35/32-92A 5315 Elliot Drive
Battery Bailey

WESTMORELAND CITIZENS ASSOCIATION, INC.

October 14, 1992

Mr. Albert B. Randall
Chairman
Historic Preservation Commission
8787 Georgia Avenue
Silver Spring, MD 20910

RE: Battery Bailey Restoration Plans

Dear Mr. Albert:

I am writing you in my capacity as president of the Westmoreland Citizens Association which represents the residents of the community that surrounds the Battery Bailey earthworks located on the grounds of our recreation center.

The Board of Directors and members of the community had an opportunity to review and comment on the restoration plans for these Civil War earthworks at a special meeting last May. County Historian Mike Dwyer and his staff presented various options to us at that time.

The plan that will be presenting to you incorporates our concerns and we heartily recommend your approval so that this rapidly deteriorating historic site can be stabalized as soon as possible.

Our community not only supports the restoration project, but has made a significant pledge to help maintain the site for the enrichment of future generations in Montgomery County.

Thank you in advance for giving this very worthwhile project your positive consideration.

Sincerely,

Robert S. Hartmann, President
Westmoreland Citizens Association
5023 Worthington Drive
Bethesda, MD 20816

Montgomery County Government

Historic Preservation Commission

51 Monroe Street, Suite 1001, Rockville, Maryland 20850
217-3625

APPLICATION FOR HISTORIC AREA WORK PERMIT

TAX ACCOUNT #

NAME OF PROPERTY OWNER _____ TELEPHONE NO. _____
(Contract/Purchaser) _____ (Include Area Code)

ADDRESS _____
CITY STATE ZIP

CONTRACTOR _____ TELEPHONE NO. _____

CONTRACTOR REGISTRATION NUMBER _____

PLANS PREPARED BY _____ TELEPHONE NO. _____
(Include Area Code)

REGISTRATION NUMBER _____

LOCATION OF BUILDING/PREMISE

House Number _____ Street _____

Town/City _____ Election District _____

Nearest Cross Street _____

Lot _____ Block _____ Subdivision _____

Liber _____ Folio _____ Parcel _____

1A. TYPE OF PERMIT ACTION: (circle one)
Construct Extend/Add Alter/Renovate Repair
Wreck/Raze Move Install Revocable Revision

Circle One: A/C Slab Room Addition
Porch Deck Fireplace Shed Solar Woodburning Stove
Fence/Wall (complete Section 4) Other _____

1B. CONSTRUCTION COSTS ESTIMATE $ _____
1C. IF THIS IS A REVISION OF A PREVIOUSLY APPROVED ACTIVE PERMIT SEE PERMIT # _____
1D. INDICATE NAME OF ELECTRIC UTILITY COMPANY _____
1E. IS THIS PROPERTY A HISTORICAL SITE? _____

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTEND/ADDITIONS

2A. TYPE OF SEWAGE DISPOSAL
01 ( ) WSSC 02 ( ) Septic
03 ( ) Other _____

2B. TYPE OF WATER SUPPLY
01 ( ) WSSC 02 ( ) Well
03 ( ) Other _____

PART THREE: COMPLETE ONLY FOR FENCE/RETAINING WALL

4A. HEIGHT _____ feet _____ inches

4B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:
1. On party line/Property line _____
2. Entirely on land of owner _____
3. On public right of way/easement _____ (Revocable Letter Required).

I hereby certify that I have the authority to make the foregoing application, that the application is correct, and that the construction will comply with plans approved by all agencies listed and I hereby acknowledge and accept this to be a condition for the issuance of this permit.

_____ _____
Signature of owner or authorized agent (agent must have signature notarized on back) Date

****

APPROVED _____ For Chairperson, Historic Preservation Commission

DISAPPROVED _____ Signature _____ Date _____

APPLICATION/PERMIT NO: _____ FILING FEE: $ _____
DATE FILED: _____ PERMIT FEE: $ _____
DATE ISSUED: _____ BALANCE $ _____
OWNERSHIP CODE: _____ RECEIPT NO: _____ FEE WAIVED: _____

SEE REVERSE SIDE FOR INSTRUCTIONS

THE FOLLOWING ITEMS MUST BE COMPLETED AND THE REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION

DESCRIPTION OF PROPOSED WORK: (including composition, color and texture of materials to be used:)

(See attached plans) Reconstruct existing asphalt path to make handicapped accessible to new wooden viewing platform overlooking the site. Encircle the earth works with 3' high wooden rail fence. Selected removal of some dead or scrub trees to open vista. Enhance outline of damaged + eroded earthen walls by building up and stabilize by planting with new ground cover. Installation of historic interpretive markers and plagues.

(If more space is needed, attach additional sheets on plain or lined paper to this application)

ATTACH TO THIS APPLICATION (2) COPIES OF: SUCH SITE PLANS (lot dimensions, building location with dimensions, drives, walks, fences, patios, etc. proposed or existing) and/or ARCHITECTURAL DRAWINGS (floor plans, elevations, etc.), PHOTOGRAPHS OF THE AREA AFFECTED, as are necessary to fully describe the proposed work.

MAIL OR DELIVER THE APPLICATION AND ALL REQUIRED DOCUMENTS TO THE:

HISTORIC PRESERVATION COMMISSION
51 MONROE STREET, SUITE 1001
ROCKVILLE, MARYLAND 20850

HISTORIC PRESERVATION COMMISSION STAFF REPORT

Address: 5315 Elliot Drive Westmoreland Hills Rec. Ctr.	Meeting Date: 10/14/92
Resource: Battery Bailey	Review: HAWP/Alt.
Case Number: 35/32-92A	Tax Credit: No
Public Notice: 9/30/92	Report Date: 10/7/92
Applicant: M-NCPPC	Staff: Nancy Witherell

The Maryland-National Capital Park and Planning Commission is proposing work at the Civil War earthworks known as Battery Bailey in order to direct and improve public access, repair and stabilize the vegetation and trails, construct a viewing platform overlooking the site, fence the area so that the public is directed to the paths and so that "rogue" paths and eroded areas can be repaired, and educate the public by the installation of wooden signs describing the physical features and significance of the site. Battery Bailey is the only defensive earthworks site remaining in the county of the original system that encircled the city of Washington during the Civil War. Designated on the Master Plan for Historic Preservation in 1979, the site is on publicly-owned park land.

An environmental planning firm has produced the attached restoration proposal. It includes more inclusive access to the site by the construction of an asphalt path from the parking lot to a new wooden viewing platform at the summit of the site. Interpretive signs would be installed in this area. Split rail fencing would encourage the public to use the path system, which also includes an existing perimeter path and a new gravel ring trail. Some limited regrading, as well as planting and stabilization of areas near the path would prevent further erosion and ruts at the site. (Currently, the site is considered advantageous for mountain biking.) The site would remain wooded in character; few trees would be removed. Undergrowth would be cleared, however. Details of the proposal are shown on the attached site plan and will be presented at the meeting.

STAFF DISCUSSION

Since the site is presently uninterpreted and used solely for recreation, the proposal to interpret, fence, and make the site fully accessible by the public, is a significant alteration of this historic site and its function.

M-NCPPC believes that the current uncontrolled and uninformed use of the site will lead to its further erosion and physical degra-

dation over time. The consultants suggest that knowledge of the significance of the site will encourage citizens to use it as directed by the paths and fences. Enhanced knowledge of Montgomery County's participation in the defense of Washington during the Civil War through the circle of forts and batteries was one of the objectives of the Historic Preservation Commission in designating the site. Although the site would be altered by this proposal, it would also be stabilized and interpreted.

The staff questions the size of the platform, which is designed for groups of 20 people. The earthworks should be left as clear of man-made elements as possible, especially in a prominent position overlooking the site.

STAFF RECOMMENDATION

The staff recommends that the Commission find the proposal consistent with the purposes of of Chapter 24A, particularly 24A-8(b)3:

> The proposal would enhance or aid in the protection, preservation and public or private utilization of the historic site, or historic resource located within an historic district, in a manner compatible with the historical, archeological, architectural or cultural value of the historic site or historic district in which an historic resource is located;

and with Standard #10:

> New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environnment would be unimpaired.

Montgomery County Government

Historic Preservation Commission

51 Monroe Street, Suite 1001, Rockville, Maryland 20850
217-3625

APPLICATION FOR HISTORIC AREA WORK PERMIT

TAX ACCOUNT # _____

NAME OF PROPERTY OWNER M-NCPPC / Dept of Parks TELEPHONE NO. 495-2550
(Contract/Purchaser) (Include Area Code)

ADDRESS 9500 Brunett Ave Silver Spring Md 20890
CITY STATE ZIP

CONTRACTOR M-NCPPC / Dept of Parks TELEPHONE NO. 495-2550

CONTRACTOR REGISTRATION NUMBER _____

PLANS PREPARED BY Andropogon Assoc. Ltd TELEPHONE NO. (215) 487-0700
(Include Area Code)

REGISTRATION NUMBER _____

LOCATION OF BUILDING/PREMISE

House Number 5315 Street Elliot Drive

Town/City Bethesda Election District _____

Nearest Cross Street Mass Ave

Lot _____ Block _____ Subdivision Westmoreland Hills

Liber _____ Folio _____ Parcel _____

1A. TYPE OF PERMIT ACTION: (circle one)
Construct Extend/Add Alter/Renovate Repair
Wreck/Raze Move Install Revocable Revision

Circle One: A/C Slab Room Addition
Porch Deck Fireplace Shed Solar Woodburning Stove
(Fence/Wall) (complete Section 4) Other _____

1B. CONSTRUCTION COSTS ESTIMATE $ 20,000.00

1C. IF THIS IS A REVISION OF A PREVIOUSLY APPROVED ACTIVE PERMIT SEE PERMIT # _____

1D. INDICATE NAME OF ELECTRIC UTILITY COMPANY Pepco

1E. IS THIS PROPERTY A HISTORICAL SITE? Yes # 35-32 (Battery Bailey)

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTEND/ADDITIONS

2A. TYPE OF SEWAGE DISPOSAL
01 ( ) WSSC 02 ( ) Septic
03 ( ) Other _____

2B. TYPE OF WATER SUPPLY
01 ( ) WSSC 02 ( ) Well
03 ( ) Other _____

PART THREE: COMPLETE ONLY FOR FENCE/RETAINING WALL

4A. HEIGHT 3 feet 0 inches

4B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:
1. On party line/Property line _____
(2) Entirely on land of owner totally within public park boundary
3. On public right of way/easement _____ (Revocable Letter Required).

I hereby certify that I have the authority to make the foregoing application, that the application is correct, and that the construction will comply with plans approved by all agencies listed and I hereby acknowledge and accept this to be a condition for the issuance of this permit.

(3)

[signature]

9/25/95

THE FOLLOWING ITEMS MUST BE COMPLETED AND THE REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION

DESCRIPTION OF PROPOSED WORK: (including composition, color and texture of materials to be used:)

(See attached plans) Reconstruct existing asphalt path to make handicapped accessible to new wooden viewing platform overlooking the site. Encircle the earth works with 3' high wood rail fence. Selected removal of some dead or scrub trees to open vista. Enhance outline of damaged + eroded earther walls by building up and stabilize by planting with new ground cover. Installation of historic interpretive marker and plagues.

(If more space is needed, attach additional sheets on plain or lined paper to this application)

ATTACH TO THIS APPLICATION (2) COPIES OF: SUCH SITE PLANS (lot dimensions, building location with dimensions, drives, walks, fences, patios, etc. proposed or existing) and/or ARCHITECTURAL DRAWINGS (floor plans, elevations, etc.), PHOTOGRAPHS OF THE AREA AFFECTED, as are necessary to fully describe the proposed work.

MAIL OR DELIVER THE APPLICATION AND ALL REQUIRED DOCUMENTS TO THE:

HISTORIC PRESERVATION COMMISSION
51 MONROE STREET, SUITE 1001
ROCKVILLE, MARYLAND 20850

SUPPLEMENTAL APPLICATION FOR HISTORIC AREA WORK PERMIT

REQUIRED ATTACHMENTS

1. **WRITTEN DESCRIPTION OF PROJECT**

   a. Description of existing structure(s) and environmental setting, including their historical features and significance:

Battery Bailey is the last surviving remnant of the Civil War defenses of [redacted] Washington in Mont Co. It is situated in Westmoreland Hills Local Park overlooking Little Falls (Powder Mill) Branch. It is a wooded setting that has recently suffered significant damage due to "Mountain bike" riders and "pot-hunters" digging into the earther walls.

   b. General description of project and its impact on the historic resource(s), the environmental setting, and, where applicable, the historic district:

This project will stabilize this neglected and vandalized site by fencing off the most sensitive areas and installing new ground covers. Due to the environmental policies of the Parks Department and County, the site will remain heavily wooded and the emphasis will be on repair rather than restoration or reconstruction. In addition to the Departments own Landscape Architect and Horticultural personnel, the Commission has hired one of the nation's foremost environmental planning firms to assist in this project. In addition to the Departments Historian and Archaeologist, a select group of nationally recognized Civil War authorities have also assisted -1-

(5)

2. Statement of Project Intent:

Short, written statement that describes:

a. the proposed design of the new work, in terms of scale, massing, materials, details, and landscaping:

(Emphasis to be on stabilization rather than reconstruction) Existing worn and faded "fort" walls will be defined with addition of light earth and ground covers, partially encircled with wooden fencing and viewing platform and interpretive markers installed.

b. the relationship of this design to the existing resource(s):

Plan will enhance and protect a rare resource that is currently being severely vandalized, and will respect the integrity of the wooded setting rather than the 1960's-style practice of clear-cutting Civil War resources which has come into disrepute.

c. the way in which the proposed work conforms to the specific requirements of the Ordinance (Chapter 24A):

Preserves and protects resource while allowing for interpretive visitation - something currently not available due to the neglected and unmarked & unprotected nature of the site. Public meetings have been held with full support of neighborhood and "Civil War" community.

3. Project Plan:

Site and environmental setting, drawn to scale (staff will advise on area required). Plan to include:

a. the scale, north arrow, and date;

b. dimensions and heights of all existing and proposed structures;

c. brief description and age of all structures (e.g., 2 story, frame house c.1900);

d. grading at no less than 5' contours (contour maps can be obtained from the Maryland-National Capital Park and Planning Commission, 8787 Georgia Avenue, Silver Spring; telephone 495-4610); and

e. site features such as walks, drives, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.

4. Tree Survey: If applicable, tree survey indicating location, caliper and species of all trees within project area which are 6" in caliper or larger (including those to be removed).

5. Design Features: Schematic construction plans drawn to scale at 1/8" =1'-0", or 1/4" = 1'-0", indicating location, size and general type of walls, window and door openings, roof profiles, and other fixed features of both the existing resource(s) and the proposed work.

6. Facades: Elevation drawings, drawn to scale at 1/8" = 1'0", or 1/4" = 1'0", clearly indicating proposed work in relation to existing construction and, when appropriate, context. All materials and fixtures proposed for exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.

7. Materials Specifications: General description of materials and manufactured items proposed for incorporation in the work of the project.

8. Photos of Resources: Clearly labeled color photographic prints of each facade of existing resource, including details of the affected portions. All labels should be placed on the front of photographs.

9. Photos of Context: Clearly labeled color photographic prints of the resource as viewed from the public right-of-way and from adjoining properties, and of the adjoining and facing properties.

Color renderings and models are encouraged, but not generally required.

Applicant shall submit 2 copies of all materials in a format no larger than 8 1/2" x 14"; black and white photocopies of color photos are acceptable with the submission of one original photo.

10. Addresses of Adjacent Property Owners. For all projects, provide an accurate list of adjacent and confronting property owners (not tenants), including names, addresses, and zip codes. This list should include the owners of all lots or parcels which adjoin the parcel in question, as well as the owner(s) of lot(s) or parcel(s) which lie directly across the street/highway from the parcel in question. If you need assistance obtaining this information, call the Department of Assessments and Taxation, at 279-1355.

1. Name N.A

   Address (public park)

   City/Zip _____

2. Name _____

   Address _____

   City/Zip _____

(7)

3. Name _____

Address _____

City/Zip _____

4. Name _____

Address _____

City/Zip _____

5. Name _____

Address _____

City/Zip _____

6. Name _____

Address _____

City/Zip _____

7. Name _____

Address _____

City/Zip _____

8. Name _____

Address _____

City/Zip _____

1757E

#35-32 | Battery Bailey / Civil War Earthworks   Westmoreland Hills Rec Ctr Beth, Md

92092580 78

DESIGN NOTES

1. NEW APPROACH PATH

This path connects the parking lot and existing asphalt path to the recreation area and the new earthwork viewing area. It is a fully handicapped accessible path, 8'-0" wide, asphalt surface, with a gradient of 5%. It is located to avoid trees and has the minimum of regrading to meet the legal requirements for handicapped access. Side slopes are at a grade of between 1:3 and 1:4 to minimize erosion. The extent of regrading is shown on the plan with a cross hatch. This area will require seeding and/or planting to stabilize the soil.

2. VIEWING AREA

The viewing area is kept to an absolute minimum with a 20' diameter circle of asphalt. As most people visit in groups, it was felt necessary to have some milling space and also provide room for wheel chairs, strollers etc., to maneuver. There is some minimal regrading required, as shown on the plan, to achieve a flat area, however, no trees require removal. The location of the viewing area is at a high point, the only location where a good view of the interior of the earthwork can be obtained without actually walking on the earthwork. The erosion patterns indicate this is a popular viewing point.

Interpretative signage partially encircles the viewing area. This is envisioned as a continuous series of boards, inclined at 45 degrees and mounted on wood posts to form a sort of inner fence. This signage could be added at a later date if the present budget does not permit immediate installation. The circle form enables the direction of specific features to be indicated and the graphics to be designed as a storyline rather than as a single sign.

3. ENCLOSING FENCE

A wood post and split rail fence completely encloses the earthwork. (Note that the extent of the earthwork is shown hatched on the plan.) It has been designed to follow the form of the terrain as gracefully as possible without being completely free-form. Major curves are radiuses that could be set out on site quite easily. The fenceline indents to wrap around the viewing area. This is done in order to clearly indicate the viewing area as a specific destination and to encourage people to walk only on the paths provided.

4. SECONDARY FENCE

A short section of secondary fence is provided in the location indicated to discourage people from cutting off the corner on this steeply sloping area. Only a path system that is totally fenced will prevent people from going off the path. The earthwork should be monitored regularly and other sections of fence added at strategic locations if new rogue paths develop. It is also important to repair vandalism as quickly as possible if it occurs as most people tend to respect a place more if it is obviously cared for.

5. RING TRAIL

A trail has been designed to encircle the entire earthwork connecting the new approach path to the existing asphalt path. This trail gives the visitor good views of the earthwork from the outside. This trail has been designed to follow the terrain as closely as possible and avoids cutting trees. It is approximately 5' wide, never reaches more than an 8% slope, and has a gravel surface. Some grading is unavoidable because of the steep slope, particularly at the southwest corner where it cuts close to the earthwork. Note: while it might seem advisable to have the path further away from the earthwork at this point, this alignment is the only way of avoiding much steeper grade in which the path would inevitably become an erosion gully over time.

6. BUILT UP EARTHWORK

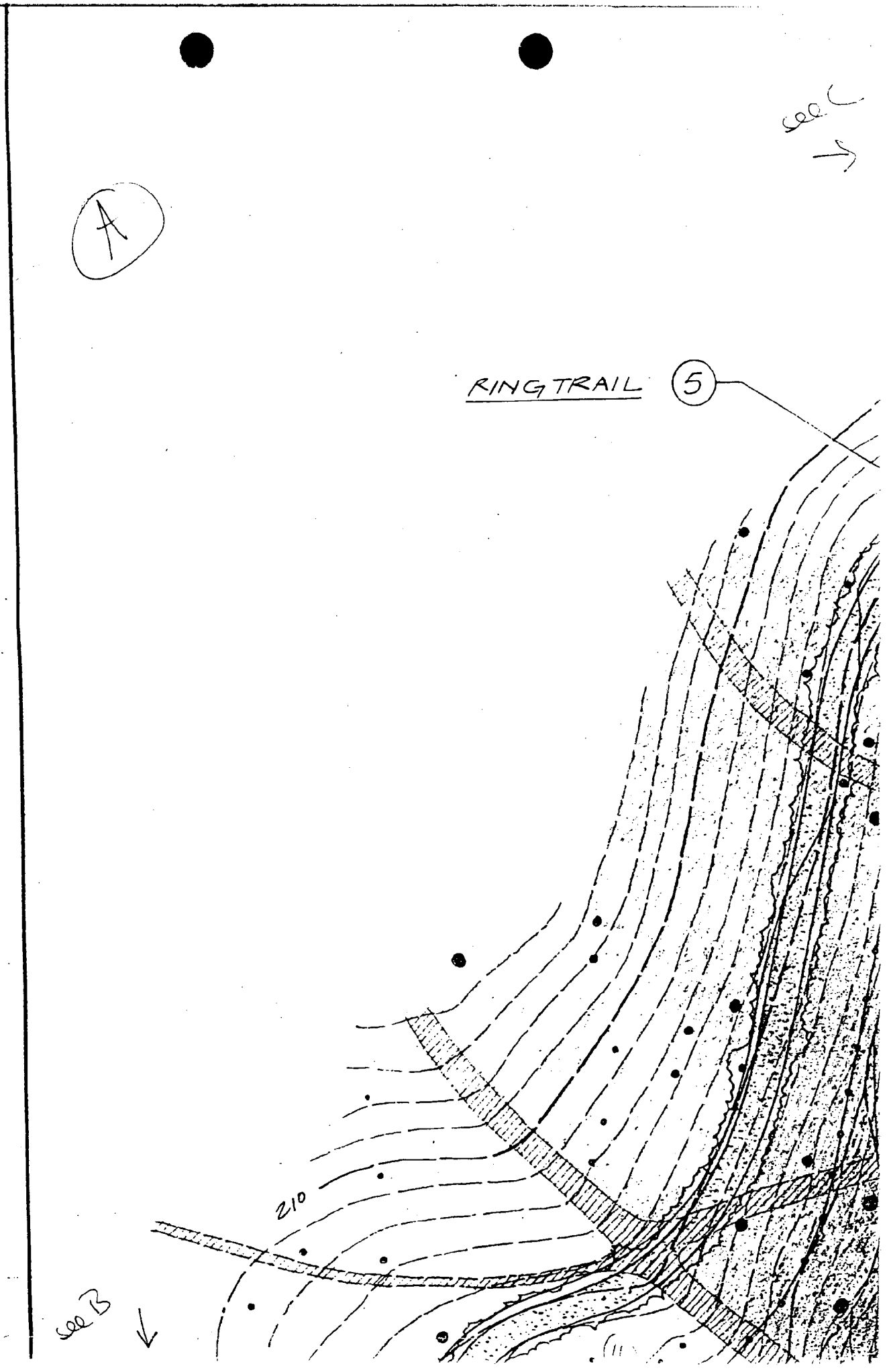
The earthwork itself is shown built up with new soil to indicate the general form and location of the embrasures and other features. Slopes on this partial reconstruction should not exceed 1.5:1 as it will not be possible to stabilize anything steeper without resorting to mechanical means of stabillzation which would be expensive and unsightly. This reconstruction will require stabilization with ground cover planting at a minimum and possibly reinforcement with jute matting or other low key forms of reinforcement. *To avoid damaging the resource, the existing surface should be preserved and indicated so that in the future the reconstruction can be clearly distinguished from the original form.* Following this precept, it would follow that only fill should be applied to the earthwork. It may be necessary to scarify the surface of the earthwork or use other means to ensure good adhesion between the new fill and the existing form.

BATTERY BAILEY LEGEND

- NEW ASPHALT PATH
- NEW GRAVEL PATH
- REGRADED & STABILIZED AREA
- ERODED AREAS & "ROGUE" PATHS
- AREA OF EARTHWORK
- 210 EXISTING CONTOUR
- 210 NEW CONTOUR
- SHADED RELIEF
- VEGETATION LINE (GROUND COVER/ SHRUBS)
- TREE LINE
- NEW FENCE
- EXISTING TREES

A	C	E	
B	D	F	G

(use legend for following map photocopied on 4 pages)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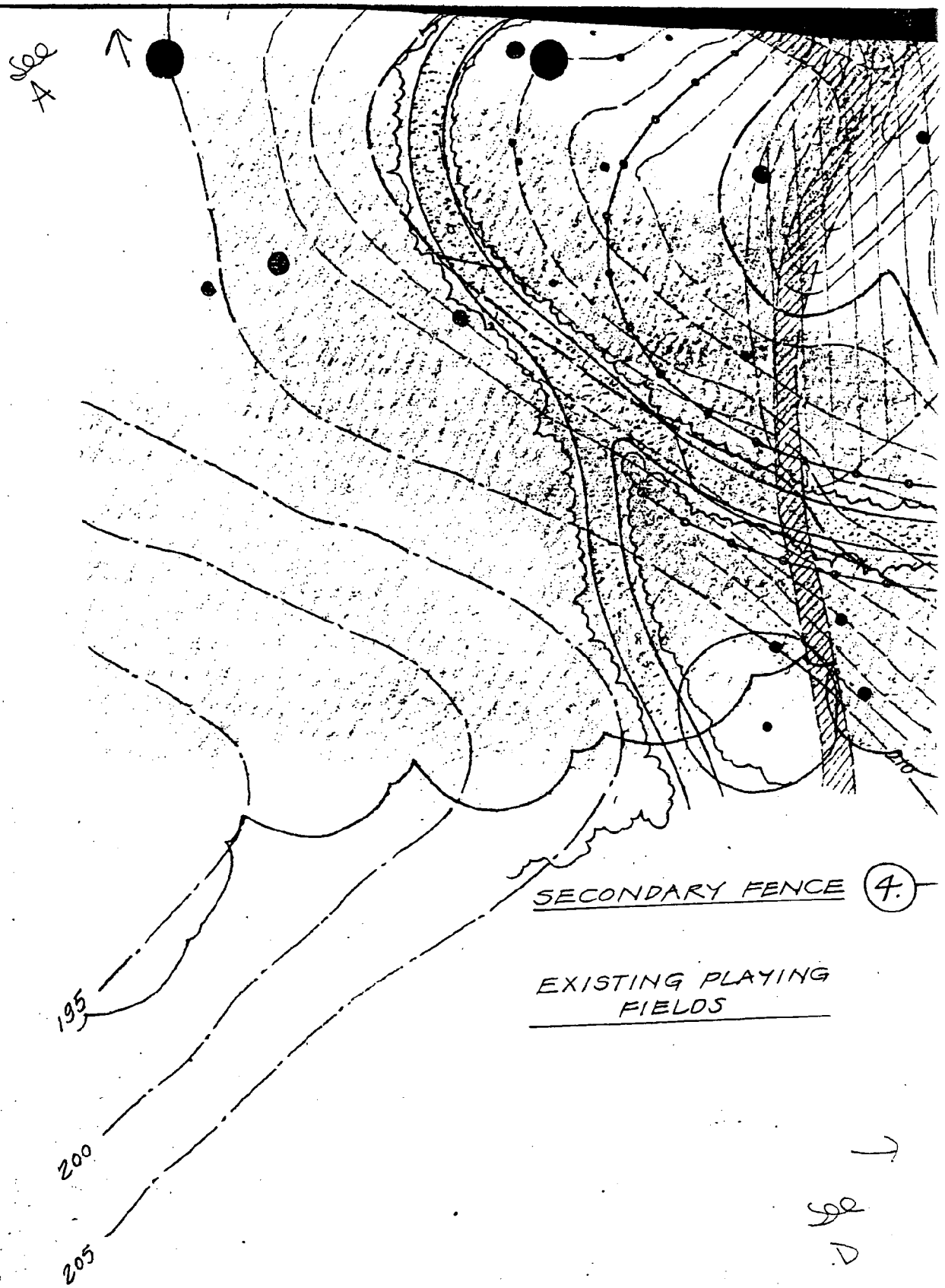
See A
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EXISTING PLAYING FIELDS
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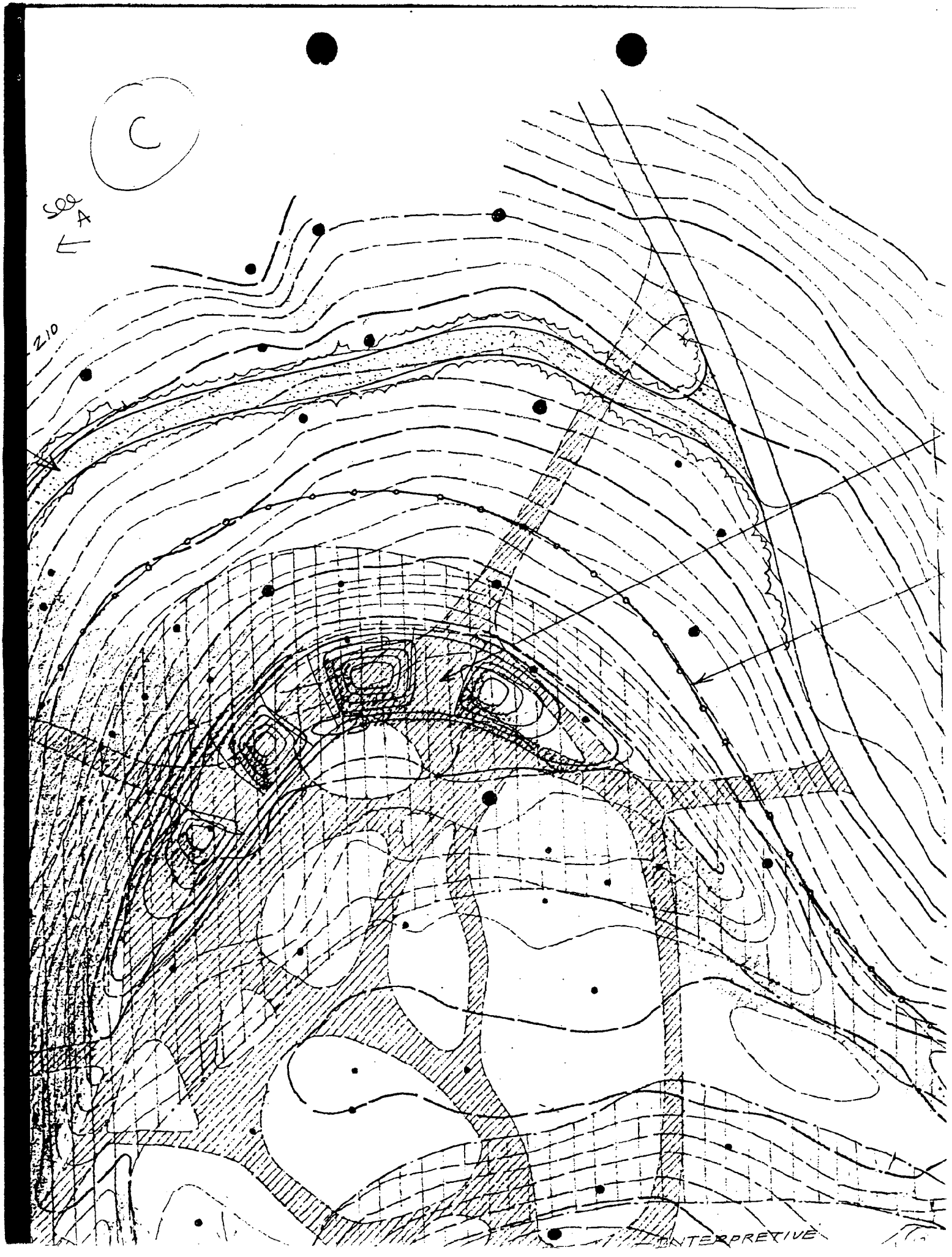
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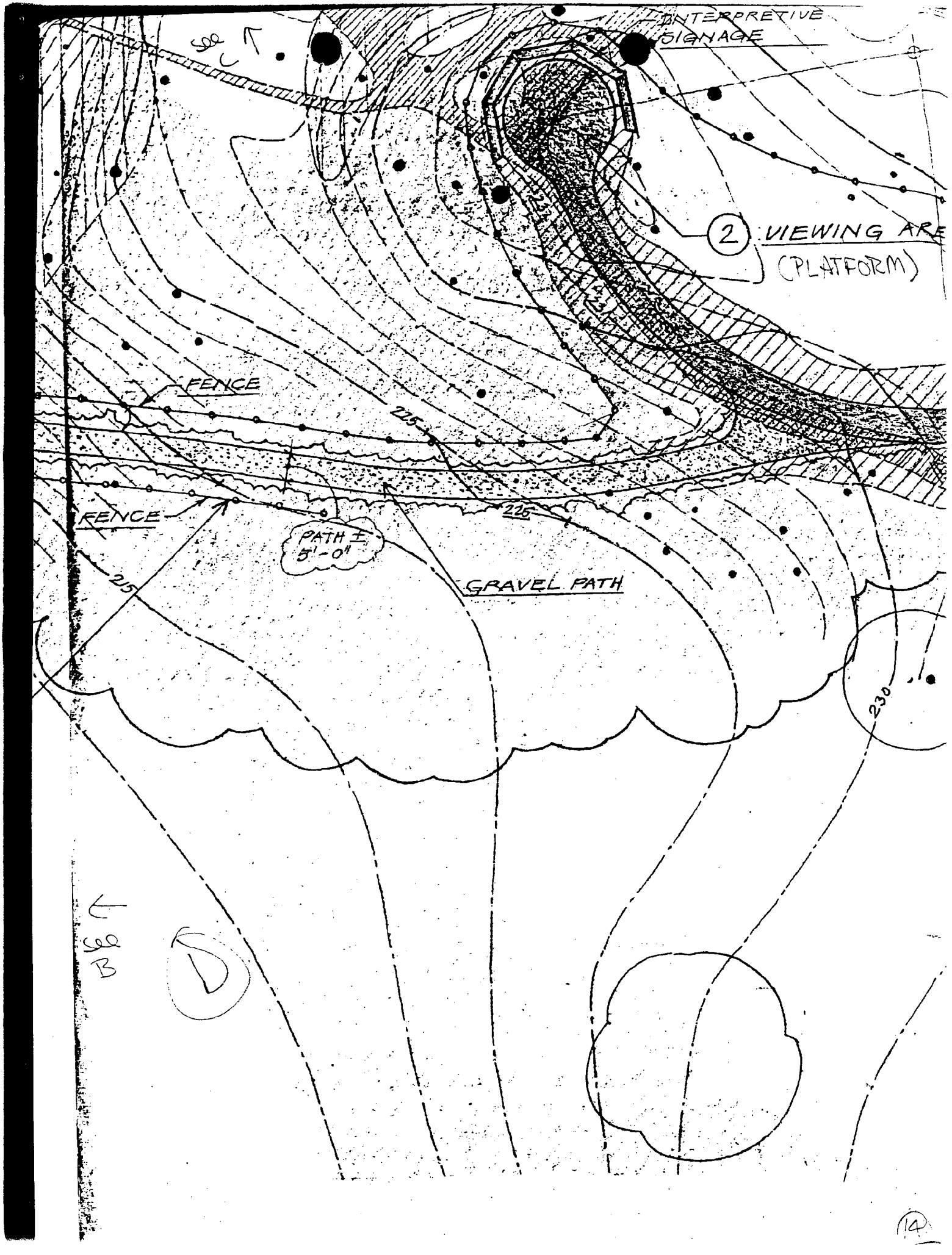
INTERPRETIVE SIGNAGE
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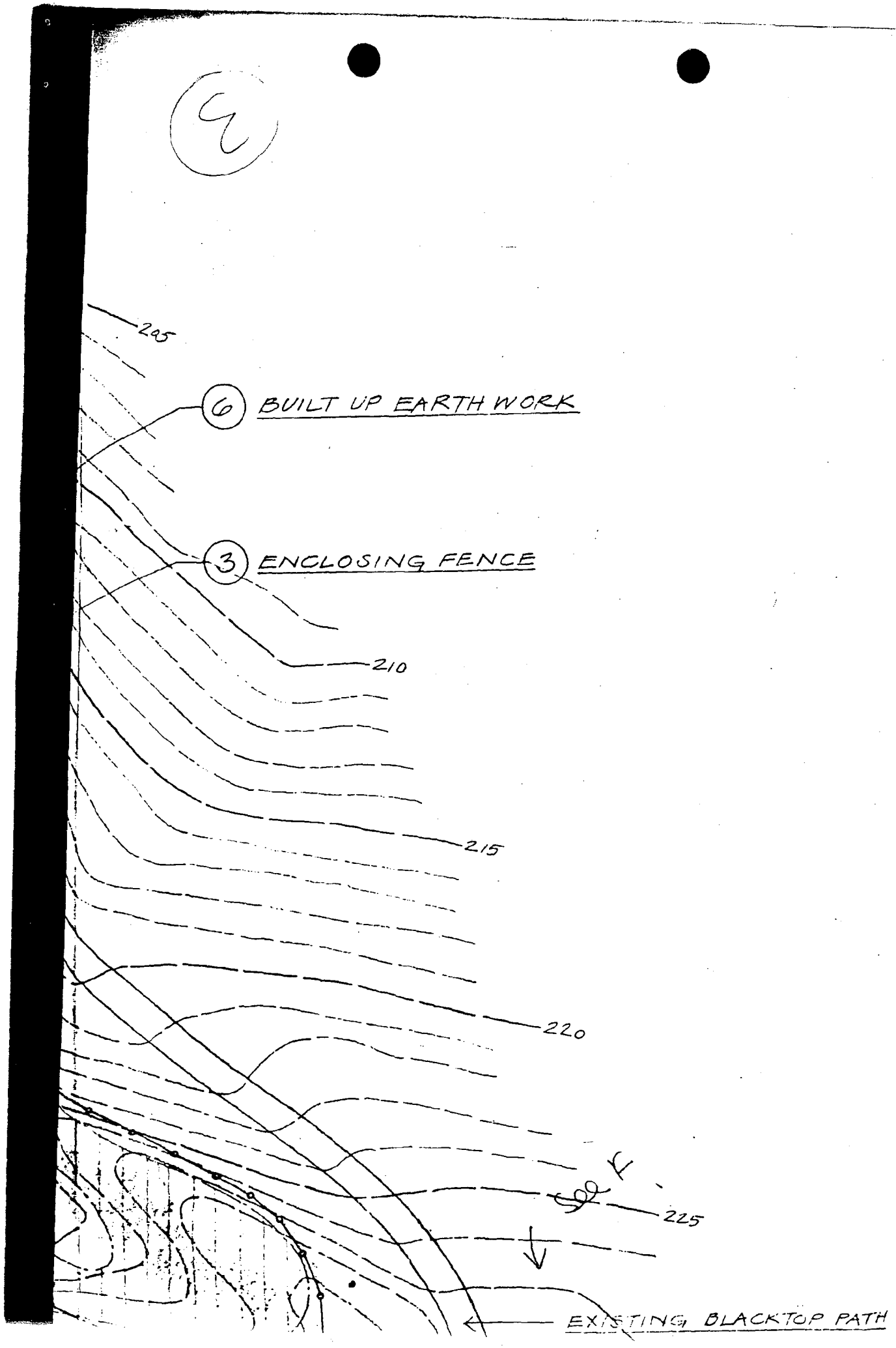

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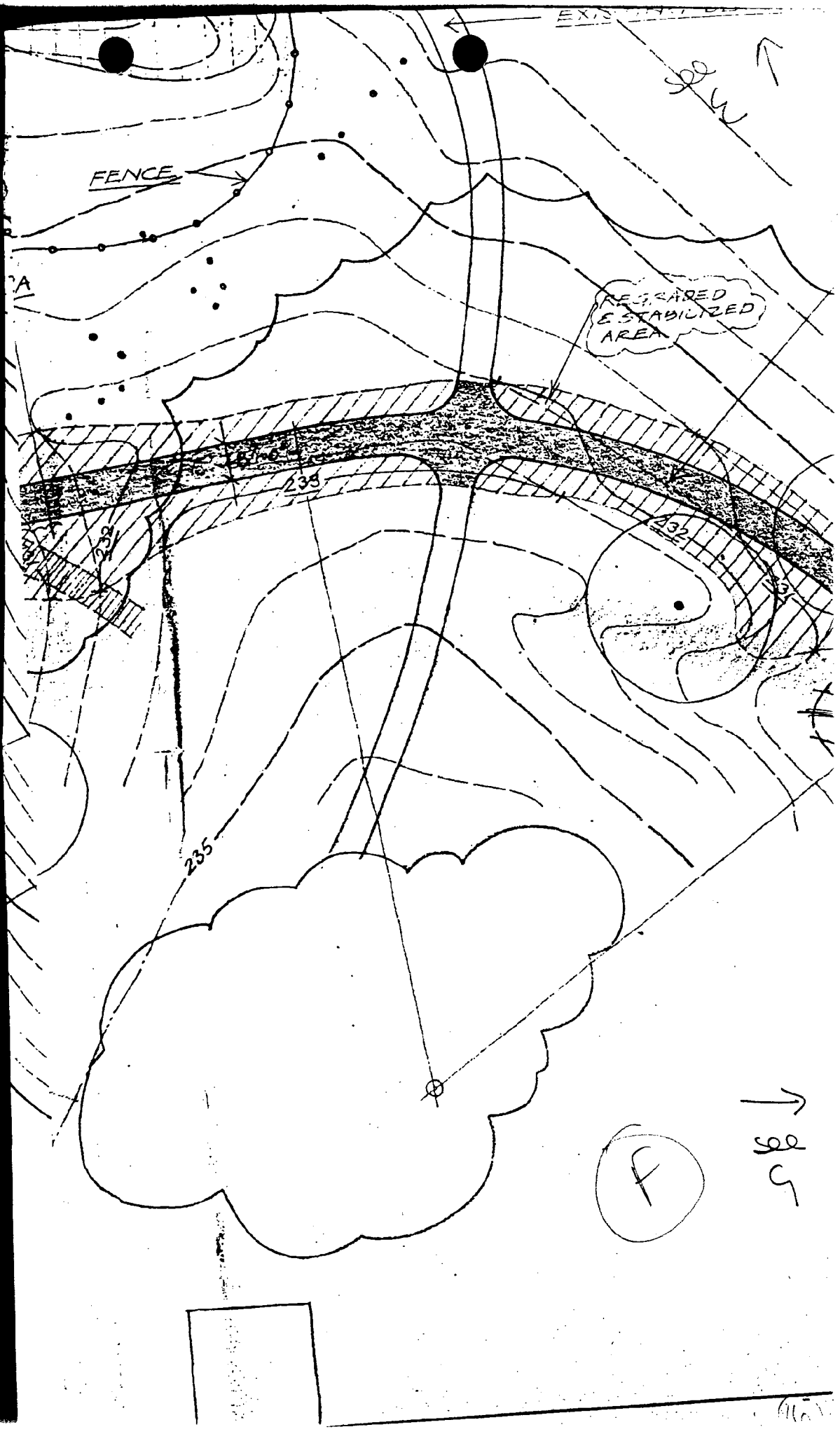
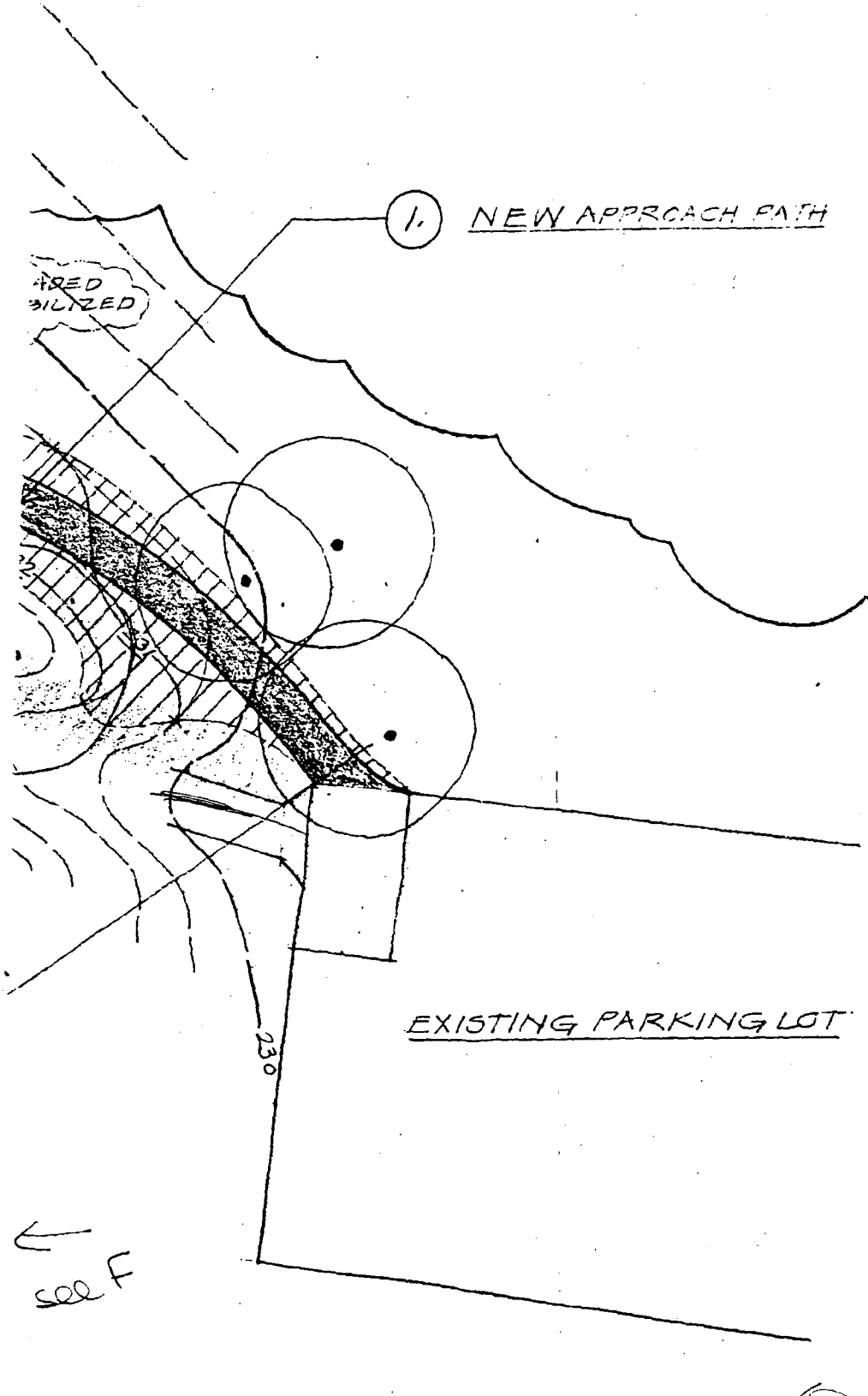

FENCE
REGRADED & STABILIZED AREA
235
232
235
F

(↑ see E)

G BLACKTOP PATH

reconstruction can be clearly distinguished [illegible]
Following this precept, it would follow that only fill should be applied [illegible] earthwork. It may be necessary to scarify the [illegible] face of the earthwork or use other means to ensure good adhesion [illegible] between the new fill and the existing form.



DRAFT

Project
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Checked C
Project No.

Andropogon Associates, Ltd.

Ecological Planning & Design
374 Shurs Lane Philadelphia PA 19128

Battery Bailey Earthworks Restoration

West Moreland Hills Local Park
Montgomery County Department of Parks
Maryland National Capital Park & Planning Commission

DRAFT

Prepared by:

Andropogon Associates, Ltd.
374 Shurs Lane
Philadelphia, PA 19128

August 1992

9209257078

Architects, Landscape Architects & Planners (215) 487-0700 Fax: (215) 483-7520

(19)

Introduction

This report is intended to summarize the recommendations for the preservation, stabilization and interpretation of the Battery Bailey Civil War Earthworks located in the West Moreland Hills Local Park of the Montgomery County Department of Parks, Maryland National Capital Park and Planning Commission.

Battery Bailey was one of 93 unarmed batteries constructed by the Union Army during the Civil War for the defense of Washington. Built in the fall of 1862 following Lee's invasion of Maryland, this earthwork, part of a 37-mile ring of defenses encircling the Capital, served to strengthen the line of fortifications northwest of the city; it connected with Fort Sumner to the left and Fort Mansfield to the right. Situated on a rise overlooking the Little Falls Branch, formerly known as Powder Mill Branch, the battery was originally a C-shaped structure containing six wooden platforms on which field guns could be mounted. The battery went unarmed during the war. The battery was named for Colonel Guilford D. Bailey, who was killed in action during the battle of Fair Oaks in 1862. Of the nine Civil War Defenses which existed in Montgomery County, Battery Bailey is the only site remaining. [Fig. 1-3].

Historical information on the Battery Bailey Civil War Earthworks can be found in two reports:

Battery Bailey & the Montgomery County Line of the Civil War Defenses of Washington, prepared by Mark Walston, Montgomery County Department of Parks, October 1983.

The Montgomery County Story, Vol IV, Part I, The Defenses of Washington during the Civil War, Roger S. Cohen Jr., published by the Montgomery County Historical Society

The purpose of the study is twofold - to provide for an effective level of stabilization to ensure its preservation for the future and to provide for appropriate interpretation, including barrier-free access, of this significant historic site. A detailed reconstruction and restoration of the earthwork is not anticipated at this time.

Existing Conditions

Battery Bailey today is surrounded by forest and is overgrown with trees and bush. The once sharp outlines of the earthwork have been rounded by time and in many places are severely eroded from trampling and mountain bike use, although the six cuts for embrasures in the ramparts and the remains of the terreplain are still visible. The site is uninterpretated and unprotected at the present time. Its neglected condition is due to the generally unrecognized value of this type of historic site.

As the primary goal is to preserve the earthwork as an historic artifact, an assessment of current levels of damage due to erosion and compaction was undertaken. Trampling and/or mountain bike damage compacts the ground, kills the stabilizing vegetation and leaves the soil exposed and vulnerable to the effects of water, frost and gravity. The map of the Existing Conditions summarizes the problems of the site and depicts the various levels of soil erosion. [Drawing No. 9103/1].

At the present time, the historic artifact is not interpreted or acknowledged in any way to the public who use the site. There is no protection or surveillance of the Battery. It is therefore conceived as no more than a 'bump' in the woods. People are always drawn to irregularities in the landscape. The Battery has therefore become a beacon for activity on the wooded slope where it is located. If people want to walk their dog in that are, they walk along the highest 'bumps' - the parapet itself. If they want to ride their mountain bike in park, the 'bumps' of the Battery make an excellent jump course. Visitors do not treat the Battery with the respect it deserves as they have not been informed of the significance of the artifact, nor is there any appropriate path system.

It seems likely that the majority of disturbance to the Battery could be controlled if the public were informed of the significance of the earthworks and asked to modify their use of the site accordingly. Additional deterrents will probably be required to control the activities of the hardcore minority who will ignore these requests.

It is strongly recommended that the artifact be protected with site fencing. Its purpose would be to inform and direct the visitor accordingly rather than to totally prohibit access of any kind. Therefore a measure of visitor cooperation will still be required as well as adequate signage and on-going monitoring to assess the effectiveness of these measures. The areas of existing erosion and compaction must be stabilized and replanting in order to provide for long-term preservation of the artifact.

Two fencing options were examined.

1. *Access control to the entire area*

Enclosure of the entire wooded slope would afford a level of protection to the landscape, which is currently in relatively good condition, but would require more extensive construction and therefore higher costs. The earthworks would not be visually crowded with barriers, but would therefore also not be as well protected.

2. *Protecting the artifact only*

Conversely, enclosure of the earthworks would afford no protection to the landscape on the wider slope; would be less extensive and, therefore, less costly to install and maintain; would visually crowd the earthworks, but would also offer greater protection for the artifact.

At this time, based on review with the local community and the client, it is recommended that only the artifact be fenced.

Current Recreational Use

The current levels of damage to the earthwork are directly related to visitor use of site which is comprised of four major activities.

The *Cyclist* - entering from Elliott road or the greenway/bikeway along Powder Mill Creek. Damage consists of off-trail use on the slope and on the earthworks.

The *Walker* - entering from Elliott road or the greenway/bikeway along Powder Mill Creek. Damage is primarily associated with a desire line trail on top of the ramparts.

The *Visitor* - to the Battery for interpretative purposes. Use for interpretative purposes is as yet too low to be a major damage factor, but any visitors are likely to use the parapet trail.

The *Visitor to the Park facilities,* including the Recreation Center and the playing fields. No direct damage to earthworks results from this use.

In order to reduce damage to the earthworks from the first two uses and to prevent future damage from increased interpretative usage, it is proposed that the design alternatives must separate these uses to reduce recreational conflicts.

The proposed circulation is comprised of five major components:

1. Revised path from parking lot to provide barrier-free access to park as well as earthworks.

2. Independent pedestrian loop that serves to bring the visitor to the Battery, the athletic fields, and/or the connecting trail to the Powder Mill Creek Greenway /Bikeway and provides a tour loop for the casual walker.

3. Independent interpretive loop for the Battery. This is optional and would be developed if and when a more interpretative program is designed.

4. Bicycle use confined to the trail connecting the Powder Mill Creek Greenway/ Bikeway to Elliott road at the park.

5. Fencing along the connecting rail from the Greenway to discourage access to the pedestrian only trail.

Interpretive Facilities

A key concern in any earthwork interpretation is achieving an appropriate balance between access and preservation. Unfortunately many of the publicly owned earthworks sites have suffered from severe deterioration due to unrestricted access and inadequate stabilization.

Perhaps the single most damaging activity recently in earthworks management has been the wholesale removal of trees from earthwork sites which was undertaken to provide greater visibility of the form of the earthworks and to reduce impacts to archaeological stratigraphy from tree roots. The consequences, however, were by and large disastrous relative to earthworks preservation. In most cases severe erosion resulted immediately and often the earthworks were also directly impacted by the clearance activities. Many sites were never replanted or stabilized at all, in others new vegetative cover was inadequately maintained and deteriorated overtime. Elsewhere, access was dramatically increased leading to increased trampling, biking and vandalism.

Several guidelines were established by the National Park Service (Earthworks Landscape Management Manual prepared by Andropogon Associates for the National Park Service) to reduce the impacts and achieve adequate preservation. These included a recommendation to prohibit all direct access or walking on the unprotected surface of the earthworks and to provide a circulation system that affords adequate interpretive access and clear information on where the walker is supposed to be. It was further recommended that forested earthworks remain in forest cover except where exceptional levels of maintenance and security can be maintained. An increase in the of fencing boardwalks and other forms of confined access was proposed.

At this time the terrain of Battery Bailey is protected by forest cover except where the vegetation and soil have been damaged by trampling and bicycle use and it is strongly urged that Forest Cover be maintained and managed to favor healthy native plant communities, except where Light Forest Cover is desired to provide greater visibility. The revision of circulation patterns and adequate site fencing are also required.

At the very least appropriate interpretive signage is required at the Battery and can be incorporated into the site fencing. Where more extensive facilities are desired it is recommended that they take their basic forms from the actual forms that were part of the original form rather than introduce new and possibly confusing site patterns. A key goal will be to help the visitor to recreate in his or her mind a visual image of what the original earthworks and setting were like.

The most sensitive section of the site is the area at the east end of the Battery that has the steepest topography closest to the existing asphalt path. This area has the most direct visual link to the path as well as some of the densest vegetation. It is currently in relatively good condition because the vegetation obscures the earthworks and makes

them virtually undetectable to the visitor. There is, therefore, little existing use of this area. However, if visitors were introduced, the potential for severe erosion and disturbance would be very high. For this reason, all three conceptual path designs avoid intrusion into this particularly sensitive zone.

Proposed Design

The proposed scheme is the simplest and can be implemented within the funding available for Battery Bailey at this time. It's primary goals are to protect and stabilize the site while providing a limited interpretive experience. It also meets current community goals to retain a low-key character to the site, at least for the present time. [Drawing Nos. 9103/2 and 9103/3].

The proposed design includes the following components:

(i) *New Approach Path*

This path connects the parking lot and existing asphalt path to the recreation area and the new earthwork viewing area. It is a fully handicapped accessible path, 8'-0" wide, asphalt surface, with a gradient of 5%. It is located to avoid trees and has the minimum of regrading to meet the legal requirements for handicapped access. Side slopes are at a grade of between 1:3 and 1:4 to minimize erosion. The extent of regrading is shown on the plan with a cross hatch. This area will require seeding and/or planting to stabilize the soil. [Fig. 4.]

(ii) *Viewing Area*

The viewing area is kept to an absolute minimum with a 20' diameter circle of asphalt. As most people visit in groups, it was felt necessary to have some milling space and also provide room for wheel chairs, strollers etc., to maneuver. There is some minimal regrading required, as shown on the plan, to achieve a flat area, however, no trees require removal. The location of the viewing area is at a high point, the only location where a good view of the interior of the earthwork can be obtained without actually walking on the earthwork. The erosion patterns indicate this is a popular viewing point.

Interpretative signage partially encircles the viewing area. This is envisioned as a continuous series of boards, inclined at 45 degrees and mounted on wood posts to form a sort of inner fence. This signage could be added at a later date if the present budget does not permit immediate installation. The circle form enables the direction of specific features to be indicated and the graphics to be designed as a storyline rather than as a single sign. [Fig. 5.].

(iii) *Enclosing Fence*

A wood post and rail fence completely encloses the earthwork. It has been designed to follow the form of the terrain as gracefully as possible without being completely free-form. Major curves are radiuses that could be set out on site quite easily. The fenceline indents to wrap around the viewing area. This is done in order to clearly indicate the viewing area as a specific destination and to encourage people to walk only on the paths provided.

(iv) *Secondary Fence*

A short section of secondary fence is provided in the location indicated to discourage people from cutting off the corner on this steeply sloping area. Only a path system that is totally fenced will prevent people from going off the path. The earthwork should be monitored regularly and other sections of fence added at strategic locations if new rogue paths develop. It is also important to repair vandalism as quickly as possible if it occurs as most people tend to respect a place more if it is obviously cared for.

(v) *Ring Trail*

A trail has been designed to encircle the entire earthwork connecting the new approach path to the existing asphalt path. This trail gives the visitor good views of the earthwork from the outside. This trail has been designed to follow the terrain as closely as possible and avoids cutting trees. It is approximately 5' wide, never reaches more than an 8% slope, and has a gravel surface. Some grading is unavoidable because of the steep slope, particularly at the southwest corner where it cuts close to the earthwork. Note: while it might seem advisable to have the path further away from the earthwork at this point, this alignment is the only way of avoiding much steeper grade in which the path would inevitably become an erosion gully over time. [Fig. 4.].

(vi) *Built up Earthwork*

The earthwork itself is shown built up with new soil to indicate the general form and location of the embrasures and other features. Slopes on this partial reconstruction should not exceed 1.5:1 as it will not be possible to stabilize anything steeper without resorting to mechanical means of stabilization which would be expensive and unsightly. This reconstruction will require stabilization with ground cover planting at a minimum and possibly reinforcement with jute matting or other low key forms of reinforcement. To avoid damaging the resource, the existing surface will be preserved and indicated so that in the future the reconstruction can be clearly distinguished from the original form. The eastern portion of the Earthwork is proposed to be left in it's current state, both because it is in the best condition and in order to retain a portion of the earthwork unmodified. [Fig. 6.].

This proposal will provide much needed protection to the Battery without entailing significant construction. Virtually all of the construction and landscaping proposed for

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this scheme could be undertaken in-house if that was desirable with the exeption of the new asphalt access path. Some on-going maintenance, especially to maintain cover on the once eroded and compacted areas, is required. There are two major limitations to this scheme. The first is that the view of the earthwork will remain fairly restricted, even with light forest cover, because access is so limited and the visitor will be at some distance away. There is likely to be some temptation to over-clear the earthworks to gain visibility except this is strongly recommend against as it would result in greatly increased susceptibility to erosion and weedy vine growth - both of which would ultimately obscure the earthworks. The second concern is that the level of protection provided may be inadequate, especially as pressure for recreational use increases. This factor will have to be monitored and assessed over time.

Landscape Management and Restoration Issues

Reconstruction of the Earthworks

The idea of reconstructing an earthwork to its original configuration is often a major goal in earthworks stabilization projects, however, there are several problems associated with this objective. The most severe is the steepness of the grades that characterized the original earthworks which is typically far steeper than can be conventionally maintained. It is important to remember, for example, that these sites required regular maintenance during war time, sometimes every day. Newly reconstructed sites have also proven to require routine care. The most successful are probably those at Colonial National Historical Park in Yorktown, VA, however, these were specially reconstructed for this purpose and the soil carefully prepared to help sustain vegetative cover. They are also in the open, for the most part, and have been kept well-stabilized with both turf and tall grass. Other sites, however, have proven more difficult, such as Fort Ward Museum and Historic Site, Alexandria, VA and have required far more maintenance than originally expected and still are subject to locally severe erosion.

In the case of Battery Bailey, it is strongly recommended that a literal reconstruction of the earthworks not be attempted. Firstly, the maintenance required would be excessive, on top of almost prohibitive construction costs. The usual problems of steep grades are further complicated by the steepness of the slope on which the battery is sited. Reconstructions would, in fact, necessitate not only complete clearance of the site but also major tree removals down slope as well as extensive rise of soil reinforcing materials. In addition, as there are not accurate records of the earthworks actual configuration would at best be an approximation.

At the same time, however, there is a strong desire to reestablish at least some of the character and drama of the original configuration, especially as the remnant terrain is not adequately distinguished from the surrounding terrain and the site details, such as the embrasures, are barely distinguishable, especially from a distance. Therefore, we propose a partial reconstruction that will make the earthworks and the features significantly more visible. Specifically up to 4 foot of soil is proposed to be added

between the embrasures, both to call out those features and to recreate the protection afforded by the breastworks. At the steepest, the grades proposed approach 66% between the embrasures (1.5:1), however, the length of the slopes are relatively short and they can be stabilized with vegetation if some routine maintenance is provided. In addition some soil enforcement is included as well as erosion matting on the surface to help provide stability until the vegetation is established.

Revegetation of the Earthworks

It is strongly recommended that only native species plant material be used to restabilize the site. This is not difficult when it comes to a few trees and shrubs but is a problem with regard to groundcover plants where natives have not been used in the commercial trade. The most cost effective approach to take would be to order material from a commercial propagator, unless there is a state or county facility willing to take the order. In the case of the earthworks we recommend two species be used as ground cover: low-bush blueberry *(Vaccinium angustifolium)* and Christmas fern *(Polystichum acrostichoides).*

The lowbush blueberry is the most compact and low-growing of the locally abundant native shrubs and will tolerate the infertile, dry soils of the site as well as partial shade. Once established, it will form a very dense groundcover that will help to call out the earthworks from the rest of the surrounding forest landscape. In the event you are unable to locate a local supplier, we recommend you contact Don Knezick at Pinelands Nursery, RR 1, Box 12 (Island Road), Columbus, NJ 08022 (609) 291-9486. Don has had excellent results with lowbush blueberry and produces excellent stock. The Christmas fern is evergreen which will further help to distinguish the earthworks especially during the winter. The Christmas fern is more widely available but still may be far cheaper through a propagator.

While the use of native groundcover is more costly than a commercial groundcover the results will be more appropriate to the larger context of this site and make a real contribution to the local flora. As an alternate, however, should this approach not be feasible, we propose the use of periwinkle (Vinca minor) as a groundcover for the restabilized earthworks. It will, however, require slightly higher maintenance at the outset, especially watering. In addition, it will be important to ensure that it does not spread beyond the earthworks into the adjacent forest as it can suppress the reproduction of native species. As it grows relatively slowly, however, this is not expected to be an issue for many years.

Only limited replanting is required for the remainder of the site on portions of restored trail, where there inadequate reproduction of forest cover, and to replace turf along the entry path. It is recommended that the portions, of the 'desire line' or 'rogue' trails that are steeper than 3:1 be stabilized with Virginia creeper *(Parthenocissus quinquefolia).* For shallower slopes, leaf litter should be adequate. Some additional stabilization is also proposed using check logs to help control stormwater. In these areas where the outlaw

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trail meets a trail, minimal tree and shrub planting is proposed to obscure the trail and discourage it's reopening. Any native trees and shrubs that are characteristic of the surrounding forest could be used such as red maple *(Acer rubrum)* and red oak *(Quercus rubra)*, arrowwood *(V. dentatum)* and Spicebush *(Lindera benzoin)*. Additional replanting is reviewed in the next section.

Landscape Management Guidelines

In addition to the maintenance required to successfully establish and maintain the newly planted vegetation, some additional management of the forest vegetation both on and adjacent to the earthworks is recommended both to maintain the health of the habitat and to provide a greater degree of visibility of the earthwork.

The management recommended for sustaining a healthy forest habitat focuses on three factors:

(1) Soil disturbance
(2) Invasive exotics
(3) Recruitment and replacement of native plants

1. *Soil Disturbance*

The proposed plan for Battery Bailey has been directed in large measure toward restoring disturbed soil, that is areas that have been eroded and/or compacted by trampling and bicycling, and installing appropriate fencing to reduce or eliminate further disturbance in the future. It, however, is imperative that adequate monitoring be undertaken to assess the effectiveness of these measures. Some occasional disturbance is probably unavoidable and it is crucial that any impacted area be restored as quickly as possible. It is especially important if a new desire line trail is cut that it be restored and replanted before it attracts regular use.

2. *Invasive Exotics*

The negative impacts of naturalized exotic vegetation are increasingly recognized, in particular primarily the suppression of native plant communities and the consequent losses to native wildlife habitat. Wherever possible invasive exotic vegetation should be removed, however, where densely established removals may necessitate the replanting of native species to provide adequate vegetative cover. The most prolific exotic at Battery Bailey is honeysuckle, a plant that is already so widely entrenched that it is acknowledged to have significantly altered the course of natural succession in the Northeast. First priority should be given to those areas where honeysuckle is just getting established and where minimal or not replanting is required. In those areas where honeysuckle is well-established it is critical than immediate replanting be undertaken and that adequate maintenance, especially during the establishment period, is provided for the eastern end of the breastworks, in particular, are for the present, partially protected from trampling by dense mounds of honeysuckle and would be very

vulnerable without replanting other invasive exotic species should be treated similarly. In general, incremental management is the most cost-effective. It is recommended that, in general, invasives should be removed manually. This should be undertaken at least three times the first year - after the first heavy spring growth, after the substantial regrowth, and while in flower. This will need to be repeated the second year. By the third year only two cuttings may be necessary. If the use of herbicides is acceptable, additional control can be achieved by applying round-up to the regrowth that occurs just after the last removal in accordance with IPM (Integrated Pest Management) principles. A similar approach is recommended towards other invasives that are noted during routine site monitoring.

3. *Replace of Native Species*

A common problem encountered in the management of forested earthworks is the gradual loss of cover vegetation due to limited reproduction of native species, due to trampling, compaction, drought, infertility, animal browse, competition from exotics. and in some cases past management. Over time the vegetation is often reduced to large old trees, which may even be a hazard with no or few younger replacement trees or understory layers present.

Effective management includes not only monitoring for and timely removal of older trees, but also replanting and replacement canopy as well as understory trees and shrubs as needed overtime. These can be sited to minimize any hazard to the earthwork and without blocking the view from important visitor sites.

Additional management may be desired to increase the visibility of the earthworks from the viewing platform. Great care must be given to minimizing the actual amount of removal, which is almost inevitably done by novice managers. It is also important to ensure that adequate vegetation in each layer of the landscape is retained to provide for future cover, that is canopy and understory trees, shrubs etc. All areas on the earthworks should be under woody cover to provide for protection from the impact of raindrops. Ideally at least two people should be included on the management time; one sited at the viewing are to verify exactly which plants should be removed and the second one actually doing the removals. A walkie-talkie could be very helpful to this effort.

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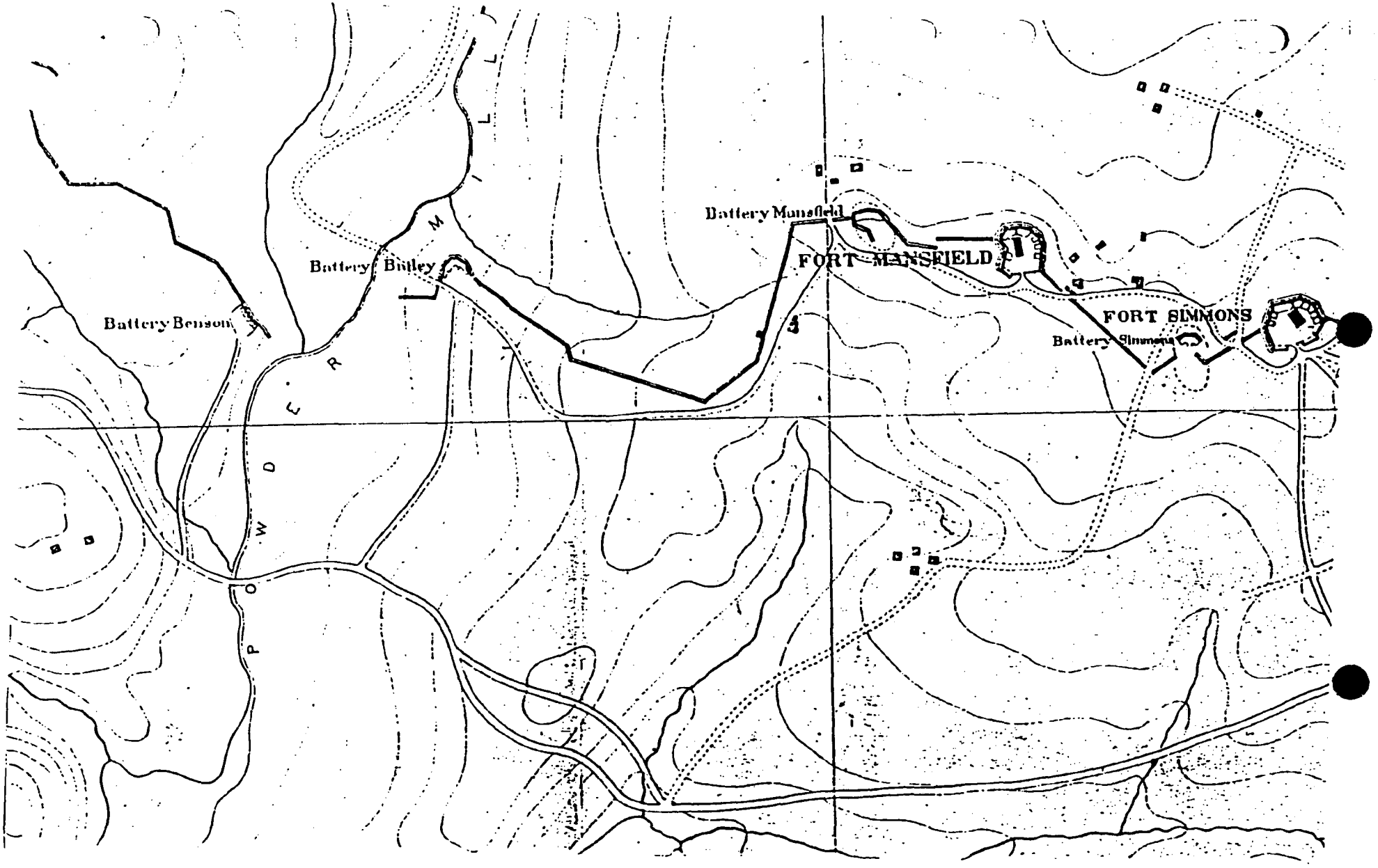

Fig. 1. Historical map showing Battery Bailey's position relative to the other Civil War Earthworks for the defense of Washington.

Fig. 2. U.S. Army Corps of Engineers Map showing the only information available.

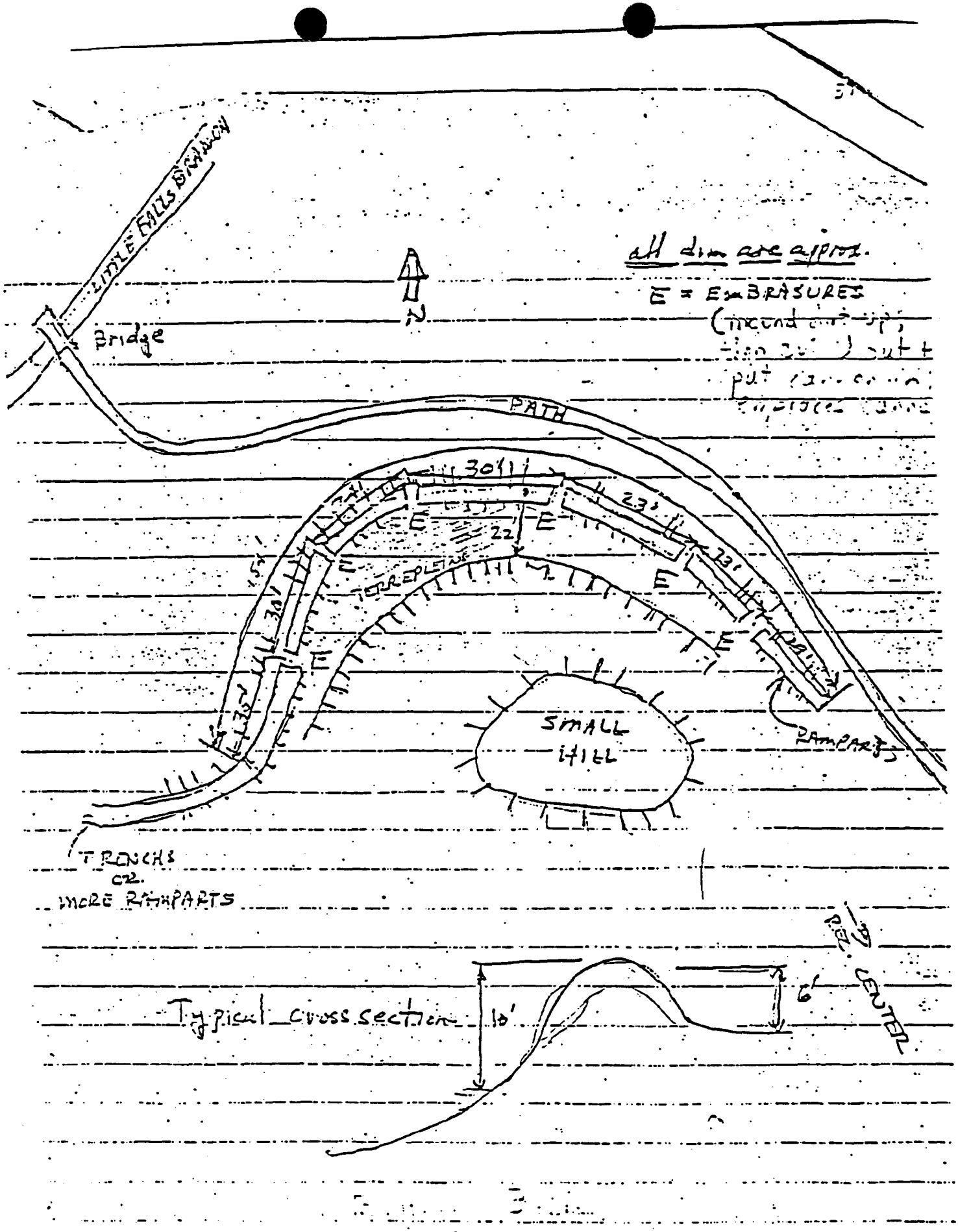

Fig. 3. Historians Map of the site from the most recent survey.

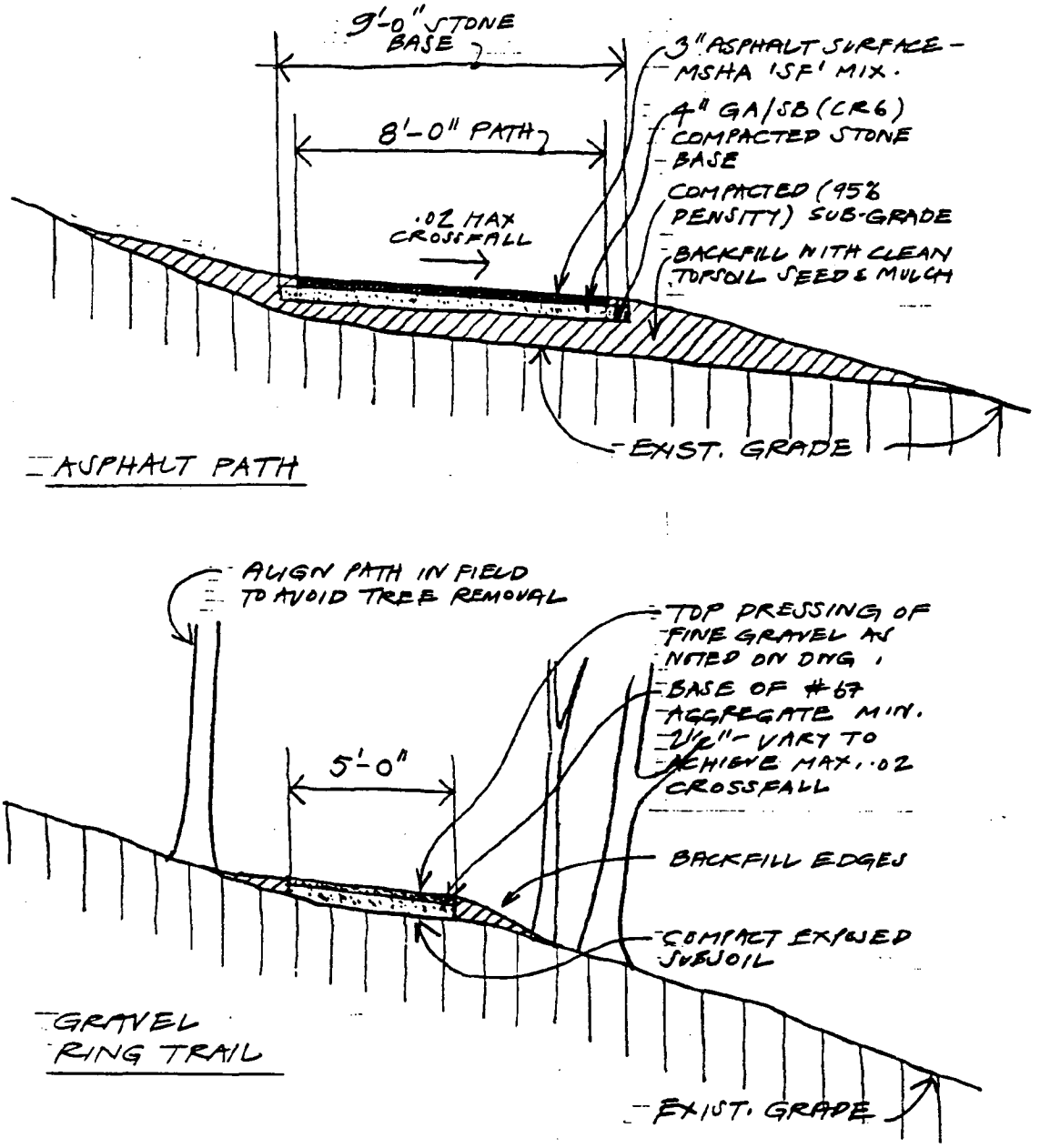
9'-0" STONE BASE
8'-0" PATH
.02 MAX CROSSFALL
3" ASPHALT SURFACE - MSHA 1SF1 MIX.
4" GA/SB (CR6) COMPACTED STONE BASE
COMPACTED (95% DENSITY) SUB-GRADE
BACKFILL WITH CLEAN TOPSOIL SEED & MULCH
EXIST. GRADE
ASPHALT PATH
ALIGN PATH IN FIELD TO AVOID TREE REMOVAL
5'-0"
TOP DRESSING OF FINE GRAVEL AS NOTED ON DWG.
BASE OF #67 AGGREGATE MIN. 2½" - VARY TO ACHIEVE MAX. .02 CROSSFALL
BACKFILL EDGES
COMPACT EXPOSED SUBSOIL
EXIST. GRADE
GRAVEL RING TRAIL

Fig. 4.

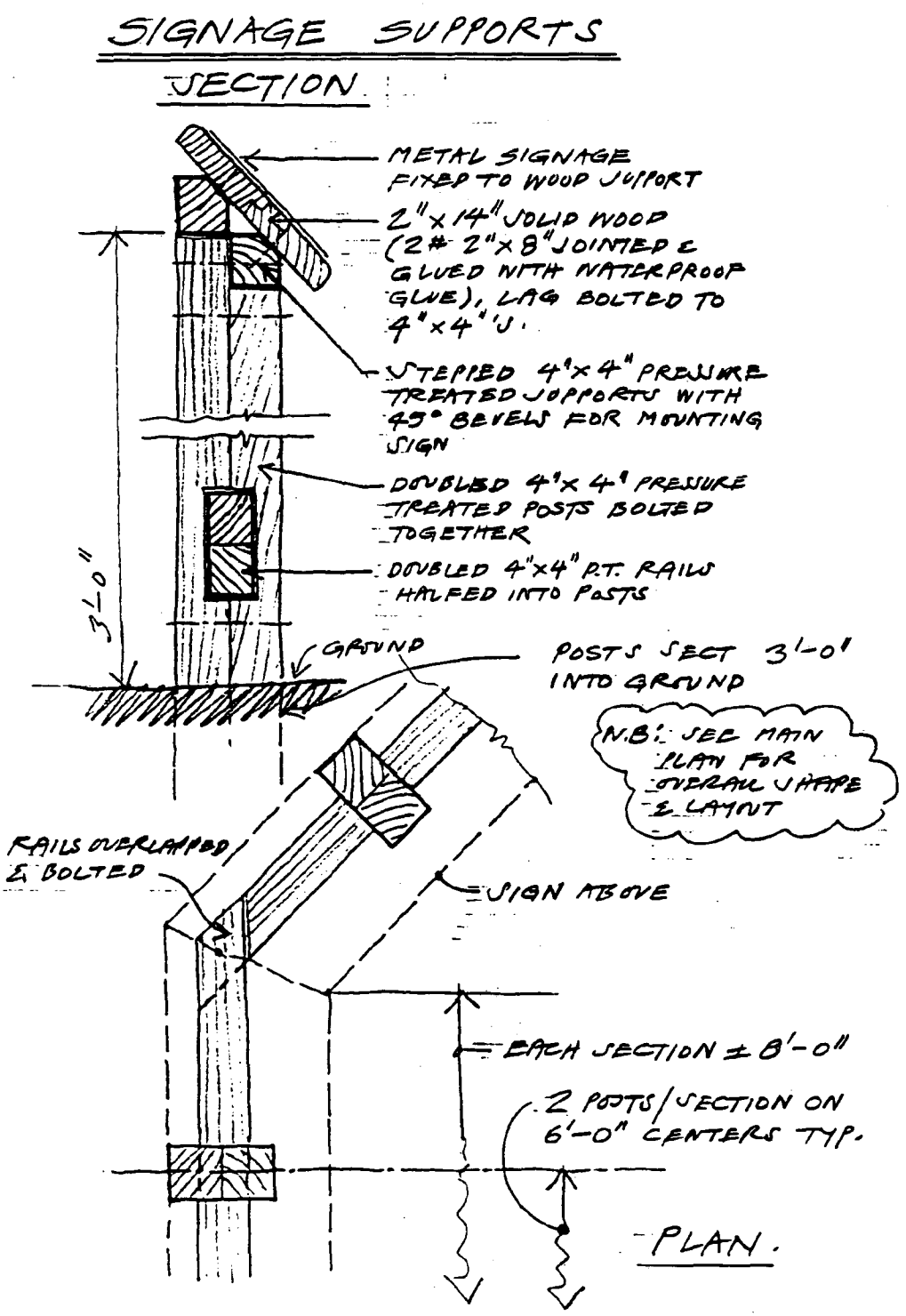
SIGNAGE SUPPORTS
SECTION
METAL SIGNAGE FIXED TO WOOD SUPPORT
2"x14" SOLID WOOD (2# 2"x8" JOINTED & GLUED WITH WATERPROOF GLUE), LAG BOLTED TO 4"x4" 'U'.
STEPPED 4"x4" PRESSURE TREATED SUPPORTS WITH 45° BEVELS FOR MOUNTING SIGN
DOUBLED 4"x4" PRESSURE TREATED POSTS BOLTED TOGETHER
DOUBLED 4"x4" P.T. RAILS HALFED INTO POSTS
3'-0"
GROUND
POSTS SECT 3'-0" INTO GROUND
N.B.: SEE MAIN PLAN FOR OVERALL SHAPE & LAYOUT
RAILS OVERLAPPED & BOLTED
SIGN ABOVE
EACH SECTION ± 8'-0"
2 POSTS/SECTION ON 6'-0" CENTERS TYP.
PLAN.

Fig. 5.

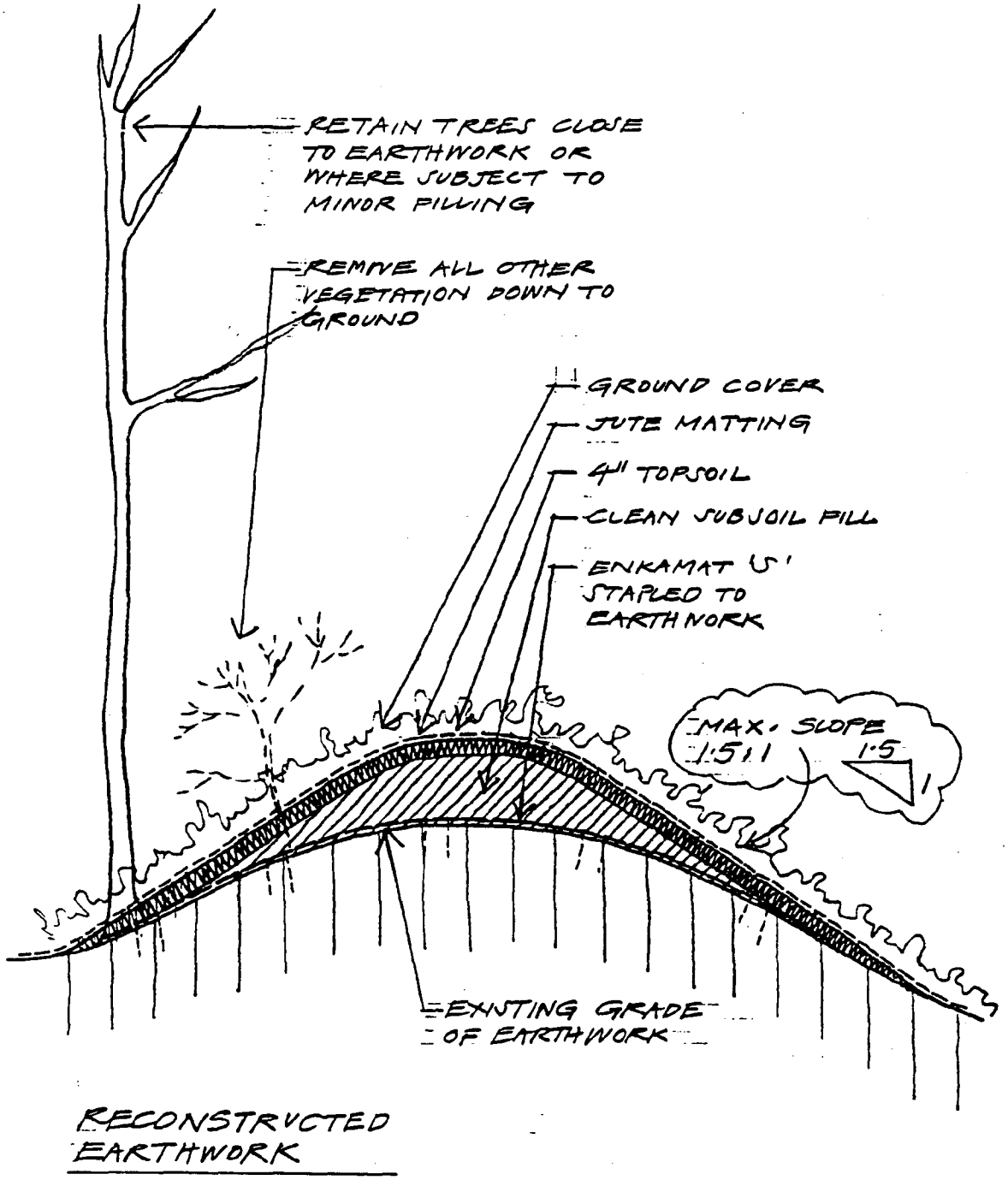
RETAIN TREES CLOSE TO EARTHWORK OR WHERE SUBJECT TO MINOR FILLING
REMOVE ALL OTHER VEGETATION DOWN TO GROUND
GROUND COVER
JUTE MATTING
4" TOPSOIL
CLEAN SUBSOIL FILL
ENKAMAT 8' STAPLED TO EARTHWORK
MAX. SLOPE 1:5
1:5
1
EXISTING GRADE OF EARTHWORK
RECONSTRUCTED EARTHWORK

Fig. 6.

#35-32 Battery Bailey / Civil War Earthworks

Westmoreland Hills Rec Ctr Bethesda, Md

9209250028

Andropogon Associates, Ltd.

Ecological Planning & Design
374 Shurs Lane Philadelphia PA 19128

Battery Bailey Earthworks Restoration

West Moreland Hills Local Park
Montgomery County Department of Parks
Maryland National Capital Park & Planning Commission

DRAFT

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Philadelphia, PA 19128

August 1992

9209250078

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Introduction

This report is intended to summarize the recommendations for the preservation, stabilization and interpretation of the Battery Bailey Civil War Earthworks located in the West Moreland Hills Local Park of the Montgomery County Department of Parks, Maryland National Capital Park and Planning Commission.

Battery Bailey was one of 93 unarmed batteries constructed by the Union Army during the Civil War for the defense of Washington. Built in the fall of 1862 following Lee's invasion of Maryland, this earthwork, part of a 37-mile ring of defenses encircling the Capital, served to strengthen the line of fortifications northwest of the city; it connected with Fort Sumner to the left and Fort Mansfield to the right. Situated on a rise overlooking the Little Falls Branch, formerly known as Powder Mill Branch, the battery was originally a C-shaped structure containing six wooden platforms on which field guns could be mounted. The battery went unarmed during the war. The battery was named for Colonel Guilford D. Bailey, who was killed in action during the battle of Fair Oaks in 1862. Of the nine Civil War Defenses which existed in Montgomery County, Battery Bailey is the only site remaining. [Fig. 1-3].

Historical information on the Battery Bailey Civil War Earthworks can be found in two reports:

> Battery Bailey & the Montgomery County Line of the Civil War Defenses of Washington, prepared by Mark Walston, Montgomery County Department of Parks, October 1983.
>
> The Montgomery County Story, Vol IV, Part I, The Defenses of Washington during the Civil War, Roger S. Cohen Jr., published by the Montgomery County Historical Society

The purpose of the study is twofold - to provide for an effective level of stabilization to ensure its preservation for the future and to provide for appropriate interpretation, including barrier-free access, of this significant historic site. A detailed reconstruction and restoration of the earthwork is not anticipated at this time.

Existing Conditions

Battery Bailey today is surrounded by forest and is overgrown with trees and bush. The once sharp outlines of the earthwork have been rounded by time and in many places are severely eroded from trampling and mountain bike use, although the six cuts for embrasures in the ramparts and the remains of the terreplain are still visible. The site is uninterpretated and unprotected at the present time. Its neglected condition is due to the generally unrecognized value of this type of historic site.

As the primary goal is to preserve the earthwork as an historic artifact, an assessment of current levels of damage due to erosion and compaction was undertaken. Trampling and/or mountain bike damage compacts the ground, kills the stabilizing vegetation and leaves the soil exposed and vulnerable to the effects of water, frost and gravity. The map of the Existing Conditions summarizes the problems of the site and depicts the various levels of soil erosion. [Drawing No. 9103/1].

At the present time, the historic artifact is not interpreted or acknowledged in any way to the public who use the site. There is no protection or surveillance of the Battery. It is therefore conceived as no more than a 'bump' in the woods. People are always drawn to irregularities in the landscape. The Battery has therefore become a beacon for activity on the wooded slope where it is located. If people want to walk their dog in that are, they walk along the highest 'bumps' - the parapet itself. If they want to ride their mountain bike in park, the 'bumps' of the Battery make an excellent jump course. Visitors do not treat the Battery with the respect it deserves as they have not been informed of the significance of the artifact, nor is there any appropriate path system.

It seems likely that the majority of disturbance to the Battery could be controlled if the public were informed of the significance of the earthworks and asked to modify their use of the site accordingly. Additional deterrents will probably be required to control the activities of the hardcore minority who will ignore these requests.

It is strongly recommended that the artifact be protected with site fencing. Its purpose would be to inform and direct the visitor accordingly rather than to totally prohibit access of any kind. Therefore a measure of visitor cooperation will still be required as well as adequate signage and on-going monitoring to assess the effectiveness of these measures. The areas of existing erosion and compaction must be stabilized and replanting in order to provide for long-term preservation of the artifact.

Two fencing options were examined.

1. *Access control to the entire area*

Enclosure of the entire wooded slope would afford a level of protection to the landscape, which is currently in relatively good condition, but would require more extensive construction and therefore higher costs. The earthworks would not be visually crowded with barriers, but would therefore also not be as well protected.

2. *Protecting the artifact only*

Conversely, enclosure of the earthworks would afford no protection to the landscape on the wider slope; would be less extensive and, therefore, less costly to install and maintain; would visually crowd the earthworks, but would also offer greater protection for the artifact.

At this time, based on review with the local community and the client, it is recommended that only the artifact be fenced.

Current Recreational Use

The current levels of damage to the earthwork are directly related to visitor use of site which is comprised of four major activities.

The *Cyclist* - entering from Elliott road or the greenway/bikeway along Powder Mill Creek. Damage consists of off-trail use on the slope and on the earthworks.

The *Walker* - entering from Elliott road or the greenway/bikeway along Powder Mill Creek. Damage is primarily associated with a desire line trail on top of the ramparts.

The *Visitor* - to the Battery for interpretative purposes. Use for interpretative purposes is as yet too low to be a major damage factor, but any visitors are likely to use the parapet trail.

The *Visitor to the Park facilities,* including the Recreation Center and the playing fields. No direct damage to earthworks results from this use.

In order to reduce damage to the earthworks from the first two uses and to prevent future damage from increased interpretative usage, it is proposed that the design alternatives must separate these uses to reduce recreational conflicts.

The proposed circulation is comprised of five major components:

1. Revised path from parking lot to provide barrier-free access to park as well as earthworks.

2. Independent pedestrian loop that serves to bring the visitor to the Battery, the athletic fields, and/or the connecting trail to the Powder Mill Creek Greenway /Bikeway and provides a tour loop for the casual walker.

3. Independent interpretive loop for the Battery. This is optional and would be developed if and when a more interpretative program is designed.

4. Bicycle use confined to the trail connecting the Powder Mill Creek Greenway/ Bikeway to Elliott road at the park.

5. Fencing along the connecting rail from the Greenway to discourage access to the pedestrian only trail.

Interpretive Facilities

A key concern in any earthwork interpretation is achieving an appropriate balance between access and preservation. Unfortunately many of the publicly owned earthworks sites have suffered from severe deterioration due to unrestricted access and inadequate stabilization.

Perhaps the single most damaging activity recently in earthworks management has been the wholesale removal of trees from earthwork sites which was undertaken to provide greater visibility of the form of the earthworks and to reduce impacts to archaeological stratigraphy from tree roots. The consequences, however, were by and large disastrous relative to earthworks preservation. In most cases severe erosion resulted immediately and often the earthworks were also directly impacted by the clearance activities. Many sites were never replanted or stabilized at all, in others new vegetative cover was inadequately maintained and deteriorated overtime. Elsewhere, access was dramatically increased leading to increased trampling, biking and vandalism.

Several guidelines were established by the National Park Service (Earthworks Landscape Management Manual prepared by Andropogon Associates for the National Park Service) to reduce the impacts and achieve adequate preservation. These included a recommendation to prohibit all direct access or walking on the unprotected surface of the earthworks and to provide a circulation system that affords adequate interpretive access and clear information on where the walker is supposed to be. It was further recommended that forested earthworks remain in forest cover except where exceptional levels of maintenance and security can be maintained. An increase in the of fencing boardwalks and other forms of confined access was proposed.

At this time the terrain of Battery Bailey is protected by forest cover except where the vegetation and soil have been damaged by trampling and bicycle use and it is strongly urged that Forest Cover be maintained and managed to favor healthy native plant communities, except where Light Forest Cover is desired to provide greater visibility. The revision of circulation patterns and adequate site fencing are also required.

At the very least appropriate interpretive signage is required at the Battery and can be incorporated into the site fencing. Where more extensive facilities are desired it is recommended that they take their basic forms from the actual forms that were part of the original form rather than introduce new and possibly confusing site patterns. A key goal will be to help the visitor to recreate in his or her mind a visual image of what the original earthworks and setting were like.

The most sensitive section of the site is the area at the east end of the Battery that has the steepest topography closest to the existing asphalt path. This area has the most direct visual link to the path as well as some of the densest vegetation. It is currently in relatively good condition because the vegetation obscures the earthworks and makes

them virtually undetectable to the visitor. There is, therefore, little existing use of this area. However, if visitors were introduced, the potential for severe erosion and disturbance would be very high. For this reason, all three conceptual path designs avoid intrusion into this particularly sensitive zone.

Proposed Design

The proposed scheme is the simplest and can be implemented within the funding available for Battery Bailey at this time. It's primary goals are to protect and stabilize the site while providing a limited interpretive experience. It also meets current community goals to retain a low-key character to the site, at least for the present time. [Drawing Nos. 9103/2 and 9103/3].

The proposed design includes the following components:

(i) *New Approach Path*

This path connects the parking lot and existing asphalt path to the recreation area and the new earthwork viewing area. It is a fully handicapped accessible path, 8'-0" wide, asphalt surface, with a gradient of 5%. It is located to avoid trees and has the minimum of regrading to meet the legal requirements for handicapped access. Side slopes are at a grade of between 1:3 and 1:4 to minimize erosion. The extent of regrading is shown on the plan with a cross hatch. This area will require seeding and/or planting to stabilize the soil. [Fig. 4.]

(ii) *Viewing Area*

The viewing area is kept to an absolute minimum with a 20' diameter circle of asphalt. As most people visit in groups, it was felt necessary to have some milling space and also provide room for wheel chairs, strollers etc., to maneuver. There is some minimal regrading required, as shown on the plan, to achieve a flat area, however, no trees require removal. The location of the viewing area is at a high point, the only location where a good view of the interior of the earthwork can be obtained without actually walking on the earthwork. The erosion patterns indicate this is a popular viewing point.

Interpretative signage partially encircles the viewing area. This is envisioned as a continuous series of boards, inclined at 45 degrees and mounted on wood posts to form a sort of inner fence. This signage could be added at a later date if the present budget does not permit immediate installation. The circle form enables the direction of specific features to be indicated and the graphics to be designed as a storyline rather than as a single sign. [Fig. 5.].

(iii) *Enclosing Fence*

A wood post and rail fence completely encloses the earthwork. It has been designed to follow the form of the terrain as gracefully as possible without being completely free-form. Major curves are radiuses that could be set out on site quite easily. The fenceline indents to wrap around the viewing area. This is done in order to clearly indicate the viewing area as a specific destination and to encourage people to walk only on the paths provided.

(iv) *Secondary Fence*

A short section of secondary fence is provided in the location indicated to discourage people from cutting off the corner on this steeply sloping area. Only a path system that is totally fenced will prevent people from going off the path. The earthwork should be monitored regularly and other sections of fence added at strategic locations if new rogue paths develop. It is also important to repair vandalism as quickly as possible if it occurs as most people tend to respect a place more if it is obviously cared for.

(v) *Ring Trail*

A trail has been designed to encircle the entire earthwork connecting the new approach path to the existing asphalt path. This trail gives the visitor good views of the earthwork from the outside. This trail has been designed to follow the terrain as closely as possible and avoids cutting trees. It is approximately 5' wide, never reaches more than an 8% slope, and has a gravel surface. Some grading is unavoidable because of the steep slope, particularly at the southwest corner where it cuts close to the earthwork. Note: while it might seem advisable to have the path further away from the earthwork at this point, this alignment is the only way of avoiding much steeper grade in which the path would inevitably become an erosion gully over time. [Fig. 4.].

(vi) *Built up Earthwork*

The earthwork itself is shown built up with new soil to indicate the general form and location of the embrasures and other features. Slopes on this partial reconstruction should not exceed 1.5:1 as it will not be possible to stabilize anything steeper without resorting to mechanical means of stabilization which would be expensive and unsightly. This reconstruction will require stabilization with ground cover planting at a minimum and possibly reinforcement with jute matting or other low key forms of reinforcement. To avoid damaging the resource, the existing surface will be preserved and indicated so that in the future the reconstruction can be clearly distinguished from the original form. The eastern portion of the Earthwork is proposed to be left in it's current state, both because it is in the best condition and in order to retain a portion of the earthwork unmodified. [Fig. 6.].

This proposal will provide much needed protection to the Battery without entailing significant construction. Virtually all of the construction and landscaping proposed for

this scheme could be undertaken in-house if that was desirable with the exeption of the new asphalt access path. Some on-going maintenance, especially to maintain cover on the once eroded and compacted areas, is required. There are two major limitations to this scheme. The first is that the view of the earthwork will remain fairly restricted, even with light forest cover, because access is so limited and the visitor will be at some distance away. There is likely to be some temptation to over-clear the earthworks to gain visibility except this is strongly recommend against as it would result in greatly increased susceptibility to erosion and weedy vine growth - both of which would ultimately obscure the earthworks. The second concern is that the level of protection provided may be inadequate, especially as pressure for recreational use increases. This factor will have to be monitored and assessed over time.

Landscape Management and Restoration Issues

Reconstruction of the Earthworks

The idea of reconstructing an earthwork to its original configuration is often a major goal in earthworks stabilization projects, however, there are several problems associated with this objective. The most severe is the steepness of the grades that characterized the original earthworks which is typically far steeper than can be conventionally maintained. It is important to remember, for example, that these sites required regular maintenance during war time, sometimes every day. Newly reconstructed sites have also proven to require routine care. The most successful are probably those at Colonial National Historical Park in Yorktown, VA, however, these were specially reconstructed for this purpose and the soil carefully prepared to help sustain vegetative cover. They are also in the open, for the most part, and have been kept well-stabilized with both turf and tall grass. Other sites, however, have proven more difficult, such as Fort Ward Museum and Historic Site, Alexandria, VA and have required far more maintenance than originally expected and still are subject to locally severe erosion.

In the case of Battery Bailey, it is strongly recommended that a literal reconstruction of the earthworks not be attempted. Firstly, the maintenance required would be excessive, on top of almost prohibitive construction costs. The usual problems of steep grades are further complicated by the steepness of the slope on which the battery is sited. Reconstructions would, in fact, necessitate not only complete clearance of the site but also major tree removals down slope as well as extensive rise of soil reinforcing materials. In addition, as there are not accurate records of the earthworks actual configuration would at best be an approximation.

At the same time, however, there is a strong desire to reestablish at least some of the character and drama of the original configuration, especially as the remnant terrain is not adequately distinguished from the surrounding terrain and the site details, such as the embrasures, are barely distinguishable, especially from a distance. Therefore, we propose a partial reconstruction that will make the earthworks and the features significantly more visible. Specifically up to 4 foot of soil is proposed to be added

between the embrasures, both to call out those features and to recreate the protection afforded by the breastworks. At the steepest, the grades proposed approach 66% between the embrasures (1.5:1), however, the length of the slopes are relatively short and they can be stabilized with vegetation if some routine maintenance is provided. In addition some soil enforcement is included as well as erosion matting on the surface to help provide stability until the vegetation is established.

Revegetation of the Earthworks

It is strongly recommended that only native species plant material be used to restabilize the site. This is not difficult when it comes to a few trees and shrubs but is a problem with regard to groundcover plants where natives have not been used in the commercial trade. The most cost effective approach to take would be to order material from a commercial propagator, unless there is a state or county facility willing to take the order. In the case of the earthworks we recommend two species be used as ground cover: low-bush blueberry *(Vaccinium angustifolium)* and Christmas fern *(Polystichum acrostichoides).*

The lowbush blueberry is the most compact and low-growing of the locally abundant native shrubs and will tolerate the infertile, dry soils of the site as well as partial shade. Once established, it will form a very dense groundcover that will help to call out the earthworks from the rest of the surrounding forest landscape. In the event you are unable to locate a local supplier, we recommend you contact Don Knezick at Pinelands Nursery, RR 1, Box 12 (Island Road), Columbus, NJ 08022 (609) 291-9486. Don has had excellent results with lowbush blueberry and produces excellent stock. The Christmas fern is evergreen which will further help to distinguish the earthworks especially during the winter. The Christmas fern is more widely available but still may be far cheaper through a propagator.

While the use of native groundcover is more costly than a commercial groundcover the results will be more appropriate to the larger context of this site and make a real contribution to the local flora. As an alternate, however, should this approach not be feasible, we propose the use of periwinkle (Vinca minor) as a groundcover for the restabilized earthworks. It will, however, require slightly higher maintenance at the outset, especially watering. In addition, it will be important to ensure that it does not spread beyond the earthworks into the adjacent forest as it can suppress the reproduction of native species. As it grows relatively slowly, however, this is not expected to be an issue for many years.

Only limited replanting is required for the remainder of the site on portions of restored trail, where there inadequate reproduction of forest cover, and to replace turf along the entry path. It is recommended that the portions, of the 'desire line' or 'rogue' trails that are steeper than 3:1 be stabilized with Virginia creeper *(Parthenocissus quinquefolia).* For shallower slopes, leaf litter should be adequate. Some additional stabilization is also proposed using check logs to help control stormwater. In these areas where the outlaw

trail meets a trail, minimal tree and shrub planting is proposed to obscure the trail and discourage it's reopening. Any native trees and shrubs that are characteristic of the surrounding forest could be used such as red maple *(Acer rubrum)* and red oak *(Quercus rubra)*, arrowwood *(V. dentatum)* and Spicebush *(Lindera benzoin)*. Additional replanting is reviewed in the next section.

Landscape Management Guidelines

In addition to the maintenance required to successfully establish and maintain the newly planted vegetation, some additional management of the forest vegetation both on and adjacent to the earthworks is recommended both to maintain the health of the habitat and to provide a greater degree of visibility of the earthwork.

The management recommended for sustaining a healthy forest habitat focuses on three factors:

(1) Soil disturbance
(2) Invasive exotics
(3) Recruitment and replacement of native plants

1. *Soil Disturbance*

The proposed plan for Battery Bailey has been directed in large measure toward restoring disturbed soil, that is areas that have been eroded and/or compacted by trampling and bicycling, and installing appropriate fencing to reduce or eliminate further disturbance in the future. It, however, is imperative that adequate monitoring be undertaken to assess the effectiveness of these measures. Some occasional disturbance is probably unavoidable and it is crucial that any impacted area be restored as quickly as possible. It is especially important if a new desire line trail is cut that it be restored and replanted before it attracts regular use.

2. *Invasive Exotics*

The negative impacts of naturalized exotic vegetation are increasingly recognized, in particular primarily the suppression of native plant communities and the consequent losses to native wildlife habitat. Wherever possible invasive exotic vegetation should be removed, however, where densely established removals may necessitate the replanting of native species to provide adequate vegetative cover. The most prolific exotic at Battery Bailey is honeysuckle, a plant that is already so widely entrenched that it is acknowledged to have significantly altered the course of natural succession in the Northeast. First priority should be given to those areas where honeysuckle is just getting established and where minimal or not replanting is required. In those areas where honeysuckle is well-established it is critical than immediate replanting be undertaken and that adequate maintenance, especially during the establishment period, is provided for the eastern end of the breastworks, in particular, are for the present, partially protected from trampling by dense mounds of honeysuckle and would be very

vulnerable without replanting other invasive exotic species should be treated similarly. In general, incremental management is the most cost-effective. It is recommended that, in general, invasives should be removed manually. This should be undertaken at least three times the first year - after the first heavy spring growth, after the substantial regrowth, and while in flower. This will need to be repeated the second year. By the third year only two cuttings may be necessary. If the use of herbicides is acceptable, additional control can be achieved by applying round-up to the regrowth that occurs just after the last removal in accordance with IPM (Integrated Pest Management) principles. A similar approach is recommended towards other invasives that are noted during routine site monitoring.

3. *Replace of Native Species*

A common problem encountered in the management of forested earthworks is the gradual loss of cover vegetation due to limited reproduction of native species, due to trampling, compaction, drought, infertility, animal browse, competition from exotics. and in some cases past management. Over time the vegetation is often reduced to large old trees, which may even be a hazard with no or few younger replacement trees or understory layers present.

Effective management includes not only monitoring for and timely removal of older trees, but also replanting and replacement canopy as well as understory trees and shrubs as needed overtime. These can be sited to minimize any hazard to the earthwork and without blocking the view from important visitor sites.

Additional management may be desired to increase the visibility of the earthworks from the viewing platform. Great care must be given to minimizing the actual amount of removal, which is almost inevitably done by novice managers. It is also important to ensure that adequate vegetation in each layer of the landscape is retained to provide for future cover, that is canopy and understory trees, shrubs etc. All areas on the earthworks should be under woody cover to provide for protection from the impact of raindrops. Ideally at least two people should be included on the management time; one sited at the viewing are to verify exactly which plants should be removed and the second one actually doing the removals. A walkie-talkie could be very helpful to this effort.

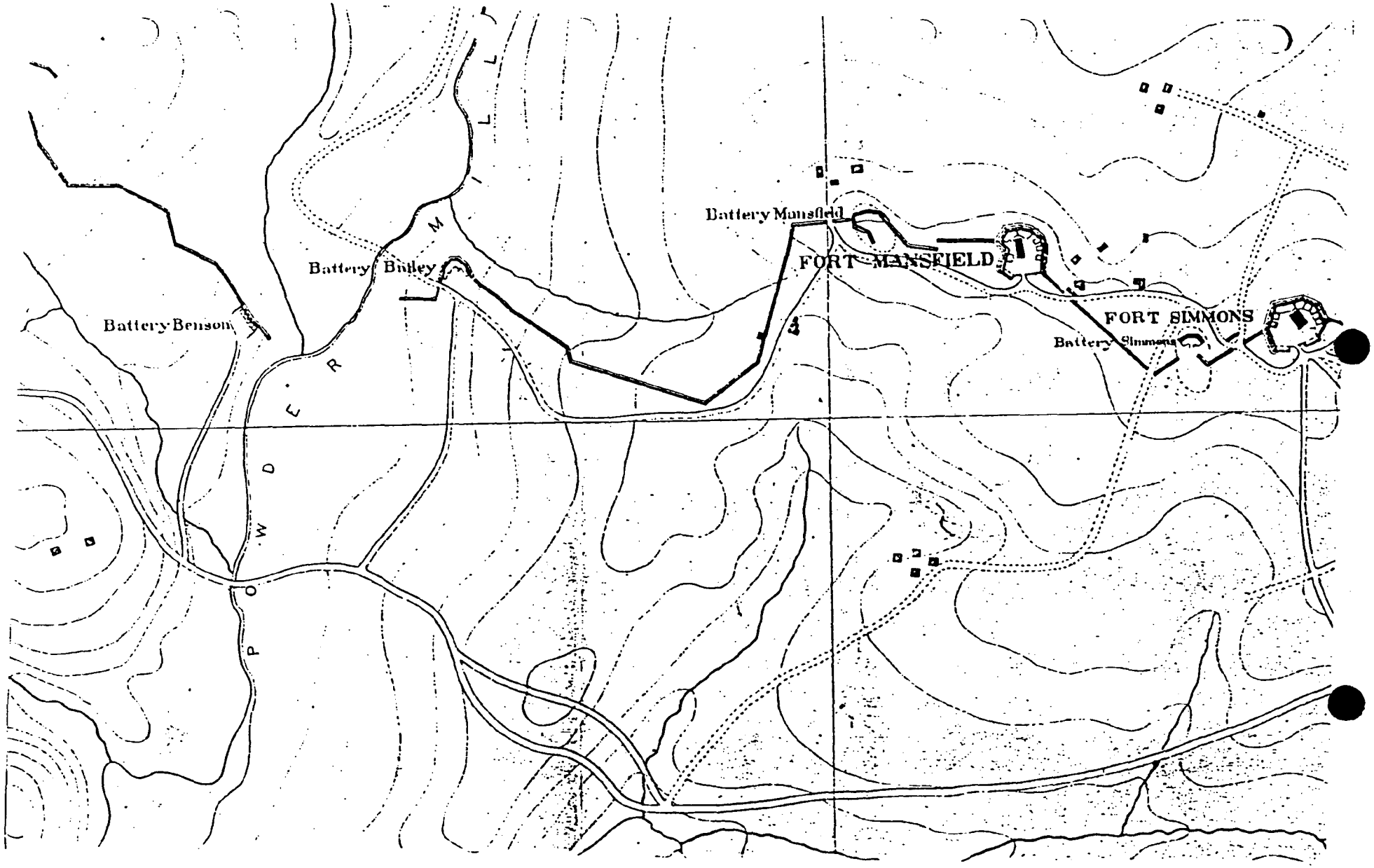

Fig. 1. Historical map showing Battery Bailey's position relative to the other Civil War Earthworks for the defense of Washington.

Fig. 2. U.S. Army Corps of Engineers Map showing the only information available.

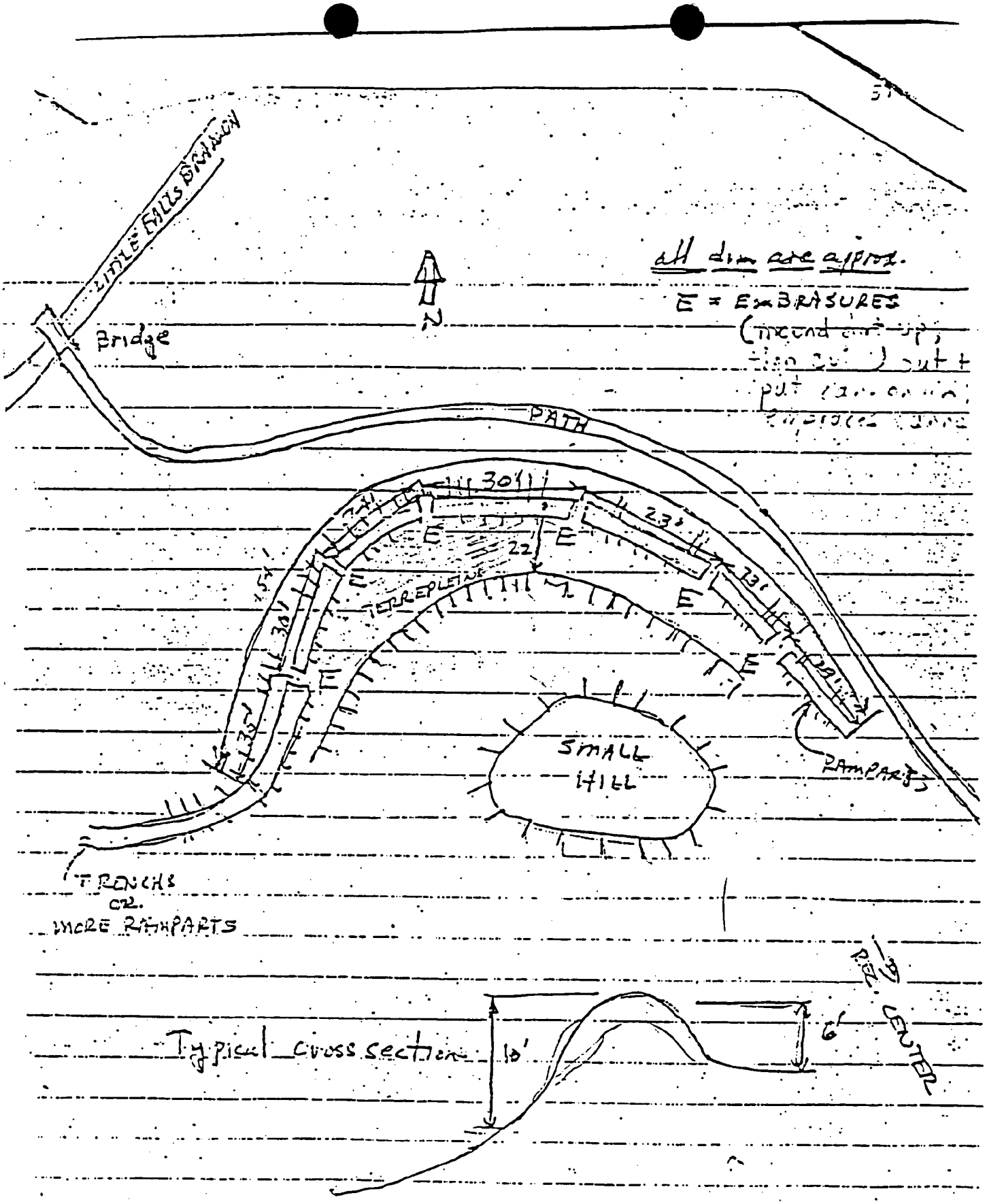

Fig. 3. Historians Map of the site from the most recent survey.

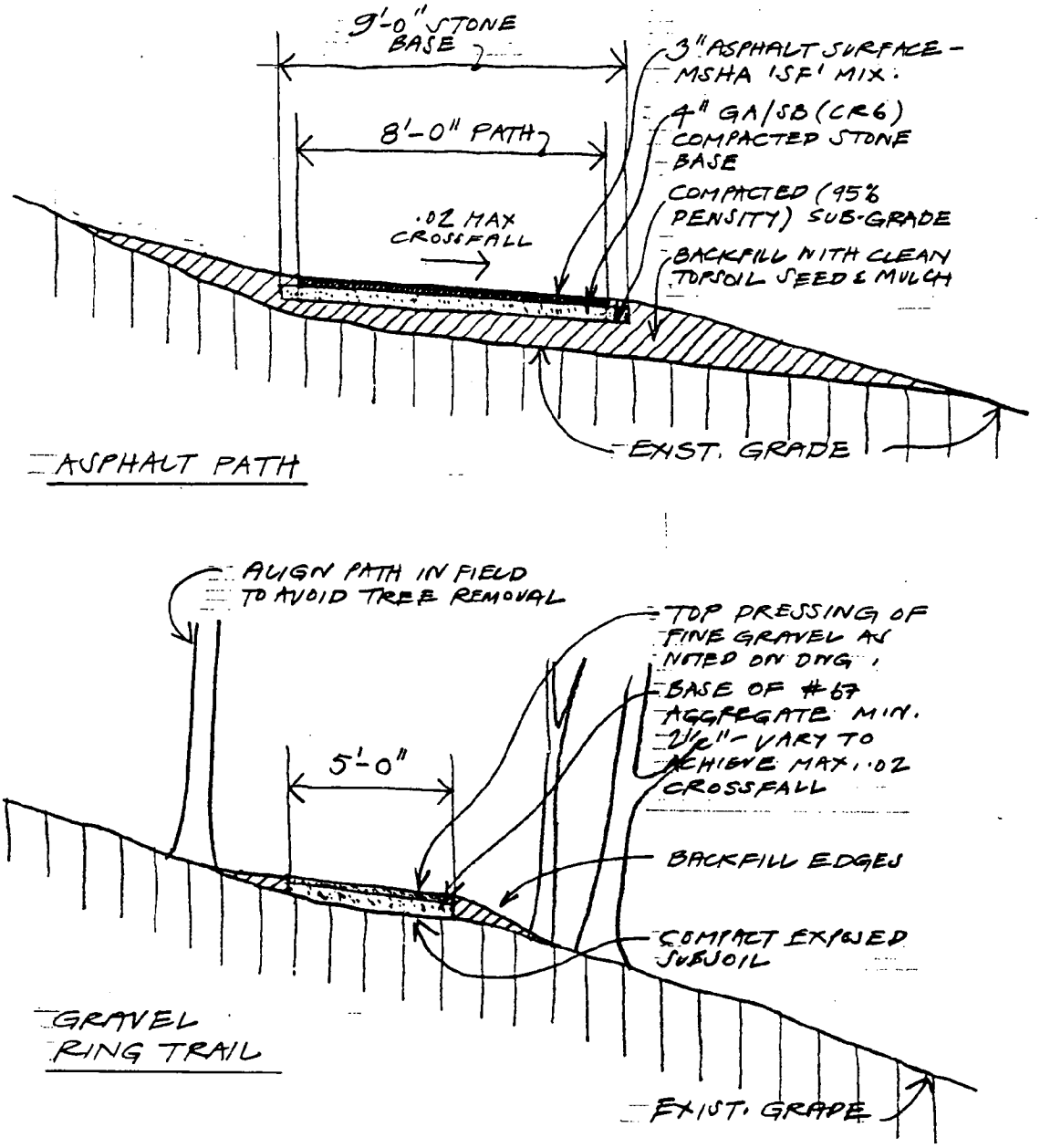
9'-0" STONE BASE
8'-0" PATH
.02 MAX CROSSFALL
3" ASPHALT SURFACE - MSHA 1SF1 MIX.
4" GA/SB (CR6) COMPACTED STONE BASE
COMPACTED (95% DENSITY) SUB-GRADE
BACKFILL WITH CLEAN TOPSOIL SEED & MULCH
EXIST. GRADE
ASPHALT PATH
ALIGN PATH IN FIELD TO AVOID TREE REMOVAL
5'-0"
TOP DRESSING OF FINE GRAVEL AS NOTED ON DWG.
BASE OF #67 AGGREGATE MIN. 2½" - VARY TO ACHIEVE MAX. .02 CROSSFALL
BACKFILL EDGES
COMPACT EXPOSED SUBSOIL
EXIST. GRADE
GRAVEL RING TRAIL

Fig. 4.

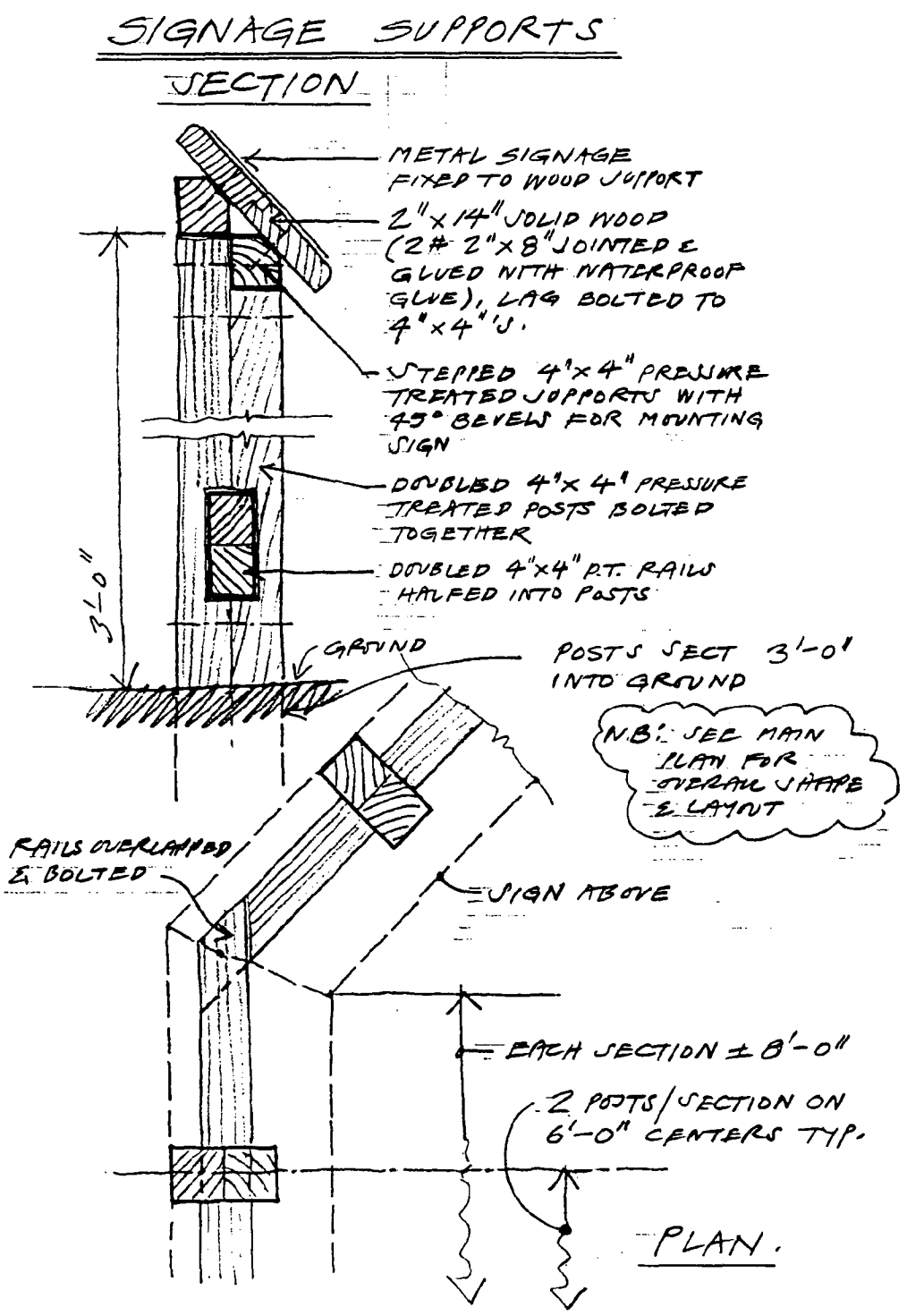
SIGNAGE SUPPORTS
SECTION
METAL SIGNAGE FIXED TO WOOD SUPPORT
2"x14" SOLID WOOD (2# 2"x8" JOINTED & GLUED WITH WATERPROOF GLUE), LAG BOLTED TO 4"x4" 'S.
STEPPED 4"x4" PRESSURE TREATED SUPPORTS WITH 45° BEVELS FOR MOUNTING SIGN
DOUBLED 4"x4" PRESSURE TREATED POSTS BOLTED TOGETHER
DOUBLED 4"x4" P.T. RAILS HALFED INTO POSTS
3'-0"
GROUND
POSTS SECT 3'-0" INTO GROUND
N.B.: SEE MAIN PLAN FOR OVERALL SHAPE & LAYOUT
RAILS OVERLAPPED & BOLTED
SIGN ABOVE
EACH SECTION ± 8'-0"
2 POSTS/SECTION ON 6'-0" CENTERS TYP.
PLAN.

Fig. 5.

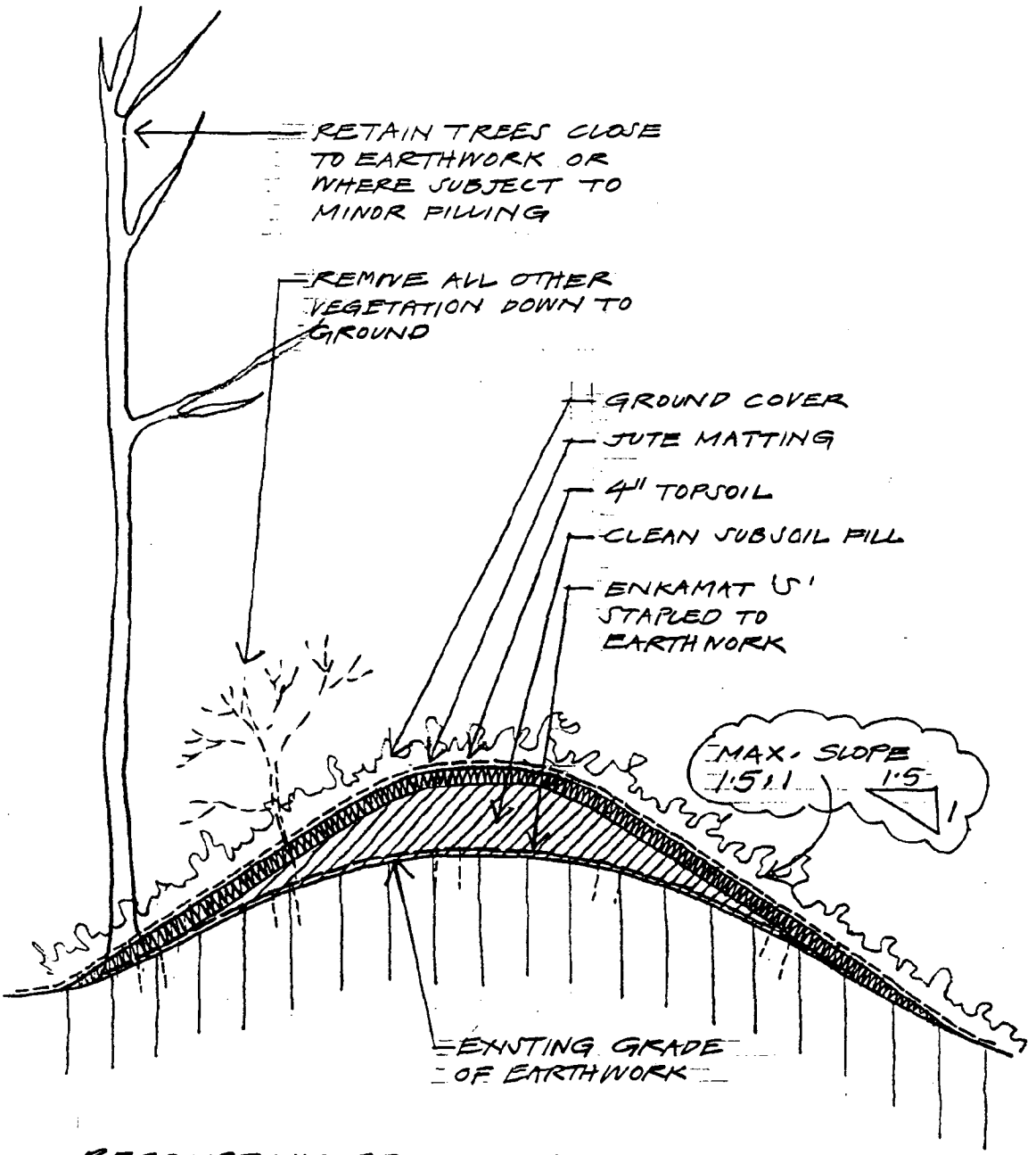
RETAIN TREES CLOSE TO EARTHWORK OR WHERE SUBJECT TO MINOR FILLING
REMOVE ALL OTHER VEGETATION DOWN TO GROUND
GROUND COVER
JUTE MATTING
4" TOPSOIL
CLEAN SUBSOIL FILL
ENKAMAT S1 STAPLED TO EARTHWORK
MAX. SLOPE 1:5:1
1:5
1
EXISTING GRADE OF EARTHWORK
RECONSTRUCTED EARTHWORK

Fig. 6.

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION
8787 GEORGIA AVENUE
SILVER SPRING, MARYLAND 20907