

*CIVIL WAR DRILL HALL
NATURE PATH AND
BICYCLE ROUTE
CONCEPT PLAN*

**BOROUGH OF LEONIA
BERGEN COUNTY, NJ**

prepared by

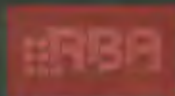
The RBA Group

prepared for

Borough of Leonia

August 2, 2001

The RBA Group



ENGINEERS • ARCHITECTS • PLANNERS

Leonia Civil War Drill Hall Nature Path and Bike Route

I. Purpose

The primary purpose of this project is to create a bicycle and pedestrian link from the existing pool parking area to the Civil War Drill Hall and potentially to Overpeck State Park. The secondary objective is to rehabilitate both the wetlands and woodlands to create a meandering educational path through these areas. This project encompasses Phase 1 of the design and implementation of this path. Phase 1 is the schematic design of this trail and wetland restoration as well as preliminary research on the existing wetland. Also included in this phase is a review of the general wetland permitting process required for project approval.

II. Methodology

The first step in developing the path was to conduct a site inventory. Two site visits were made to assess the existing conditions, analyze the potential for wetlands and determine the safest, easiest route for the path.

Upon completing the site inventory, a conceptual path routing was developed using the base map information provided by the Borough. This design was then presented to the Borough Task Force for review and comment. (Refer to appendix for attendees and comments.)

Following the meeting, the concept plan was modified according to the comments made during the meeting and the Final Conceptual Plan and Technical Memo were developed.

III. Summary of Findings

The following is a list of the opportunities and constraints that governed the design of the path:

Opportunities

- Direct access to Drill Hall from existing parking
- Educational importance of wetland and wooded areas
- Historic importance of Civil War Drill Hall
- Eliminate dumping
- Rehabilitate wetlands and surroundings
- Future bike/ped connection to Overpeck Park
- Create a link between major public function areas: Sylvan Park, The Public Pool and The Civil War Drill Hall.

Constraints

- Potential wetlands and/or wetland buffers (permit required)
- Safety - lighting, access, visibility etc.
- ADA Compliance – Severe change in grade from Drill Hall to parking area.

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- Trail surface: majority of area remains wet or partially wet (boardwalk required)

IV. Conceptual Design

In developing this concept, there were four major design elements that needed to be addressed. These elements were 1) Main path from the parking lot to the Drill Hall 2) Educational Path and elements 3) Environmental enhancements and rehabilitation 4) Future connection to Overpeck Park. Please note that all of the improvements listed are pending a Wetland Delineation and Letter of Interpretation from the New Jersey Department of Environmental Protection. The presence or lack of wetlands and/or wetland buffer will have a dramatic effect on the proposed concept.

Safety is a main concern when creating an off-road path. The following precautions shall be taken in order to assure a safe path.

- A. Any portions that will be open after sundown will be properly lit.
- B. The main portion of the boardwalk will be located adjacent to the pool fence to allow for visibility to and from the trail.
- C. Any vegetation that will create pockets for hiding or low visibility should be removed.
- D. Police presence, patrolling and enforcement are necessary.
- E. Signs posting the hours of operation and rules of the trail should be clearly visible and strictly enforced.
- F. The entire trail must meet ADA and AASHTO design standards.

1. Main Path Components – Parking lot to Civil War Drill Hall

- **Trail Head**

Located at the beginning of the trail, the trailhead will have an information kiosk informing users of local wildlife habitats, the historic significance of the property and public events in the area and at the Drill Hall.

- **The Boardwalk**

The plan proposes a 12' wide boardwalk to run from the area just before the phragmites to the Drill Hall property. The boardwalk will be designed to support the load of a golf cart. The walk will ascend gradually for the first 350 feet. The last 150 feet will be a series of four ramps, each being 30' long sloped at 8.33% with 10' platforms between them. This configuration meets ADA criteria. The boardwalk shall be designed to minimize its height above existing grade.

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*If construction cost becomes an issue, alternative routes through drier areas of the site, where the path could be on-grade, should be investigated.

- **Lighting**

The boardwalk will be lit with a vandal resistant pedestrian scale light fixture spaced at 40 feet on center (may vary slightly when exact fixture is chosen, see appendix for sample). The fixtures are to be selected primarily for vandal resistance and secondarily for aesthetics. A minimum of 1 foot-candle of light is to be maintained throughout the trail. All lights will be shielded to prevent light from spilling onto neighboring properties.

The vandal resistant lights shall end at the Drill Hall property where a more aesthetic fixture will be used.

*Refer to appendix for lighting cut sheet samples.

- **Civil War Drill Hall**

A concrete sidewalk will extend from the end of the boardwalk to the steps leading to the proposed Drill Hall deck. The open area adjacent to the sidewalk should be leveled to approximately 2% slope. The area may be used as a memorial garden incorporating a Historic Civil War Tree selected from the American Forests "Famous and Historic Trees" program. A retaining wall or stabilized bank at the western side of the property may be used to accommodate the additional change in grade.

The difference in elevation between the end of the sidewalk and the proposed deck is approximately 12'. A variety of options including a series of stairs and intermediate terraces to accommodate this change in elevation should be studied.

- **Way-side Interpretive Signs and Observation Platforms**

Two platforms will be located at approximately 300' and 400' into the path. The locations will be located in order to display two different habitats – Lowland (scrub shrub) and Upland (Mature Forest). Interpretive signs describing the local vegetation, wildlife and historic significance will be located on these platforms.

2. Educational Center

- **Educational Path**

A hexagon shaped educational loop walk will branch off approximately 150' into the main boardwalk. This walk will be 6 feet wide (exclusively for pedestrians) and will be closed after sundown. It will utilize part of the existing dirt road for its northwestern side in order to minimize clearing.

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The northern and southern sides of the hexagon will be at two different elevations. The lower side will be just above existing grade and the upper side will be located just above the top of the phragmites. This will allow the user two different perspectives on the habitats located within this area.

- **Way-side Interpretive Signs and Observation Platforms**

Two platforms will be located along the path. One at the upper side and one at the lower side. Interpretive signs describing the local vegetation, wildlife and historic significance will be located on these platforms.

- **Wildlife Education Tower and Deck**

An observation tower and deck will be located at the termination of the existing dirt roads. This area will be cleaned of all debris (i.e. asphalt, tires, concrete, etc.) and be revegetated with native plant material. The tower and deck will offer dynamic views of Overpeck State Park. Railroad tracks will be screened from tower views by existing vegetation.

3. Environmental Enhancements and Rehabilitation

- **Existing Dirt Road**

The existing dirt road will be removed and revegetated using plant materials selected from the native vegetation plant list (see appendix). The western road will be utilized to accommodate the proposed boardwalk that will link the trail to Overpeck Park. The eastern road will be used to accommodate one leg of the nature walk. The area currently used for dumping will be cleared of all debris and an observation platform will be constructed in its place. All area not used for the boardwalks or observation deck will be revegetated with native plant material.

- **Woodland Area**

The woodland area will be cleared of all debris and selectively cleared of dead or dying plant material. Native trees and shrubs will be planted in the place of any materials removed.

- **Wetland Mitigation**

There is a possibility for the mitigation, or creation of, wetlands along the train tracks on the western side of the site. These wetlands can serve to educate users about water quality and potentially collect additional runoff caused by and improvements made to the Sylvan Park/Public Pool area.

4. Connection to Overpeck Park

There is the potential for a future bike/ped link over the existing railroad tracks to the Overpeck Parks. This type of link is very complicated due to

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the many safety concerns involved with crossing a train track. However, due to the state's efforts to begin linking the "isolated pocket parks" around this state, this is worth consideration.

5. Environmental Assessment and Required Permitting

According to the New Jersey Freshwater Wetlands Map – Central Park NW this area is not classified as a wetland. However due to the close proximity of wetlands around the site and a field inspection, there are several areas of potential wetland, particularly, along the railroad tracks and in the western side of the site adjacent to the parking lot. Before proceeding with final design, a Letter of Interpretation should be obtained from NJDEP (and will be required prior to construction) to determine the exact locations of the wetlands.

- **Letter of Interpretation (L.O.I.)**

A Letter of Interpretation requires an extensive field visit by a specialist in order to delineate the wetland boundaries, a survey of the wetland line, and a report submitted to the New Jersey Department of Environmental Protection (NJDEP). The NJDEP has 30 days in which to issue the L.O.I. The NJDEP fee is \$250.00 plus \$35.00 per acre or fraction thereof.

- **Natural Heritage Data Request**

A Natural Heritage Data Request must be made to the New Jersey Office of Natural Lands to ascertain whether the site may provide habitat for threatened or endangered species. A reply is usually granted within 30 days and the minimum charge is \$20.

Permitting

Based on the L.O.I., the following permits will be required:

- General Permit 17- this permits the building of a trail through a wetland. The width of the trail cannot exceed 6' except for barrier free trails or boardwalks designed in accordance with the Barrier Free Subcode. NJDEP fee for a General Permit is \$250.00 and review time is generally 180 days.
- Transition Area Waiver- a transition area is a buffer that extends 50' or 150' from a wetland. The exact distance is based on the resource value classification of the wetland (determined in the Letter of Interpretation). A waiver is necessary for any construction within a transition area. The NJDEP has 90 days in which to review the request for a Transition Area

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Waiver. If a L.O.I. has been granted for the property, the NJDEP fee is \$250 plus \$20 per acre or any fraction thereof.

Native Vegetation Plant List

1) Marshland – Western most portion of the site

This area of the site will unavoidably fill in with phragmites due to the surroundings and the plant's ability to colonize in disturbed land. Larger trees should be interspersed throughout the area to create small pockets of shade for the user. Some possible plant selections for this use are:

- Typical Trees
 - Red Maple
 - Pin Oak
 - Swamp White Oak

2) Scrub Shrub Transition

This area should be selectively cleared and revegetated with native vegetation. Some possible plant selections are:

- Typical Trees
 - Red Maple
 - Green Ash
 - Basswood
 - Tulip Tree

- Typical Shrubs
 - Alder
 - Willow
 - Buttonbush
 - Witch hazel

3) "Upland" Mixed Forest

This area should be selectively cleared and revegetated with native vegetation. Some possible plant selections are:

- Typical Trees
 - Red, White and Black Oak
 - Hickories
 - Red Maple
 - Ash
 - Tulip Tree

- Typical Understory
 - Dogwood
 - Sassafras
 - Hop Hornbeam

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- Typical Shrubs
 - Viburnum
 - Spicebush

Meeting Minutes

Location: Leonia Borough Hall

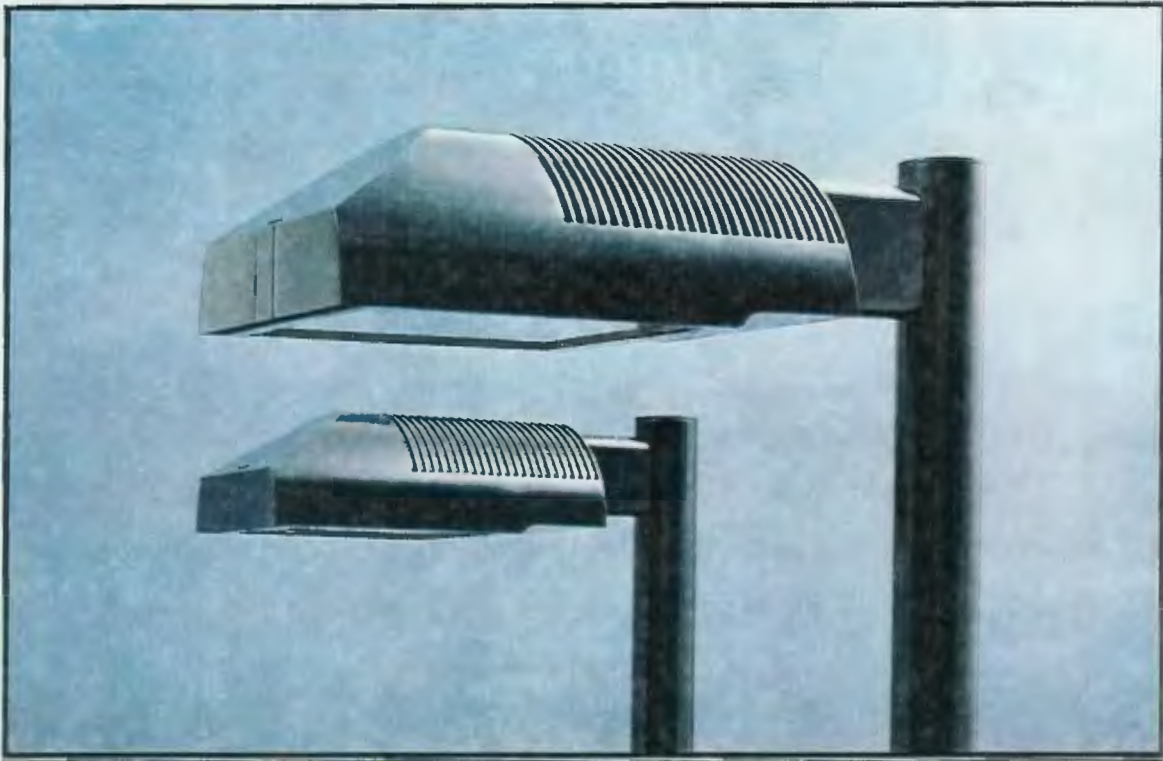
Date: 7/27/01, 8:30a.m.

Attendees: David Lustberg – The RBA Group
Martha Leiblich – Leonia Environmental Commission / Planning Board
Dan Cunning – Leonia Recreation Commission
Barbara H. Davulsi - Leonia Recreation Commission
John Perkins – Borough Administrator
Frank Messina – Players Guild / Leonia Planning Board

The meeting began at 8:30 a.m. David Lustberg gave a brief background of the project then went on to present the findings and preliminary concept. The comments were as follows:

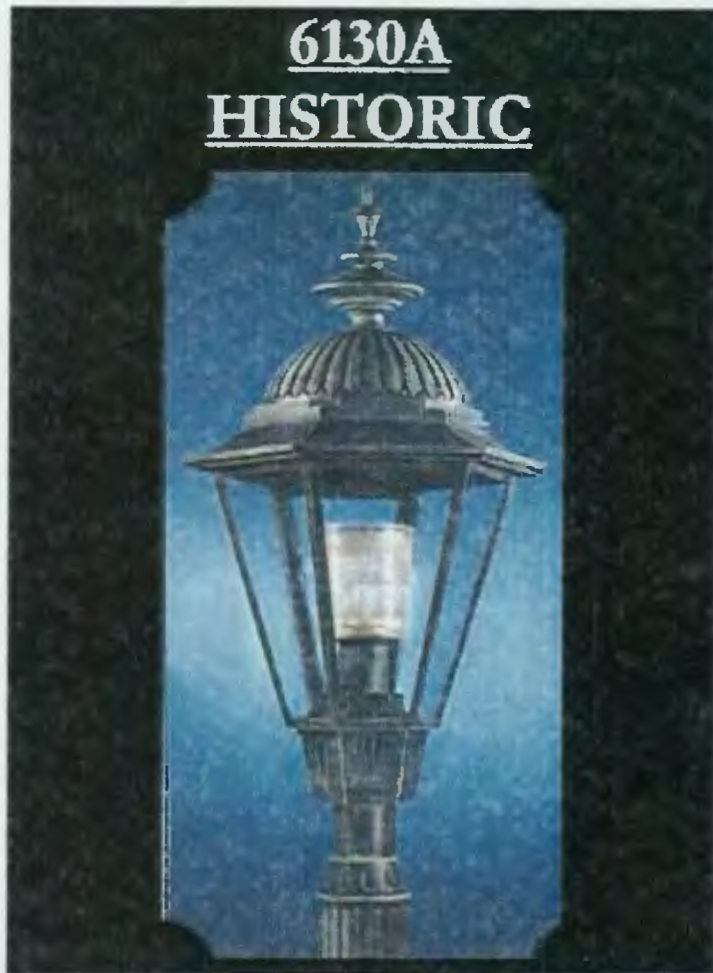
- 1) Everyone agreed that the routing of the trail was acceptable.
- 2) The "Educational Center" must be closed after sundown, however, it will not be gated. The open hours will be indicated with signs and must be enforced.
- 3) The lighting needs to be extremely vandal resistant since this is a problem at other sites in town. Aesthetics are secondary.
- 4) During final design, certain drier areas may be considered for a transition from the boardwalk to a gravel walk on grade to help reduce costs.
- 5) If trails on-grade are considered, ticks and poison ivy may be a problem.
- 6) The title of the project must include "Bike Path"
- 7) The boardwalk is to be designed and constructed to support the load of a golf cart and potential police motorcycles.

Vandal Resistant Lighting for Boardwalk

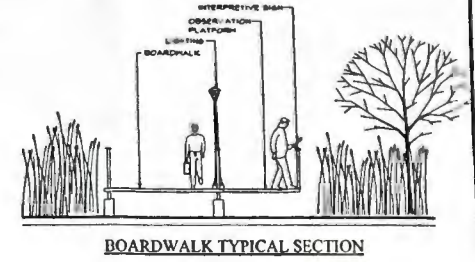
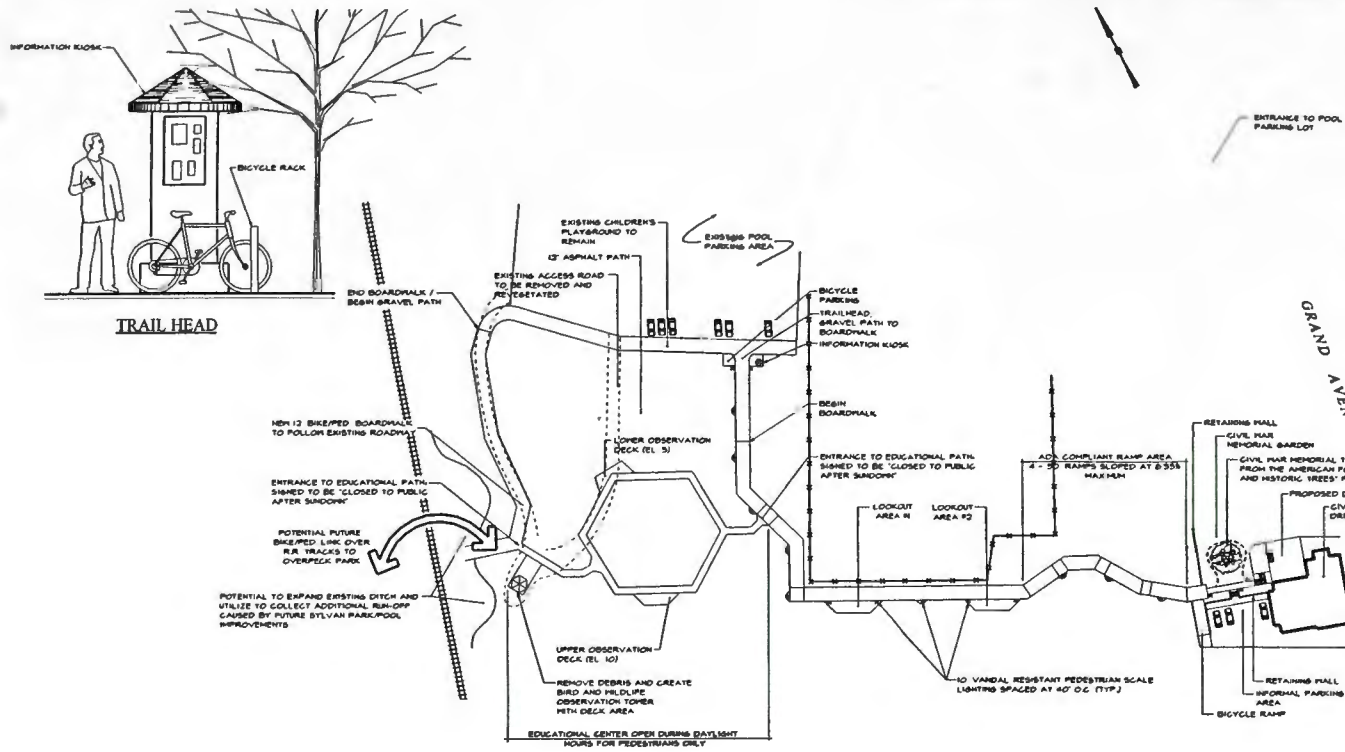


Boardwalk Lighting: KIM Lighting SAR Series fixture at 10 -12 mounting height and spaced at +/- 40 o.c. will provide vandal resistant lighting throughout the trail.

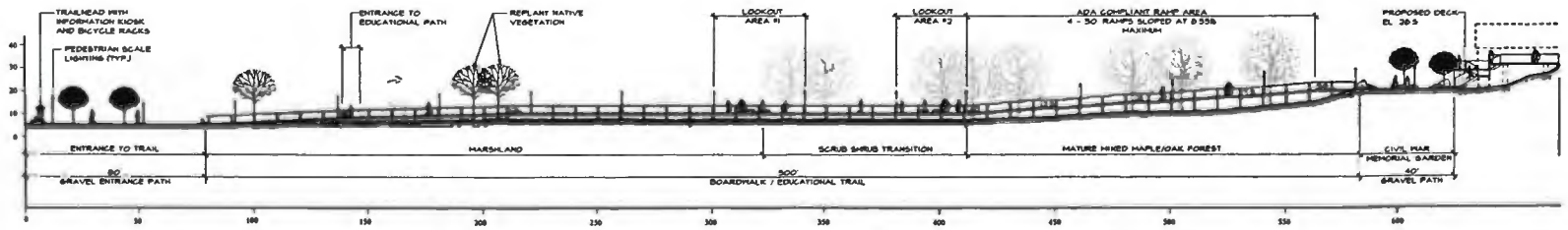
DECORATIVE LIGHTING FOR DRILL HALL



Drill Hall Lighting: This historic fixture made by Sternberg Vintage Lighting is a custom masterpiece with its stately fluted roof, six-sided cage top that flows from a hex to an octagon to a domed shape with elegance. The antique seeded acrylic lens and Verde Green finish retains the period. All sturdy cast aluminum construction assures years of service. This fixture is also available as a wall mounted unit.



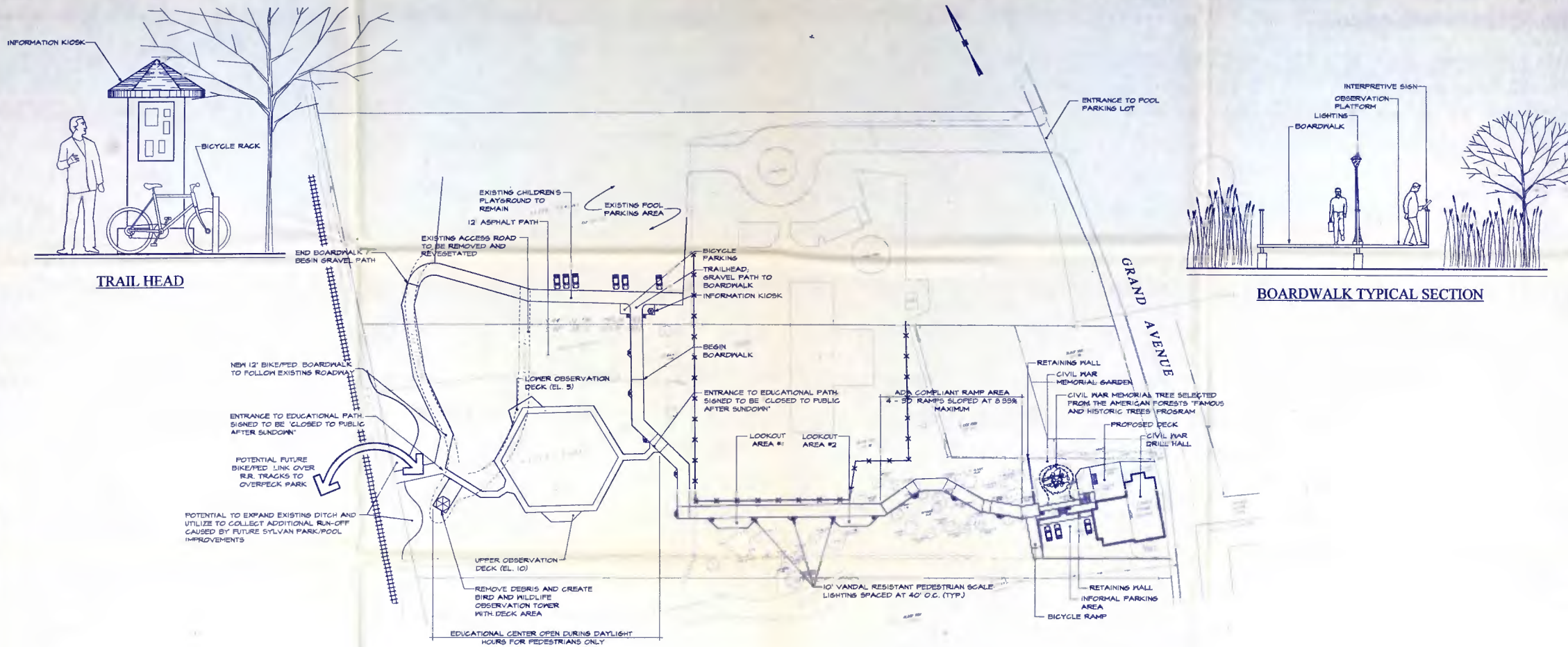
CONCEPTUAL TRAIL ROUTING PLAN
SCALE: 1"=30'



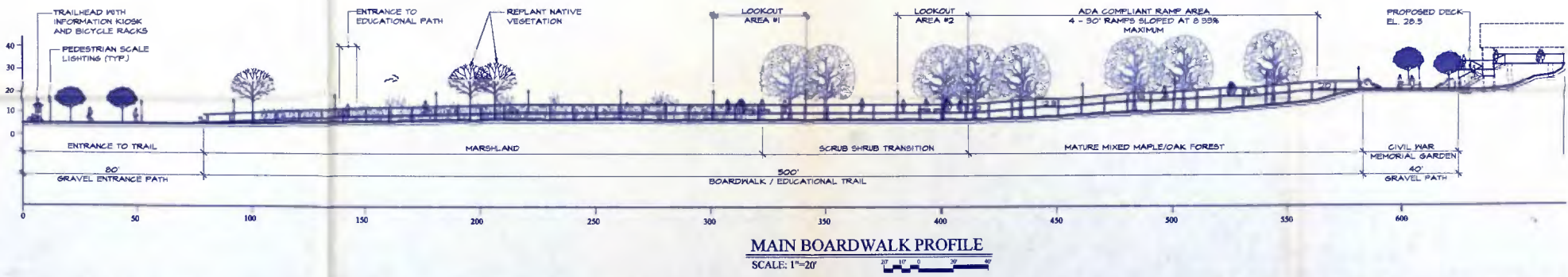
CIVIL WAR DRILL HALL NATURE PATH AND BIKE ROUTE
CONCEPTUAL LAYOUT AND DESIGN

LEONIA ENVIRONMENTAL COMMISSION • BOROUGH OF LEONIA TASK FORCE

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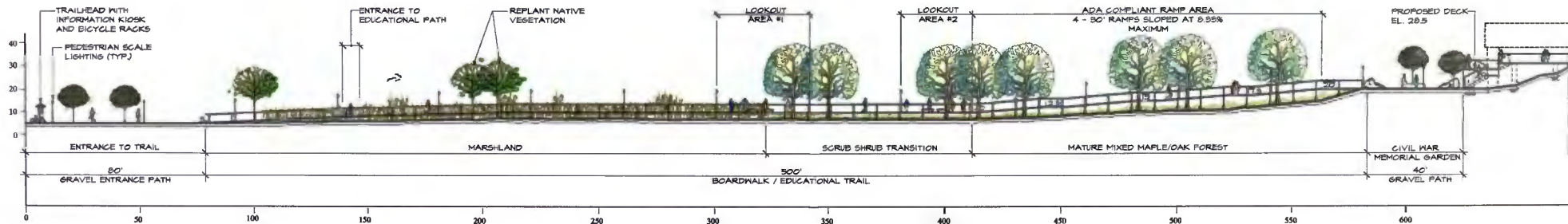
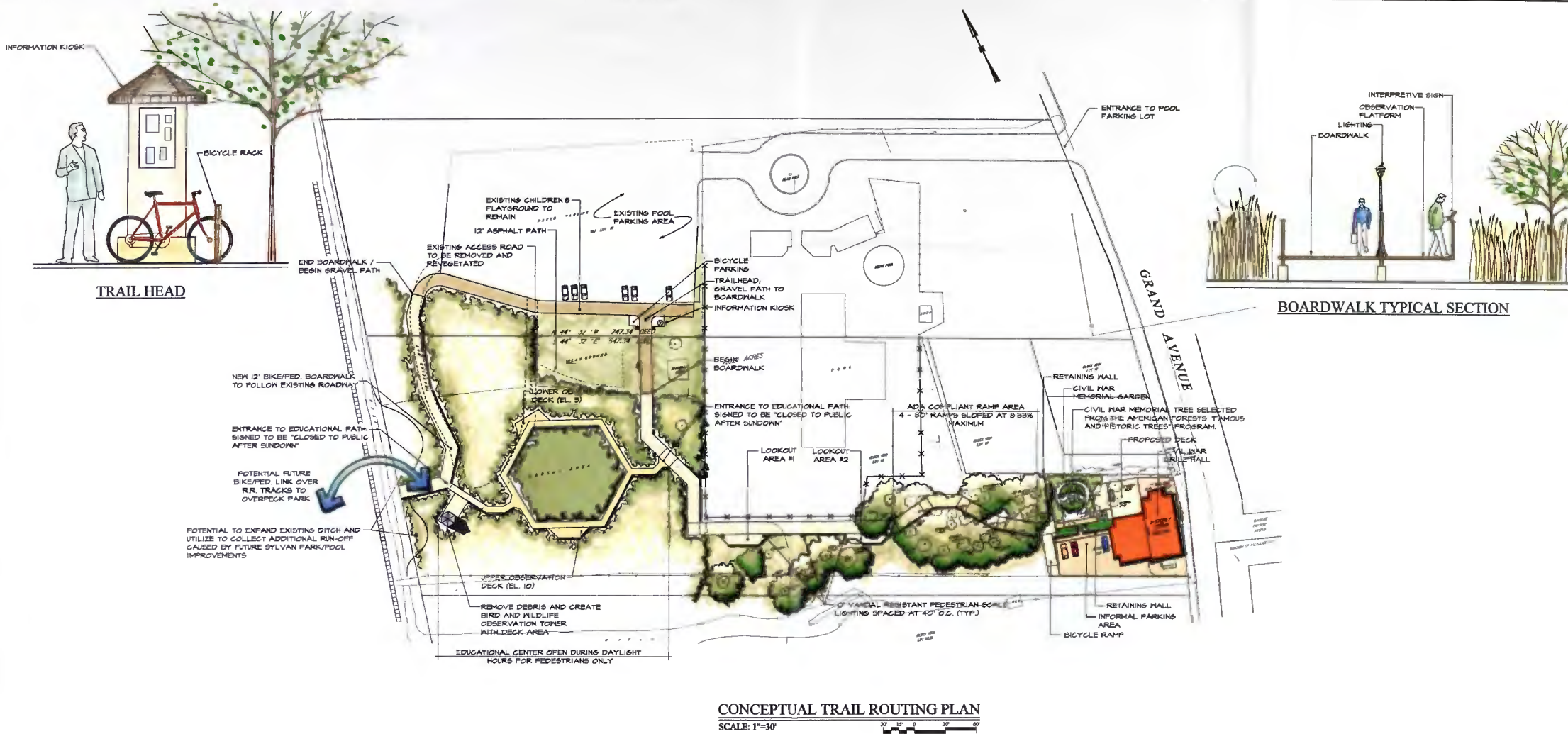
CONCEPTUAL TRAIL ROUTING PLAN
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CIVIL WAR DRILL HALL NATURE PATH AND BIKE ROUTE
CONCEPTUAL LAYOUT AND DESIGN

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CONCEPTUAL LAYOUT AND DESIGN

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