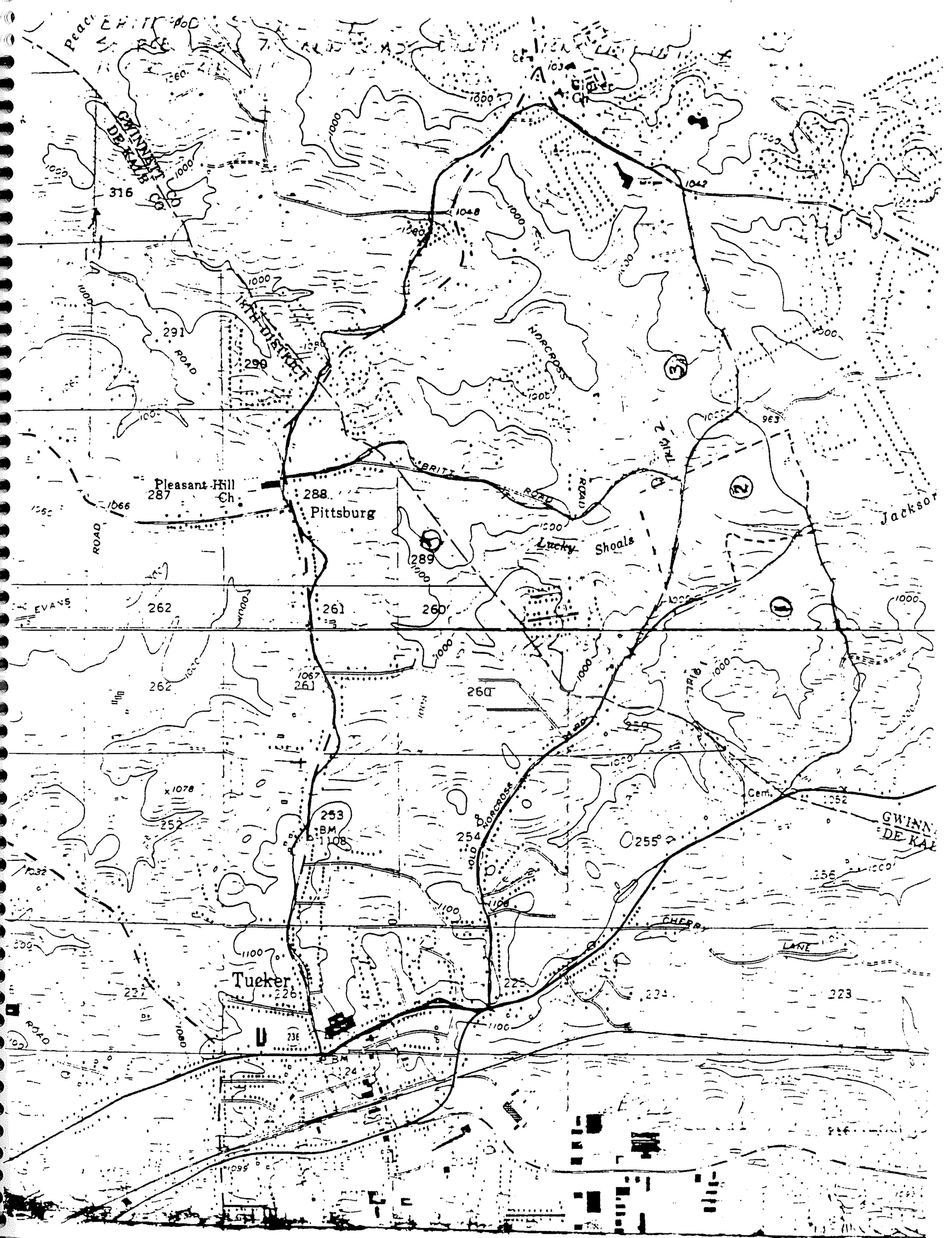
AV. ANNUAL FLOW RATE SOURCE: U.S.G.S. W.R.I 82-557, PLATE 1 ATLANTA

AV ANNUAL FLOW RATE = 1.38 cfs / sq. mi

1.28 cfs / sq. mi.

AV. ANNUAL FLOW

LOCATION	AREA (mi²)	AV. ANNUAL FLOW (cfs) (AREA x 1.38 cfs/sq mi)
MOUTH OF TRIB. 1	0.8833	1.2
MOUTH OF TRIB 2	1.2164	1.7
AT BRITT ROAD	3.798	5.2
JUST U/S TRIB 1	2.9147	4.0
JUST U/S TRIB 2	1.5965	2.1


GWINNETT CO
DE KALB CO
14TH DISTRICT
316
291
ROAD
290
Pleasant Hill
287
Ch
288
Pittsburg
289
BRITT ROAD
NORCROSS ROAD
TRIB 2
Lucky Shoals
Jackson
EVANS
262
261
260
TRIB 1
1067
x 1078
252
253
BM
1108
254
OLD NORCROSS
255
Cem.
1052
GWINN
DE KAL
256
CHERRY
LANE
Tucker
226
227
225
224
223
ROAD

AVERAGE ANNUAL RUNOFF, cfs

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
PUTT ROAD
6625.01
ILLE COPY

Prepared in cooperation with the
GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

SOURCE: WRI 82-557
O.F. Report Plate 1

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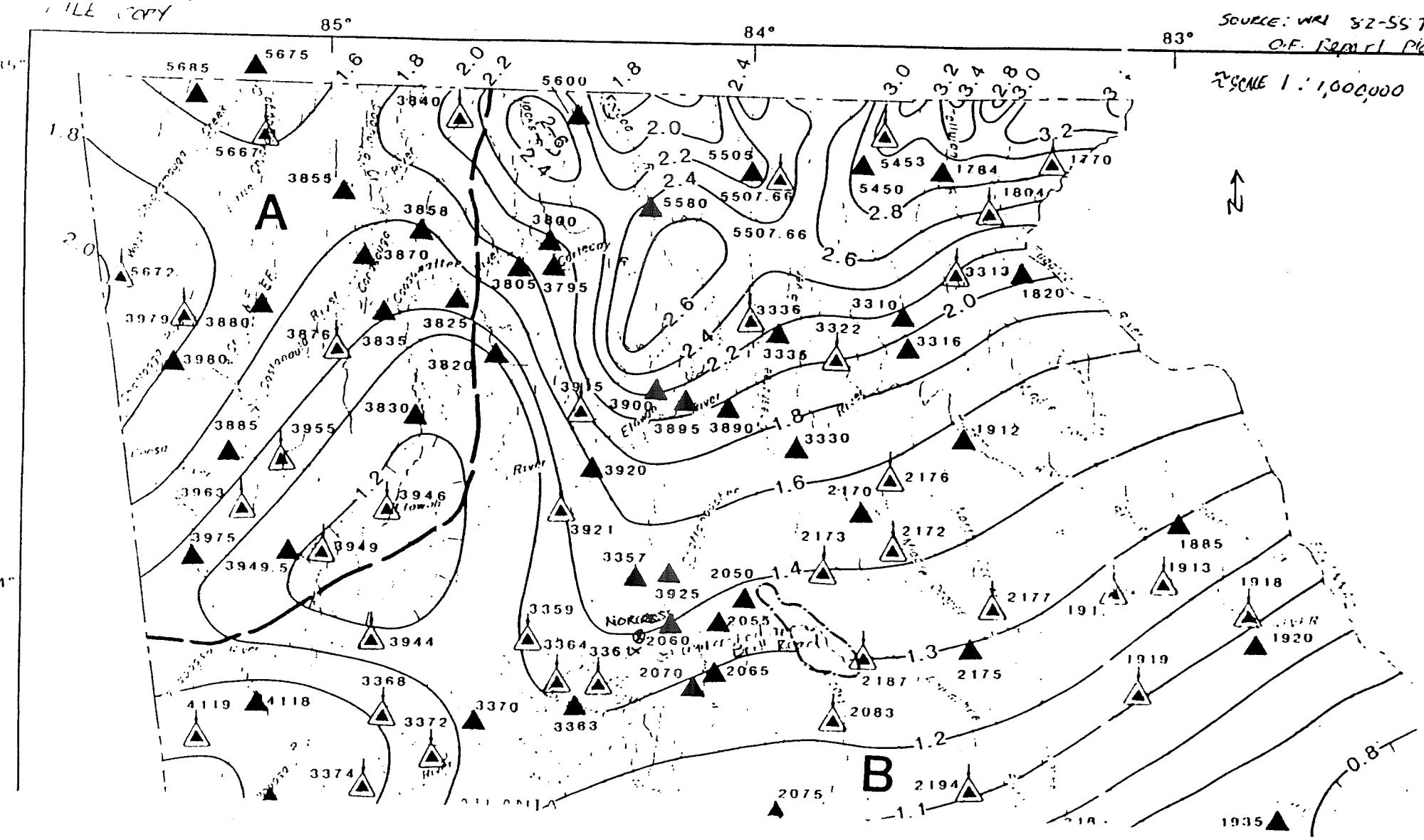

Carol J. Burns

LAW ENVIRONMENTAL INC.

112 TOWNPARK DRIVE
KENNESAW GEORGIA 30144-5599
404-421-3400

22 February 1989

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Atlanta, Georgia 30367-5401

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Law Environmental Job No. 55-9525

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Before completing a conceptual park master plan, it is the intent of Heery Engineering to determine the wetland acreage associated with the site and the need for the appropriate COE permits necessary for filling of jurisdictional wetlands.

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Recommendations

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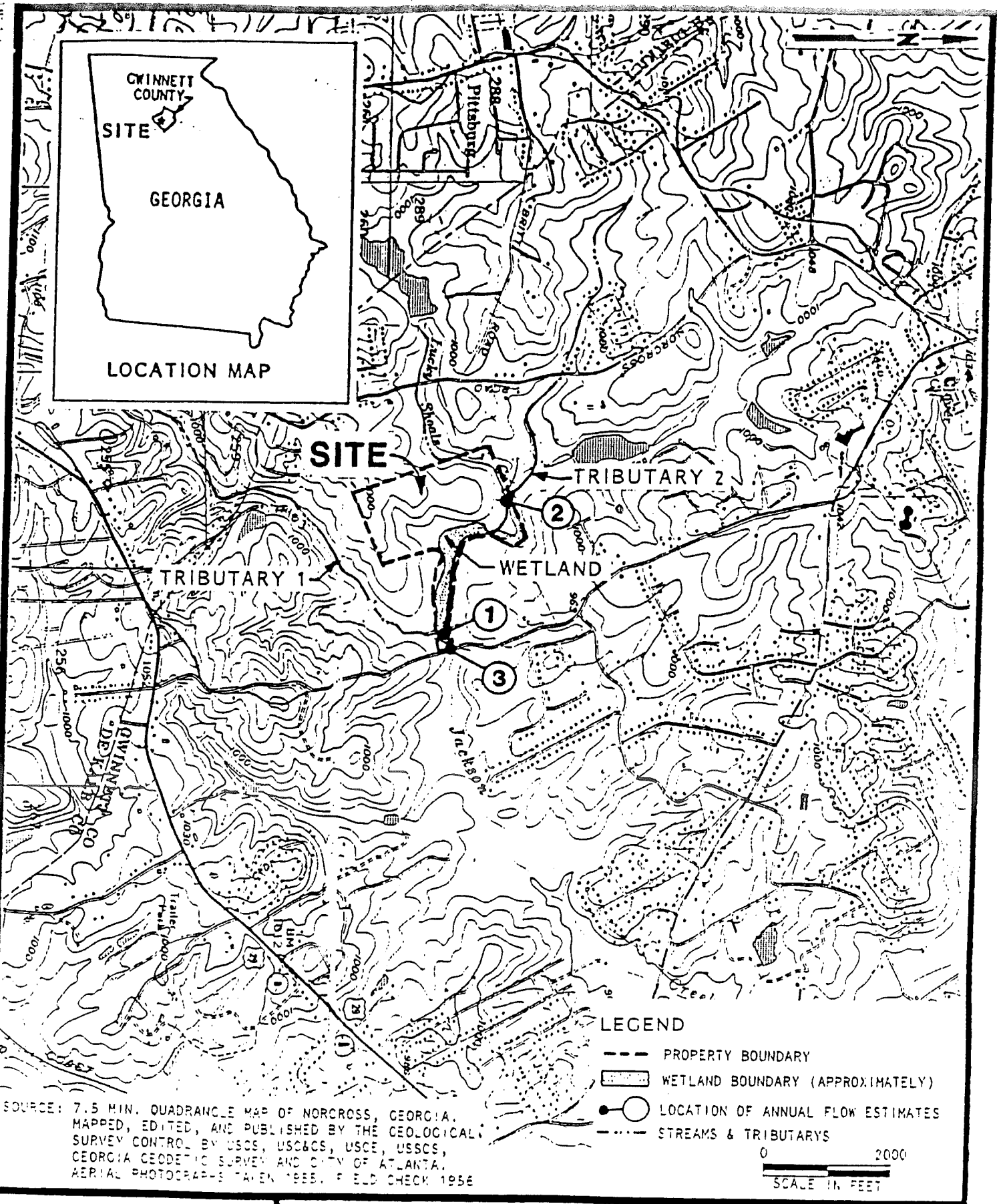

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BRITE ROAD COMMUNITY PARK SITE

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Sincerely,

Carol J. Burns

Carol J. Burns
Ecologist

Richard W. Whiteside

Richard W. Whiteside, Ph.D.
Principal Environmental Scientist

CJB:lc

Enclosure

Georgia Power Company
5195 Minola Drive
Lithonia, Georgia 30058
Telephone 404 987-7475

East Metro
Transmission Department

Georgia Power
the southern electric system

Recd for GP
12/30/88

Homeowners
Contractors

This package of material relates to the use of property through which there are electric transmission line rights-of-way. We hope that it will help you understand the policies and practices of the owners of the Intergrated Transmission System of Georgia.

Georgia Power Company serves as the central clearing house for all requests to use the rights-of way regardless of the owner of the specific transmission line(s).

We would like to be included in your plans as soon as possible.

Sincerely

Glenn Brooks
Operating Services Rep.
East Metro Transmission

PROCEDURES TO OBTAIN ENCROACHMENTS

The Electric Transmission System in Georgia is owned by Georgia Power Co.,Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and the City of Dalton. The Georgia Power Co. originates all encroachments, regardless of the ownership of the individual lines.

All of these organizations recognize the need to cooperate with property owners so that maximum use can be derived from the property without diminishing the Utilities rights.

We would like to be included in development plans as early as possible. This serves two purposes: one, it allows us to begin the encroachment process well in advance of construction. Second, in the early design period, we may be able to suggest solutions to potential problems. This can save time for both the developer and the utility owner.

Each request is reviewed on its own merit. Items that may be approved in one location may not necessarily be approved in another location and vice versa.

Once an encroachment is granted, the work must be done as approved. Any changes must be approved in writing by the utility.

The time needed to process a request for an encroachment varies with the type work desired, the line ownership, and the line voltage. You should allow 90 days for an encroachment application to be processed.

The following steps outline the procedure for granting approval of your request:

1. The property owner should send a letter requesting the encroachment. Enclose with the letter a plat showing what you want to do. Show all poles and towers with their location numbers that are adjacent to your request. If it is a residential development, the following is to be included in Protective Covenants and on all plats including individual lot plats:

"The Electric Transmission Line Easement may not be used for buildings, permanent or temporary, including residences, decks, porches, outbuildings, swimming pools, sanitary facilities, paved parking, or storage of trailers, campers, or boats. Request for an encroachment may be made to Georgia Power Co. East Metro Transmission.

2. When the letter and plat are received, an application form is prepared along with any supporting items. This application is then processed through Georgia Power Company and/or any of the other system owners that might be affected.

3. After the Company's approval, the application will be sent to the property owner for signature. A signed copy must be returned to Georgia Power Company. If the signed copy is not returned within thirty days, the application is automatically voided.

4. Anytime after the signed application has been returned, construction may begin by giving Georgia Power Company two (2) days notice.

5. After completion of the work, an inspection will be conducted to verify that the work was done as approved.

To help in the planning stage of your development, a more detailed explanation of the uses of rights is included as Attachment #2.

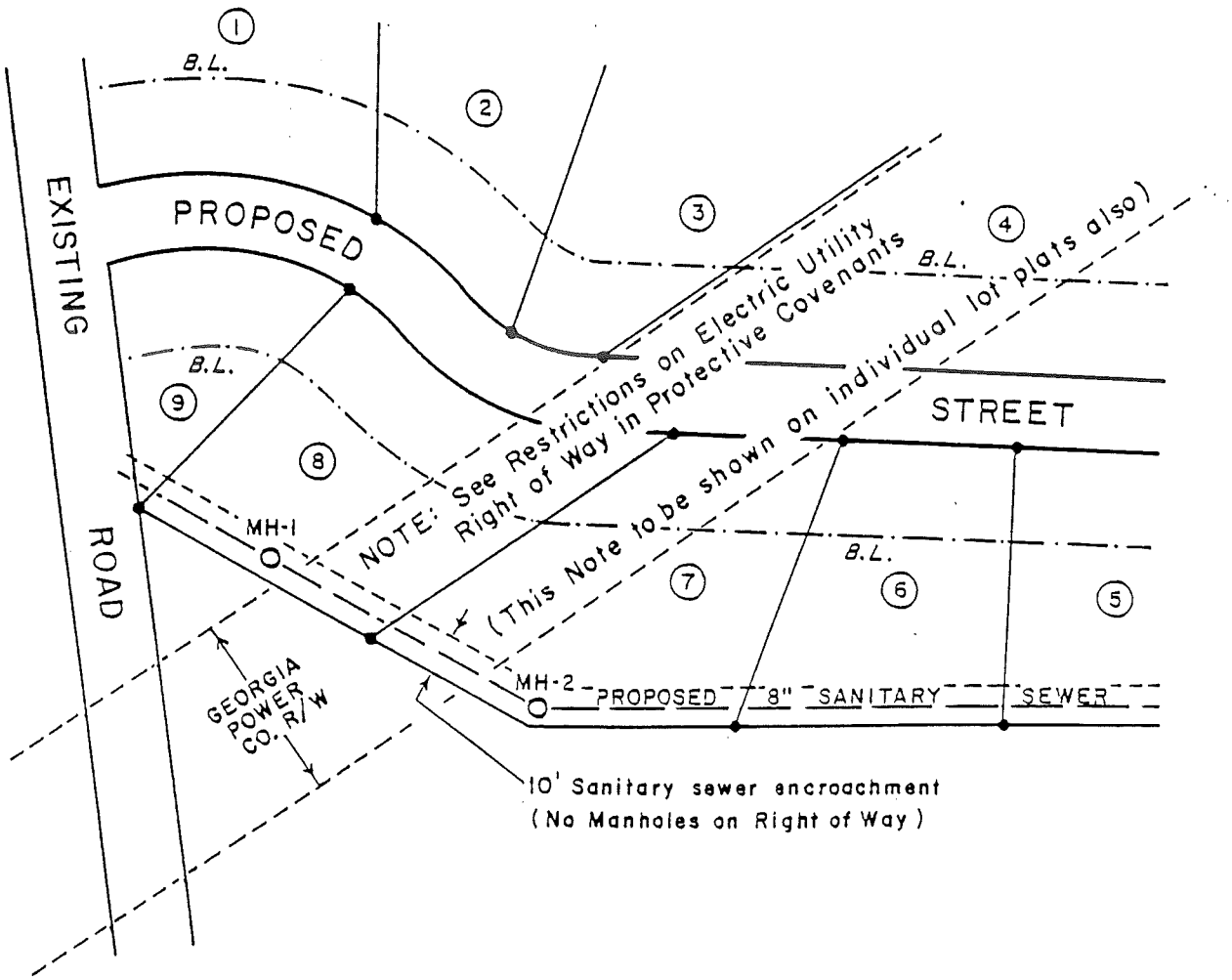
Attachment #3 is a copy of the Encroachment Application form which may be used by the utility.

Attachment #4 is a sample letter that may be used as a guide when making a request for an encroachment.

ATTACHMENT 1

PROTECTIVE COVENANTS:

"The Electric Transmission Line Easement may not be used for buildings, permanent or temporary, including residences, decks, porches, outbuildings, swimming pools, sanitary facilities, paved parking, or storage of trailers, campers, or boats. Yard fences may be erected, provided they do not interfere with travel along the right of way and are a minimum of 10 feet from a structure. Request for an Encroachment (variance) may be made to Georgia Power Company, East Metro Transmission Department, Atlanta, Georgia:



ATTACHMENT #2
SUPPLEMENTAL INFORMATION FOR ENCROACHMENT REQUESTS

Certain uses of electric transmission line rights-of-way, easements or property by non-company parties will not either by their nature or exercise, interfere with the utility's rights so long as certain standards of use are observed. Agricultural, horticultural or grazing activities do not require a written agreement, except where the utility owns the property in fee simple.

PERMISSIBLE USES

Subsequent to a written Encroachment Agreement within the standards outlined below, the following uses and/or encroachments are permitted if:

A. Grading, so long as it does not prevent ingress and egress for operation and maintenance purposes, is permitted if:

Top of cuts are 20 feet from the structure and/or attachments at the ground line and the slope does not exceed 1:1, provided depth of the cut does not exceed 3 feet. If depth of the cut exceeds 3 feet, the distance from the structure or attachments should be 25 feet and the slope should not exceed 3:1. Generally, an area at least 50 feet square should be left undisturbed at the structure locations.

B. Earth fills within the rights are permitted when the fill does not reduce the following vertical clearance of conductors to ground (based on 212 degrees F final sag):

500KV	-	33 feet
230KV	-	27 feet
46KV, 69KV, 115KV	-	25 feet
Telephone Lines	-	20 feet

When the fill is to be placed near structures or attachments, a distance of 25 feet shall be maintained from the toe of the fill and the structure or attachment.

C. Drainage and irrigation ditches are permitted within the rights-of-way so long as they do not prevent ingress and egress for operation and maintenance purposes. Concrete lined canals or ditches which may cause erosion or water pooling around structures or attachments are not allowed.

D. Buried encroachments may be permitted within the rights-of-way provided that operation and maintenance of the transmission facilities are not adversely affected and the following standards are observed:

1. All buried encroachments should cross the rights at least 20 feet from the nearest structure or attachment.
2. Underground construction parallel to the centerline of the easement shall be limited to the outside 5 feet of the rights and to a maximum of 500 feet parallel length provided that it does not interfere with present or future facilities.
3. Manholes should be outside of the rights If this is not practical, then the manhole must be flush with the finished grade and meet highway strength standards.
4. The utility will not be responsible for any damage to these facilities by the utility or any third party.

E. Streets, roads and driveways crossing the rights-of-way should be planned so that their rights will permit any additions to the street such as curbs, gutters, sidewalks, etc. to be constructed at a safe distance from the structures and attachments. When construction is within the 20 foot safe distance, a suitable barrier or curb must be installed by the applicant to protect the utility property. Parallel construction of streets, roads, drives, etc., may be considered only for short distances, with the extreme limit of their length to be 500 feet, and provided that they will not interfere with present or future facilities.

F. Subdivision and development layout plans must include a plan to provide a method for the utility's equipment and material to have access to the rights and specifically to each structure. This may require accessways or larger than normal side yards. A minimum of 20 feet width and a minimum turning radius of 50 feet will meet this requirement.

G. Recreational use of the rights-of-way are permitted so long as they are non-structural in nature and will allow adequate ingress and egress to facilities. These uses would include but not be limited to golf courses, jogging trails and children's play fields.

H. Temporary parking of vehicles in industrial and commercial developments may be allowed whenever it is determined that such parking will not impair or interfere with the utility's access to or use of the rights-of-way nor endanger the safety of persons or property. Applications for parking facilities should observe the following:

1. To ensure that no vehicle parks within 20 feet of any structure or attachment, the application shall include plans for the installation of barriers or curbs.

2. Regardless of any agreement allowing temporary parking, parked vehicles must be moved immediately at the request of the utility if necessary to accommodate the operation, maintenance, construction or reconstruction of utility facilities. The utility reserves the right to use the right of way at a later date for its own facilities.

3. Temporary parking will not include house trailers, campers, sailboats or construction equipment.

4. Because of the considerations that must be given the extra-high voltage transmission lines, electro-static and/or electro-magnetic field strengths may be the determining factor on certain applications.

I. Lakes and ponds will be given special consideration to insure that ingress and egress rights will not be diminished. Dams on the rights will not normally be considered unless they will also serve as a roadbed for operating and maintenance equipment. The high water level at full pond must be a minimum of 20 feet from and structure or attachment and must clear the conductor (at 212 degrees F. conductor temperature) by the following vertical distances:

115KV, 230KV, 500KV - 35 feet
46KV - 30 feet

Detention ponds require the same vertical and horizontal clearance standards as any other lake or pond.

J. No fences shall be installed closer than 10 feet from a structure nor exceed 15 feet in height. Any metal fences installed within the limits of extra-high voltage lines must be equipped with driven grounds and all gates must be bonded to the ground. Gates shall be 16 feet wide to accommodate construction and maintenance equipment.

NON-PERMISSIBLE USES

While the utilities intend to accommodate reasonable requests, some uses by their very nature are not compatible with transmission line rights-of-way because they will interfere with, obstruct, restrict or endanger either the utility's facilities or the public. The following uses shall not be permitted:

- Swimming pools
- Permanent structures of any kind, including signboards which exceed 15 feet in height.
- Trees and shrubbery which will exceed 15 feet in height at maturity.
- Dumps, junkyards, or garbage receptacles.
- Wells
- Retaining walls.
- Satellite receiving antennas/dishes.
- Burial of stumps, trees, construction debris, etc.
- Lightning standards which exceed 15 feet in height.

RELOCATION OF FACILITIES

In some cases an encroachment may require the relocation of transmission line facilities. All expenses for this work shall be borne by the applicant. If new rights-of-way are required, then the applicant will be responsible for obtaining the easements for the new rights-of-way before the old rights can be used or Quit CLaimed.

ATTACHMENT 3

ENCROACHMENT AGREEMENT

L. F #_____

APPLICATION #_____

SUBJECT:

The Georgia Power Company, hereinafter called the "Power Company," hereby consents for _____

_____

hereinafter called the "Undersigned," to use an area within the Power Company's subject electric transmission line right(s) of way described as follows:

Said right(s) of way being _____

feet in width and extending in part through Land Lot _____ District,

of _____ County, Georgia, on which the Power Company has constructed and now maintains and operates said electric transmission lines by virtue of certain easements heretofore acquired by the Power Company. The said right(s) of way _____ shown on plat attached hereto and made a part hereof.

The use of the area by the Undersigned within said right(s) of way, pursuant to this consent, shall be limited to _____

_____

_____

at the location and to the extent as shown in red on said attached plat. It is specifically understood that no buildings or other obstructions of any type will be permitted within or on subject transmission line right(s) of way.

The plans and specifications as submitted by the Undersigned meet the Power Company's approval provided the Undersigned conforms to the following terms and conditions:

1. The Undersigned agrees to obtain all necessary rights from the owners of the lands crossed by the Power Company's right(s) of way in the event the Undersigned does not own the said lands and rights.

2. The Undersigned agrees to use said area within the Power Company's right(s) of way in such a manner as will not interfere with the Power Company's facilities installed thereon.

3. The Undersigned agrees that the use of the Power Company's right(s) of way as herein provided shall in no way affect the validity of the Power Company's easements and shall in no way modify or restrict the use or rights of the Power Company, its successors or assigns, in and to the area to be used. The Undersigned acknowledges the Power Company's right and title to said easement and the priority of the Power Company's right of use and hereby agrees not to resist or assail said priority.

4. The use of said area within said right(s) of way by the Undersigned shall be at the sole risk and expense of the Undersigned, and the Power Company is specifically relieved of any responsibility for damage to said facilities resulting or occurring from the use of said right(s) of way by the Power Company.

5. The Undersigned hereby agrees and covenants not to use and will prohibit agents, employees and contractors of the Undersigned from using on said right(s) of way any tools, equipment or machinery capable of being located or operated within eight (8) feet of the Power Company's overhead conductors. The attention of the Undersigned is hereby specifically directed to the provisions of Georgia Laws 1960, Page 181 et seq. (Georgia Code annotated 34B-201 et seq.). The Undersigned further agrees and covenants to warn all persons whom the Undersigned knows or should reasonably anticipate for any reason may resort to the vicinity of such conductors of the fact that such conductors are (a) electric conductors, (b) energized, (c) uninsulated and (d) dangerous.

6. Notwithstanding anything contained herein, the Undersigned agrees to reimburse the Power Company for all cost and expense for any damage to the Power Company's facilities resulting from the use by the Undersigned of said area within said right(s) of way. Also, the Undersigned agrees that if in the opinion of the Power Company, it becomes necessary, as a result of the exercise of the permission herein granted, to relocate, rearrange, change or raise any of the Power Company's facilities, to promptly reimburse the Power Company for all cost and expense involved in such relocation, rearrangement or raising of said facilities.

7. The Undersigned agrees to notify or have _____ contractor notify the Power Company's Division Transmission Supervisor, _____ Georgia, Phone _____, at least two (2) days prior to actual construction on the Power Company's right(s) of way.

8. The Undersigned shall and does hereby agree to indemnify and save harmless and defend the Power Company from the payment of any sum or sums of money to any person whomsoever (including third persons, subcontractors, the Undersigned the Power Company and agents and employees of them) on account of claims or suits growing out of injuries to persons (including death) or damage to property (including property of the Power Company) in any way attributable to or arising out of the use of said right of way by the Undersigned as herein provided regardless of whether same results from the claimed or actual, sole or joint, negligence of the Undersigned (its agents, employees or contractors) or the Power Company (its agents, employees or contractors) or any combination of these (including (but without limiting the generality of the foregoing) all liens, garnishments, attachments, claims, suits, judgments, costs, attorney's fees, cost of investigation and of defense, and excepting only those situations where the injuries claimed have been caused solely by willfulness or gross negligence on the part of the Power Company, its agents or employees, unmixed even with slight negligence on the part of the Undersigned, its agents, employees or contractors. The phrase "willfulness or gross negligence" shall not be deemed to include the absence of any warning by the Power Company as to the danger of its facilities, the absence of insulation on its facilities, the failure to de-energize or rearrange its facilities, or the failure or absence of any circuit breaker or similar device.

The Undersigned hereby accepts the foregoing consent subject to the terms and conditions set forth above and in the event the Undersigned fails to perform as herein provided and shall not have executed and returned this agreement on or before the _____ day of _____, 19_____, this agreement shall become void and no use of the Power Company's right of way as herein provided for shall be made.

BY: _____

TITLE: _____

DATE: _____

The Georgia Power Company has by its duly authorized agent executed this agreement, this the _____ day of _____, 19_____

GEORGIA POWER COMPANY

BY: _____

701909

East Metro Transmission
Georgia Power Company
5195 Minola Drive
Lithonia, Georgia 30058

RE:

Gentlemen:

Our records show that there is an electric transmission line rights easement across the proposed development. An encroachment is requested for the purpose of constructing a (street, temporary parking, sanitary sewer crossing, etc.); as shown on the enclosed plat.

Please initiate the necessary agreement. The agreement should be in the name of (property owner or other responsible party), and will be signed for us by, (person's name), whose title is, (Owner, President, etc.).

Sincerely,

NOTES FROM PUBLIC MEETING
SINGLETON ROAD ACTIVITY BUILDING
JANUARY 5, 1989

REPRESENTING GWINNETT COUNTY

Mike Huff
Grant Guess
Bill Lunceford
Jim Collins
Donnie Fuller
Kristy Verdi

REPRESENTING HEERY

George Sellers
Claudia Warren

The purpose of this public meeting was to present information to the Community regarding the Gwinnett County Park and Recreation Program, the Britt Road Community Park Site and solicit information and input from members of the Community for Master Planning purposes.

1. Mike Huff, Director of Human Services, opened the meeting with general remarks concerning the Gwinnett County-wide Recreation Master Plan, funding, land acquisition and introduced the County Parks and Recreation and Heery staff.

2. George Sellers of Heery explained the purpose of the meeting and presented the primary Goals and Objectives for Britt Road Park Community Park, which are:

   Preservation and Enhancement of the Environment
   Efficiency of Operations
   Aesthetics
   Safety and Security
   Budget
   Compliance with Prototype Community Park

3. Preliminary site information and site analysis was presented by Claudia Warren of Heery. Subjects covered were: Flood zone/wetlands, vegetation, topography and slopes, easements, zoning, vehicular and pedestrian access to the site.

4. The concept and program of a Community Park were explained by George Sellers. The major points discussed were:

Average Size	50 to 100 acres
General Physical Concept	Natural area providing active and passive activities

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Average Size	50 to 100 acres
General Physical Concept	Natural area providing active and passive activities

General Purpose	To serve a full range of Community area recreational needs
Program	Lighted Softball Fields Lighted Youth Baseball Fields Lighted Tennis Courts Football & Soccer Fields Basketball/Multi-purpose Courts Horseshoe Courts Picnic Areas Children's Play Area Apparatus Area Community Center Building Swimming Pool Maintenance Building Lake Parking Landscaping Utilities

5. General discussion by members of the audience, consultants and staff provided the following information concerning the Community's interests, concerns, wants and desires to be considered in preparation of the Park Master Plan.

Park Access:
- o want Pedestrian (particularly by Children) access from all directions
- o would like to see sidewalks along perimeter roads for safe access to the park

Site Preservation:
- o very important issue
- o provide "oasis" from surrounding intense development - "a place to get away from it all"
- o save trees, plant and animal habitats
- o provide educational and cultural programs

Trails:	o want walking, jogging, bike trails
	o want fitness trail system
	o want interpretive trails
	o want different surfaces, elevated, boardwalks, etc.
Controls:	o buffers
	o concern about noise and field lighting
	o security - staffing, vehicular gate, perimeter fencing needed? park hours
Parking:	o locate away from roads and close to activities to eliminate overflow parking on perimeter roads and adjacent properties
Park Use:	o emphasis more on Children's Activities than Adult
	o balance between planned or organized use and activities with spontaneous and un-organized use and activities
	o provide multi-purpose/use field(s) for frisbee, pick-up games, etc.
	o proper facility management and use by groups and individuals
	o provide community and educational programs
Park Facilities:	o tennis courts with handball, racquetball and paddle tennis courts
	o restrooms (permanent) a "must"
	o inquired about indoor vs. outdoor basketball

- o want a Community Center/Activities Building
- o inquired about swimming pools - both indoor and outdoor facilities
- o picnic areas - both large and small

General Concerns and Comments:

- o concern about re-zoning and use of adjacent properties
- o inquired about schedule (all parties want it ASAP, but not before it is ready for use)
- o asked about budget
- o make facility as "Park-like" as possible

REPRESENTINGGWINNETT COUNTY

Mike Huff
Grant Guess
Bill Lunceford
Jim Collins
Kristy Verdi

REPRESENTING HEERY

George Sellers
Claudia Warren

The purpose of this public meeting was to present the preliminary Britt Road Park Master Plan to the Community for their review, comments, and answer any questions they might have.

1. Mike Huff, Director of Human Services, opened the meeting with general remarks and introduction of County Parks and Recreation and Heery staff.

2. George Sellers of Heery briefly presented the Goals and Objectives of Britt Road Community Park, Park Program and Scope, and Site Analysis. He also reviewed the comments, recommendations, and input received from the Community in the previous public meeting.

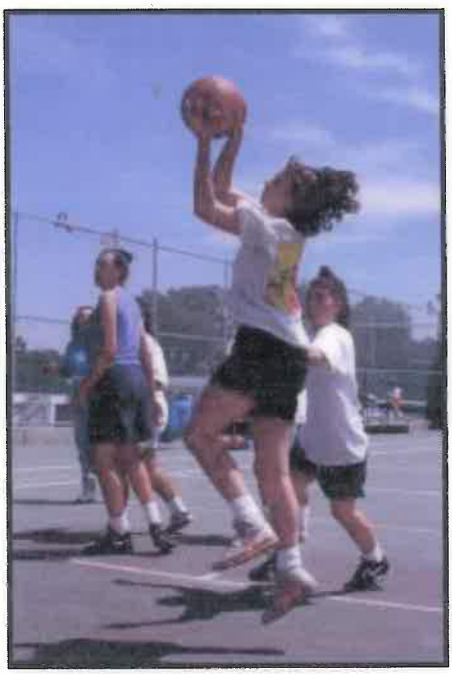
3. Claudia Warren of Heery presented the Preliminary Britt Road Park Master Plan in detail.

4. General discussion by members of the audience, consultants, and staff provided the following information and comments regarding the Preliminary Master Plan.

Wetlands:	Appreciated the proposed use and preservation of this valuable and sensitive natural area.
Trails, Boardwalks and Decks:	Inquired about the type and length of these facilities. Desire to have them be readily accessible by senior citizens, handicapped, joggers, and bicycles.
Pedestrian Access:	Asked about access from Jimmy Carter Boulevard and the apartments to the south. Requested sidewalks be installed along Britt Road.
Vehicular Access:	Concern about traffic along Britt Road now and in the future may require turning lanes, acceleration and deceleration lanes and a type of signalization.

Park Security:	Discussion about a perimeter fence around the property as well as the proposed swimming pool. Need for entrance gate. Asked about Park hours, staffing, management, and maintenance.
Soccer/Football:	Noticed the absence of soccer or football field-not one currently in the program.
Phase I Program and Budget:	Inquired as to what was included in Phase I (all or portions of all the park elements and infrastructure, except the Community Center Complex, are targeted for Phase I.
Adjacent Property and Acquisition:	Interest in proposed use of adjacent property (Burns in particular) and if County had plans to acquire more land.
Senior Citizens:	Asked that the wants and needs of Senior Citizens be considered in the design and construction of these park facilities.
Future Community Center Site:	Suggested that the proposed Community Center site be graded in Phase I to provide a temporary "Free Play Area" and borrow materials if required.

LUCKY SHOALS PARK
MASTER PLAN



GWINNETT COUNTY DEPARTMENT OF COMMUNITY SERVICES, PARKS & RECREATION DIVISION

JUNE 2004

Lucky Shoals Park Master Plan

Gwinnett County, Georgia

Prepared For:
Gwinnett County Department of Community Services
Parks & Recreation Division
75 Langley Drive
Lawrenceville, Georgia 30245-6900

Prepared By:
jB+a Park Design Studio
jon Benson + associates, inc.
2900 Paces Ferry Road
Building B, Suite 120
Atlanta, Georgia 30339

June, 2004

The Lucky Shoals Park Master Plan was prepared with the participation and guidance of the Master Plan Steering Committee members and Department Staff. We appreciate their time and efforts:

Jagadish Patel
Prashant Patel
Mark McClure
Mary Repine
Angela Pringle
Sonya Perez
Carl Caffey
Phil Hoskins
Grant Guess
Sharon Plunkett
Bill Lunceford
Tina Fleming
Denny Jenkins
Stacey Fowler

Special thanks to the Gwinnett County Board of Commissioners for their support and vision:

Chairman:	Wayne Hill
District 1:	Marcia L. Neaton
District 2:	Bert Nasuti
DIstrict 3:	John Dunn
District 4:	Kevin Kenerly
County Administrator:	Charlotte Nash

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SECTION 1.0 PROJECT GOALS AND OBJECTIVES

Gwinnett County is an exciting, vibrant community that continues to attract buisnesses and residents because of the quality of life the County offers to people of all incomes and backgrounds. Central to this quality of life is a first-rate parks and recreation system which provides residents the opportunity to participate in a wide range of recreation activities.

Since 1996, the County has allocated almost $275 million for acquisition of park land and development of recreation facilities. The Gwinnnett County park system today features a wide range of traditional and nontraditional facilities and opportunities, including numerous athletic field complexes, pavilions, meeting rooms, multipurpose trails, and large open spaces.

As the population of the County continues to grow and change, the parks and recreation system must grow and change in response to the needs of people of all ages and backgrounds.

This report addresses the need for park services in a growing area of Gwinnett County in an existing 68 acre site on Britt Road. The goals driving this master plan include the following:

- Address need for park services in a densely developed area to ensure that park services are provided to all areas of the County.
- Realize goals of 1996 Comprehensive Plan and the 2000 CIP Plan
- Respond to the changing needs of a growing community.
- Integrate a variety of diverse recreation activities which will serve all age groups.
- Ensure that no more than 25% to 33% of the site is developed with impermeable surfaces.
- Maintain a consistent passive atmosphere to the park while providing safety.

SECTION 2.0 PROJECT UNDERSTANDING

The existing 68 +acre Lucky Shoals Park Site is located in fast growing area of Gwinnett County. The park is currently host to a ball field complex, tennis courts, outdoor basketball courts, picnic pavilions, playground and preserved open space. As a response to the growing need for soccer fields in this area of the county, several of the existing ball fields are to be reconfigured to accommodate soccer and other field sports. The park site is also to be expanded to include a community center / gym, additional tennis courts, and additional parking. The site itself is very steep with terraces between the ballfields, some woodland areas currently exist and are made up of a mixture of pines and hardwoods punctuated with flowering understory trees. A stream cuts across the eastern end of the

site. Wetlands associated with the banks of the stream and a floodplain are also in existence.

SECTION 3.0 PROJECT APPROACH

Using a standard Master Planning project approach toward the Lucky Shoals park project, the project passed through a series of design stages before a final Master Plan was approved. The following represent the milestones completed along the way:

- Inventory /Analysis
- Steering Committee Kick Off Meeting w/ presentation of analysis
- Conceptual Plans Presentation to Steering Committee
- Preliminary Master Plan and Cost Estimate Presentation to Steering Committee
- Final Master Plan Presentation
- Presentation to Gwinnett County Recreation Authority
- Presentation to Gwinnett County Board of Commissioners.

The following provides a brief description and timeline of sequence of Meetings:

Preparation of Base Information
jon Benson + associates prepared AutoCAD base information utilizing aerial photography and an existing Lucky Shoals Park survey, obtained from Gwinnett County.

Inventory / Analysis, Concept Presentation
The Consultant presented the Park Site Inventory & Analysis diagrams to the Steering Committee on February 12, 2004. A single diagram exhibited Slope Analysis, Vegetation Analysis and an Opportunities and Constraints Analysis. The desires and concerns for Lucky Shoals park were also discussed and jB+a was directed to develop three concept plans for the next meeting.

Concept Development Presentation Meeting
The consultant presented three concepts to the Steering Committee on March 4, 2004. These included a Near Term Master Plan, and two variations of a Long Term Master Plan. The Near Term Master Plan was agreed upon with little discussion and the #2 version of the Long Term Master Plan was agreed to with revisions. This combination of plans was chosen to become the Preliminary Master Plan.

Preliminary Master Plan
A Presentation of the Preliminary Master Plan graphic and cost estimate was given to the Steering Committee on April 1, 2004 by the consultant. A short list of comments from the Committee and staff were given and the Consultant was asked to incorporate the

comments into the Final Master Plan. The Preliminary Master Plan with the revisions suggested was voted to become the Final Master Plan graphic. This would be presented to the Recreation Authority on May 20, 2004.

Presentation to Recreation Authority

The Steering Committee recommendations were presented to the Gwinnett County Recreation Authority on May 20, 2004. The plan was presented by the consultant with several committee members present. The Recreation Authority voted unanimously to recommend the plan endorsed by the Steering Committee to the Board of Commissioners.

Presentation to Board of Commissioners

Based on the Recreation Authority's endorsement, the plan was presented to the Gwinnett County Board of Commissioners on June 1, 2004. The Board of Commissioners unanimously voiced no objection to the Master Plan becoming the guiding document for the redevelopment of the Lucky Shoals Park Site.

SECTION 4.0 Site Inventory and Analysis

Prior to concept development a series of analyses were conducted. The following is a summary of each of these analyses; a graphic diagram accompanies the summarization (RE: Graphic Page 9).

Slope

The existing park site is generally very hilly with fairly extensive variation. The portion of the park that is developed is located above a large wetlands area. The majority of the site (excluding the existing recreation fields) falls within a 10-50% slope range. The existing fields are separated by very steep slopes, many of which are 2:1 inclines.

The steep slopes make grading and altering the existing fields very challenging both physically and financially.

Hydrology

The acreage Lucky Shoals Park site, which extends from Jimmy Carter Boulevard to Britt Road includes a wetlands area that involves at least 1/3 of the site. This is accompanied by a floodplain on either side of the Britt Road entrance. The wetlands portion of the site is bordered by a "Blue Line" stream. Jackson Creek is the eastern boundary of the park, and Lucky Shoals park will therefore be regulated under state waterway laws.

As the developed portion of the park is an average of 10-15 feet above the wetlands, no changes are planned to the wetlands area. The entrance road from Britt Road will be

realigned and a pedestrian bridge will be constructed across the floodplain. The existing floodplains on each side of the entrance are linked by culvert, which will have to be upgraded with the new entrance.

The existing recreation fields also have poor drainage, specifically Field #3. This will be addressed as the fields are converted to different activity types.

Vegetation

Vegetation across the site was analyzed and recorded. Because of its proximity to the wetlands and Jackson Creek, the site is dominated by species that are typically found in creek basins, floodplains and wetlands. Higher on the site, between the sports fields and the uppermost areas, successional pine woodlands dominate. These areas have a pine canopy and deciduous understory layer. Scrub brush including, privet, wild grape and honeysuckle, is located in mass throughout the site and should be removed for a more inviting park.

Banks along the existing stream are heavily vegetated and won't require any sort of bank revitalization or stabilization efforts. As no changes are proposed in the wetlands area, little if any mitigation will be necessary. Only a minimal amount of mitigation will be required along the areas of floodplain that will be disturbed by the new entrance road.

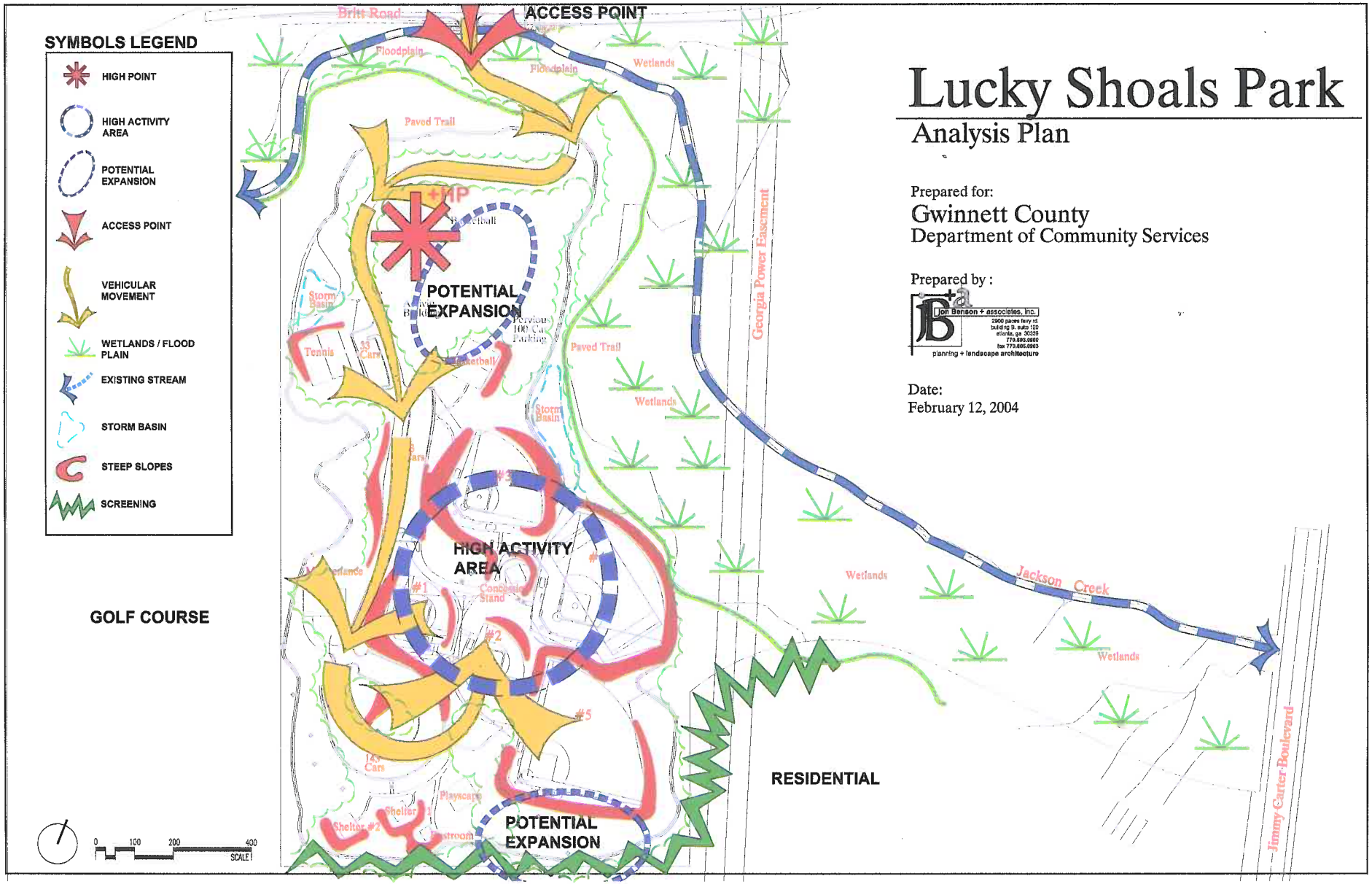
Opportunities & Constraints

Constraints

- Park site located on busy Britt Road – Pedestrian access to the site from across the road and vehicular access out of the site may be difficult at times.
- The extensive topography across the site means that large-scale grading will be necessary if new facilities are added or if playing fields are expanded.
- Strategic screening of surrounding neighborhoods- to allow adjacent residents some seclusion and filtering of noise associated from the park.
- 50' "Blue Line" Stream buffer – Design will need to adhere to state waterway laws.
- Wetlands area and flood plain along Britt Road will be major considerations during the construction process.
- Parking is limited and will need to be expanded with new park facilities.

Opportunities

- Despite topography, existing park is already established so major earth moving will be minimal.
- Established access into park site (from Britt Road). By restricting ingress and egress to this one location, security and control factors can be greatly enhanced. Physical connection is possible to surrounding neighborhoods and Heritage Park Country Club.



Lucky Shoals Park

Analysis Plan

Prepared for:
Gwinnett County
Department of Community Services

Prepared by :

Jon Benson + associates, inc.
2900 paces ferry rd.
building 9, suite 120
atlanta, ga 30339
770.805.0600
fax 770.805.0803
planning + landscape architecture

Date:
February 12, 2004

- Physical / visual connection to stream, wetlands, and floodplain.
- Mature landscape and native plantings are present.
- Existing sporting fields are mostly large enough to accommodate newly proposed uses.

SECTION 5.0 Program Options

Working with the Steering Committee, and representatives from Gwinnett County, the consultant, jon Benson + associates developed a program outline. What follows is the design stage progression from concept through the final master plan design. A description of each of the stages is included.

At the Steering Committee kickoff meeting in February, members of the committee were asked to voice their park needs and concerns. After a discussion of the existing site, several concepts for the future of the park were discussed:

- A potential community center if the steering committee agreed one was needed
- Gwinnett County would like to maintain Field #5 as an adult softball field
- The entrance drive could be relocated to make more room on the hillside
- Possible redevelopment of 4 smaller ball fields into soccer fields (long term)
- Concessions could be relocated to accommodate a new park layout (long term)

Several other interests were discussed:

- Basketball is huge in the area, Interest in keeping the existing courts and potentially locating another court, possibly inside the gym.
- Park needs a Community Center / Gymnasium.
- Park should allow for use by multiple age groups, and have activities appropriate for everyone.
- Soccer fields to accommodate various age groups
  - 20 x 30 yds (5-6 year olds)
  - 30 x 40 yds (6-12 year olds)
  - 50 x 70 yds (12 year olds)
  - Regulation (over 12 years)
- Improve Lighting throughout park
- Separate crossings for pedestrians and vehicles
- Left turn lane into park off Britt Road
- Youth track and field events (around soccer fields)
- Additional tennis courts
- Additional picnic shelters
- Maintain large open lawn at existing picnic area for large group gatherings

- Water fountains located at each field
- Additional restroom facilities
- Additional play areas- near each field

Several concerns were expressed as well:

- Field #3 drains poorly, holds water and needs regrading. Emits bad odor after heavy rains.
- Basketball court needs to be relocated for better security
- Parking needs to be expanded
- Entrance road is curved too sharply. Needs to be realigned
- There seems to be a power struggle between uses and users.

A "Long Term" plan was presented that included a 25,000 square foot Community Center and Gymnasium and parking for 187 cars located on the hillside in the center of the site. This concept plan was used to graphically display the amount of space necessary to accommodate these elements.

As a result of this meeting, the consultant, jon Benson + associates Park Design Team, was asked to produce and present 3 concept plans for short-term and long-term improvements and cost estimates for each.

SECTION 6.0 PROGRAM DEVELOPMENT

6.1 Concept Development Meeting

A total of three concept plans were prepared and presented at the second meeting of the steering committee on March 4, 2004. Each concept was depicted utilizing concept-level AutoCAD Graphics and they each followed the same program requirements. They differed only through spatial relationships and layout locations. As per the steering committee, the consultant developed a "Near Term Master Plan" and two variations of a "Long Term Master Plan."

Near Term Plan (RE: Graphic Page. 15)

- Majority of Improvements made in high activity area
- Fields #1 & #2 will be maintained as ball fields.
- Field #3 will be converted to a soccer field.
- Field #4 will be maintained for Senior Ball play but will be converted to a large soccer field (150' x 310') when Best Friend Park Construction is complete.
- Field #5 will be maintained as adult ball field per Recreation Department request.

- A new play area is to be sited within the sports complex area, and an additional picnic shelter is planned for the picnic area.
- A raised crosswalk is planned where the multi-use trail and entrance drive intersect.

Long Term Plan #1 (RE: Graphic Page. 16)

- Entrance drive realigned
- 25,000 square foot community center and gym with parking for 165 centrally located and site at front of park
- Basketball court relocated to front of park to allow for more visibility
- Additional tennis court added
- Field #3 converted to soccer field (50x70 yds)
- Field #4 converted to soccer field (75x115 yds)
- Concessions relocated to accommodate new field layout
- New play area within sports complex sited
- Field #2 maintained as active 150' ball field
- Field #5 maintained as adult ball field
- Additional parking for 70 cars at sports complex
- New picnic shelter planned for the picnic area
- Raised crosswalks are to be provided where multi-use trail and vehicular traffic intersect

Long Term Plan #2 (RE: Graphic Page 17)

- Entrance drive realigned to minimize sharp curves
- 25,000 square foot community center and gym with parking for 180 centrally located and sited at front of park
- Basketball Court relocated to front of park to allow for more visibility
- Additional tennis court added
- Field #3 converted to soccer field (50x70 yds)
- Field #4 converted to soccer field (756 x 115 yds) with a 6-lane track adjacent to the field to be used for track events
- Concessions building to remain in current location
- New play area within sports complex sited
- Field provided adjacent to play area for open play or practice field
- Field #2 maintained as active 150' ball field
- Field #5 reduced to 200' ball field
- Additional parking for 55 cars provided at sports complex
- Raised crosswalks are to be provided where multi-use trail and vehicular traffic intersect

At the March 4, 2004 Concept Meeting, the Near Term Plan was approved with no major changes. It was also agreed that the Long Term Plan #2 concept would be further developed into the Preliminary Master Plan with minor revisions as follows:

- The track configuration at Field #4 is not sufficient, so the configuration for this area shown on Long Term Plan #1 would be adapted into Long Term Plan #2.
- The location of the playground and play field would be swapped
- Netting would be included on the outfields of all ball fields
- Water fountains would be included at all fields

6.2 Preliminary Master Plan Meeting

The Preliminary Master Plan (RE: Graphic Page. 18) was presented and a preliminary cost estimate was distributed to the Steering Committee on April 1, 2004. Based on comments from the Steering Committee and Staff, the Preliminary Master Plan was revised and further developed into the Master Plan for the next meeting (May 20, 2004). The comments relating to the progression of the Preliminary Master Plan toward the Master Plan are as follows:

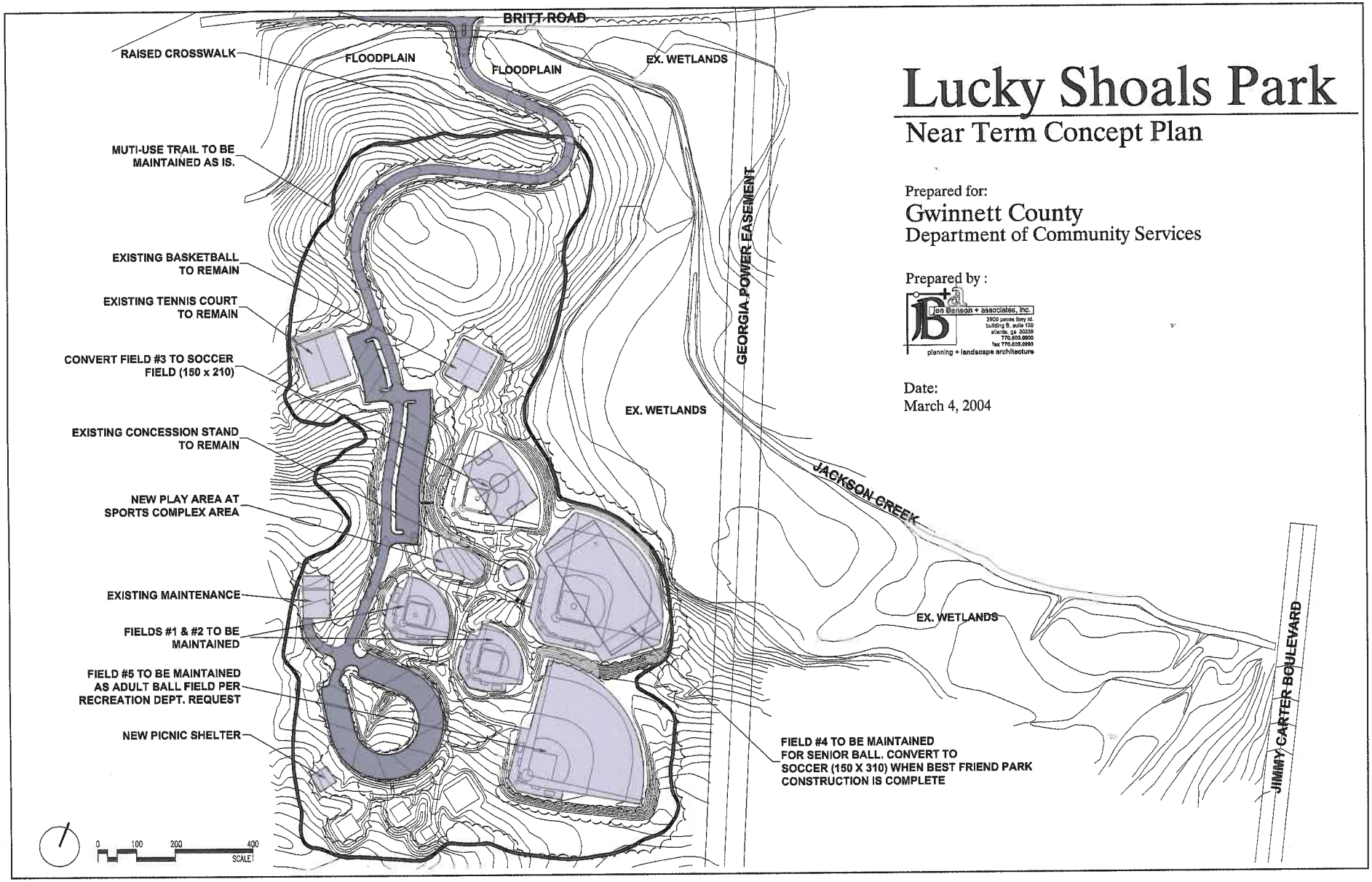
- Add small playgrounds near the ball fields rather than one full-size playground.
- Add/ Keep the raised crosswalk for the trail crossing.
- Add a caution light (flashing yellow light) at the entrance to the park off Britt Road. The recreation department will consult with the Gwinnett Department of Transportation.
- Add a football overlay plan with the soccer layout plan on field #4

After some additional discussion regarding the needs for football in the community versus soccer, the Preliminary Master Plan was voted on. It was unanimously agreed that after making the revisions listed above, the layout would become the Final Master Plan and would be presented to the Recreation Authority on May 20, 2004.

6.3 *Master Plan*

jon Benson + associates developed a final color graphic (RE: Graphic Page. 19), and cost estimate and presented them to the Recreation Authority on May 20, 2004. The discussion of the cost estimate was the focus of the meeting. The result of the discussion was confirmation of the basic park elements. The final color master plan and cost estimate were prepared and presented to the Recreation Authority on May 20, 2004, and several Steering Committee members were in attendance. The Recreation Authority voted unanimously to accept the master plan for presentation to the Board of Commissioners.

Based on the Recreation Authority's endorsement, the final master plan and cost estimate were present by the Consultant to the Board of Commissioners on June 1, 2004. Several Steering Committee members were in attendance. The Board of Commissioners unanimously voiced no objection to the Master Plan becoming the guiding document for the development of the Lucky Shoals Park Site.



Lucky Shoals Park

Near Term Concept Plan

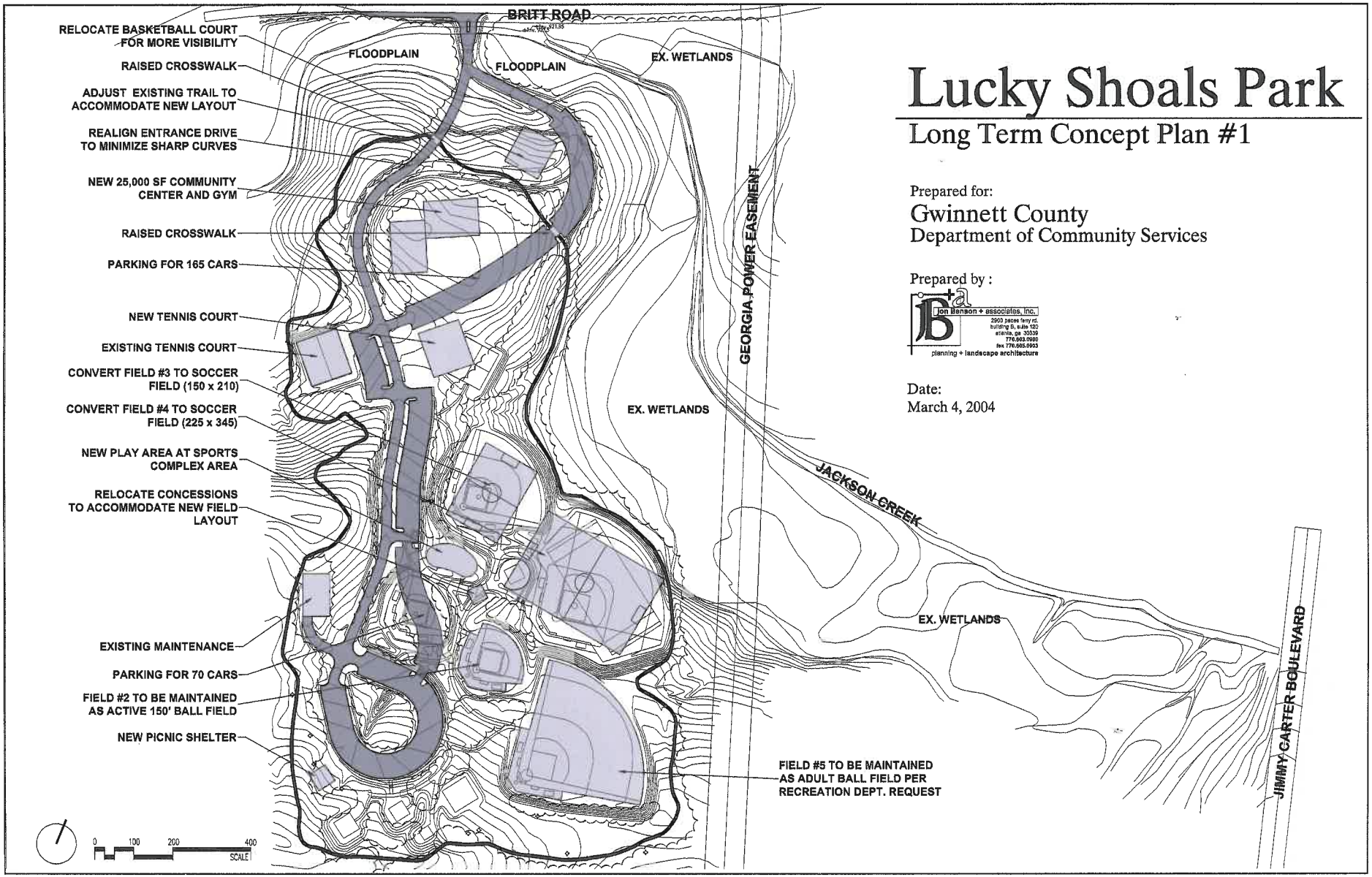
Prepared for:

Gwinnett County
Department of Community Services

Prepared by :

Jon Benson + associates, Inc.
2900 peces ferry rd.
building B, suite 100
atlanta, ga 30339
770.803.9900
fax 770.626.9995
planning + landscape architecture

Date:
March 4, 2004



Lucky Shoals Park

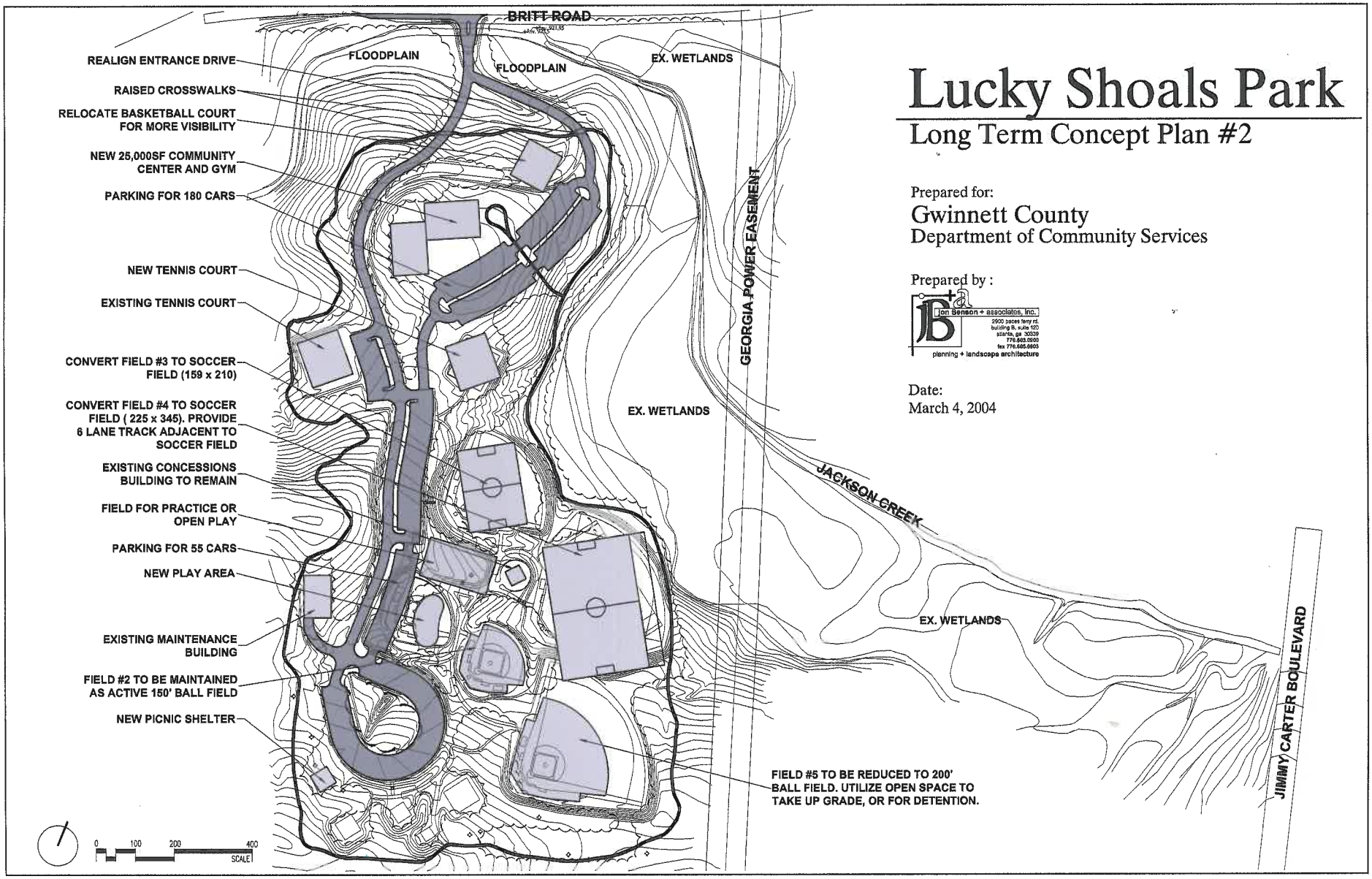
Long Term Concept Plan #1

Prepared for:
Gwinnett County
Department of Community Services

Prepared by :

jon benson + associates, inc.
2900 paces ferry rd.
building b, suite 120
atlanta, ga 30339
770.603.0900
fax 770.685.9903
planning + landscape architecture

Date:
March 4, 2004



Lucky Shoals Park

Long Term Concept Plan #2

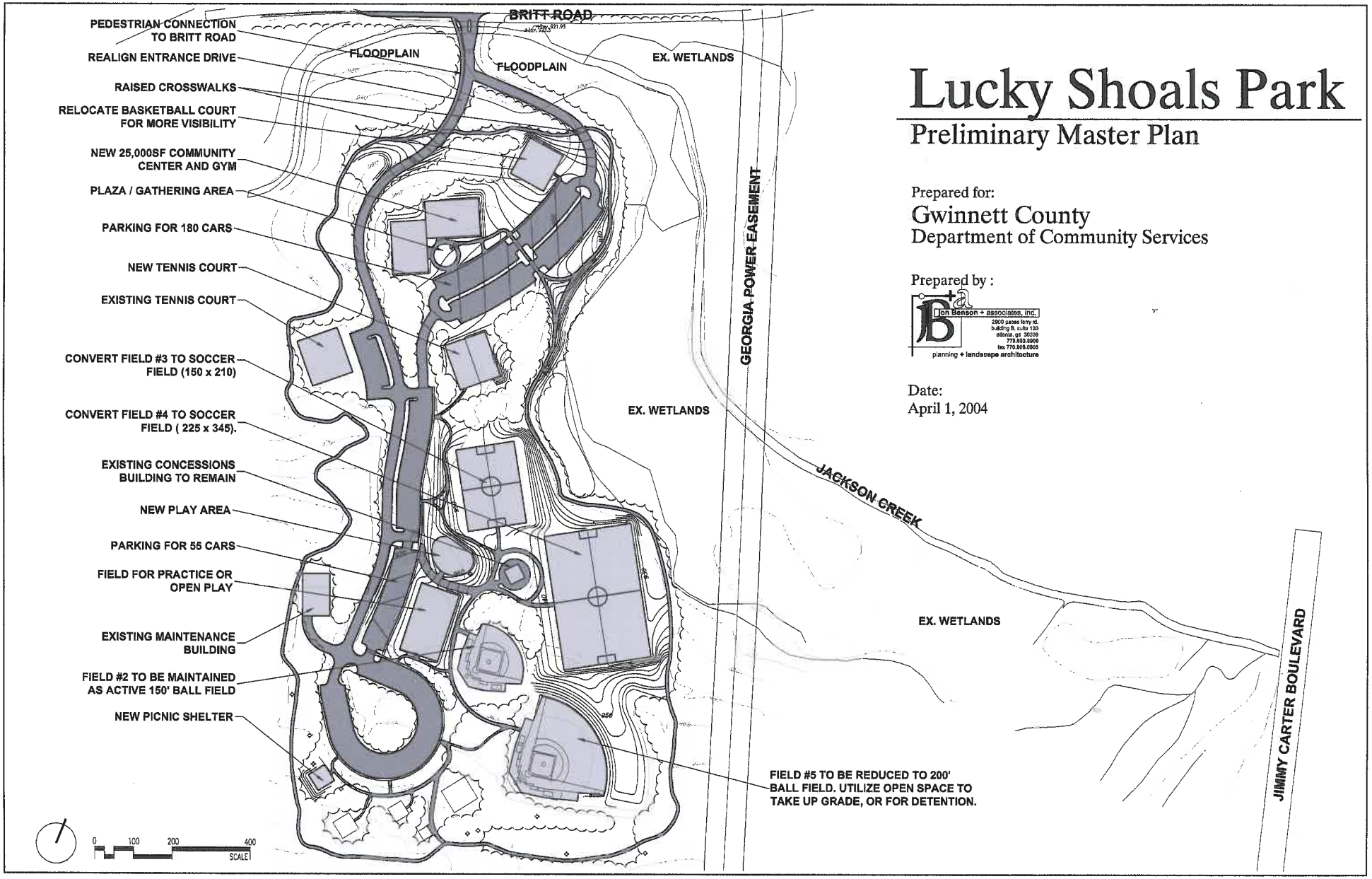
Prepared for:

Gwinnett County
Department of Community Services

Prepared by :

jon benson + associates, inc.
2900 paces ferry rd.
building B, suite 120
atlanta, ga 30339
770.603.0600
fax 770.605.0603
planning + landscape architecture

Date:
March 4, 2004



Lucky Shoals Park

Preliminary Master Plan

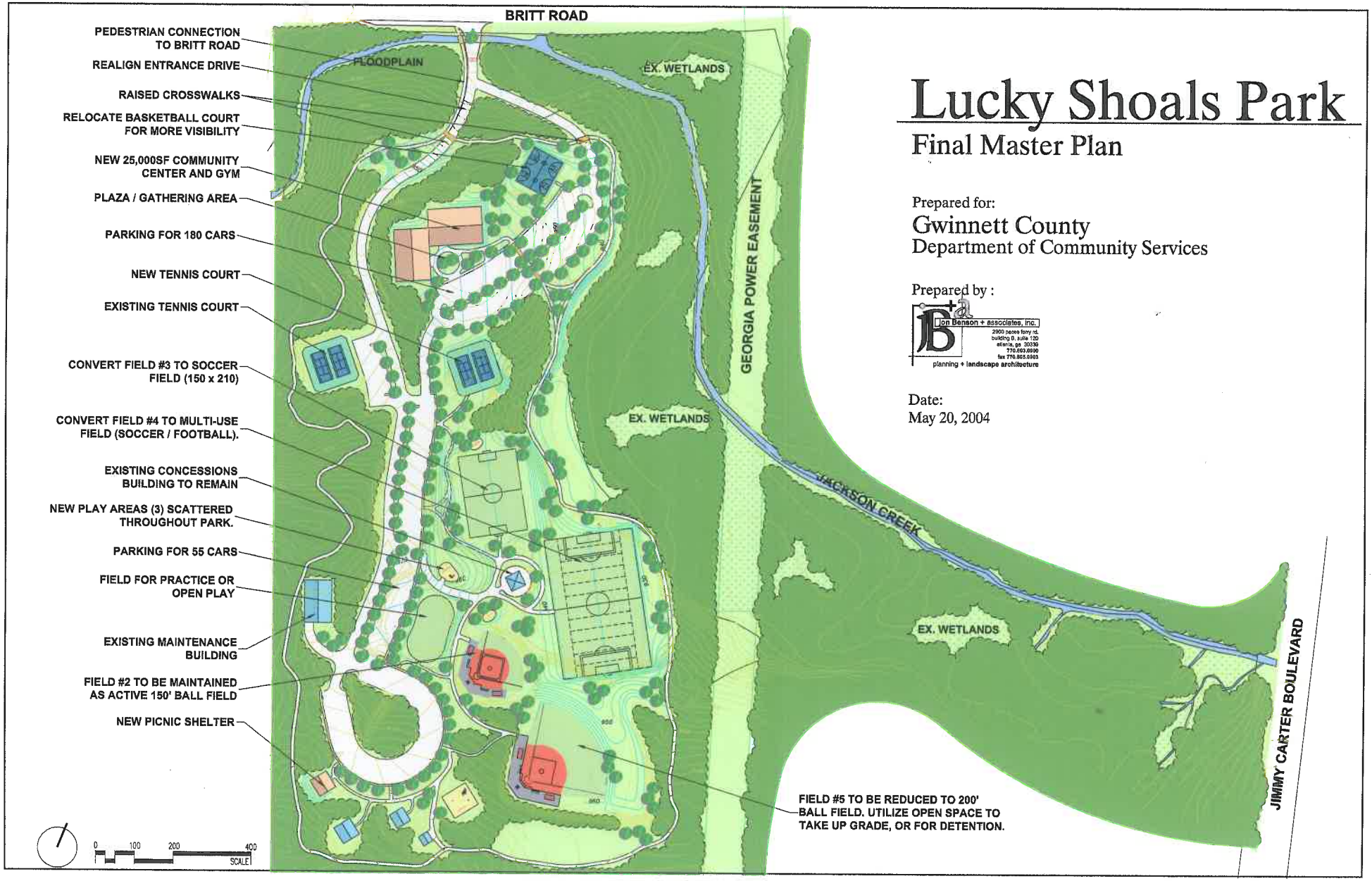
Prepared for:

Gwinnett County
Department of Community Services

Prepared by :

Jon Benson + associates, inc.
2900 paces ferry rd.
building B, suite 120
atlanta, ga 30339
770.803.2900
fax 770.805.0903
planning + landscape architecture

Date:
April 1, 2004



Lucky Shoals Park

Final Master Plan

Prepared for:

Gwinnett County
Department of Community Services

Prepared by :

Jon Benson + associates, inc.
2900 chastain ferry rd.
building b, suite 120
atlanta, ga 30339
770.693.0990
fax 770.805.0993
planning + landscape architecture

Date:
May 20, 2004

6.4 *Program Elements*

Entrance Drive from Britt Road

The entrance drive to Lucky Shoals Park is to be realigned. It was decided that the radius of the existing curve in the entrance was too small to be safe. The visibility was poor for both pedestrians on the multi-use trail and drivers in their vehicles. The new alignment will give drivers and pedestrians better visibility and create a safer entrance area.

Pedestrian Connection to Britt Road

The existing paved multi-use trail in Lucky Shoals Park is a closed circuit with no exterior connection to the surrounding areas. A proposed connection will allow pedestrians to enter the park from Britt Road without having to walk in the actual entrance road. The current trail will also be improved with raised crosswalks anywhere the trail route crosses a vehicular circulation route. These raised walks keep the pedestrian route separate from the vehicular route and also control vehicle speed in these areas.

Relocated Basketball Courts

The existing basketball courts will be relocated within the north end of the park for better visibility and better security. As opposed to the old location, the new courts will be visible from the parking lots, the entrance road, the new community center, and the multi-use trail. This new visibility will allow for passive security where other users are able to monitor activity at the courts. Better visibility reduces the need for active security patrols.

Community Center and Gymnasium

The largest improvement in Lucky Shoals Park will be the new 25,000 square foot community center and gymnasium. Located at the high point of the park, the community center will be visible from Britt Road and many of the other areas within the park. The visibility of the new buildings has the potential to draw in additional patrons from Britt Road. The footprint of the buildings creates an angled space in front that will be made into a plaza. This plaza will serve as a public meeting and gathering space. The gymnasium will include an indoor basketball facility, as this is one of the main activities in Lucky Shoals Park. The community center will house administration offices, public meetings, and cultural events.

Expanded Parking

The existing parking at Lucky Shoals Park is not adequate for the newly upgraded and expanded facilities proposed in the Master Plan. The parking areas will be expanded in two areas- the community center and nearest to the existing Field #2. Once the new Community Center is completed, parking for 180 cars will be established to better serve this building as well as the tennis courts and the basketball courts. The other parking area

will be created in the south end of the park near Field #2. This will park an additional 55 cars, increasing the parking for the athletic fields in this area.

Tennis Courts
Two new tennis courts will be created where the existing basketball court is located. Court fencing color, equipment will be regulation and County Standard. The new tennis courts will be lighted at night. The multi-use trail system will link the court to the parking area and the rest of the park.

Athletic Field Conversions
Three of the existing fields in Lucky Shoals Park will be resized or converted to different uses: Field #3 will become a soccer field, Field #4 will become a multi-use field, and Field #5 will be resized to allow for better grading and drainage. Field #3 is currently a ball field which will be regraded and resurfaced with new turf when it is converted to a 50-yard x 70-yard soccer field. Like the proposed tennis courts, this field will also connect to the multi-use trail. Field #4 will be increased in size and converted to a multi-use field that will serve both football and soccer programs. The 75-yard x 115-yard field will be regraded and surfaced with new turf. Field #5 will be resized to a 200' ball field, which is smaller than the current field. The remaining space will be utilized for storm water detention and to ease the grading in this area. The steep slopes below the field can be smoothed out to a lesser grade with the new size of the field.

Multiple Small Play Areas
Lucky Shoals Park has an existing play ground at the south end, and the desire of the steering committee was to expand that with new play facilities. During the concept development phase, it was decided that several small play areas throughout the site would be a better solution. This locates small play structures in close proximity to several of the athletic fields and allows parents to watch children on the play equipment while also watching the sports events. These smaller areas are also easier to site, and will be easier to build, as they will not require extensive grading on this hilly site.

One small playground it to be locted near the parking extension. The playground will include a variety of prefabricated play equipment including: swings, compound structures, and free standing equipment. Play equipment will be separated into zones for toddlers and K-6 age groups. ADA compliant transfer stations will also be provided on each of the compound structures. Subsurface drainage will be provided under dense wood chip mulch playground safety surface. "Wear areas" such as under swings, slides will need additional coverage. The other small playgorund areas will consist of swings only.

SECTION 7.0 **APPENDICES**

Appendix A: Cost Estimate page 23

Appendix B: Meeting Minutes page 27

APPENDICES

Appendix A: Cost Estimate

Refer to the attached itemized Master Plan level Spreadsheet

jon Benson + associates, inc.

COST ESTIMATE FOR LUCKY SHOALS PARK GWINNETT COUNTY DEPARTMENT OF COMMUNITY SERVICES

May 20, 2004

long term park elements

REALIGNED ENTRANCE ROAD	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
REMOVAL OF EXISTING ROAD SECTIONS	24,384	SF	$ 0.75	$18,288.00
ROAD GRADING - CUT	8,600	CY	$ 3.00	$25,800.00
TREE PROTECTION FENCING	1,279	LF	$ 2.00	$2,558.00
EROSION CONTROL FENCING	810	LF	$ 2.00	$1,620.00
CONCRETE CURB AND GUTTER	1,441	LF	$ 11.00	$15,851.00
ASPHALT (2" ASPHALT & 6" BASE)	16,704	SF	$ 1.60	$26,726.40
ROADWAY STRIPING	1,441	LF	$ 0.25	$360.25
ROADWAY LIGHTING	2	EA	$ 1,500.00	$3,000.00
		REALIGNMENT OF ENTRANCE ROAD SUBTOTAL		**$94,203.65**

COMMUNITY CENTER / GYM	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING - CUT	44,349	CY	$ 3.00	$133,047.00
GRADING - FILL	7,115	CY	$ 5.50	$39,132.50
CONCRETE CURB & GUTTER	3,746	LF	$ 11.00	$41,206.00
PARKING LOTS - ASPHALT (2" ASPHALT & 6" BASE)	70,274	SF	$ 1.60	$112,438.40
PARKING STRIPING	855	LF	$ 0.25	$213.75
PARKING LIGHTING	8	EA	$ 1,500.00	$12,000.00
COMMUNITY CENTER / GYM BUILDING	25,000	SF	$ 125.00	$3,125,000.00
VEGETATIVE CLEAR & GRUB	4	AC	$ 4,600.00	$18,400.00
PLAZA AREA (CONCRETE)	6,974	SF	$ 4.50	$31,383.00
RAISED CROSSWALKS	2	EA	$ 500.00	$1,000.00
WATER MANAGEMENT				$0.00
BMP SETTLING POND	1	LS	$ 8,000.00	$8,000.00
DETENTION POND	1	LS	$ 20,000.00	$20,000.00
SITE UTILITIES				$0.00
SITE ELECTRICAL	1	LS	$ 25,000.00	$25,000.00
WATER METER	1	EA	$ 1,200.00	$1,200.00
PIPE	1,300	LF	$ 22.00	$28,600.00
FIRE HYDRANTS	1	EA	$ 2,000.00	$2,000.00
FITTINGS, ATTACHMENTS, ETC (15% TOTAL)	1	LS	$ 8,520.00	$8,520.00
		COMMUNITY CENTER SUBTOTAL		**$3,607,140.65**

NEW BASKETBALL COURT	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -CUT	1,045	CY	$ 3.00	$3,135.00
GRADING -FILL	1,550	CY	$ 5.50	$8,525.00
BASKETBALL COURT (INCLUDES EQUIPMENT)	1	EA	$ 25,000.00	$25,000.00
6' WIDE CONCRETE SIDEWALK	132	SF	$ 3.60	$475.20
		BASKETBALL SUBTOTAL		**$37,135.20**

PARKING EXTENSION	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -FILL	2,600	CY	$ 5.50	$14,300.00
CONCRETE CURB & GUTTER	744	LF	$ 11.00	$8,184.00
PARKING LOTS - ASPHALT (2" ASPHALT & 6" BASE)	16,743	SF	$ 1.60	$26,788.80
PARKING STRIPING	1,045	LF	$ 0.25	$261.25
PARKING LIGHTING	4	EA	$ 1,500.00	$6,000.00
		PARKING EXTENSION SUBTOTAL		**$55,534.05**

TRAIL SYSTEM	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -FILL	7,500	CY	$ 5.50	$41,250.00
8' WIDE - NEW ASPHALT TRAIL SECTION	18,360	SF	$ 0.75	$13,770.00
REMOVE EXISTING TRAIL SECTIONS (8' WIDE)	10,304	SF	$ 1.60	$16,486.40
CONCRETE PATHWAYS, 6 FT WIDE	9,348	SF	$ 3.38	$31,596.24
TRAIL EDGE BENCHES	10	EA	$ 450.00	$4,500.00
REMOVABLE BOLLARDS	11	EA	$ 125.00	$1,375.00
			TRAIL SYSTEM SUBTOTAL	**$108,977.64**

NEW TENNIS COURT	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -CUT	2,013	CY	$ 3.00	$6,039.00
GRADING -FILL	1,030	CY	$ 5.50	$5,665.00
REMOVAL OF EXISTING BASKETBALL GOALS	4	EA	$ 300.00	$1,200.00
REMOVAL OF EXISTING ASPHALT COURT	1	LS	$ 20,000.00	$20,000.00
TENNIS COURTS (INCLUDES EQUIPMENT)	2	PAIR	$ 54,500.00	$109,000.00
SITE ELECTRICAL	1	LS	$ 5,000.00	$5,000.00
6' SIDEWALK CONNECTION TO FACILITIES - CONCRETE	612	SF	$ 3.60	$2,203.20
WATER FOUNTAIN (FREEZE RESISTANT)	1	EA	$ 2,000.00	$2,000.00
			TENNIS AREA SUBTOTAL	**$151,107.20**

CONVERSION OF FIELD #3 TO SOCCER	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING - CUT	6,552	CY	$ 3.00	$19,656.00
GRADING - FILL	7,600	CY	$ 5.50	$41,800.00
REMOVAL OF BALL FIELD FENCING / BACKSTOP	846	LF	$ 3.25	$2,749.50
REMOVAL OF CONCRETE PADS	950	SF	$ 12.00	$11,400.00
REMOVAL OF SCOREBOARD	1	LS	$ 160.00	$160.00
REMOVAL OF DUGOUTS	1	LS	$ 300.00	$300.00
EROSION CONTROL FENCING	487	LF	$ 2.00	$974.00
SOCCER FIELD IRRIGATION	1	LS	$ 15,000.00	$15,000.00
SUBSURFACE DRAINAGE - SAND	1	LS	$ 6,000.00	$6,000.00
6' BLACK VINYL PERIMETER FENCING (INCLUDING GATES)	800	LF	$ 15.50	$12,400.00
SOCCER GOALS	2	EA	$ 2,000.00	$4,000.00
8' WIDE CONNECTOR TRAIL	440	SF	$ 2.50	$1,100.00
SOD	31,499	SF	$ 0.40	$12,599.60
			FIELD #3 CONVERSION SUBTOTAL	**$128,139.10**

CONVERSION OF FIELD #4 TO SOCCER / FOOTBALL	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING-CUT	3,778	CY	$ 3.00	$11,334.00
GRADING-FILL	6,839	CY	$ 5.50	$37,614.50
REMOVAL OF BALL FIELD FENCING / BACK STOP	1,247	LF	$ 3.25	$4,052.75
REMOVAL OF CONCRETE PADS	950	SF	$ 12.00	$11,400.00
REMOVAL OF SCOREBOARD	1	LS	$ 160.00	$160.00
REMOVAL OF DUGOUTS	1	LS	$ 300.00	$300.00
REMOVAL OF EXISTING RETAINING WALLS	2,500	SF	$ 1.75	$4,375.00
EROSION CONTROL FENCING	702	LF	$ 2.00	$1,404.00
SOCCER FIELD IRRIGATION	1	LS	$ 15,000.00	$15,000.00
SUBSURFACE DRAINAGE - SAND	1	LS	$ 6,000.00	$6,000.00
6' BLACK VINYL PERIMETER FENCING (INCLUDING GATES)	1,200	LF	$ 15.50	$18,600.00
FOOTBALL GOALS	2	EA	$ 2,500.00	$5,000.00
SOCCER GOALS	2	EA	$ 2,000.00	$4,000.00
8' WIDE CONNECTOR TRAIL	62	SF	$ 2.50	$155.00
SOD	89,374	SF	$ 0.40	$35,749.60
			FIELD #4 CONVERSION SUBTOTAL	**$155,144.85**

CONVERSION OF FIELD #1 TO PRACTICE / OPEN FIELD	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING - FILL	2,643	CY	$ 5.50	$14,536.50
REMOVAL OF BALL FIELD FENCING / BACKSTOP	558	LF	$ 3.25	$1,813.50
REMOVAL OF CONCRETE PADS	950	SF	$ 12.00	$11,400.00
REMOVAL OF SCOREBOARD	1	LS	$ 160.00	
REMOVAL OF DUGOUTS	1	LS	$ 300.00	
EROSION CONTROL FENCING	407	LF	$ 2.00	$814.00
FIELD IRRIGATION	1	LS	$ 15,000.00	$15,000.00
SUBSURFACE DRAINAGE - SAND	1	LS	$ 6,000.00	$6,000.00
8' WIDE CONNECTOR TRAIL	1,200	SF	$ 2.50	$3,000.00
SOD	18,068	SF	$ 0.40	$7,227.20
		FIELD #1 CONVERSION SUBTOTAL		**$16,227.20**

PLAYGROUND AREAS	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -FILL	5,063	CY	$ 5.50	$27,846.50
SMALL PLAY STRUCTURE	1	EA	$ 40,000.00	$40,000.00
SWING SETS	3	EA	$ 3,500.00	$10,500.00
ENGINEERED WOOD CHIP MULCH - 12" DEPTH	10,000	SF	$ 2.00	$20,000.00
TRASH RECEPTACLES	2	EA	$ 450.00	$900.00
PICNIC TABLES 3	3	EA	$ 500.00	$1,500.00
BIKE RACKS (1 @ EACH PLAYGROUND)	1	EA	$ 200.00	$200.00
WATER FOUNTAIN W/ DOGGIE DISH FILLER (FREEZE RESISTANT) (1 EA.PG)	1	EA	$ 2,000.00	$2,000.00
BENCHES	4	EA	$ 500.00	$2,000.00
		PLAYGROUND AREA / PICNIC AREAS SUBTOTAL		**$104,946.50**

FIELD #5 REDUCTION	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
REMOVE PERIMETER FENCING	1,172	LF	$ 3.25	$3,809.00
6' BLACK VINYL PERIMETER FENCING (INCLUDING GATES)	776	LF	$ 15.50	$12,028.00
GRADING-CUT	22,175	CY	$ 3.00	$66,525.00
FIELD PREPARATION	1	LS	$ 10,000.00	$10,000.00
SOD	39,503	SF	$ 0.40	$15,801.20
BASEBALL FIELD IRRIGATION	1	LS	$ 18,000.00	$18,000.00
		FIELD #5 REDUCTION SUBTOTAL		**$122,354.20**

PICNIC AREAS	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
GRADING -CUT	620	CY	$ 3.00	$1,860.00
6' WIDE CONCRETE WALK	912	SF	$ 3.60	$3,283.20
20' PICNIC PAVILION	1	EA	$ 25,000.00	$25,000.00
TRASH RECEPTACLES	1	EA	$ 450.00	$450.00
		PLAYGROUND AREAS / PICNIC AREAS SUBTOTAL		**$25,450.00**

PARK LANDSCAPE	# OF UNITS	UNITS	COST/UNIT	ITEM TOTAL
PARKING LOT TREES	1	LS	$ 30,000.00	$30,000.00
ADDITIONAL PARK SCREENING AND REVEGETATION	1	LS	$ 150,000.00	$150,000.00
SEEDING	1	LS	$ 30,000.00	$30,000.00
		PARK LANDSCAPE SUBTOTAL		**$210,000.00**

TOTAL MASTER PLAN -- GRAND SUBTOTAL	**$4,816,360.24**
MOBILIZATION, FEES, BONDS, ETC. (10% TOTAL)	$481,636.02
SUBTOTAL	**$5,297,996.26**
15% CONTINGENCY FOR PRELIMINARY PLAN LEVEL COST ESTIMATE	$794,699.44
SUBTOTAL	**$6,092,695.70**
12% DESIGN, ENGINEERING AND PROGRAM MANAGEMENT FEES	$731,123.48
PROJECT TOTAL	**$6,823,819.19**

Note: This cost estimate is the Landscape Architect's opinion of probable cost but is not guaranteed because the Landscape Architect has no control over the market, the contractor's bid or the length of time between the estimate creation and the project bid.

APPENDICES

Appendix B: Meeting Minutes

Refer to the attached meeting minutes for a summary of the discussion and presented materials at each steering committee meeting.

Lucky Shoals Park – Steering Committee Meeting

Minutes from: 02.12.04 Steering Committee Meeting

Attendees: Gwinnett County - Phil Hoskins, Grant Guess, Bill Lunceford, Stacey Fowler, Denny Jenkins, Tina Fleming

jon Benson + associates (jB+a) - Raigan Kretzschmar

Steering Committee Participants – Jagadish Patel, Prashant Patel, Mark McClure, Hugh Floyd, Mary Repine, Carl Caffey, Angela Pringle, Sonya Perez

Location: Singleton Road Activities Building
Gwinnett County

Time: 7:00pm

Grant Guess welcomed steering committee to meeting. Introductions around the table were made and the purpose of the meeting was discussed. Steering Committee members were asked to voice their park needs and concerns as the meeting progressed.

An overview of the existing park features and an explanation of the site analysis graphics were presented by Bill Lunceford and Raigan Kretzschmar. Following the initial presentation there was discussion about what could be done on site:

- Potential for Community Center if Steering Committee agrees one is needed.
- Field 5 – County would like to maintain as ball field for adult softball
- Potential to relocate entrance drive to allow more room on hillside
- Possible redevelopment of 4 smaller ball fields into soccer fields (long term)
- Relocation of Concessions to accommodate new layout of park (long term)

The floor was then opened for informal discussion, and the following interests and concerns were presented:

Interests:

- Basketball is huge in the area, Interest in keeping the existing courts and potentially locating another court, possibly inside
- Park needs a Community Center / Gymnasium.
- Park should allow for use by multiple age groups, and have activities appropriate for everyone.
- Soccer fields to accommodate various age groups
  - 20 x 30 yds (5-6 year olds)
  - 30 x 40 yds (6-12 year olds)
  - 50 x 70 yds (12 year olds)
  - Regulation (over 12 years)
- Improve lighting throughout park.
- Separate crossings (Pedestrian vs. Vehicular)
- Left turn lane into park off Britt Road
- Youth track and field events (around soccer fields)

- Additional tennis courts – Very popular activity
- Additional picnic shelters
- Maintaining large open lawn area (at existing picnic area) for large group gatherings, family picnics. Etc.
- Water fountains located at each field
- Additional restroom facilities
- Additional play areas – near each field

Concerns:

- Field #3 drains poorly, holds water and needs regarding. Also tends to omit an odor after heavy rains.
- Location of Basketball Court. Would like to relocate to an area that can be patrolled better.
- Not enough parking
- Entrance road curve is too sharp – realign
- Power struggle between uses.

Bill Lunceford presented a "Long Term" plan which showed the location of a 25,000 sq. ft. Community Center / Gymnasium and parking for 187 cars, located on the hillside in the center of the site. This concept plan was used to graphically display, for the Steering Committee, the amount of space necessary to accommodate these elements.

The next meeting was tentatively scheduled for March 4th, 2004. jon Benson + associates will present 3 concept plans for short and long term improvements and cost estimates.

If there are any additions or corrections to these meeting minutes, please contact Raigan Kretzschmar of jB+a immediately at 770.803.0900.

Lucky Shoals Park – Concept Meeting

Minutes from: 03.04.04 Steering Committee Meeting

Attendees: Gwinnett County - Grant Guess, Bill Lunceford, Sharon Plunkett, Tina Fleming Stacey Fowler, Denny Jenkins

jon Benson + associates (jB+a) – Steve Provost, Raigan Kretzschmar

Steering Committee Participants – Jagadish Patel, Prashant Patel, Mark McClure, Mary Repine

Location: Singleton Road Activities Building
Gwinnett County

Time: 7:00pm

Bill Lunceford opened the meeting. He described the overall intent of the two phase plan as noted below:

Near Term Plan – Illustrated improvements that could be implemented in the near future.

Long Term Plans – Illustrated improvements that could potentially be implemented once additional funding becomes available.

Bill informed the group that the County is working with Georgia Power to increase the lighting in the park by upsizing the lamp wattage for the existing bulbs from 100w to 250w.

Raigan Kretzschmar (jB+a) described the concept plans:

Near Term Plan –

- Majority of improvements made in high activity area.
- Fields #1 & #2 to be maintained as ball fields.
- Field #3 will be converted to soccer field.
- Field #4 will be maintained for Senior Ball play but will be converted to large soccer field (150 X310) when Best Friend Park Construction is complete.
- Field #5 will be maintained as adult ball filed per Recreation Department request.
- A new play area is to be sited within the sports complex area, and an additional picnic shelter is planned for the picnic area.
- A raised crosswalk is also planned where the multi-use trail and the entrance drive intersect.

Bill Lunceford explained that Best Friend Park is being renovated so the Senior Ball players will be using Field #4 at Lucky Shoals until Best Friend renovations are complete.

Long Term Plan #1 –

- Entrance drive realigned to minimize sharp curves.
- 25,000sf Community center and Gym with parking for 165 centrally located and sited at front of park,
- Basketball court relocated to front of park to allow for more visibility,

- Additional tennis court added.
- Field #3 converted to soccer field (50x70 yds).
- Field #4 converted to soccer field (75x115 yds).
- Concessions relocated to accommodate new field layout.
- New play area within sports complex sited,
- Field #2 maintained as active 150' ball field,
- Field #5 maintained as adult ball field.
- Additional parking for 70 cars provided at sports complex,
- New picnic shelter planned for the picnic area,
- Raised crosswalks are to be provided where multi-use trail and vehicular traffic intersect.

Long Term Plan #2 –

- Entrance drive realigned to minimize sharp curves.
- 25,000sf Community center and Gym with parking for 180 centrally located and sited at front of park,
- Basketball court relocated to front of park to allow for more visibility,
- Additional tennis court added.
- Field #3 converted to soccer field (50x70 yds).
- Field #4 converted to soccer field (75x115 yds), with a 6 lane track adjacent to the field to be used for track events.
- Concessions building to remain in current location
- New play area within sports complex sited,
- Field provided adjacent to play area for open play or practice field
- Field #2 maintained as active 150' ball field,
- Field #5 reduced to 200' ball field.
- Additional parking for 55 cars provided at sports complex,
- New picnic shelter planned for the picnic area,
- Raised crosswalks are to be provided where multi-use trail and vehicular traffic intersect.

After the plans were presented the floor was opened for questions.

1. Could netting be added to outfield of field #4 to protect multi-trail users from fly balls? *Yes.*
2. Could an emergency phone be added to the park? *Recreation Department installs on pay phone per park due to maintenance costs. There is currently one pay phone in Lucky Shoals.*
3. Is the soccer field large enough for football as well? *The soccer field located on the long term plans is large enough for football.*
4. What is the time from for the "Near Term" Plan? *Bill explained the schedule and explained that some elements such as raised crosswalks could be installed immediately.*

Comment was made that large soccer fields are needed now, 3 years down the road was not soon enough.

County Staff explained that soccer is currently being played on Field #4 and will continue to be played on that field

5. What is the likelihood of this project being funded? *Funding for this park would depend on the SPLOST fund being passed.*

   County Staff described the SPLOST process, funding options, phasing development and the overall county-wide recreation system plan.

   Steering Committee members said they want more representation on Steering Committees that make decisions about the parks in this area.

6. Can the Lions Club Park (Lilburn) be used for soccer? This could happen (maybe) sooner than the "Near Term" Plan.

Additional Comments

The track next to Field #4 does not provide what is needed. So field configurations of Plan #1 would be better.

Short Term Plan is agreed on – no major changes.

Long Term #2 will be further developed into the Preliminary Master Plan with only minor revisions.

- Swap the location of the playground and the play field
- Include netting on the outfields of the ball fields.
- Include water fountains at the fields in the cost estimate (long term)

The next meeting was tentatively scheduled for April 1, 2004. jon Benson + associates will present Preliminary Master Plans for short and long term improvements and cost estimates.

If there are any additions or corrections to these meeting minutes, please contact Raigan Kretzschmar of jB+a immediately at 770.803.0900.

Lucky Shoals Park – Preliminary Master Plan Meeting

Minutes from: 04.01.04 Steering Committee Meeting

Attendees: Gwinnett County - Phil Hoskins, Grant Guess, Bill Lunceford, Tina Fleming, Stacey Fowler

jon Benson + associates (jB+a) – Steve Provost, Raigan Kretzschmar

Steering Committee Participants – Jagadish Patel, Prashant Patel, Mark McClure, Mary Repine

Community Participants – Tommy T. Welch, George Pugh, Mena Wilson, Cruz hunter, Anthony Blevins, Amelia Quarles, Rhonda Smith, Debra Meadows

Location: Singleton Road Activities Building
Gwinnett County

Time: 7:00pm

Bill Lunceford and Raigan Kretzschmar presented the Preliminary Master Plan to the Steering Committee. The following additions are to be included in the Final Master Plan:

- Add small playgrounds near ball fields rather than one full size playground.
- Add a Street light at the intersection of the entrance drive and the multi-use trail crosswalk.
- Add / Keep the raised crosswalk for the trail crossing.
- Add caution light (flashing yellow) at the entrance of the park, along Britt Road. Recreation Department to check with Gwinnett Department of Transportation.
- Add football overlay plan w the soccer layout plan on field #4.

After additional discussion regarding the needs for football in the community verses soccer, the Preliminary Master Plan was voted on. It was unanimously agreed that after making the revisions listed above, the layout would become the Final Master Plan and would be presented to the Recreation Authority on May 20th 2004.

If there are any additions or corrections to these meeting minutes, please contact Raigan Kretzschmar of jB+a immediately at 770.803.0900.

Lucky Shoals Park – Recreation Authority Meeting

Minutes from:	05.20.04 Recreation Authority Meeting
Attendees:	Gwinnett County Recreation Authority
	jon Benson + associates (jB+a) –Raigan Kretzschmar
Location:	Gwinnett County Justice and Administration Center Conference Room C
Time:	7:00pm

The Steering Committee Final Master Plan recommendations were presented to the Gwinnett County Recreation Authority by Bill Lunceford and Raigan Kretzschmar. The Recreation Authority voted unanimously to recommend the plan endorsed by the Steering Committee to the Board of Commissioners. (June 1, 2004)

If there are any additions or corrections to these meeting minutes, please contact Raigan Kretzschmar of jB+a immediately at 770.803.0900.

Lucky Shoals Park – Board of Commissioners Meeting

Minutes from: 06.01.04 Board of Commissioners Meeting

Attendees: Gwinnett County Board of Commissioners

Gwinnett County Parks and Recreation – Phil Hoskins, Grant Guess, Bill Lunceford

jon Benson + associates (jB+a) – Steve Provost, Raigan Kretzschmar

Location: Gwinnett County Justice and Administration Center
Conference Room C

Time: 7:00pm

The Lucky Shoals Final Master Plan was presented to the Gwinnett County Board of Commissioners by Steve Provost of jon Benson + associates. The Board of Commissioners unanimously voiced no objection to the Master Plan becoming the guiding document for the development of the Lucky Shoals Park Site.

If there are any additions or corrections to these meeting minutes, please contact Raigan Kretzschmar of jB+a immediately at 770.803.0900.

Lucky Shoals Park

Final Master Plan

Prepared for:

Gwinnett County
Department of Community Services

Prepared by :

Jon Benson + associates, inc.
2900 paces ferry rd.
building B, suite 120
atlanta, ga 30339
770.803.0900
fax 770.805.0903
planning + landscape architecture

Date:
May 20, 2004