

# GRAVES PARK MASTER PLAN



Gwinnett County, Department of Community Services, Parks Division

Prepared by: CERULEA Inc.

April, 2003

## Graves Park Master Plan

---

The Graves Park Master Plan was prepared with the participation and guidance of the Master Plan Steering Committee members. For their efforts we are most appreciative.

<i>Terez Cioc-Kele</i>	<i>Charles McCann</i>
<i>June Deans</i>	<i>Tray McCarty</i>
<i>Karim Delawalla</i>	<i>Angela Pringle</i>
<i>Joan Dickerson</i>	<i>Bessie Shavers</i>
<i>Hugh Floyd</i>	<i>Mary Squires</i>
<i>Eric Garris</i>	<i>Georgette Stanescu</i>
<i>Bill Hawkins</i>	<i>Harold Timms</i>
<i>Bill Keller</i>	<i>Robert Wood</i>
<i>Terry Lollis</i>	<i>Mark R. Williams, Recreation Authority</i>

The support and vision of the Gwinnett County Board of Commissioners has assured preparation and faithful implementation of the Master Plan:

<i>Chairman:</i>	<i>Wayne Hill</i>
<i>District 1:</i>	<i>Marcia L. Neaton</i>
<i>District 2:</i>	<i>Bert Nasuti</i>
<i>District 3:</i>	<i>John P. Dunn</i>
<i>District 4:</i>	<i>Kevin Kenerly</i>
<i>County Administrator</i>	<i>Charlotte J. Nash</i>

# Graves Park Master Plan

---

## *Table of Contents*

<i>Chapters</i>		<u>Page</u>
1.0	Project Goals and Objectives.....	3
2.0	Site Context.....	3
3.0	Methodology .....	3
4.0	Site Inventory and Analysis.....	5
5.0	Development Program .....	14
6.0	Development Budget .....	24
7.0	Alternative Development Concepts and Master Plan .....	25

## *Appendices*

- A. Master Plan Design Estimate
- B. Splash Ground Illustrative Layout
- C. Meeting Minutes

## *List of Figures*

- Topographic Diagram .....
- Circulation Diagram .....
- Vegetation Diagram .....
- Watershed Diagram .....
- Views and Spatial Relationships Diagram .....
- Concept A .....
- Concept B .....
- Concept C .....
- Hybrid Concept.....
- Preliminary Master Plan .....
- Final Master Plan (Color Graphic) .....

## 1.0 Project Goals and Objectives

This study addresses the recently acquired 70-acre Graves Park tract. The goals guiding the master plan phase of the project include:

- Address needs for additional park acreage in this area of Gwinnett County (per Gwinnett County Parks and Recreation 2000 Capitol Improvements Plan).
- Provide community recreational facilities not otherwise conveniently available to the surrounding population.
- Provide a Passive Community Park as defined in the Passive Community Park Position Paper approved by the Gwinnett County Recreation Authority – August 15, 2000.

## 2.0 Site Context

The site fronts on Graves Road to the East. Graves Lane penetrates the site, terminating in a cul-de-sac near the center of the property. The rear of the property backs up to the Gwinnett County boundary with DeKalb County. Located in western Gwinnett County, south of I-85 and north of Norcross-Tucker Road, the surrounding census tract has one of the highest population densities in Gwinnett County.

## 3.0 Methodology

Using a traditional approach to the park planning process, the project progressed through a series of interim tasks to arrive at a consensus Master Plan. The milestones along the way to completion of the Master Plan included:

- Confirmation with Staff of Relevant Issues.
- Public Input Meeting, Survey Distribution, and Steering Committee Membership Applications Distribution.
- Steering Committee Kickoff and Scheduling Meeting.
- Performance of Archeological Investigation.
- Steering committee Tour of Park Site and other County Parks, Program Confirmation based on input of staff as well as the Steering Committee.
- Steering Committee Presentation of Inventory/Analysis and 3 Alternative Development Concepts.
- Steering Committee Presentation of Hybrid Concept Plan
- Steering Committee Presentation of Preliminary Master Plan.
- Steering Committee Presentation of Final Master Plan to include Phased Prioritization.
- Performance of Geologic Evaluation of Groundwater Potential.
- Presentation to the Recreation Authority.
- Presentation to the Board of Commissioners

# Graves Park Master Plan

---

The following provides additional brief description of the methodology and timeline:

## **Base Plan Development (through September 30, 2002)**

Using digital DXF files derived from the County GIS system together with a digital Property Boundary Survey, CERULEA prepared a composite AutoCAD base plan for the site.

## **Park Site Visit and Tour of Similar Parks (December 7, 2002)**

Together with the full steering committee, the site was walked over in detail. Together with the steering committee and key staff, a field trip of parks throughout Gwinnett County was conducted to illustrate a variety of plan elements included in the passive community park prototype. Sites visited included Mountain Park Park, Lenora Park, Collins Hill Aquatics Center, Pinckneyville Park. Following the tour, the program options were reviewed and voted upon by all Steering committee Members in attendance.

## **Inventory and Analysis (through January 8, 2003)**

A series of five graphics were then prepared to record the findings organized under the headings of: Topography; Circulation; Watershed; Vegetation; and Views and Spatial Relationships.

## **Conceptual Development (through January 12, 2003)**

Three alternative concept plans were quickly developed to consider the program requirements. The plans were varied and were presented to the Steering Committee on January 13, 2003. All the alternatives differed principally on the basis of the treatment of Graves Lane and associated parking development. From this process, a Hybrid Scheme was selected for further refinement.

## **Hybrid Concept Development (through January 28, 2003)**

A Hybrid Concept Plan was then developed and presented to the Steering Committee on January 28, 2003.

## **Preliminary Master Plan Development (January 30 - February 10, 2003)**

The Preliminary Master Plan was presented to the Steering Committee on February 10, 2003. The plan was recommended without plan changes as a final master plan for the next meeting.

## **Final Master Plan (February 11 – 24, 2003)**

The final plan and cost estimate were presented on February 24, 2003 to the Steering Committee. There were no plan refinements requested by the Steering Committee. The discussion of the cost estimate was the focus of the meeting. The final color master plan was prepared and presented to the Recreation Authority on March 20, 2003, and many of the Steering Committee members were in attendance. An April 16, 2003 presentation to the Board of Commissioners marked the completion of the master plans process.

## 4.0 Site Inventory and Analysis

The following constitutes a summary of the inventory and analysis process. Each major category of discussion is supplemented by a diagrammatic graphic.

### *Topography*

The site is comprised of one major landform. A ridgeline roughly along Graves Road declines from a high elevation of 1086 in the southeast corner to a low point of elevation 968 at the bed of the un-named creek flowing out of the middle of the site at the DeKalb County line. The mostly wooded, sloping terrain, falls at average grades of 10-15% with many areas in excess of 20%. Hazardous, eroded embankments, some with sheer faces in excess of 14 vertical feet, are associated with the central drainage channel exiting the center of the property adjacent to DeKalb County. Less than 1/3 of the site slopes at less than 10% (see Diagram) and much should be made of these areas suitable for meadow and parking development consistent with program objectives.

Note the gray shaded areas of less slope (areas which are more easily and cost effectively developed) situated as a band in the central part of the site. Several soil borings have confirmed a depth to bedrock sufficient to allow for grading of the central area whereas peripheral areas to the north and south have shallow depths to bedrock. Additional geotechnical investigation is needed to assure that the final design of the park would not require rock excavation.

The 18-25% slopes to the north and south, to be adapted for trails per the program, will require benching, swales, and cross-drainage provisions.

### *Circulation*

Graves Lane terminates in a cul-de-sac in the center of the property. For planning purposes, it is assumed that this paved public road and right-of-way may be removed, provided the existing road improvements and right-of-way are maintained to the adjacent residential driveway north of Graves Lane. A County bus line is now being established to provide service along Graves Road, with a stop at the park.

For planning purposes, the existing vehicular property access via Graves Lane will most likely be preserved. An existing driveway to access the current resident police officer's home at Graves Lane will also be maintained.

Existing trail alignments have been noted on the analysis graphics (see Diagram). For the most part, these trail alignments do not form logical loops and do not comply with current standards for slope, benching and cross-drainage. The existing trail alignments may or may not be incorporated into the final master plan. Any remnant trail alignments not otherwise utilized in the final plan should be removed and restored to the surrounding vegetative condition to discourage continuing use by park visitors.

## Graves Park Master Plan

---

The most interesting trail element is the discontinuous trace of the Hightower Trail alignment adjacent to the DeKalb County line. This Native American prehistoric trail alignment is discussed in greater detail in the Graves Road Archeology Report, a companion study to the park master plan process. All extant portions of the trail are to be preserved throughout development of the park and would be suitable for interpretive programming for park visitors. TRC Garrow, the consulting archeologists, have flagged the extant portions of the trail in the field.

Subdivision road rights-of-way are immediately adjacent at points to the north and south of the park. This adjacency would support the development of sidewalk links to the park trail system, thereby encouraging pedestrian access to the park.

# Graves Road Park

## Magnolia Subdivision



# Graves Road Park

Magnolia Subdivision



## Annotation Key

- A Remnant Hightower Trail
- B Trail to Northeast High Point
- C Trail to Upper Northern Valley
- D Trail to Southern High Point
- E Trail to Pond Dam
- F Trail Along Central Ravine
- G Paved Drive to House

Existing Dirt Trails  
(wide enough for  
Jeep, typ.)

## Circulation Diagram

0 100 200 400  
SCALE

Gwinnett County  
Department of Community Services  
Prepared by CERULEA Inc., January 13, 2003

# Graves Park Master Plan

---

## *Watershed*

As the project acreage does not occupy the full extent of the upstream watershed boundaries, there remain certain considerations related to offsite stormwater flows across the property. The tract drains into an un-named tributary stream at the DeKalb County Line, all a part of the Chattahoochee River drainage basin. The acreage of the watershed subunits was charted to assist in the visualization of these parameters (see Diagram).

Stormwater treatments (culverts, stabilized swales, etc.) will be where the proposed trails cross the existing surface channels, particularly those points of concentrated flow from adjacent developed areas. There are two permanently flowing streams that will be accorded wetland protection. Typically, permitting authorities will allow up to 10,000 square feet of wetlands to be disturbed per project. Additionally, the former pond bed (the dam was intentionally breached) in the northwest corner of the site is a probable wetland given the groundwater spring underlying that area. Permitting authorities may or may not allow restoration of the dam and pond. If a water quality or stormwater impoundment is required here, restoration of the pond would be conditioned on a permit being granted. Design of a back-up stormwater mitigation location would then be required if this location could not be permitted for such use.

A permanent new pond site of about one-acre could likely be developed in the center of the site, displacing one spur of the un-named tributary. This location has a groundwater spring, so consideration of same during construction would be required. Again, a careful study would be required to confirm if permits could be secured for the development of a pond in this location. An Alternative pond site, as required by the program, could be developed in the event a permit could not be obtained for the central location.

A hydrogeological study was commissioned as a companion to this master plan study. The study confirmed that there was high probability of suitable groundwater resources to replenish a surface pond for irrigation water. Two well sites, a primary and secondary were located in that report, both very close to the DeKalb County line, but away from the bed of the Hightower Trail.

## *Vegetation*

Vegetation units were mapped and analyzed (see Diagram). Areas of hardwood forest cover would hopefully be preserved where possible, contingent on provision of program requirements. Lesser concern would be accorded to preservation of pine forested areas. Specimen quality hardwoods are located scattered about the site and have not been surveyed for location. A specimen tree location survey is suggested for the design of the park elements to ensure preservation of the widely scattered specimen trees.

Very limited turf or open areas are present, limited to small areas adjacent to Graves Lane. Limited areas of herbaceous ephemeral vegetation were observed, principally along the northwest corner of the site below the breached pond dam. These species included Asarum and Trillium, species typical of the region.

# Graves Road Park

Magnolia Subdivision

Annotation Key

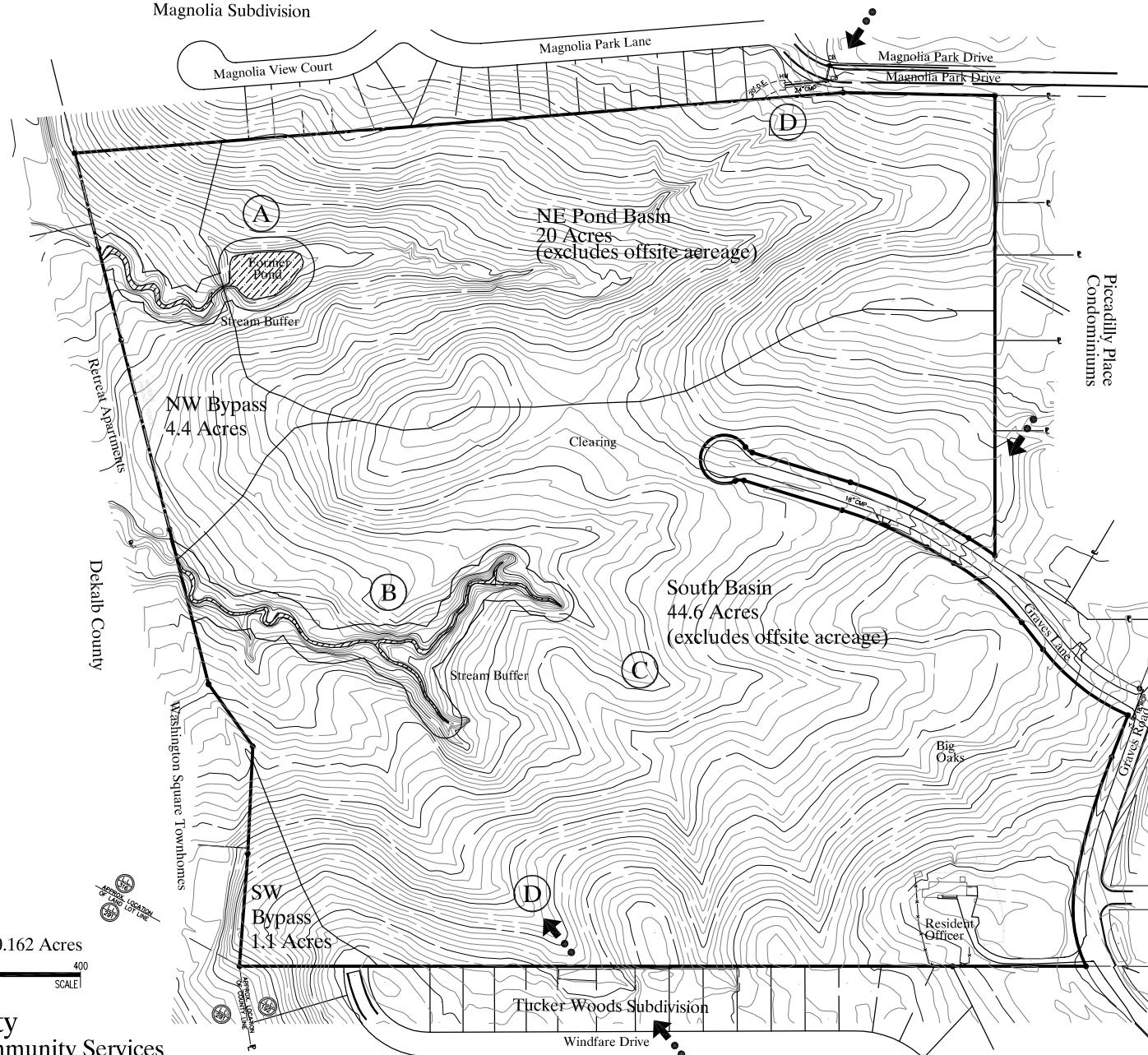


## Vegetation Diagram

70.162 Acres  
  
 Gwinnett County  
 Department of Community Services  
 Prepared by CERULEA Inc., January 13, 2003

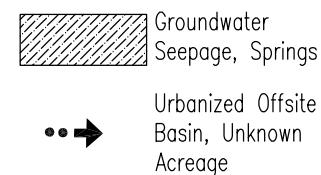
# Graves Road Park

Magnolia Subdivision



## Annotation Key

- A** Former Pond could be restored w/ dam repair
- B** Potentially hazardous steep banks along tributary
- C** Ponds can be developed upstream of jurisdictional wetlands
- D** Concentrated offsite stormwater enters site, no defined channel = erosion concern



## Watershed Diagram

70.162 Acres



Gwinnett County  
Department of Community Services  
Prepared by CERULEA Inc., January 13, 2003

# Graves Park Master Plan

---

## *Cultural Resources*

Cultural resources (man-made objects and other evidence of human habitation) will play an important, though perhaps obscure aspect in the park. Important existing cultural resources include the existing remnants of the Hightower Trail near the DeKalb County Line. The prior property Owner, the Graves family, uncovered a portion of a rough soapstone bowl in the northwest corner of the property.

A detailed archeological investigation, findings of which are summarized in a companion report, located a cluster of soapstone boulders below the former pond dam. Stone hand tools, believed used to chip and shape the stone bowls, were recovered from an archeological excavation adjacent to the boulders. These implements have been attributed to the “Archaic” time period, from 3,000 to 5,000 years ago.

During construction, protective temporary fencing would be necessary to protect the trail bed and soapstone boulder site from adjacent modern trail construction.

## *Views and Spatial Relationships*

From the park users perspective, internal to the park, from the high ground near the north, east, and south boundaries, long views into the park may be enjoyed. The best long views are located near the boundary, particularly at points A and E (see **Diagram**). Providing long views creates a feel for the expansiveness of the park property. Currently longer views into the park are terminated by vegetation that can be thinned or removed to open up the view. Trails to the high points have the problem of being close to the park boundary thus creating views off site. At the edges, there are three options:

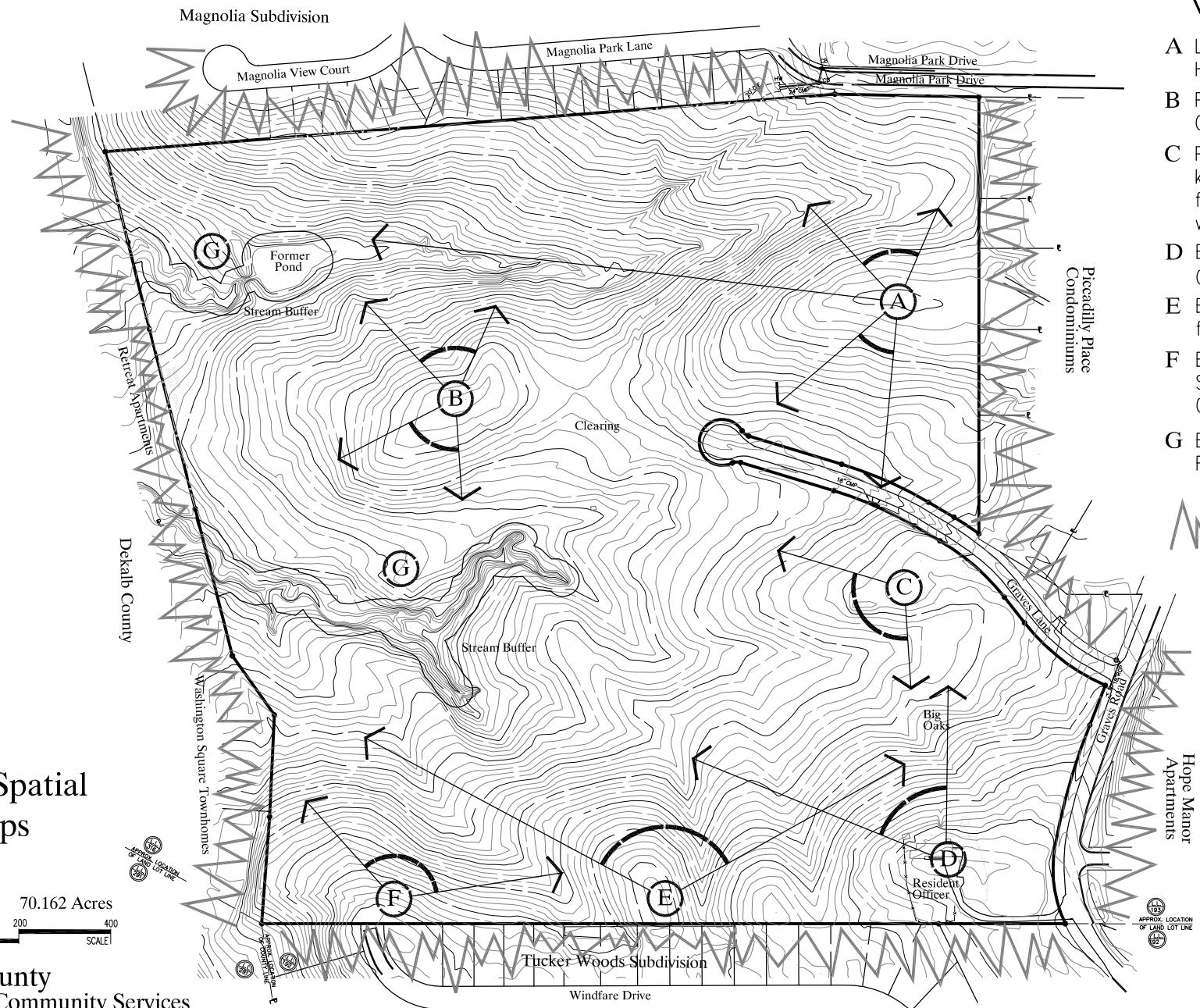
- 1) move the trail towards the interior
- 2) plant screening (but, screening trees will not grow rapidly in deep shade), or
- 3) live with the off site views.

Views internal to the core of the park include some very nice opportunities for short views from viewpoints overlooking the wooded ravine in the center of the property.

# Graves Road Park

## Views and Spatial Relationships Diagram

0 100 200 400  
SCALE  
N



### Viewshed Key

- A Long View within North Hardwood Valley
- B Panoramic Views from Central Hardwood Grove
- C Potential long views from knoll if adjacent pine forest is managed for views
- D Excellent Viewing from Caretaker's House @ Knoll
- E Excellent Panoramic Views from South Knoll
- F Excellent Views from Southwest Knoll – Could Open Up More
- G Excellent Short Views along Forested Ravine

Offsite Viewshed  
Detracts from  
Expansive Park  
Perception

## 5.0 Development Program

Working with the Steering Committee and DCS staff, a finalized program for park development was prepared. There was much discussion of this program with the Steering Committee in order to carefully consider the theming of the program elements. **Photos and Illustrations used herein to illustrate the character of various elements are not explicit guidance as to design, but indications of the intent and vision of the staff and steering committee through this process.** The park will be developed in phases. A detailed description of the elements in Phase I is included in the following.

### ***Identification of Thematic Zones***

On the ground, there are three distinct thematic zones, all linked by the paved, multi-purpose trail loops:

- A. The central area of the park, suitable for the intensive developed elements of the park including parking, restroom with greeting area/information kiosk, children's play area with splash ground, youth skatepark, group shelter, 2 tennis courts, sand volleyball, and all other developed features;
- B. The play meadows beyond the core area, including 10.35 acres of irrigated turf meadows (includes dog park), 3-4 acres of non-irrigated grass meadows, and a one-acre naturally landscaped pond; and
- C. The wooded perimeters of the park with 1.83 miles of nature trail, cultural and natural resource interpretation sites, and a maintained forested landscape.

### ***Phase I Program Elements***

The following items comprise the consensus development program for Phase I of development. At the end of this section, additive alternate bid items are placed in consecutive order based on their rank of importance assigned by the steering committee for implementation in the event that bids for the Phase I construction contract are low enough to provide for the award of added elements.

The site will require clearing, grading, erosion control, stormwater, water, power, phone, and electrical services adequately sized to serve all phases of construction. Demolition of the bulk of Graves Lane will be required to include pavement and utility removal/abandonment as appropriate. More detail on the anticipated cost of these scope elements is listed on the Appendix A, Final Master Plan Cost Estimate. Where fencing is indicated, it will be vinyl-clad chain link per departmental standards unless otherwise noted.

### **Restroom**

The approximately 580-square-foot restroom will be provided with three commodes/urinals per sex, for a total of 6 fixture units, required sinks and diaper changing stations. The footprint will include a small supply closet incorporated into the plumbing chase with an access door

# Graves Park Master Plan

---

between the men's and women's restroom doors. Design will be per department standards, similar to that recently used at Five Forks Trickum Park.

## Septic System

A septic field is anticipated to be developed proximal to the Restroom. Design of the septic field system, including tank configuration and sizing, should be coordinated with the Department of Environmental Health. A Level 3 Soils Investigation will be required to confirm the soils suitability, rate of absorption and length of field lines. The Pacolet Soils Unit (PgD2 symbol on Gwinnett County Soils Survey) is noted as having moderate septic tank absorption rates per the soil survey, a level about as good as can be expected for Gwinnett County. Prior dwellings on Graves Lane, recently removed by the County, were served by septic systems for many years.

## On-Site Residence

An existing residence is located at the southeast corner of the site, accessed by separate driveway off of Graves Road. This has been made available as housing for a resident police officer prior to Phase I.. As of this writing, no additions or modifications are proposed to the house or immediate grounds.

## Paved Asphalt Parking

Graves Lane will be shortened such that vehicles are funneled directly into the parking lot. The existing asphalt on Graves Lane will be resurfaced after the close of the Phase I development. A 100-car paved parking lot will be provided, with linesstripes and concrete precast wheelstops.

The surface profile will be pervious asphalt, similar to other lots currently under development at Little Mulberry Park and McDaniel Farm Park. Provide sub-drains so that the excess surface water collected in the pervious profile can be drained to outfalls in turf-lined swales. In this way, traditional storm inlets are not required at the periphery of the parking area and full credit for best-management practices can be accorded for stormwater modeling and water quality calculations. Provide geotechnical borings to confirm the percolation capacity of the underlying subgrade under the pervious aggregate base courses.

Curb and Gutter will only be provided at tightly radiussed aisles and islands at either end of the parking lot. The layout will provide for expansion to 140-spaces in a later phase, however, the radius curb returns at the farthest extreme end near the Phase 2 picnic pavilion will be placed as shown on the master plan graphic with the future 40-spaces located proximal to the Phase 2 youth skatepark area.

The parking lot gate will be a rustic timber design by Ryther-Purdy, similar to that used at McDaniel Farm Park.

# Graves Park Master Plan

---

## **Site Lighting**

The parking lot will be the only element to be lighted in the park. The poles will be wood round poles with Holophane Polestar fixtures spaced in a fashion similar to those used at Little Mulberry Park and McDaniel Farm Park. The system will be built by the Phase I contractor, not the local power utility. The lights will be operated to turn on and off per a timer set in the restroom building. The lights will not burn all night, but will be timed to allow visitors in the park at dusk to navigate back to their cars at nightfall. Lighting layouts will be designed so that the Phase 2 park development features will not require reconfiguration of the Phase I lighting system.

## **Sidewalks**

Provide 6-foot wide concrete sidewalks in the Graves Lane and Graves Road right-of-way to allow bus system users and neighborhood residents to access the park. Where the sidewalks cross the parking lot bays, provide raised pedestrian concrete crosswalks.

## **Paved Multi-Purpose Trail**

Provide a 12-foot wide asphalt, one-mile loop. Also provide a 12-foot wide asphalt, ADA accessible 0.45 mile extension loop with maximum slopes of 5%. There will also be 2 links of similar width asphalt trail provided from the parking lot and greeting area to the trail loops.

## **Children's Play Area**

Provide a play area configured roughly per the master plan concept. The base bid play area, designed within the \$95,000 limits shown on the detailed cost estimate would include concrete sidewalks, picnic tables and benches, and a wood chip mulch area with subdrainage per departmental standards. Equipment would be prefabricated to include: swings; free-standing items; and compound structures, all suitable for a variety of play and separated into zones for tots and K-6 age groups. Provide ADA compliant transfer routes to access a representative portion of compound structures. Provide 2" thick rubber particle mats under wear zones such as K-6 swings, slides, climber landings, and any other concentrated wear zones. Expansion of the play area per Alternate #4 is described below.

## **Turf Meadows**

Provide approximately 10.3 acres open play areas, graded similar to rolling golf fairways. 7.3 acres of the turf meadows are intended to be suitable for casual athletic play (such as soccer) but not conducive to formal games or organized practices. 2 acres of the turf meadows are to be developed as base bid elements for an alternative bid Dog Park overlay (the turf meadow will be developed whether or not the Dog Park alternate is awarded). A one-acre turf meadow area near the future phase Group Shelter will be developed as a base bid item as well.

These are not to be graded uniformly as athletic fields. If users concentrate activity in a wear pattern such as occurs when soccer goals are placed in a fixed location, then temporary wooden lath fences will be put in place to partition that area from use while the impacted turf is

# Graves Park Master Plan

---

restored. Grass will be mowed when it reaches 6", and will be normally maintained in a 3-4" height range. The grass species required, seeded improved common Bermuda, will not tolerate the low-cropped mowing regime typically employed for hybrid Bermuda on sports field turf. Irrigation is to be provided for the turf meadows per Alternate Bid line item.

## Grass Meadows

Provide 3-4 acres open seeded grass meadows, similar to the above except that the slopes are much greater, the turf will not be irrigated, and the grass height will be maintained at an average of 4-6". Activities anticipated include picnicking, nature appreciation, kite flying, sunning, etc. Sports activities (or other activities that concentrate wear in any particular area) are to be discouraged on the grass meadows.

## Kudzu Eradication and Landscape Planting/Restoration

In the southwest corner of the site, near Tucker Woods subdivision, Kudzu has invaded a largely open hillside. Phase I includes whatever methods are necessary to permanently eradicate Kudzu from this portion of the property.

Landscape planting is required to effect transitions, provide shade, and screening as appropriate in various portions of the site disturbed by the various items of work. Plant lists and designs will feature native species and will be as approved by the department.

## Pond

Provide a minimum one-acre pond, to be located approximately in the center of the site. This location requires one leg of a spring-fed drainage channel to be impounded with an earthen dam. The location is contingent upon confirmation by geotechnical investigation of locations of soils suitable for the dam as well as permit approvals for the modest loss of wetland area.

The perimeter of the pond will be naturally landscaped. The pond will be managed as a visual amenity and as an irrigation water reservoir. The pond will also be managed as a stormwater management facility, provided the storage volumes do not result in a hazardous fluctuation condition incompatible with safe public access to the pond shore. Flood hazard signs are suggested, set between the multi-use trail and the normal pool, with foot depth markers on the post, topped with a suitable warning so that park visitors are alerted to atypical flooding conditions. Outlet control structures will be sited to limit visibility, and any portions visible from the public trail system will be detailed in stone veneers or solid stone (conceal standard precast concrete structures, if used). Trash racks/skimmers will be carefully positioned and detailed for aesthetic value.

Another option to reduce the pond's stormwater freeboard is to place an outlet control weir into the existing abandoned earthen pond dam in the northwest corner of the site. If this is done, the existing dam must be carefully graded to minimize removal of existing trees. Also, the Phase II nature trail crosses over the dam via narrow boardwalk, so the design must allow for the future crossing.

## Well System

The pond will be replenished by a drilled well sited at one of two indicated locations

# Graves Park Master Plan

---

recommended per the companion subsurface water resources study. Electrical power and well water return piping will be required to be extended to the well site. The route of these services must be outside of the ravine woodland in order to protect trees. Consider lightning protection for both the well and power supply.

The procurement of the well will include an initial specification of the permanent well pump, with unit price bid options to increase or decrease both the pump and return pipe sizes as necessary to match the system to the results of a 24-hour yield test performed after the well is drilled. Irrigation drawdown during the day should be scheduled via timer so as not exceed the volume that can be replaced prior to the next irrigation cycle.

In the event that initial or subsequent well yields are not satisfactory to assure replenishment between cycles, the design will provide for lake irrigation pool replenishment with municipal potable water supply via a manually and electronically (irrigation time clock) operated irrigation valve. The replacement water piping will empty into the lake at a point above the permanent lake pool so that maintenance staff can confirm the open/closed status of the valve and avoid unnecessary replacement water use.

Provide a tee and manual valves with additional return piping to carry water beyond the lake all the way to the Phase 2 Splash Ground location at the Children's Play Area. In the event that the pressure and flow from the well are suitable, the well water may also be used for the Phase 2 Splash Ground installation in lieu of municipal potable water supply. Refer to the Splash Ground narrative description for more information.

Included in the base bid, and associated with the irrigation well, irrigation water will be withdrawn from the lake via a pre-engineered pump station sized for the mainlines, to deliver adequate pressure and flow for the desired number of simultaneously operable irrigation zones. The pump unit will have a water level sensor to communicate irrigation make-up water demand levels to the well head. Provide perimeter fencing around the pump station and locate the unit screened from sight of the multi-use trail. Provide power to this location.

## Park Signage

Provide near the corner of Graves Road and Graves Lane, where visible to motorists on Graves Lane, a 2-sided entry sign. Base the design upon the departmental signage standards. Vehicular (STOP, Crosswalk, Speed Limit, ADA Parking) and rules signs will also be per departmental standards. Additional signage and site interpretive graphics are stipulated among the alternates below.

## Irrigation System

Additive Alternate #1, the irrigation system is deemed necessary and the highest priority in the alternate implementation strategy. This alternate includes the distribution upstream from the base bid lake pump system and all components downstream of the distribution (zones, valves, controller(s), wiring, heads). Irrigation will be limited to the 10.35-acre irrigated turf meadows, including the one-acre turf meadow at the future phase group shelter, and the 2-acre dog park turf meadow. Use economical large diameter turf irrigation heads. Head layouts at the vicinity of the group shelter footprint and dog park fencing will be placed so that heads do not have to be relocated for a future phase improvement. Controllers, heads, piping, valve arrays, wiring and computer linkage controls will be per departmental standards.

# Graves Park Master Plan

---

## **Benches and Picnic Tables**

Additive Alternate #2 addresses the need for picnic and benches. Approximately 12 each of picnic tables and benches are to be provided, specified per departmental standards, and generally located per the master plan graphic. Two tables, located in the turf meadow near the Phase 2 Picnic Shelter will be equipped with grills. Grills will not be permitted elsewhere in the park. Benches will be distributed along the trail system to provide rest areas.

## **Neighborhood Links**

Additive Alternate #3 provides 6-foot wide concrete walks to link the Magnolia and Tucker Woods subdivisions to the multi-use asphalt trails. Where the slope of the walkway exceeds 12% provide a hybrid stepped walkway, where one half of the width has steps at intervals where required to maintain the maximum pavement slope at 12% grade, and the other half is a coarse, broom-textured ramp so that bikes, baby joggers, and baby carriages can be wheeled into the park without bumping over the steps.

## **Play Ground Completion**

Additive Alternate #4 provides for the expansion of the playground beyond the level funded under the base bid playground program. This would include the addition of perimeter fencing, a sand play area shaded by a prefabricated pavilion, and more tot and K-6 play equipment to more fully utilize the available play area. Provide additional benches, picnic tables, and waste receptacles to serve the expanded area.

## **Dog Park**

Additive Alternate #5, the 2-acre Dog Park will be located at the western end of the irrigated turf meadows near the western extreme of the one-mile multipurpose trail. The entire area will be fenced, then cross-fenced to provide 3 separate areas to run dogs. The fence will be designed with a gated chute, so that when the gate is opened to enter the chute, one must then pass through another gate to enter the dog park area. Consequently, dogs already in the area can not dash out of a single open gate.

The bulk of the area will be irrigated, grassed, and maintained per the turf meadow program item. Perimeter trees will be preserved, and the area should be carefully surveyed to identify suitable clumps of trees to be maintained for shade within the fenced area. The natural sloping terrain of the area may be maintained. Existing remnant agricultural terraces should be located and incorporated into the grading design. Such terraces would be used to place several dog park exercise elements such as jump-through hoops or bar jumps.

Great care will be required to assure good turf quality in this area. During periods of extreme moisture, the area may be closed to allow the soil to sufficiently drain, preventing the area from becoming compacted and the turf rootmat wearing away. If turf quality degrades, it may become necessary to partition areas with wood lath fence until the turf is restored. Appropriate signage is necessary, directing users to properly cleanup dog feces and properly handle their dogs.

# Graves Park Master Plan

---

A further amenity, a drinking fountain with dog bowl at the base will be provided near the entry to the dog park, available to trail users as well. This allows dogs to get a drink when entering or leaving the dog park.

## Tennis Courts

Additive Alternate #6 provides 2 tennis courts. Court fencing, nets, colorcoat, and paving will be per departmental standards. The courts will not be lighted. As the courts are benched into a sideslope, provide and maintain drainage swales to intercept water and divert it around the courts.

## Pond Improvements & Trail Markers

Additive Alternate #7 provides various enhancements to assure the pond will endure as an attractive landscape feature. To the perimeter of the pond add barrier and cross-fencing to prevent park users from forming barren/compacted desire trails around the shoreline. Access to the pond bank will be limited to a maximum 150-foot length zone near the multi-use trail.

The public access zone will require incorporation of a submerged stone wall at the water line. The top of the pond shore wall would be set level with the normal operating pool of the pond. In this way, dogs can enter or exit the water without clawing out the bank and children can step close to the edge without getting muddy feet. The wall height below normal pool should not exceed the anticipated daily irrigation withdrawal freeboard and in no case may exceed 30 inches to the safety ledge required around the edges of the pond basin.

In addition, an electrical subsurface water aerator (2 units) will be provided to oxygenate the lower level of the pond. Provide electrical power and locate lakeshore aerator control boxes out of the public access area and above the 100-year impoundment level of the pond.

At the paved asphalt trail loops, provide departmental standard distance markers to include  $\frac{1}{4}$  mile, start and finish markers at the one mile loop and ADA notice markers at the ADA compliant sub-loop.

## Greeting Area

Additive Alternate #8 includes provision of a kiosk with a diagrammatic park map (with trails), park rules and limited interpretive graphics on the Native American cultural landscape. Kiosk Graphics (artwork and electronic files produced by the designer) would be fiberglass embedded digital artwork configured so that the graphic panel(s) can be economically re-ordered from the original fabricator (using digital archive files in Adobe Illustrator format provided by the designer), removed and replaced if vandalized.

A vine trellis, supported by stone or masonry columns compatible with the restroom design would link the kiosk to the restroom, shading the access trail. If this alternate is awarded the asphalt trail under the trellis between the kiosk and restroom will be upgraded to brick pavers.

Also part of this alternate; provide perimeter fencing at the edges of the parking lot per the master plan graphic. This is intended to keep cars confined to the parking area. In addition, at the end of the access walk to the multi-purpose trail near the greeting area, overlooking the turf meadow, provide a series of stone seatwall steps (12" height) incorporating sets of 8' wide, 2 step risers at the midpoint of each seatwall. The seatwalls will create 5-foot wide turf terraces,

# Graves Park Master Plan

---

irrigated by the adjacent irrigation heads on the turf meadow.

## ***Phase II Program Elements***

The following items comprise the consensus development program for Phase II of development. The items are placed in consecutive order based on their rank of importance assigned by the steering committee for implementation in the event that Phase II funding is not sufficient to provide all elements. Any unexecuted elements as described under Phase I, should they not be awarded and constructed during Phase I, would be appended to the head of this list.

### **Nature Trail**

This trail system will be available to walkers only. The layout provides a .75 mile north loop and a 1.08 mile south loop. The four-foot wide trail surface will be 2" of shredded mulch (hardwood bark or cypress) over a suitable prepared base. In places, switchbacks with limited stone steps may be required to traverse steep transitions. At places where the trail is close to precipitous banks along the ravine, rustic timber barrier fences would be required (see photo).



Where the alignment crosses existing concentrated drainage flows provide stone paved trail dips. Provide water bars at other intermediate points to shed surface water.

The emphasis will be construction methods and materials that assure the provision of an all weather surface that does not require costly replacement of surfacing, and that resists rutting of the natural soil profile. Construction methods would include handwork and "Dingo" type power equipment. In no case would power equipment be allowed to plow out the trail subgrade profile

# Graves Park Master Plan

---

such that tree roots are ripped. Instead, ditch-witch or other hand excavation may be used provided that tree roots, where encountered are cleanly cut and are not left exposed to open air after cutting. Where large roots are evident (over 3" diameter) or root flares are visible near tree trunks then special bridging of such roots is required to include hand-raking of topsoil to the firm subsoil layer adjacent to the protected root. The rootzone would then be covered by geotextile fabric, and backfilled with a suitable gap-graded crushed aggregate bridge.

Hand root pruning, topsoil removal and stone aggregate beds, are among required elements in steep side-slope conditions where new trail alignments are proposed. Gap-graded crushed aggregate sub-surface layers and fine-textured surfacing are required for all weather performance. In lieu of quarry aggregates, in-situ or on-site borrow soils must be tested to confirm if they possess the correct physical properties for foundation, base or top course. Bulldozers and dump truck access will not be provided into the woodland environment. Special tree protection and erosion control measures are required during development.

A limited amount of 6-8' wide boardwalk is anticipated to be required at the crossing of the north trail over the existing breached pond dam in the northwest corner of the site. Provide safety railings where required to prevent falls. Provide either 3" nominal thickness treated wood decking or appropriate manufactured "plastic" lumber decking as an alternative.

## **Skatepark**

The skatepark is intended to serve the local community, so the size must be limited to the area shown on the master plan (7,000 SF). The design would include a full array of concrete and fabricated metal street elements suitable for both skateboards and in-line skates. To reduce injury, bikes are prohibited from the skatepark. Modest bowl elements will be provided, designed with proper profiles to allow moderate-skilled skaters to conserve momentum, achieve proper "air" and execute basic bowl "tricks".

The County will develop posted rules for skatepark usage, set fines for infractions, and will determine the extent of supervision and rule enforcement. The venue will be fenced with locking gates.

## **Group Pavilion**

A mid-sized (2,200 SF) hexagonal group shelter will be provided near the parking lot. It would be available for reservation through the County, or would otherwise be available on a first come first served basis. The design would be similar to many already in place, designed per latest departmental standards.

## **Parking Expansion**

Provide 40 added parking spaces with linestripes and wheelstops to coincide with addition of the group shelter above.

## **Splash Ground**

## Graves Park Master Plan

---

Located between the Children's Playground and the Restroom, this moderate footprint would be packed with over 15 spray elements (see Appendix B for illustrative graphic). The budget set in the cost estimate assumes a more costly approach where water is recirculated and chemically treated to the high standards for such applications.

### **Sand Volleyball Court**

A single sand volleyball court will be located above one of the turf meadows. It will have a deep sand base, outdoor sleeves and a net standard (post and net) as well as a timber edge. A subdrain pipe will remove excess water from the sand profile. The design will otherwise comply with current departmental standards.

### **Perimeter Fence**

Provide a continuous 8' chain-link fence at the Dekalb County line.

# Graves Park Master Plan

---

## 6.0 Development Budget

The Phase I program list is based on an available budget of \$1,791,000. A recent highly competitive bid environment may yield bids 20-25% below current estimates. The Phase I program list will be expanded so that the bid process will reflect 8 additive alternates:

### First Phase

Insurance/Bonds	\$50,000
Sitework, Kudzu Removal/Planting.	\$682,250
Utilities	\$158,200
Vehicular Circulation	\$100,250
Basic Hardscape Amenities	\$446,272
Turf Steps, Misc. Hardscape	\$15,000
Turf Meadow Seeding	\$36,225
Contingency	\$50,000
Alt #1: Irrigated Turf	\$112,712
Alt #2: Benches & Picnic Tables	\$15,600
Alt #3: Neighborhood Walk Linkages	\$24,600
Alt #4: Playground Completion	\$56,375
Alt #5: Dog Park, Drinking Fountain	\$44,500
Alt #6: Tennis Courts	\$40,000
Alt #7: Pond Improvements/Trail Markers	\$27,525
Alt #8: Hardscape, Kiosk, Trellis et al	\$54,500
<u>All Design, Master Plan, Survey, Testing</u>	<u>\$265,000</u>
Sub-Total	\$2,179,009

The Second Phase list contained the balance of park program features the Committee believed should be in the next construction phase or phases as additional funds become available:

### Second Phase

Nature Trails	\$190,930
Skatepark	\$80,000
Group Pavilion	\$200,000
Parking Expansion	\$19,600
Splash Ground	\$221,000
Sand Volleyball	\$8,000
Perimeter Fence @ DeKalb County Line	\$28,000
<u>All Design, Survey, Testing</u>	<u>Not Included</u>
Sub-Total	\$762,530

A more detailed estimate is included in the **Appendix A**.

## 7.0 Alternative Development Concepts and Master Plan

A total of three alternative development concepts were prepared and presented to the Steering Committee. Following this, a hybrid concept plan was developed to refine the conceptual approach. Then a more refined plan, called the Preliminary Master Plan, was developed to reflect a consensus approach to the Parks development. With further revision, the Final Master plan was developed.

### ***Concept Plans A, B, and C***

All three concept plans (see **diagrams Concept A, Concept B, Concept C**) represent identical development programs, but vary in terms of spatial layout, and adjacency. The differences in each concept relate to layout of the trails, configuration/extent of meadows and parking location relative to Graves Lane.

Concept “C” was selected for modification into a hybrid concept for incorporating the following changes:

- Nature Trail: Move the trail in away from the boundary, like Concept A, but allow it to move up to selected high points, particularly to create pedestrian access via spur trails from the north and south subdivisions. The trail is to keep about 75 feet from the neighbors backyards, but come closer at pedestrian access points. Add any necessary boardwalks.
- Multi-purpose Trail: Design 1-mile loop in the central/south part of the site (the northern part of C and the southern part of A). Add a smaller, relatively flat loop suitable for pushing a wheel chair. Create spurs to high points or subdivision access points where practical. Pull trail back from the DeKalb County line.
- Neighborhood Connector Walks: may not connect to the multipurpose trail directly, so that pushing a baby stroller or riding a bike into the park will not be possible. This will be a pedestrian (walking) access. Stairs may be needed to achieve the elevation changes.
- Parking: Change the shape to more of a curved form with a smooth, radial return lane at the far end. The Steering Committee by majority voted to include lights on timers in the parking lot.
- Pond: Restore the dam, if permitted, but limit access to the water with a boardwalk.
- Pavilion: Move the pavilion south to the end of the parking lot. There will be open turf between the pavilion and the playground
- Restroom and Playground: Switch the locations of the restroom and playground. Open up a visual line to the restroom from Graves Road. The playground will be located on high ground.
- Meadow: Indicate a gateway portal (with kiosk) to frame the view down the long meadow. More meadow and the dog park will move towards the southern corner. Water line will be extended to the dog park.
- Tennis: Move the tennis courts to the right (northeast) as much as possible.
- Sand Volleyball: One court is small enough to be located almost anywhere at the edge the meadow. It does not need to be located next to the pavilion.
- Show the Skatepark footprint.

# Graves Park Master Plan

---

## *Hybrid Concept Plan*

The Hybrid Concept Plan (**see graphic**) was formatted based on comments by the Steering Committee and Staff. The plan was recommended with the following minor plan changes as a preliminary master plan for the next meeting:

- Tennis: staff desires to bring the tennis courts closer to the parking lot, shift them to the area below the multi-purpose trail.
- Shift the sand volleyball to the former tennis location.
- Because there is no maintenance compound, expand the restroom building to include a secure, locked storage room.
- Include in the cost of construction a sand profile with subsurface drainage in the irrigated turf areas.
- Consider adding a well if sand profile irrigated turf is proposed.
- The splash ground and playground locations should be swapped to keep leaves and debris from the trees from clogging the drains in the splash ground, and the playground would be closer to the shade.
- It is important to keep the splash ground and the skatepark small so that the parking lot needs to be no more than 140 spaces.
- Add irrigation to the dog park area.
- The committee voted to eliminate the disk golf course from the program based on impacts on the remaining woodlands.

## *Preliminary Master Plan*

The Preliminary Master Plan (**see graphic**) was formatted based on comments by the Steering Committee and Staff. The plan was recommended with only minor plan changes as a final master plan for the next meeting:

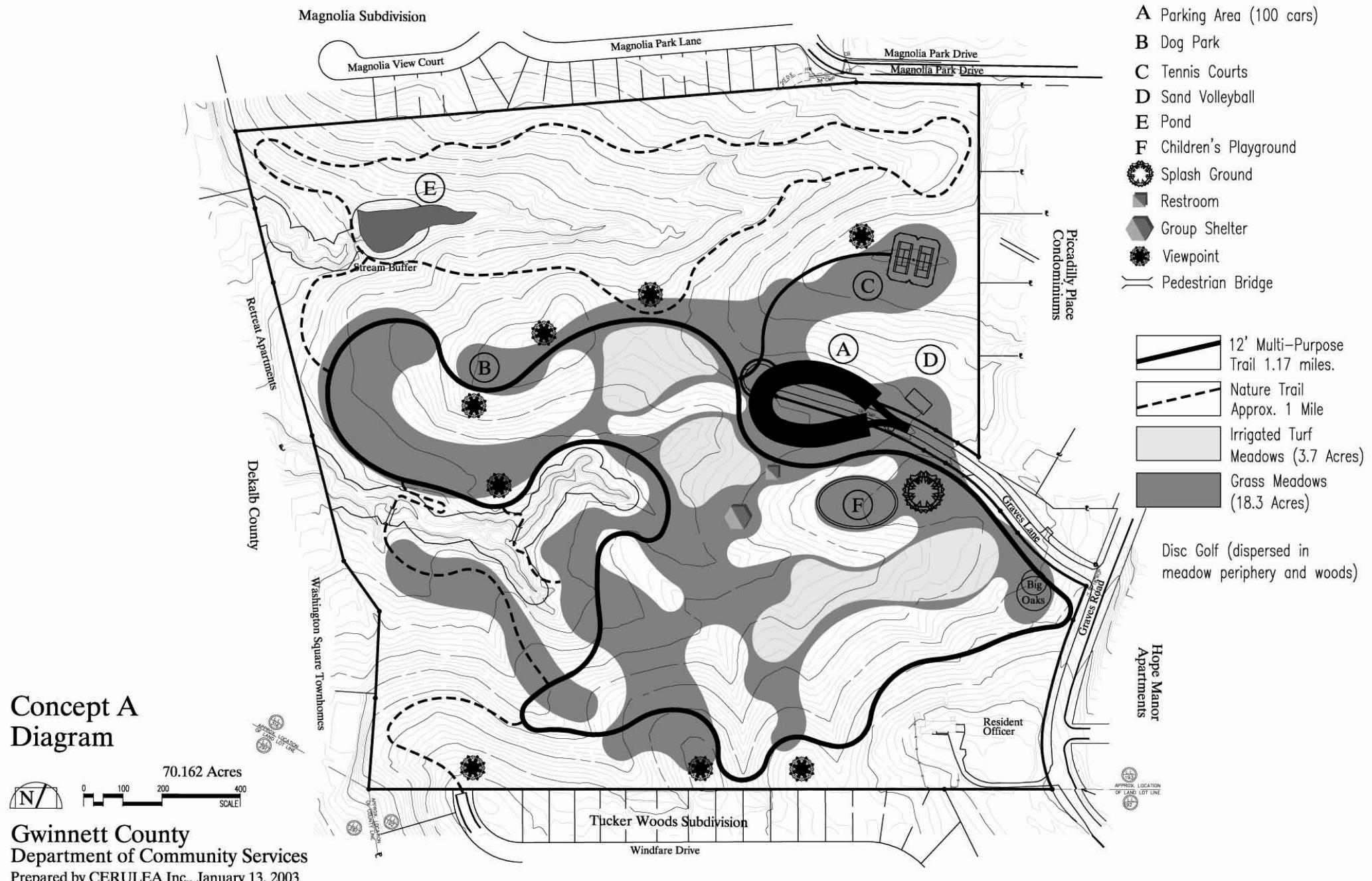
- A pond has been added since the last presentation based on water demand for irrigation and possibly for the splash ground.
- Of 3 Splash Ground concepts shown, the middle option with 15 spray elements was selected.
- To assure safe crossing of pedestrians from the Skatepark over the parking area to the restroom, add a raised, wide pedestrian crossing (like a wide speed hump) at the entrance to the parking bays and fencing.
- Provide 2- separately fenced areas on the Dog Park.
- Locate benches along the nature trail and picnic tables along the multi-purpose trail, but no grills on trails (grills only near picnic pavilion).
- A shade structure will be indicated at the playground/splash ground area.

## ***Final Master Plan***

- CERULEA formatted a final color graphic The final plan (see **Graphic**), and cost estimate (see **Appendix**) were presented on February 24, 2003 to the Steering Committee. There were no plan refinements requested by the Steering Committee. The discussion of the cost estimate was the focus of the meeting. The result of discussion was confirmation of the basic Phase I elements; designation of 8 prioritized Phase I alternates to be bid in the hopes that lower bids will allow inclusion of most; and prioritized Phase II elements.

The final color master plan was prepared and presented to the Recreation Authority on March 20, 2003, and several of the Steering Committee members were in attendance.

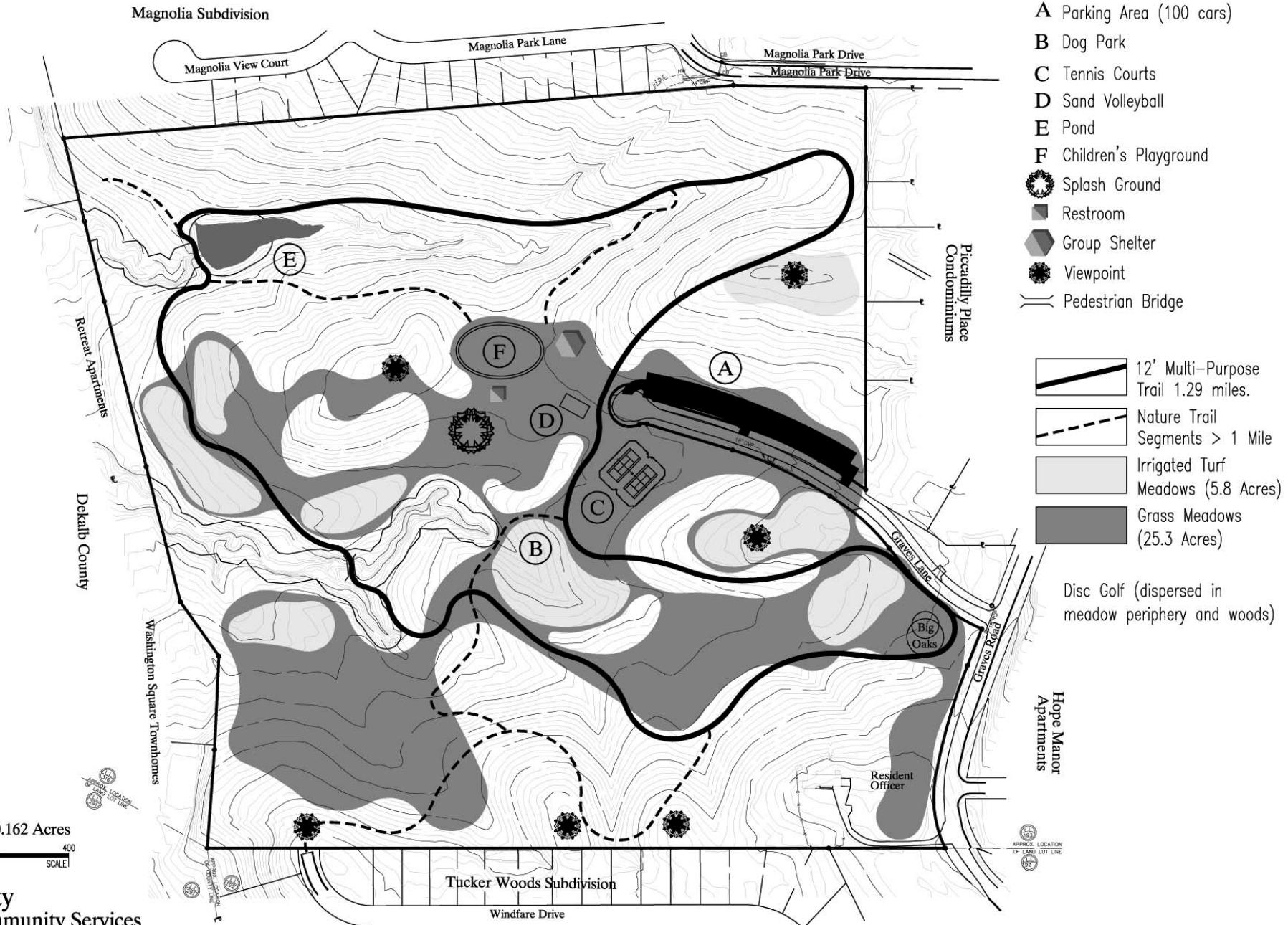
# Graves Road Park Site



# Graves Road Park Site

## Program Elements

- A** Parking Area (100 cars)
- B** Dog Park
- C** Tennis Courts
- D** Sand Volleyball
- E** Pond
- F** Children's Playground
-  **G** Splash Ground
-  **H** Restroom
-  **I** Group Shelter
-  **J** Viewpoint
-  **K** Pedestrian Bridge

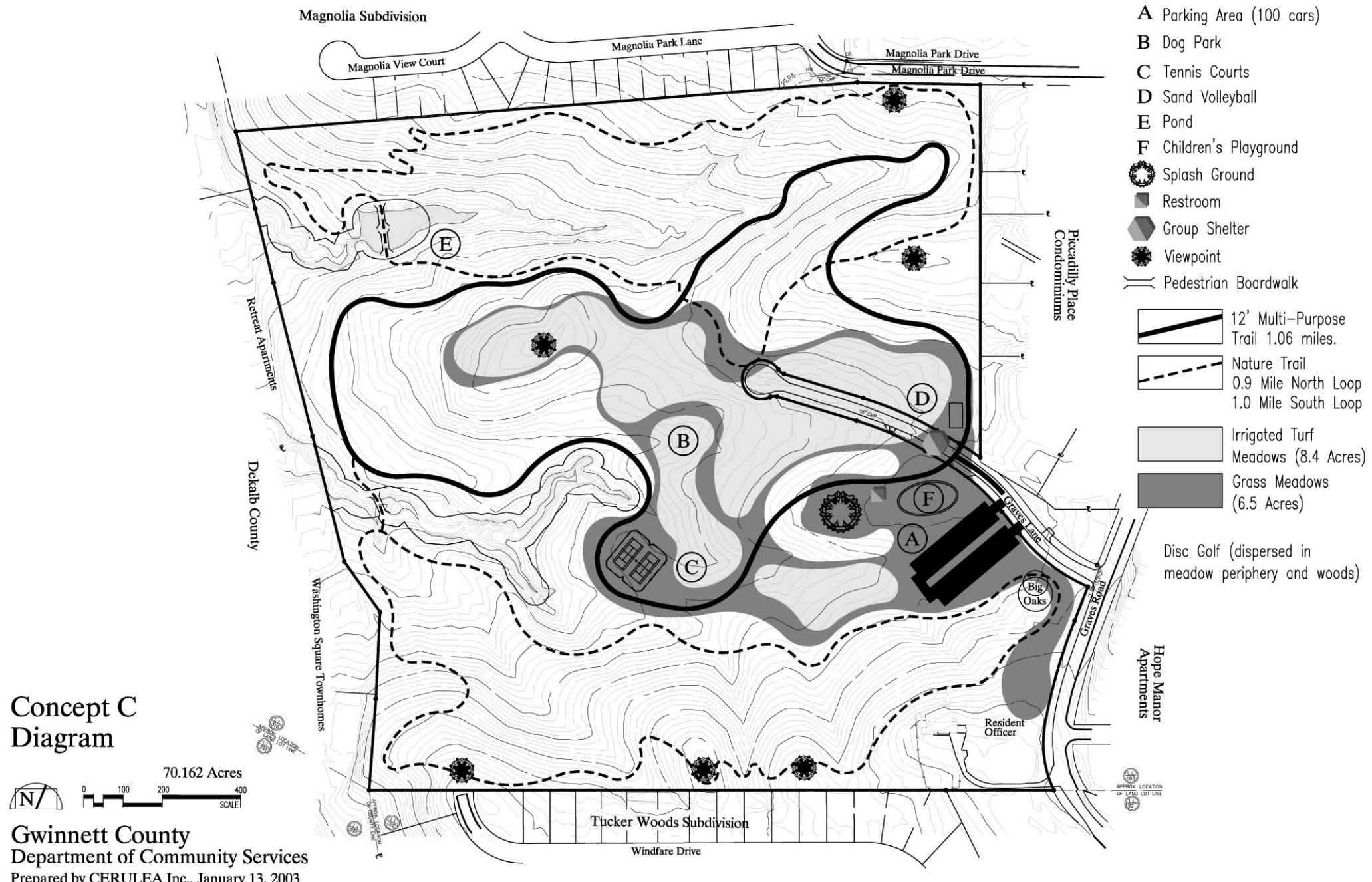


## Concept B Diagram

70.162 Acres  
0 100 200 400  
SCALE

**Gwinnett County**  
Department of Community Services  
Prepared by CERULEA Inc., January 13, 2003

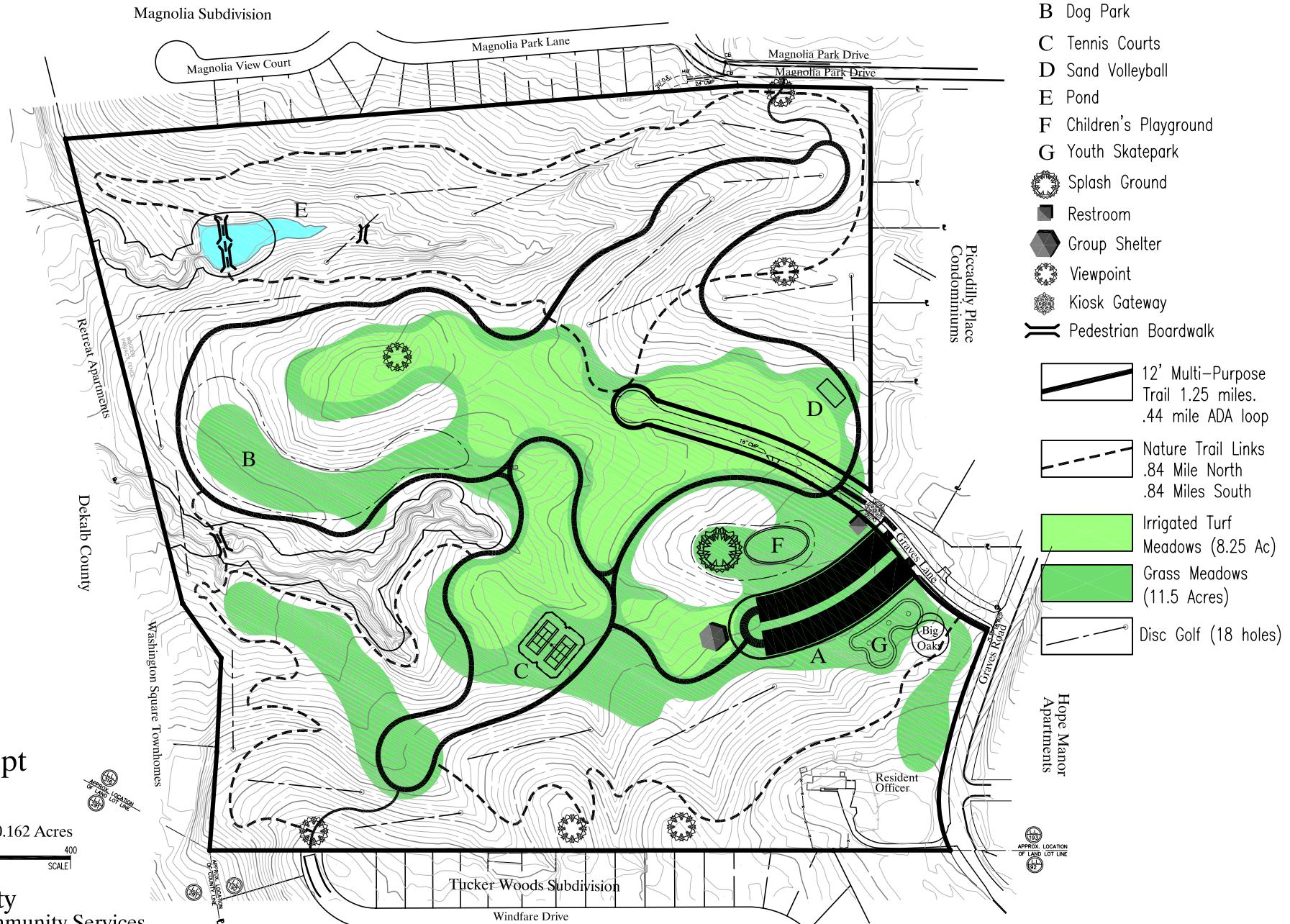
# Graves Road Park Site



# Graves Road Park Site

## Program Elements

- A** Parking Area (140 cars)
- B** Dog Park
- C** Tennis Courts
- D** Sand Volleyball
- E** Pond
- F** Children's Playground
- G** Youth Skatepark
-  **Splash Ground**
-  **Restroom**
-  **Group Shelter**
-  **Viewpoint**
-  **Kiosk Gateway**
-  **Pedestrian Boardwalk**



# Hybrid Concept Diagram

70.162 Acres  
SCALE  
N

# Graves Road Park Site

Magnolia Subdivision



Preliminary Master Plan

## Program Elements

**A** Parking Area (140 cars)

**B** Dog Park

**C** Tennis Courts

**D** Sand Volleyball

**E** Pond

**F** Children's Playground

**G** Youth Skatepark

Splash Ground

Restroom

Group Shelter

Kiosk Gateway

Bench, Picnic Table

Pedestrian Boardwalk

12' Multi-Purpose Trail 1.0 mile.  
.45 mile ADA loop

Nature Trail Links  
0.75 Mile North  
1.08 Miles South

Irrigated Turf  
Meadows (8.35 Ac)

Grass Meadows

Mulched Area  
Reforest/Planting

Wooded Area  
to Remain

70.162 Acres

N

0 100 200 400

SCALE

Gwinnett County  
Department of Community Services  
Prepared by CERULEA Inc., February 10, 2003

# Graves Park

Magnolia Subdivision



Master Plan

## Program Elements

A Parking Area (140 cars)

B Tennis Courts (Unlighted)

C Sand Volleyball

D Pond

E Dog Park

F Children's Playground

G Splash Ground

H Restroom, Kiosk Gateway

I Youth Skate Park

Group Shelter

Picnic Table ("G" = Grill)

Bench

Pedestrian Boardwalk

12' Multi-Purpose Trail 1.0 mile.  
.45 mile ADA loop

Nature Trail Links  
0.75 Mile North  
1.08 Miles South

Irrigated Turf  
Meadows (10.35 Ac)

Grass Meadows

Mulched Area  
Reforest/Planting

Wooded Area  
to Remain

70.162 Acres

0 100 200 400  
SCALE

Gwinnett County  
Department of Community Services  
Prepared by CERULEA Inc., February 24, 2003

# Graves Park Master Plan

---

## *Appendix A: Cost Estimate*

Refer to the attached itemized master plan level spreadsheet.

**Appendix A: Graves Road Park Site Master Plan**

**Gwinnett County Dept. of Community Services**

**Master Plan Cost Estimate FINAL**

**Prepared by: CERULEA Incorporated**

**02/27/03**

**Phased Version**

Page 1 - Appendix A

Description	Quantity	Unit Price	Phase I Base Bid	Phase I Options	Phase II
<b>Insurance Cost/Bond Cost</b>			\$30,000.00		
<b>Owners Special Requirements, MultiPhase (trailers, etc.)</b>			\$20,000.00		
<i>Site Preparation/Staking typically included in each category</i>					
<b>Basic Sitework</b>		<b>\$682,250.00</b>			
Clean-up/ Fence Removal/Demolition of Graves Lane & Utility Relocate	1.00	\$40,000.00	LS	\$40,000.00	
Clearing: Chipping/Spreading - (trail verges, perimeters and slopes)	32.00	\$6,000.00	AC	\$192,000.00	
Earthwork - Balanced Site - Includes Dam, no Rock Excavation	50000.00	\$3.00	CY	\$150,000.00	
Tree Protection - fencing save critical areas	8000.00	\$1.25	LF	\$10,000.00	
Permanent Grassing & Lawns (increase if sod area reduced)	13.00	\$3,500.00	AC	\$45,500.00	
Kudzu Eradication @ Southwest Slopes	6.25	\$2,200.00	AC	\$13,750.00	
Landscape Planting & Reforestation - PHASED	1.00	\$70,000.00	LS	<b>\$55,000.00</b>	\$15,000.00
Storm Piping - Cross Drains & Dam Outlet Control, Structures	1.00	\$80,000.00	LS	\$80,000.00	
Erosion Control - all measures	32.00	\$3,000.00	AC	\$96,000.00	
<b>Utilities</b>		<b>\$158,200.00</b>			
Septic System (size for 140 car parking capacity, no athletic game programming)	1.00	\$28,000.00	LS	\$28,000.00	
3" Meter w/ Water/Backflow Impact Fees (will supply spray ground as backup for well)	1.00	\$14,200.00	LS	\$14,200.00	
Wastewater Fees for 3" metered service (waived if on Septic)	0.00	\$52,000.00	LS	\$0.00	
Irrigation Well & Return Piping (includes electrical service & fenced enclosure)	1.00	\$38,000.00	LS	\$38,000.00	
Lake Irrigation Pump	1.00	\$36,000.00	LS	\$36,000.00	
Potable Water Piping	1.00	\$12,000.00	LS	\$12,000.00	
Fire Hydrant - Preserve @ Graves Lane	0.00	\$2,500.00	EA	\$0.00	
8" DIP Fire Main - Preserve Existing	0.00	\$30.00	LF	\$0.00	
Site Electrical/Parking Lot Lighting/Phone Cabling/Conduit	1.00	\$30,000.00	LS	\$30,000.00	
<b>Vehicular Circulation</b>		<b>\$100,250.00</b>			
Resurface Graves Lane @ close of job	850.00	\$6.00	SY	\$5,100.00	
Pervious Asphalt Paving - 100 car parking & driveways	4380.00	\$20.00	SY	\$87,600.00	
Pervious Asphalt Paving - 40 car parking for shelter	720.00	\$25.00	SY		\$18,000.00
Pavement Marking/Striping @ Parking	1.00	\$700.00	LS	\$500.00	\$400.00
Wheelstops @ Parking	100.00	\$30.00	EA	\$3,000.00	\$1,200.00
Concrete Curb and Gutter (limit to critical areas only)	450.00	\$9.00	LF	\$4,050.00	
<b>Basic Hardscape</b>		<b>\$446,272.00</b>			
Multipurpose Trail - 12' wide Asphalt	7620.00	\$20.00	LF	\$152,400.00	
Concrete Walkways - 6' wide (Includes Core Parking & Graves Road Sidewalk)	1720.00	\$20.10	LF	\$34,572.00	
Trail Distance Markers and Route Markers	4.00	\$450.00	EA		\$1,800.00
Fence to Preserve Lake Edge - Woven Wire Rustic	630.00	\$7.50	LF		\$4,725.00
Pond Reinforced Edge (Stone) Near Public Side	150.00	\$100.00	LF		\$15,000.00
Pond Subsurface Aerator	1.00	\$6,000.00	LS		\$6,000.00
Children's Playground Equipment, Phased Development (includes 400 SF shelter)	1.00	\$145,000.00	LS	<b>\$95,000.00</b>	<b>\$50,000.00</b>
Fence @ Playground / Splash Ground Area - 4' VC Chain-link	750.00	\$8.50	LF		\$6,375.00
Restroom at Open Meadow, (Gateway/Kiosk Phased)	1.00	\$180,000.00	EA	<b>\$145,000.00</b>	<b>\$35,000.00</b>
Rustic Parking Lot Entry Gate	2.00	\$3,500.00	EA	\$7,000.00	
Park Entry Sign Pylon	1.00	\$7,800.00	EA	\$7,800.00	
Rules/Directional Signage/Map (Digital <u>not</u> Ceramic) Phased	1.00	\$9,000.00	LS	<b>\$4,500.00</b>	
<b>Additional Hardscape</b>		<b>\$15,000.00</b>			
Perimeter Fence @ Dekalb County Line (allowance for 8' vinyl-clad chain-link)	1750.00	\$16.00	LF		\$28,000.00
Concrete Walkways - Neighborhood Links w/ Stepped Ramp @ Side	820.00	\$30.00	LF		\$24,600.00
Mulch Foot Trail - 4' wide, Gentle Terrain w/ Hardscape Allowance (limited drains/steps)	9635.00	\$18.00	LF		\$173,430.00
Trail Boardwalk, 50 lf x 6' wide	50.00	\$350.00	LF		\$17,500.00
Pedestrian Hardscape (Turf Steps and Parking Perimeter Fence in Phase I Base)	1.00	\$30,000.00	LS	\$15,000.00	\$15,000.00
Drinking Fountain w/ dog bowl, near playground	1.00	\$5,000.00	EA		\$5,000.00
Dog Park Fencing - 6' VC Chain-link Fence w/ Gates	1750.00	\$18.00	EA		\$31,500.00
Dog Park Furnishings	1.00	\$8,000.00	EA		\$8,000.00
Picnic Tables on Concrete Pads	12.00	\$800.00	EA		\$9,600.00
Benches on Trails	12.00	\$500.00	EA		\$6,000.00
Large Group Shelter - 2200 SF	1.00	\$200,000.00	LS		\$200,000.00
Skatepark - Basic Street & Beginner Bowls - 7000 SF includes walls/metal elements	1.00	\$80,000.00	LS		\$80,000.00
Tennis - 2 Courts	1.00	\$40,000.00	LS		\$40,000.00
Sand Volleyball Court - 1	1.00	\$8,000.00	LS		\$8,000.00
Spray Ground - Basic System w/ controller, chemical treatment & activator assemblies	1.00	\$221,000.00	LS		\$221,000.00
<b>Play Lawns</b>		<b>\$36,225.00</b>			
Seeded Play Lawns (Irrigated Areas)	10.35	\$3,500.00	AC	<b>\$36,225.00</b>	
Irrigation @ Sod Lawns & Dog Park	10.35	\$10,890.00	AC		\$112,711.50
<b>Construction Sub-total</b>				<b>\$1,488,197</b>	<b>\$375,812</b>
Contingency			\$50,000	NA	NA
Subtotal of Construction Items			<b>\$1,538,197</b>	<b>\$375,812</b>	<b>\$762,530</b>
Master Plan/Survey/Bid Package & CA Services (FEE PER BUDGET)/Testing			\$265,000	Included @ Left	NA
<b>Sub-total All Construction (excluding Program Management)</b>	<i>AVAILABLE \$\$\$&gt;</i>	<i>\$1,791,000.00</i>	<i>\$1,803,197</i>	<i>\$375,812</i>	<i>\$762,530</i>

## *Appendix B: Splash Ground Illustrative Layout*

Refer to the attached illustrative layout concept. This specific design has not been accepted, but reflects the general size and range of features desired.

# Water Odyssey™

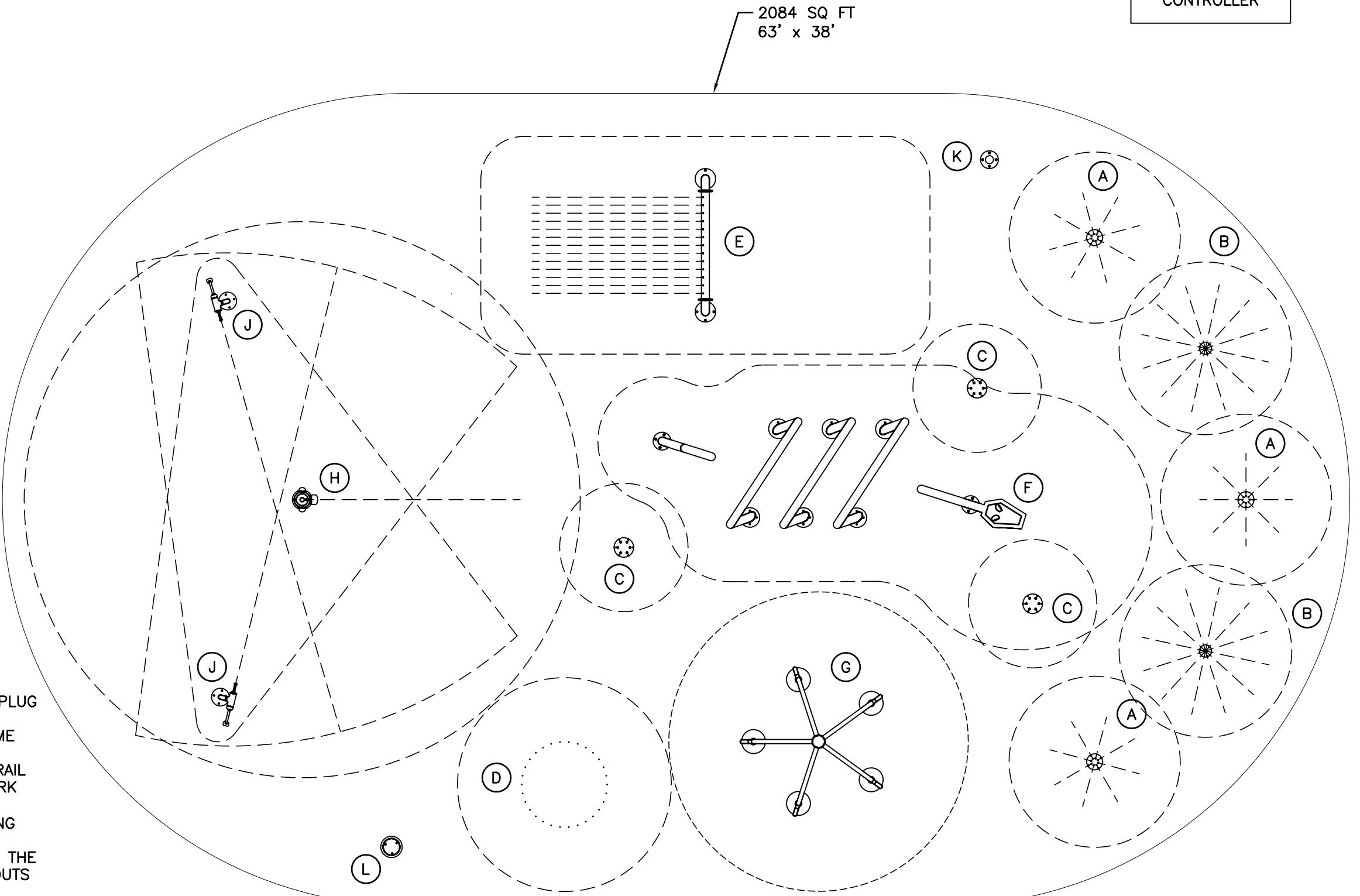
## Aquatic Playground Equipment

W6949-6GA01  
 THE FOUNTAIN PEOPLE, INC - PO BOX 807 - SAN MARCOS, TX 78667 - 512-392-1155  
 DORBROOK PARK - LARGE AREA  
 PLAN VIEW  
 SCALE 3/16" = 1'  
 DATE 11-15-02  
 REV 1  
 DWG NO  
 KD  
 KD

ITEM	QTY	DESCRIPTION
A	3	W004 DADDY LONG LEGS 7' HIGH 31 GPM (93)
B	2	W057 WATER SPROUT 2' HIGH 4 GPM (8)
C	3	W016 CLOUD 9 6 GPM (18)
D	1	W012 WATER CAGE 4' HIGH 60 GPM
E	1	W080 ROLL-A-RAIL 8' THROW 50 GPM
F	1	W066-STW-S WATER SNAKE W/WIRELESS ACTIVATOR BUTTON & SOUND 45 GPM
G	1	W103 FILL N' SPILL 5-15 GPM
H	1	W102-STW WATER PLUG W/WIRELESS ACTIVATOR BUTTON 10' THROW 12 GPM
J	2	W059 FOAM SHOOTER 20' FT 20 GPM
K	1	W009W TOUCH & GO WIRELESS
L	1	W017W LAUNCH PAD WIRELESS

### PLAY SCENARIO:

1. WHEN THE ACTIVATOR ON THE WATER PLUG IS TOUCHED THE WATER PLUG AND FOAM SHOOTERS WILL OPERATE FOR A PLAY TIME DURATION.
2. THE FILL & SPILL AND THE ROLL-A-RAIL WILL OPERATE CONTINUOUSLY DURING PARK HOURS.
3. THE CLOUD 9'S WILL SEQUENCE DURING PARK HOURS.
4. WHEN THE TOUCH & GO IS ACTIVATED THE DADDY LONG LEGS AND THE WATER SPROUTS WILL SEQUENCE.
5. WHEN THE WIRELESS ACTIVATOR ON THE WATER SNAKE IS TOUCHED THE SNAKE WILL MAKE ONE OF SEVERAL RANDOM SOUNDS. THE WATER SNAKE WATER EFFECTS WILL OPERATE FOR A PLAY TIME DURATION.
6. WHEN THE LAUNCH PAD IS STEPPED ON THE WATER CAGE WILL CYCLE. THE WATER CAGE WILL OPERATE AT THREE DIFFERENT HEIGHTS.



NOTE: THIS DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS RECOMMENDED FOR COMPONENTS ARE APPROXIMATE.

## *Appendix C: Meeting Minutes*

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