

**Roosevelt Nature Trail
Master Plan Report**
for the
Roosevelt Environmental Commission

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Certification #AS0-0270

21 September 1995

This document was prepared with the aid of a grant from the
New Jersey Department of Environmental Protection and Energy,
Office of Environmental Services.



21 September 1995

Jim Carnevale, Chair
Environmental Commission
Borough of Roosevelt
P.O.Box 128
33 North Rochdale
Roosevelt NJ 08555

6094480539/8716

Re: Roosevelt Nature Trail Master Plan Report

Dear Jim:

I am pleased to submit this revised Roosevelt Nature Trail Master Plan Report to you and the other members of the Environmental Commission. It is a pleasure to work interactively with a group so dedicated to serving public interests.

The accompanying report has been revised in accordance with corrections and additions requested through Bert Ellentuck in his memo of 16 July 1995.

I would be happy to "flag" the line of the path and the location of key features in the field. It would be most helpful if Wayne Cokeley could continue his fine contributions to this venture when this is done.

I wish you well in the pursuit of an improved environment for Roosevelt. Thank you for the opportunity to serve with you in this pursuit.

Sincerely,

Alan Goodheart
New Jersey Certification #AS0-0270

enclosures: 12 copies of the Master Plan report. A Freshwater Wetlands Permit Application (FW-1/3.92) and Application Instructions, miscellaneous product literature, and information about laser cut, stainless steel signs have been submitted previously.

Acknowledgements

The Environmental Commission of Roosevelt - especially Bert Ellentuck and Wayne Cokely, for their contributions to the content of this report, their guidance "on the trail", and their company.

Gayle Donnelly - as Public Works person of Roosevelt, for the opportunity to work on the development of a tree signage system that has been useful as a model for consideration for the trail system.

Kurt Kabl and Tim Cochran - from the Land Use Regulation Program at NJDEP, for their help in understanding Freshwater Wetlands Permitting.

Roger Whitehouse and Harriet Spear - from Whitehouse & Company in New York City, for their help in understanding what is needed to interpret a site and their development of the signage system drawings that are included in this report.

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Introduction

This project began with an idea about an Arboretum and Nature Preserve. By the time work began last October, the Environmental Commission had focused on the development of a Nature Trail between Rochdale and the Sewer Plant along the newly repaired sewer line.

Three reasons for this focus are: first, this pathway is already informally used by local residents; second, the sewer line repair that ended unwanted infiltration of ground water also increased the richness of wetland succession (because the ground now stays wet in extensive areas). and third, no significant new environmental disturbance would be required to create the trail.

This submission is a Master Plan, a framework for decision making about actual construction as well as an overview of what can be accomplished. If the Commission uses this plan as a reference and guide for each and every future action, energies will remain focused and aligned and there will be significantly less wasted effort, confusion, and friction. It's important to use the Master Plan as a stabilizer; but it's also important not to think of it as absolute and fixed. Even the larger concepts can shift and be rebalanced without destroying the plan's viability and value.

Master Plan Development

The plan itself is based on field walks, observations, conversations, data collection, and development of plan diagram overlays of the large aerial photograph in Borough Hall. Bert Ellentuck introduced me to the site and Wayne Cokely interpreted the sites and diagrammed the key trail elements with me in the field and on the aerial photograph.

The trail system provides experiences and information, through signage, that emphasize an understanding and an appreciation of a unique series of plant and animal communities and habitats. The trail follows the sewer line closely. Where it diverges, it is for the purpose of experiencing adjacent environments or for enjoying a more central environment by following its edge, rather than running through its middle.

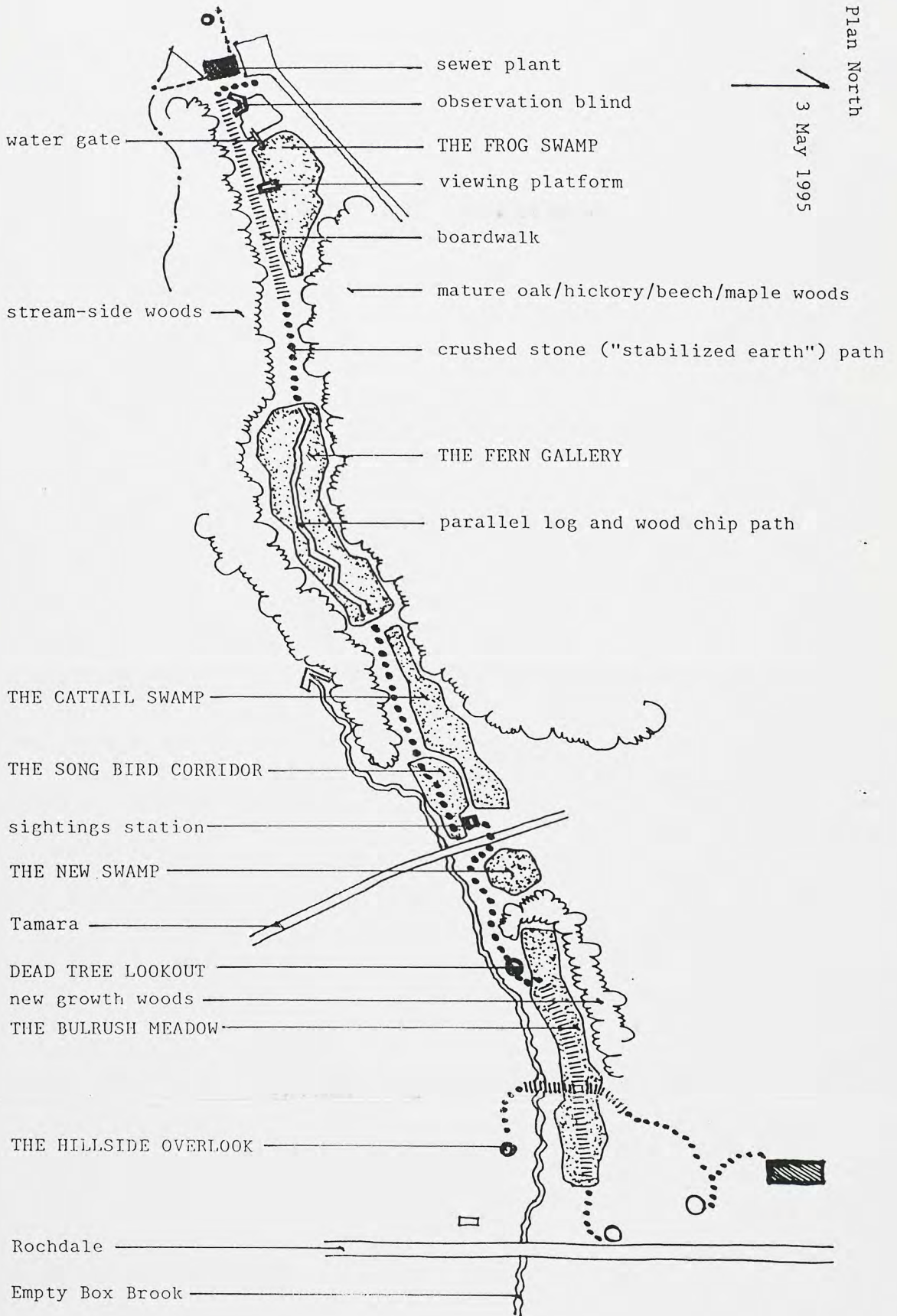
Many of the small scale environments through or along which the trail passes are in transition, and in fact, may always be. The basic structure of the series of experiences, however, should remain valid for a very long time because the transitions will continue to create distinctive areas. The driest areas will most likely continue to be dry, and the path surfaces will still work as they do in the proposed plan. The wettest areas could conceivably become somewhat drier in time, but, even if they do, the boardwalks proposed will still provide a special, traffic controlling, pedestrian surface that will contribute to the overall experience of the trail.

The path is located and designed to keep shoes and feet of visitors dry, and to direct visitors to stay on the path, especially when it will help preserve adjacent environments. Visitors will be told through signage about the issues and the path will provide the way to avoid: trampling fragile plants, compaction of soils, interference with wildlife trails (including those of turtles), and noise disturbance (particularly of birds).

The Master Plan organizes a comprehensive experience, provides learning station / rest stops in key locations, describes path construction options, establishes a pattern of access / gathering points, and illustrates a hierarchy of signs. The following page diagrams the Key Elements of the Master Plan. It is followed by plans showing publically accessible open spaces and sewer information for Roosevelt that is pertinent to this project.

Plan North

3 May 1995



Roosevelt Nature Trail / Key Elements

0
300'

6

3 May 1995

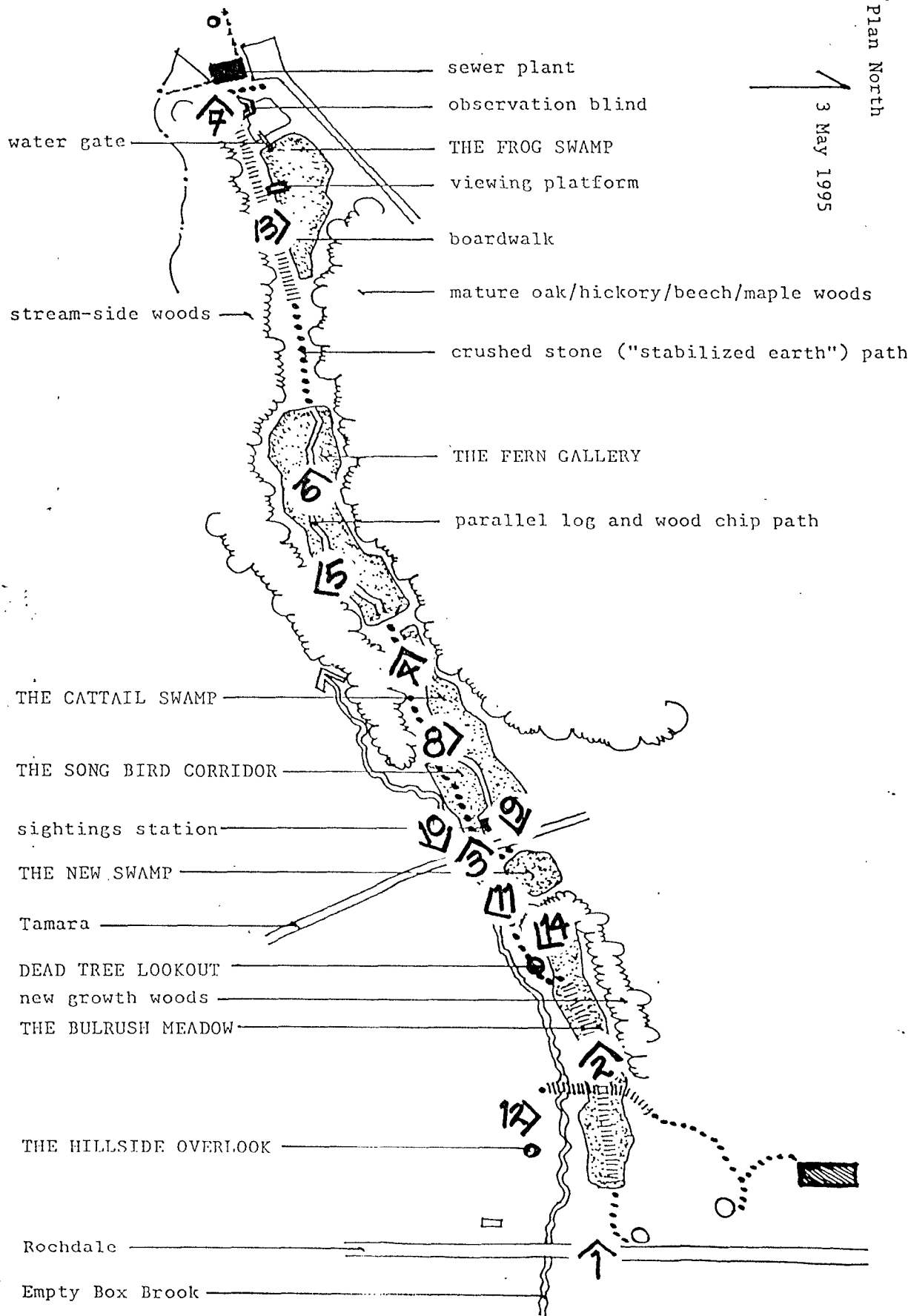


photo Key Plan



1



2

5 3 NOV 94



3



4

5 3 NOV 94

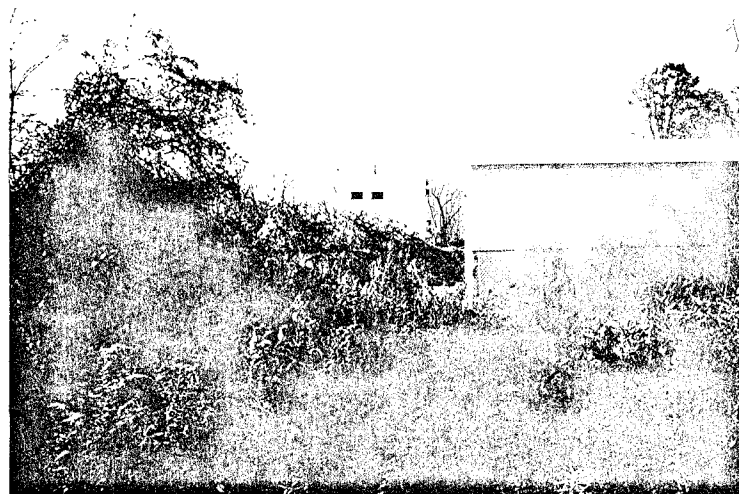


5

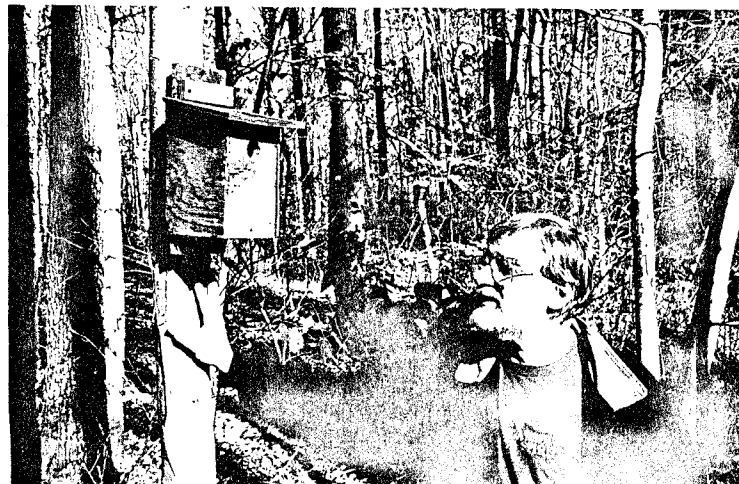


6

3 NOV 94



7



8

3 NOV 94



9



10

103 Nov. 94



11



12

103 Nov. 94



13



14

3 FEB 11 NOV 94

Construction Notes

The primary concern in construction is the path itself. Three surface types are recommended (see illustrations following):

- a. SOFT - woodchips between parallel logs - This surface is designed to guide visitors through areas where it is desirable to have visitors stay on the path because of potential damage to adjacent ground surfaces and plants.
- b. HARD - wood boardwalk - This surface is designed to keep visitors dry through areas which are always or predictably/seasonably wet. A simpler version of the boardwalk illustrated might be used for those areas that have firm ground, but which are often damp or wet. This simpler version could be constructed from flat 2x6 boards on continuous, parallel sleepers directly on the ground. Gaps left between sections would avoid damming any water movement that was perpendicular to the path.
- c. CRUNCHY - gravel blend, compacted (NJDOT's I-5) - This surface is designed to provide firm, dry footing on higher, drier ground. It is very light and warm in color so very early morning and very late evening visibility is improved. It is porous enough to minimize puddling and firm enough to support foot traffic without deteriorating. It would blend in well with all of the natural elements of this site and would maintain a strong but flexible edge.

Other materials and systems to consider are listed below (and illustrated with product literature sheets following the path surface drawings):

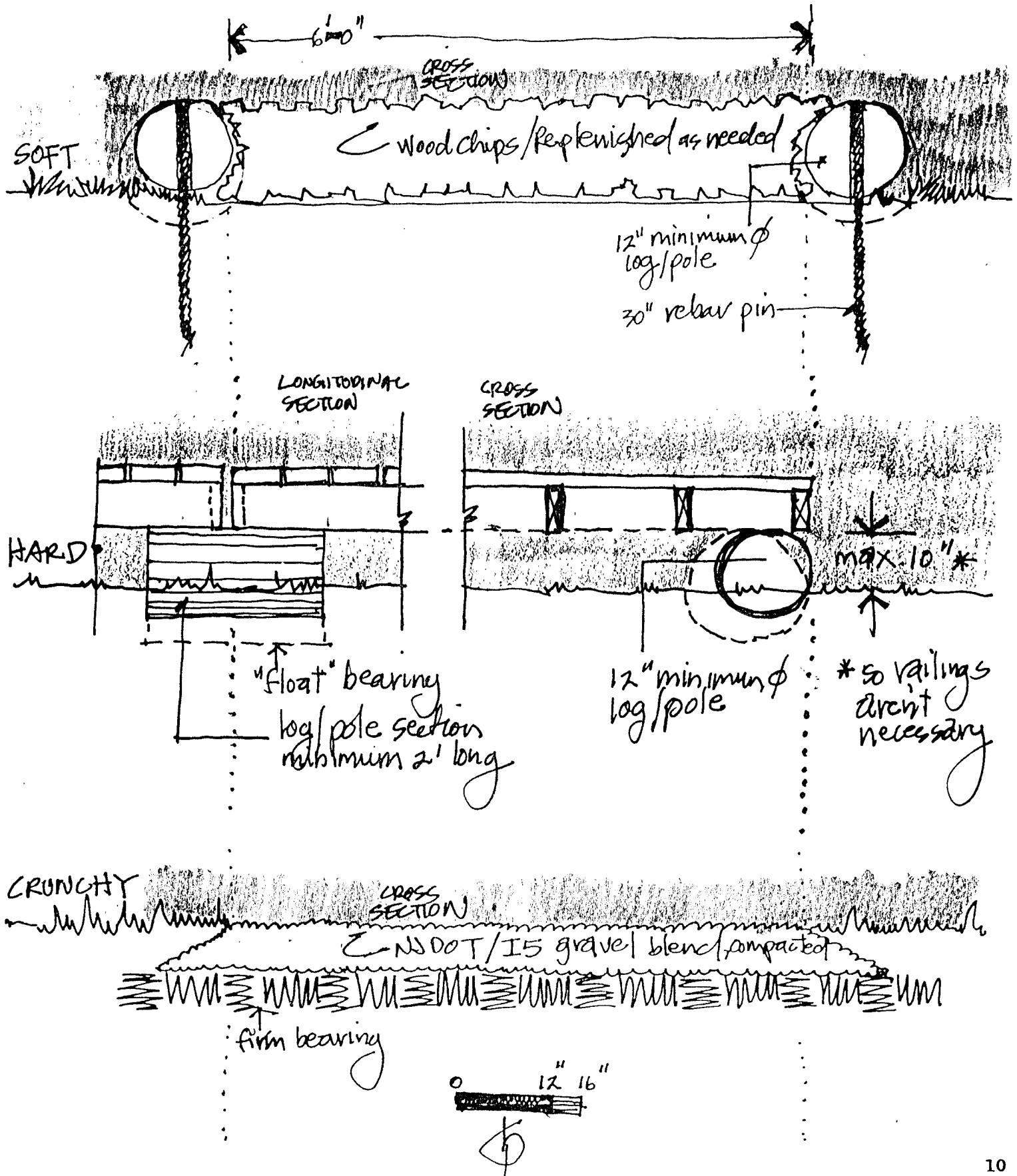
- a. plastic lumber, including a composite version that combines plastic with wood products. These materials would eliminate the necessity for chemical preservatives and could reduce maintenance significantly. There are, however, issues to consider: higher initial cost, a less natural look, lack of local available.
- b. special fasteners, such as Deckmaster, a system for fastening wood decking to supports that is installed below the surface planks. This system eliminates problems of water penetration from above, avoids popped nails, reduces splintering of the walking surface, and is better looking. It would also be more expensive and hard to install.
- c. wetland and environmentally sensitive area pathway systems, such as Topper Industries, Inc.'s "wetland solutions", Hubbell's "Chance walkway foundations", and Fox Lake Construction, Inc.'s "Timberspan" and "Bridge Builders".

These other materials and systems do not seem to fit the nature of how things are likely to get done in Roosevelt. They depend too much on large budgets and outsiders for things that could be done "at home". It seems more likely that common materials and systems, standard construction practices, and participatory efforts by residents will accomplish Roosevelt's goals for this trail most successfully in the foreseeable future.

Outdoor classrooms can be fashioned from sections cut from fallen tree trunks and set in a circle. Basic carpentry skills can be used to build most of what's needed and thereby include novices, volunteers, young and old in the process. This approach to construction is also mentioned at the end of this report under Next Steps and Priorities.

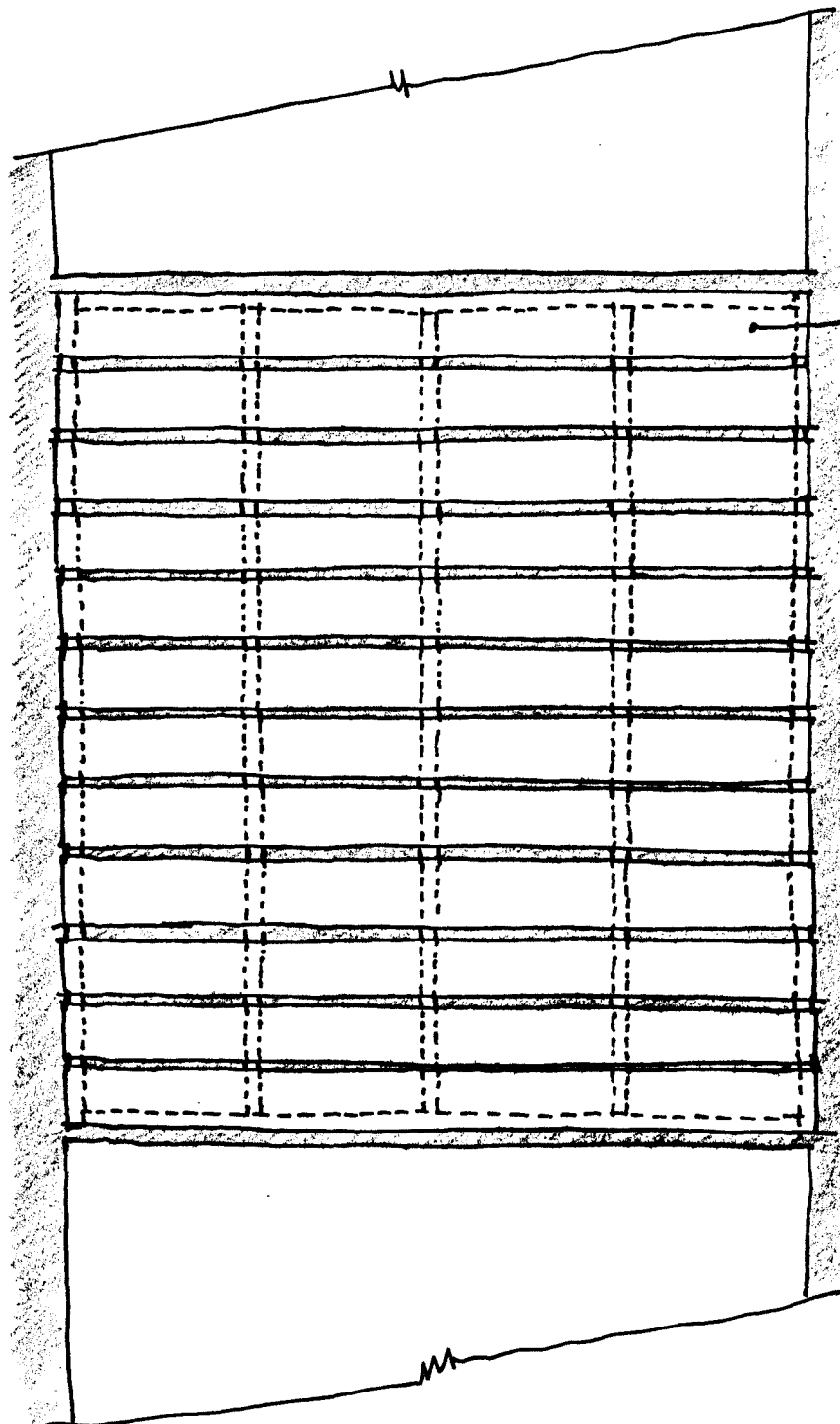
PATA SYSTEM ROOSEVELT TRAIL

MATERIALS / SECTIONS



PATH SYSTEM
ROOSEVELT TRAIL

BOARDWALK/ PLANK



5'-4" wide
by
6'-0" long
Boardwalk
pieces

2x6
construction
on
"float"
beams
made
from
logs or
poles
12" diameter
or
greater

0 12" 16"

Interpretive Signage

The signage proposed consists of four types of signs in an hierarchy designed to tell the story of the natural environment a visitor might experience here. Roger Whitehouse and Harriet Spear of Whitehouse and Company in New York City have outlined, on the pages that follow, four types/sizes of interpretive signs for, in decreasing order of size, and increasing order of number of units needed:

- a. trailhead / access points
- b. special observations places / rest stops
- c. trailside notification of special environmental events
- d. tree identification and special notice markers

An alternative proposal for sign type d is include as the result of a special Arbor Day project by Gayle Donnelly. This sign type is a potential model for a Boroughwide tree identification and special notice marking system. Please note that the colors coded on the Whitehouse pages are:

PMS 350 - a deep forest green - graphics

PMS 439 - a rich chocolate brown - title band, text and captions

PMS 454 - a warm light cream - background and title

The code names are from the Pantone Matching System (PMS) which is used throughout the United States as a color standard.

The system is designed to offer the best combination of reasonable cost, ease of construction and repair, durability, and ease of maintenance, local accessibility of production services, and a high level of graphic capability. Silk screened enamel colors on painted aluminum was seen as the best choice because:

- a. porcelain enamel, which is more durable, easier to clean, and capable of even finer graphics, is very, very much more expensive, cannot be done locally, and would discourage any consideration of updating in the future
- b. laser imaging on lexan, which can reproduce virtually anything directly from original artwork, is also very expensive and, although it may become the way of the future, at least to date, is severely limited by the fact that it fades significantly within four years from exposure to sunlight (UV light)

Extra protection can be added to the recommended system by the use of protective coatings or films or by baking the enamel paint.

The text and graphics for all the signs should present an overview of the persistent elements of the site. These same original artwork materials could also be used in slide, video, and print form to help share the site with others beyond the boundaries of the trail system. A preliminary assessment of signage needs suggests:

- a. 3 or 4 trailhead signs - at the Sewer Plant, at Tamara, and at Rochdale &/or the School (sign type a)
- b. 6 plus special environment / rest stop signs (sign type b)
- c. approximately 20 natural event interpretation signs (sign type c)
- d. identification signs as needed - in the largest quantity possible and in multiples where appropriate to reduce unit costs

One type of sign that has been discussed but which is not illustrated or included here is a more detailed, informational series on individual species or environments. My feeling is that this information might best be shared through leaflets &/or planned walks with knowledgeable guides. A balance of basic information and minimal intrusion must be reached; I think the proposed system achieves this goal.

The most effective way to develop production documents for the signs would be to have Whitehouse and Company, or another qualified design consultant / environmental graphic design firm, produce the art work for the signs in conjunction with a Roosevelt text and content specialist, and to have that professional guide you through the manufacturing and installation process once consensus is reached and funds are obtained.

sign type a



64"



sign type b



56"

sign type c



10"

Whitehouse
18 East 16 Street
New York, NY 10003

Voice: 212 206 1080
Fax: 212 727 2150
Email: WhiCo@aol.com

**Roosevelt Nature Trail
Interpretive Sign System**

elevation
Scale: 1-1/2" = 1' - 0"
Date: 22 March 1995

RNT

sign type a



Typography
all flush left, rag right
upper & lower case

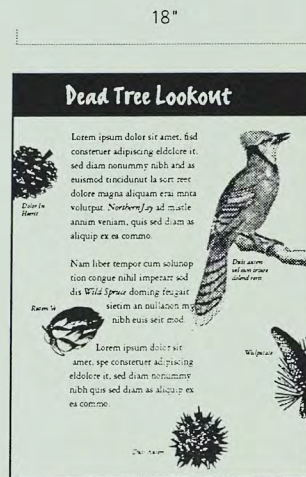
title: Erikgrighand
180 pt.

sub title: Erikgrighand
72 pt.

text: Garamond #3
50/70 pt.

captions: Garamond #3 italic
32/34 pt.

sign type b



36"

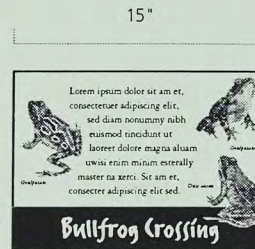
Typography
all flush left, rag right
upper & lower case

title: Erikgrighand
130 pt.

text: Garamond #3
44/60 pt.

captions: Garamond #3 italic
32/34 pt.

sign type c



24"

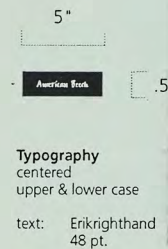
Typography
all flush left, rag right
upper & lower case

title: Erikgrighand
130 pt.

text: Garamond #3
44/60 pt.

captions: Garamond #3 italic
32/34 pt.

sign type d



10.5"

Typography
centered
upper & lower case

text: Erikgrighand
48 pt.

Whitehouse

18 East 16 Street

New York, NY 10003

Voice: 212 206 1080

Fax: 212 727 2150

Email: WhiCo@aol.com

color
background: PMS 454
title band: PMS 439
title: PMS 454
text & captions: PMS 439
graphics: PMS 350

illustration
convert illustrations to line art,
mezzotint, or coarse halftone for
silkscreen printing.

**Roosevelt Nature Trail
Interpretive Sign System**

panel layout

Scale: 1-1/2" = 1' - 0"

Date: 22 March 1995

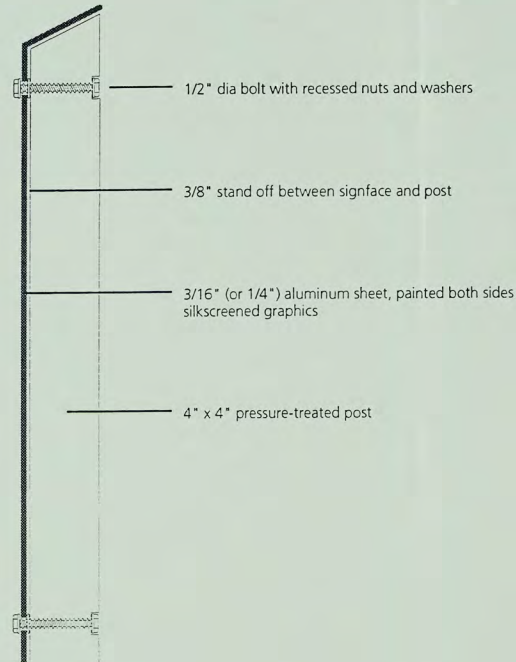
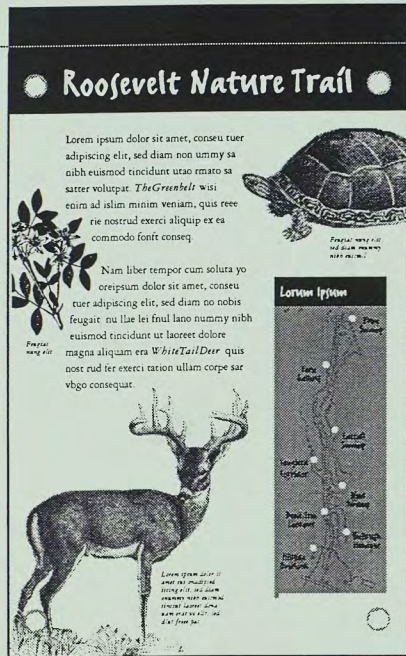
RNT

15

2

sign types a & b

Scale: 1-1/2" = 1' - 0"



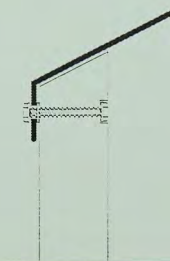
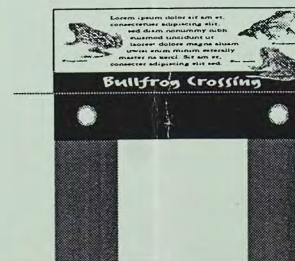
sign type d

Scale: 3\"/>



sign type c

Scale: 1-1/2" = 1' - 0"



Whitehouse

18 East 16 Street

New York, NY 10003

Voice: 212 206 1080

Fax: 212 727 2150

Email: WhiCo@aol.com

Roosevelt Nature Trail
Interpretive Sign System

structural details

Scale: varies

Date: 22 March 1995

RNT

16

3

Freshwater Wetlands Permitting

The basic issue facing Roosevelt in getting New Jersey Department of Environmental Protection approval for any work done in wetlands is the level of difficulty likely to be encountered in obtaining permits. Virtually everything proposed fits within the category of permits called "statewide general permits". This kind of permit covers typical trail development of that sort that NJDEP has reviewed many times before and is essentially a short cut process for applications provided that:

- a. paths do not exceed six feet in width
- b. natural materials, such as wood chips, wood planking, and loose stone path surfaces are maximized
- c. natural hydrological patterns and flows are not interrupted, and
- d. no threatened or endangered species are disturbed

"Individual permits" are longer and more complicated, but Tim Cochran, Environmental Specialist at NJDEP didn't think anything proposed herein was likely to cause any difficulty. Some feature of the plan could "provoke" the necessity for applying for an individual permit; however, a preliminary review for conformance is a normal part of NJDEP permitting and would reveal any special requirements early on.

I recommend that maximum effort be employed to avoid having to apply for an individual permit. NJDEP standards are quite reasonable and we all should be working towards solutions that fit within the preapproved limits of a statewide general permit for the trail. As far as I have been able to determine, that means, for the work envisioned in this report; avoiding concrete footings. On ground and float type supports for boardwalks, with sleepers and minimal pinnings into the ground for the observation blind and sightings station make sense in terms of low cost, simplicity, and ease of construction anyway.

A copy of the NJDEP Freshwater Wetlands Permit Application (FW-1/3.92) and Application Instructions has been provided to the Commission.

Next Steps and Priorities

Now that you have this report, I recommend, as the very next step, that the Roosevelt Environmental Commission come to consensus on adoption, revisions needed if any, etc. I recommend that you ask, as touchstones for all implementation decisions, the following questions:

1. Does this decision reflect the spirit of the master plan?
2. Does this decision reflect the Environmental Commission's sense of what matters first and foremost to the success of this trail, and will this decision allow further development to proceed in a logical, that is, understandable and cost effective, manner?
3. Does this decision reflect due consideration of total life-cycle cost planning for materials and methods?
4. Does this decision reflect a commitment to making participatory construction by volunteer users a major force in building and "owning" the trail?

Copies of this report should be reserved for transmittal to potential funders. Our team effort has produced a simple, direct, and effective plan for making a piece of our environment more accessible, understandable, and enjoyable.

Exhibits

PROPERTY MAP

- P - PUBLIC LAND: OWNED BY ROOSEVELT BOROUGH OR NJ DEPT OF ENVIRONMENTAL PROTECTION.
- A - AGRICULTURAL LAND: PRIVATELY OWNED. CURRENTLY CULTIVATED OR PASTURE.
- V - VACANT LAND: PRIVATELY OWNED. WOODED OR UNCULTIVATED.

NUMBERS KEYED TO INVENTORY

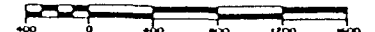
Board of Education

Borough

NJDEP

sewer plant

BOROUGH OF ROOSEVELT
*Roosevelt Native Trail / Contiguous Open Spaces
 in the public realm*



USGS Map

Robbinsville

ROAD

BM 141

School

Nature Trail

Sewer Plant

Water Line

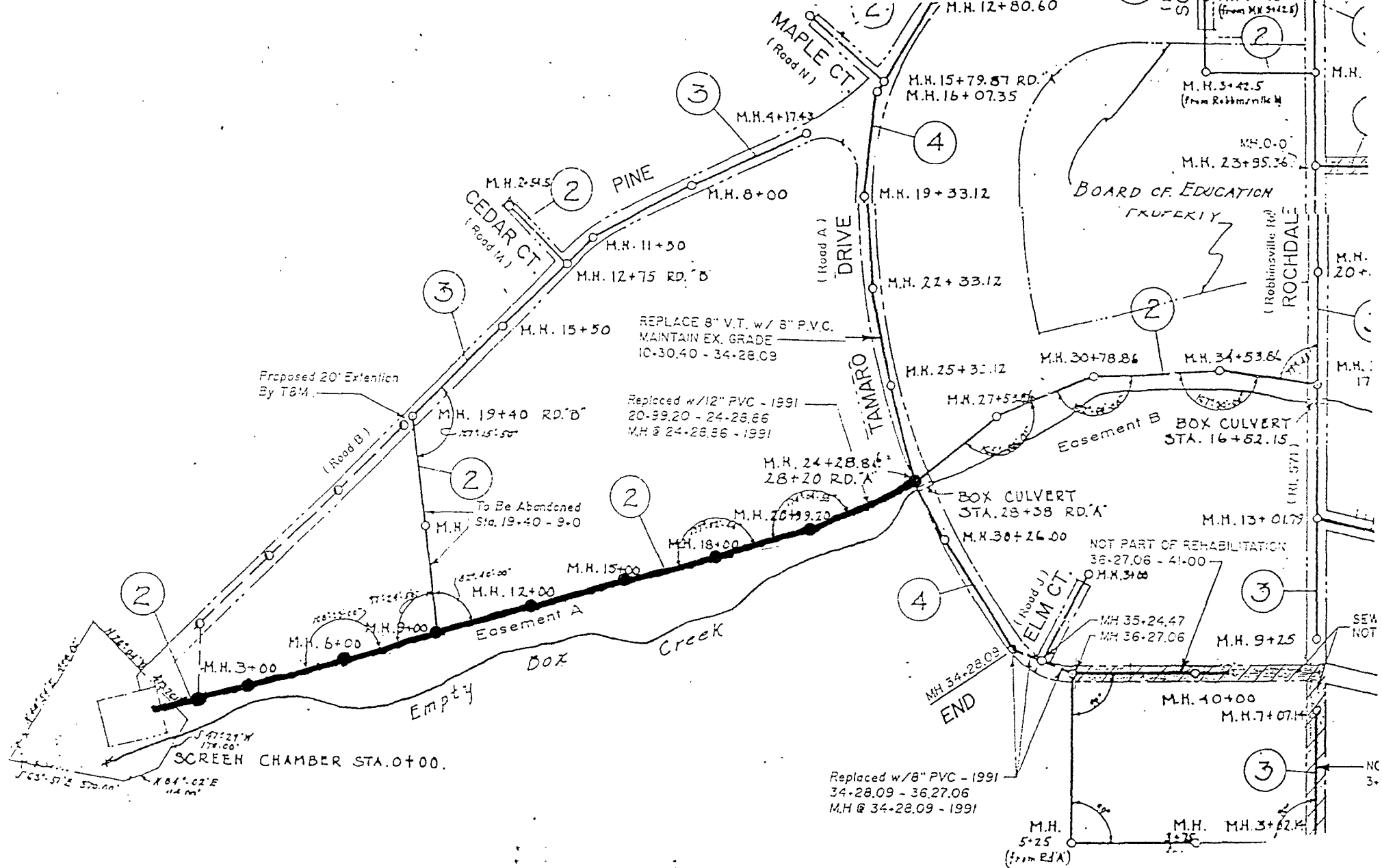
Empty Box

Roosevelt (BM 152)

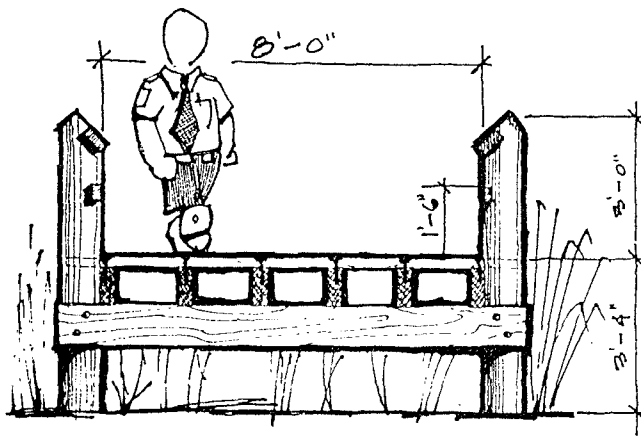
BM 152

21

1200'

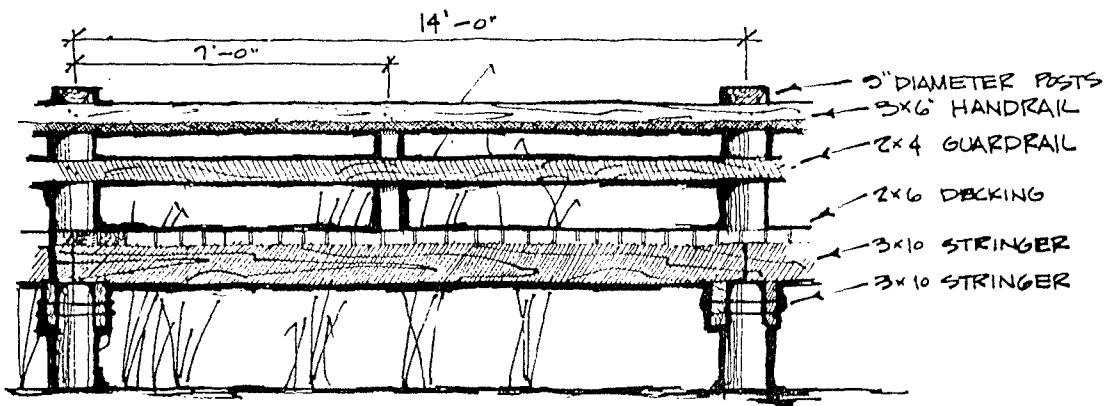


sewer Alignment in Easements A & B / Rochdale to Sewer Plant



CROSS SECTION

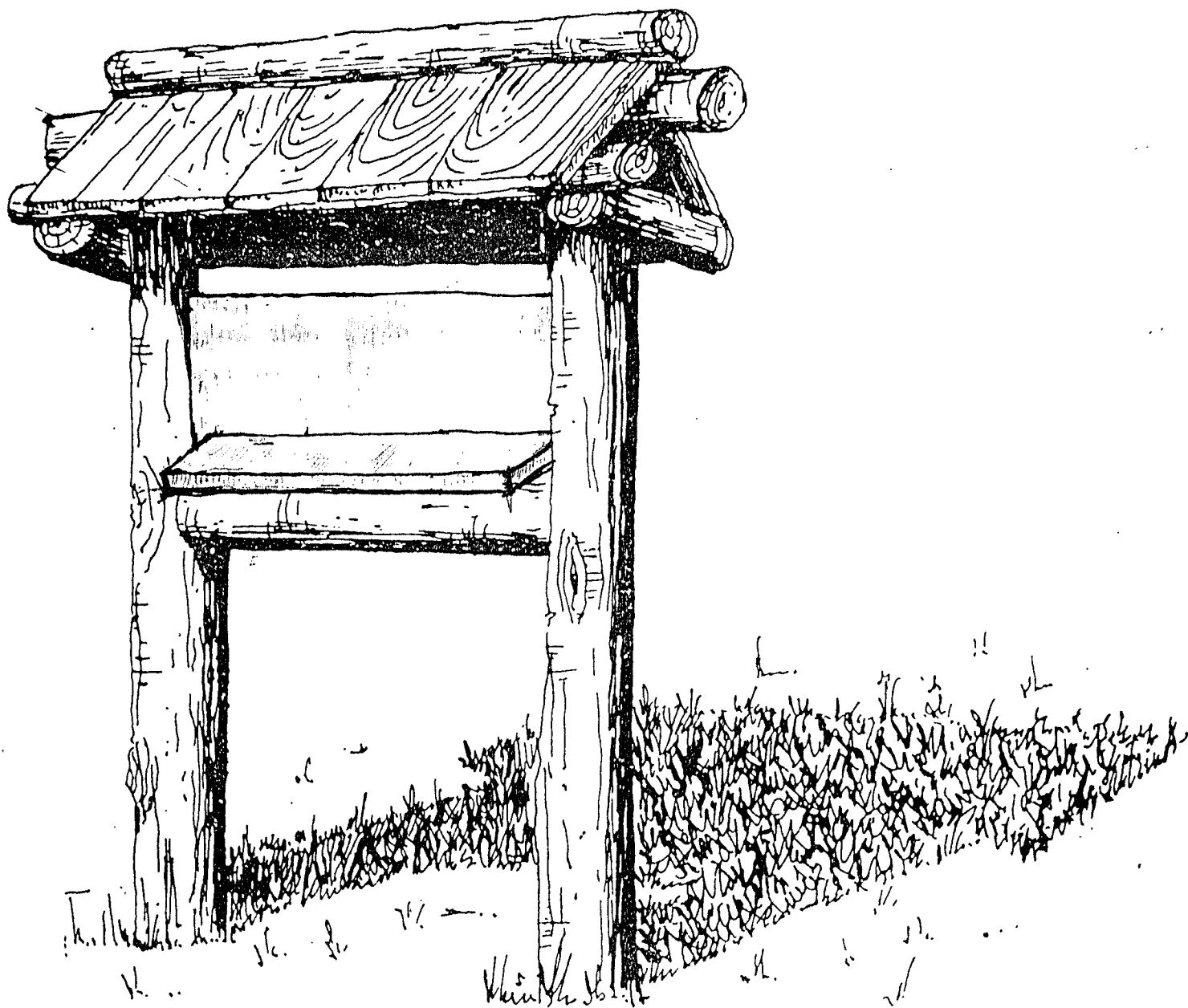
2'



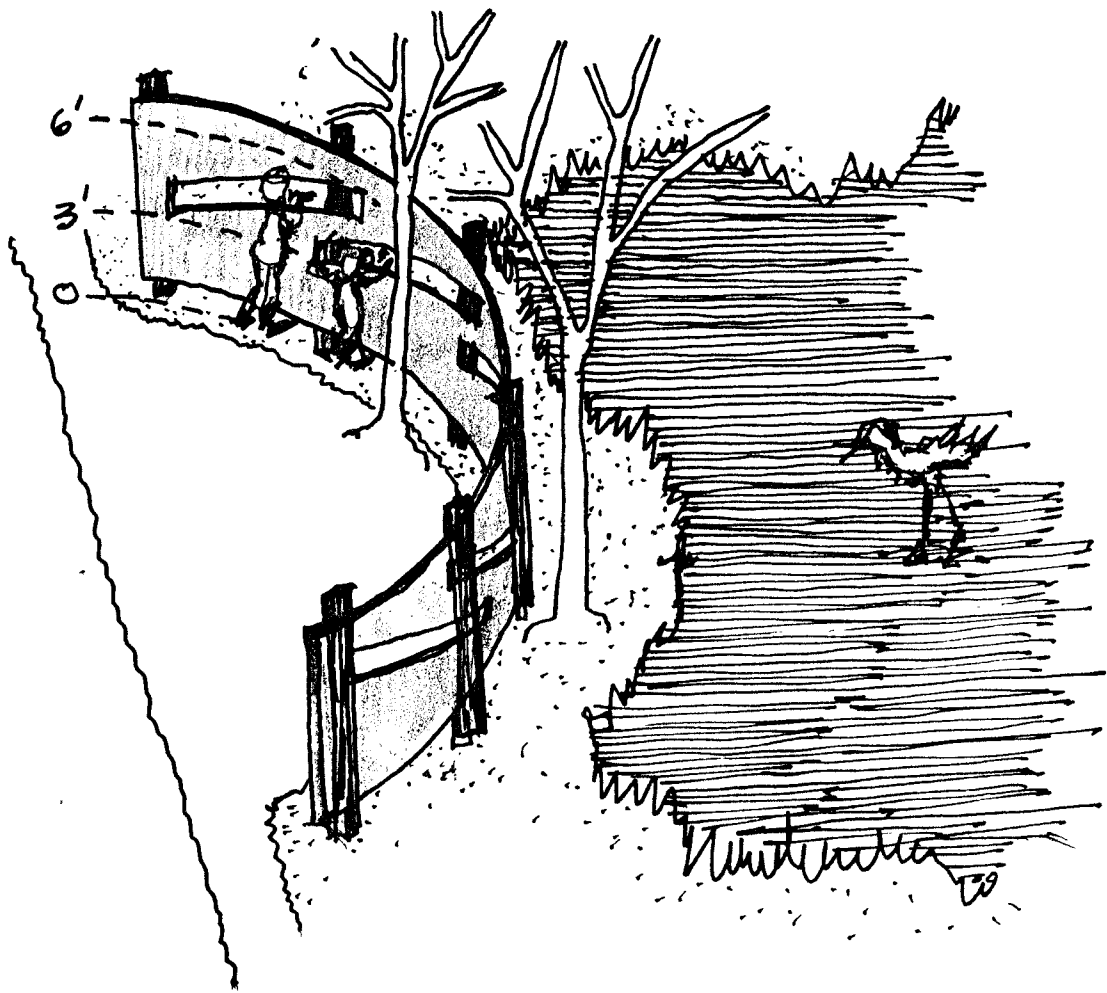
ELEVATION/SECTION

2'

Viewing Platform / Construction Character / Section-Elevations



sighting station / Eye level sketch



Observation Blind / Aerial oblique Sketch

19 September 1995

BUDGET ESTIMATE

conservative projections of probable commercial construction costs

	<u>unit</u>	<u>cost</u>	<u>quan.</u>	<u>ext.</u>
clearing & site preparation	lump sum	3000.	—	3000.
trail surfacing				
"soft"	linear feet	12.	700	8400.
"hard"	linear feet	55.	1500	82500.
"crunchy"	linear feet	10.	2450	24500.
signage systems				
type A	each	1000.	3	3000.
type B	each	500.	6	3000.
type C	each	300.	20	6000.
type D	each	10.	100	1000.
observation blind	lump sum	3000.	—	3000.
viewing platform	lump sum	4500.	—	4500.
sighting station	lump sum	2000	—	4500.
dead tree lookout/hill side overlook	lump sum	1500.	—	1500.
on-site design & construction observation services	hour	60.	100	6000.

\$148,400

Notes:

- 1- All work assumed to be done in the simplest possible manner taking fullest advantage of on site materials, especially log sections.
- 2- Considerable cost savings are possible if volunteer carpentry services are used and a "donation" of suitable crushed stone / gravel blend is obtained.