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College of Architecture and Urban Studies
Virginia Polytechnic Institute and State University

GREAT MARSH EXPERIENCE TRAIL
POQUOSON MUSEUM, POQUOSON, VIRGINIA

April, 2006



The Community Design Assistance Center (CDAC) is an outreach center of the College of Architecture and Urban Studies and Virginia Tech that assists communities, neighborhood groups and non-profit organizations in improving the natural and built environments through design, planning, and research. Through the integration of the learning and working environment, the Center will execute projects that link instruction and research and share its knowledge base with the general public.

Community Design Assistance Center

101 South Main Street, Suite 2

Blacksburg, Virginia 24061

p: 540.231.5644

f: 540.231.6089

e: cdac@vt.edu

<http://cdac.arch.vt.edu>

CDAC Project Team for Poquoson Museum, Great Marsh Experience Trail

Elizabeth Gilboy, CDAC Director

Kim Watson, Landscape Architecture Project Coordinator

Bill Mauzy, Graduate Landscape Architecture Student Designer

Jessica Emmitt, Graduate Landscape Architecture Student Designer

Girisha Keswani, Graduate Architecture Student Designer

Mike Hurley, Undergraduate Urban Forestry Student

P o q u o s o n M u s e u m

G r e a t M a r s h E x p e r i e n c e T r a i l



ACKNOWLEDGEMENTS:

The CDAC design team would like to thank the Poquoson Museum Board members for their help and support on this project. The CDAC team would like to thank Davis & Associates, PC for supplying the team with base map material for the project. The CDAC team would also like to recognize the following individuals for their help with the project:

Cliff Coffman	President, Poquoson Museum
John V. Quarstein	Consultant, Poquoson Museum
Tommie Turner	Poquoson Board Member
Charlie MacDaniel	Poquoson Board Member
Georgia MacDaniel	Poquoson Board Member
Cyrus Brame	US Fish and Wildlife Service
Jason Widstrom	City Engineer, City of Poquoson
Deborah Vest	Coordinator, Community Development, City of Poquoson
Scharlene Floyd	Environmental Scientist, Norfolk District Corps of Engineers
Susan Day	Urban Forestry Professor, Virginia Tech
Alice Baird	Senior Environmental Specialist, DCR



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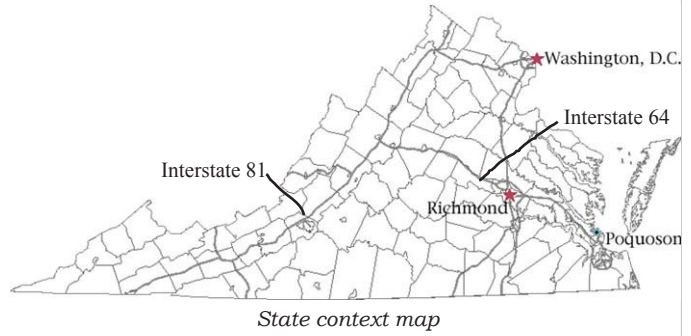


INTRODUCTION:

The City of Poquoson is located in Southeast Virginia, north of Virginia Beach on the Chesapeake Bay. Poquoson was established by a patent land grant in 1631. The name 'pocosin' is derived from the Algonquin Indian term meaning 'a great marshy area'. The area has a rich agrarian and waterman history, yet had no structure in place to capture this history and preserve it for future generations. Thus was born the Poquoson Museum.

The Poquoson Museum project is the realization of a dream conceived by numerous community residents who wished to preserve Poquoson's unique heritage. The museum's mission is to preserve, interpret, document, and educate the public about the history and heritage of the Poquoson community. It will provide residents and visitors alike with the opportunity to learn about Poquoson's "multi-faceted agrarian and seafood community" and its "rich Chesapeake Bay Heritage."

The museum has recently purchased a 15 acre farm, the Dryden Farm, and salt marsh where they seek to create a museum campus that will include the relocated and restored Tom Hunt's Store (1945 era general store and pharmacy), the Dryden Farm House, an interpretative center, Miss Becky's Store (gift shop), a barn that will house vintage agricultural equipment, a boat building exhibit, a marsh trail and Back River overlook, and various other interpretative opportunities.



The Poquoson Museum is located off of State Route 171 in Poquoson, Virginia, approximately 8 miles North of Hampton.

The Community Design Assistance Center (CDAC) was contacted to assist the Poquoson Museum in their master planning process to site and develop a conceptual design for the Great Marsh Experience Trail and Back River Overlook. This trail is intended to be an ADA accessible trail designed to guide visitors along Topping Creek Marsh. The trail will feature interpretative signs detailing marsh wildlife and fauna that the visitors can observe and will culminate in a raised wooden overlook platform providing a panoramic view of Topping Creek and the Back River.

This short supporting report documents the design process and describes the final conceptual design for the Great Marsh Experience Trail.



View towards Langley Airforce Base

GOALS + OBJECTIVES:

The goals and benefits of the project are as follows:

- Added community resource - Museum member participation in design, construction and maintenance.
- Physical fitness opportunity, providing the community with an approximate 3/4 mile trail.
- Preserve the natural marsh habitats and provide an educational environment for habitat study.
- Enable teachers to more effectively utilize the outdoor environment for both interactive and interpretive learning.
- Preserve, interpret, document, and educate the public about the history and heritage of the Poquoson community.

The objectives for accomplishing the goals set forth are as follows:

- Conduct meetings with the Poquoson Museum board to discuss trail layout and interpretive station program.
- Work with local officials and engineers in order to delineate environmentally sensitive areas and develop regulation parameters.
- Produce a series of trail master plans and interpretive station designs that are ultimately compiled into one trail design concept replete with interpretive station recommendations, trail overlook and seating areas, and potential trail access points.



Poquoson museum members give the CDAC team a tour of Miss Becky's store



Team members Bill Mauzy and Jessica Emmitt speak with Cyrus Brame of the US Fish and Wildlife Service



Proposed location for the agricultural demonstration fields and the Great Marsh Experience Trailhead

INVENTORY AND SITE ANALYSIS:

The site analysis process includes a thorough inventory of physical site attributes and constraints in addition to cultural context. The analysis synthesizes this information in drawings and descriptions that address and reveal issues and opportunities in the environmental, cultural, and social realm.

The site analysis for the Poquoson Great Marsh Experience Trail began with a site plan that CDAC acquired from Davis & Associates (2004) and aerial photography from the Virginia Basemapping Program Orthography, copyright 2002. On October 19, 2005, CDAC team members walked the Poquoson site, assessing the spatial qualities, taking photos, inventorying vegetation, assessing soil conditions, and conducting an overall site inventory.

Major features and/or conditions noted as a result of the site analysis are as follows:

1) Pre-existing historic structures along the north boundary of the property include Miss Becky's store, the Dryden farmhouse, a barn, and several two outbuildings attendant to the Dryden Farm--referred to subsequently as the Dryden Farm Complex. A historic voter registration building is temporarily sited in the southwest portion of the property.

2) A marsh extends into the southeastern portion of the property. Grasses, shrubs, and trees indicative of mesic pine forest, salt-shrub thicket, freshwater marsh, and saltwater marsh were noted in the vegetation inventory (see Appendix A9). The site plan provided by Davis & Associates indicates a riparian protection area (RPA) landward of the marsh. In the 100-foot RPA, no roofed buildings may be erected and all construction must comply with regulations set forth by the Chesapeake Bay Act. Additional restrictions apply to the 50-foot seaward portion of the RPA. Most notably, the removal of vegetation and pathway construction in this area is restricted to water-dependent activities.

3) An agricultural berm extends along the wood's edge just west of the marsh in the southern portion of the property. Museum officials noted the historic nature of this berm and requested that it be left intact.

4) A drainage ditch bisects the field west to east in the middle of the property. The ditch is open, exposed to runoff, and empties directly into the marsh on museum property.



View from marsh into property along a utility clearing, across the berm



Drainage ditch that empties into the marsh

SITE ANALYSIS- CONT.:

5) Residential development adjacent to the museum property has compromised views from the property in several locations. Most notably, views looking south to the southern portions of the property are heavily compromised. In addition, views east from the marsh edge are compromised by development on the opposite side of the marsh. Excellent views of the marsh and Topping Creek are available along the marsh edge in the southern reaches of the property.

6) Access to the property occurs in two general locations. Public access to the property is along the northern boundary which fronts Poquoson Avenue. Additional service and emergency access to southern portions of the property is from Sir Ralph Lane which approaches the site via a residential street from the west.

7) The CDAC team searched unsuccessfully for soil survey information. The team did note, however, that significant areas of the property, most notably in the southern portions, exhibited water-logged soils during site visits.

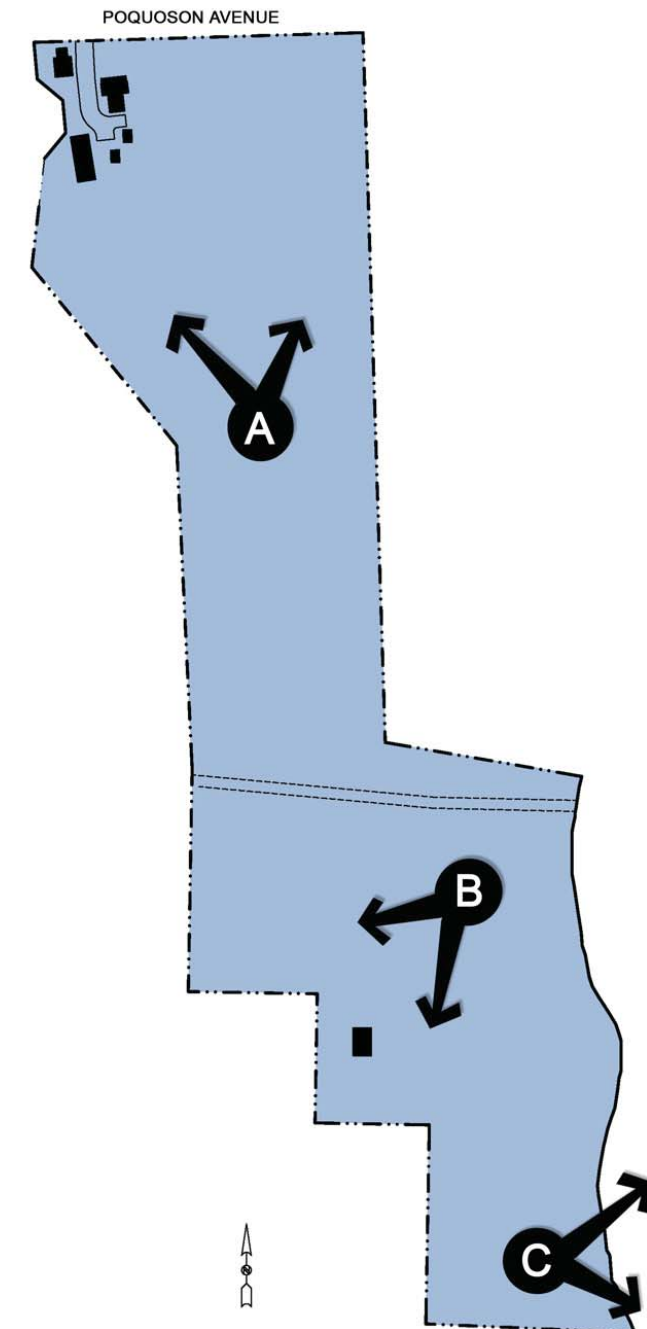


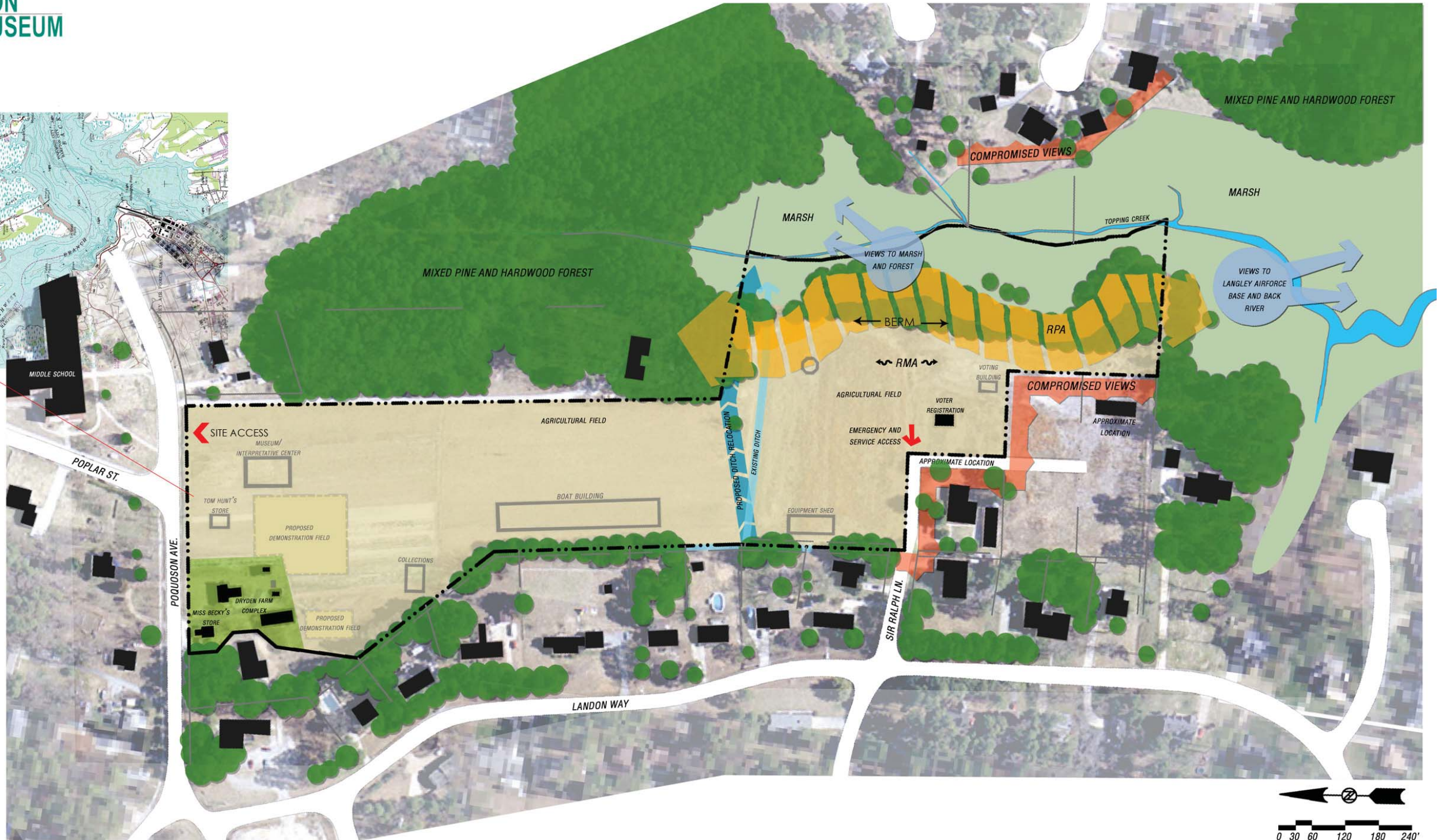
View across the marsh to the east



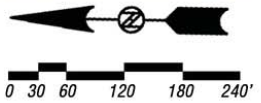
View to the south of the museum property.







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DESIGN PROCESS:

The CDAC design team is comprised of four members. Kim Watson, CDAC Project Coordinator, Bill Mauzy, Landscape Architecture Graduate Student, Jessica Emmitt, Landscape Architecture Graduate Student, and Girisha Keswani, Graduate Architecture Student.

The design process for any CDAC project includes a significant amount of time spent gathering information from potential users to gain insight into the desires and ideas that are held by interested individuals. The initial visit to the Poquoson Museum location was conducted on August 18, 2005 by CDAC director, Elizabeth Gilboy and CDAC product coordinator, Kim Watson.

Once the project goals and objectives were outlined, CDAC team members began collecting base map data and historical and environmental information.

The second visit was on October 19, 2005 by CDAC team members Kim Watson, Bill Mauzy, and Girisha Kiswani. Site photographs were obtained and a meeting with the Poquoson Museum board was held.

Issues that were raised during the meeting are as follows:

- The client desires boardwalk access to the marsh edge. Poquoson town engineer Jason Widstrom subsequently indicated that there are restrictions to access within the 50-foot seaward section of the Riparian Protection Area (RPA).
- There should be an observation tower which will be able to accommodate school groups of 30-40 people. It should provide a view to the south over the existing vegetation. It should also be at least partially accessible by wheelchairs and strollers.
- The marsh trail will depart from the Dryden Farm Complex between the barn and the wash house. The trail will then skirt a small agricultural/kitchen garden demonstration plot that is to be sited behind the barn.
- There will need to be consideration of trail surfacing type since the site is a lowland and is seasonally wet.
- The client does not want to encourage access from the Holloway Forest subdivision to the west. There is also discussion of charging admission to trail users.
- The trail alignment illustrated in the conceptual plan by Davis & Associates is open to change.
- There is no need for vehicular access along the trail with the exception of lawn mowers and golf carts for maintenance. Trail should be ADA compliant in surfacing and width.
- There should be one or two shelters/rest stations along the trail.
- The existing berm is to remain and be accompanied by an interpretive station.

After the meeting at the Poquoson Museum, the CDAC team spoke with city engineer, Jason Windstrom, in regards to the ditch realignment and general project introductions. The CDAC team also visited the Noland Trail at the Mariners Museum Park in Newport News as a demonstration of some characteristics that are desired in the Poquoson Museum Trail and visited Tom Hunts Store, which will be relocated to the museum site.



Trailhead for the Noland Trail in Newport News.

DESIGN PROCESS, cont'd:



Museum Consultant John Quarstein speaks to City Engineer Jason Windstrom before the presentation begins

After the October visit to Poquoson, the CDAC team put together a site analysis map and compiled sets of photographs, both of the existing site conditions and of design ideas and possible material choices. Two concept plans were created as preliminary design ideas. The CDAC team consulted the Virginia Department of Conservation and Recreation concerning restrictions placed on development within the RPA.

The next meeting was held on December 14th, 2005 at Miss Becky's Store. At this meeting, the CDAC team presented the preliminary design concepts along with suggested materials and the site analysis information. Discussion with the Museum board lead to the following comments and suggestions:

- John Quarstein asked if we have been able to get NPS overlook/tower examples.
- The trail should be ADA accessible, for all 3 proposed surface types.
- Trail/bridge over realigned ditch should be able to accommodate smaller utility vehicles (i.e. gator)
- One possible signage point could be the ditch (evolution of crab life...)
- Museum members do not want public access from Sir Ralph Lane - remove that connection.
- Trail needs to originate and terminate near the same point at the museum - controlled access. Screen out parking lot. Add a farm fence along Poquoson Ave. (may also need to be added along other property edges).
- Add two additional trail legs (to create 3 loops - one by museum center, the existing one, and a smaller one by the tower).



Poquoson Museum members view and discuss the preliminary concept plans



DESIGN PROCESS cont'd:

Initial research had indicated that City ordinances would prohibit extending the boardwalk into the 50' seaward portion of the RPA. However, it was later stated that the boardwalk trail constructed in the marsh will need to meet the approval of the Core of Engineers and follow their guidelines for construction. (Fishman Island was mentioned as a place that is an excellent example). There can be NO covered structures in the RPA. Railing is needed on the boardwalk in the marsh area.



Location of the Riparian Protection Area (RPA)

After the December meeting with the Poquoson board, the CDAC team refined the previous master plan ideas into a final plan. Attention was paid to details such as what the interpretive signs may address, how the viewing tower would be constructed, and where the trail surface and width may change. Character sketches of the trail were generated in order to show what the design intent is and how it may feel to walk on the trail.

Since the client again expressed a desire for attention to be paid to the area that immediately surrounds the museum complex, trails and information stations in that location were developed as well.

The final meeting between the CDAC team and the Poquoson Museum board took place on February 9th, 2006. Discussions at this meeting focused on the expressed need for an access road to the boat building and maintenance shed. The group also talked about any other changes to the plan that would result from the implementation of such a road. Another issue that was presented at this meeting was a need for a gate at the front of the property and adequate fencing around the perimeter.



Looking at the Dryden Farm House and out buildings

After the February meeting, the CDAC team made the final changes to the master plan and compiled comprehensive information for a final presentation packet.



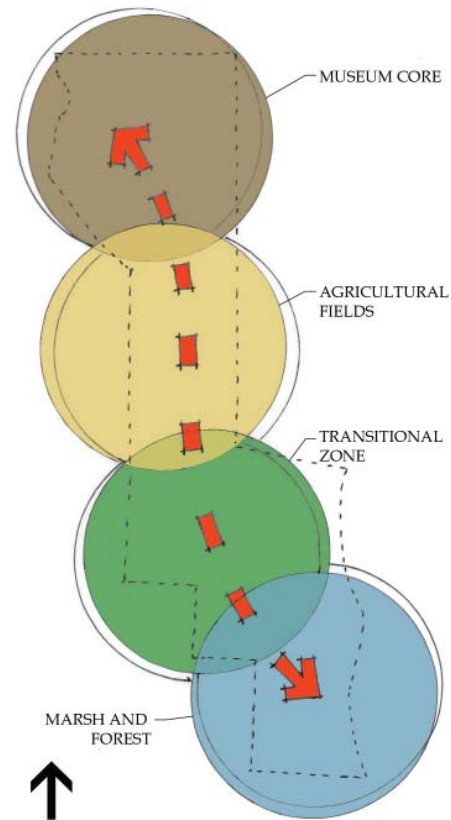
View Towards Langley Airforce Base



DESIGN:

Though they differ significantly, the design proposals, Concept A, Concept B, and the Final Concept, share certain objectives. Of foremost concern to the design team was the balance of providing a rich, safe, educational, and recreational venue. Such a venue would also allow museum visitors to engage the marsh, while protecting and enhancing the environmental qualities of the site. Each scheme seeks to incorporate the marsh trail as an integral part of the museum's overall circulation system. Additionally, each scheme seeks to provide a range of opportunities for tailoring a personal experience of the marsh and the museum.

As the CDAC team gained familiarity with the site and garnered advice and comments from the museum consultant and members, the designs were continually developed and refined.

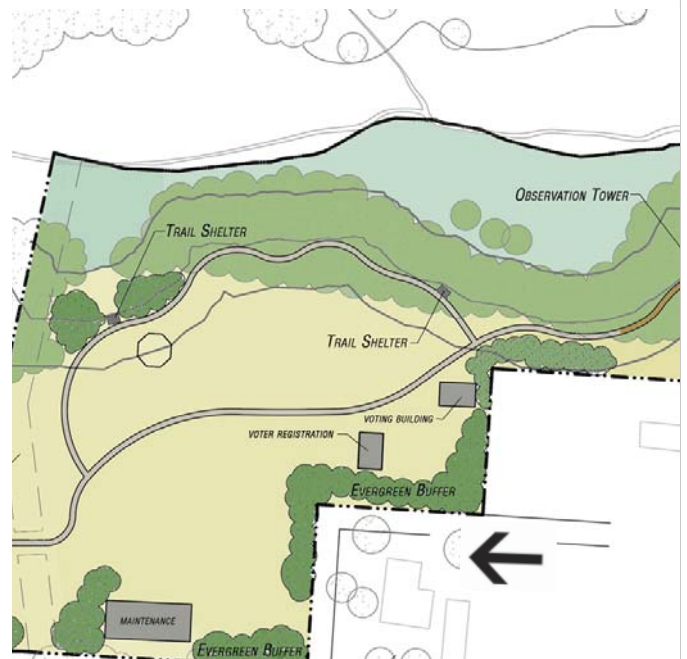


Organizational concept diagram

PRELIMINARY DESIGN

Initially, the design team was unable to confirm the acceptability of trail construction within the 50' seaward portion of the RPA. Consequently, the preliminary design alternatives reflect different approaches to trail siting with respect to the marsh. Concept A proposes that the trail skirt the 50' RPA line. Concept B assumes that approval for encroachment of the 50' RPA could be gained and proposes that portions of the trail extend to the marsh edge.

Concept A takes a minimal approach to the trail design and museum master plan. This concept assumes the locations for proposed structures given in the Davis Associates site plan. Two trail heads are proposed- one adjacent to the proposed museum interpretive building, the other adjacent to the Dryden Farm barn. The trail leads to an observation tower in the southern reaches of the property. The trail crosses the drainage ditch by way of a culverted land bridge. A loop extends the trail north-eastward along the 50' RPA line just east of the berm.



Concept A- The marsh loop stays outside of the 50' RPA. (Not to Scale)

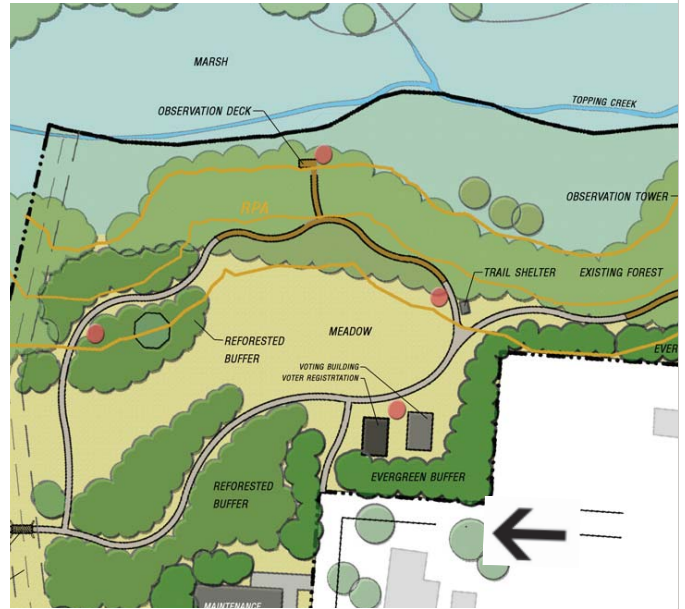
DESIGN cont'd:

Concept B differs significantly from Concept A in the complexity and potential of its proposals. First, Concept B makes changes to the Davis Associates plan with respect to the siting of buildings. The maintenance shed is sited closer to Sir Ralph Lane to minimize the amount of road surface and improve the potential to buffer views along the southwest boundary. The voter registration building and the voting building are massed together to improve their spatial relationship. Pedestrian and light vehicular access from Sir Ralph Lane is proposed. In addition to buffering along the southwest boundary, Concept B proposes that a significant portion of the field south of the ditch be reforested to enrich the spatial sequence of the trail, create a more intimate meadow setting, and buffer runoff into the ditch (See Appendix A3). The loop portion of the trail includes a pier spur which extends to the marsh edge. Access to the southern portion of the property over the ditch is via a bridge. The trail and the bridge between the boat building, collections building, and the maintenance shed is accessible and sized to accommodate light vehicular traffic. Finally, Concept B incorporates suggested locations for interpretive signs and/or stations.

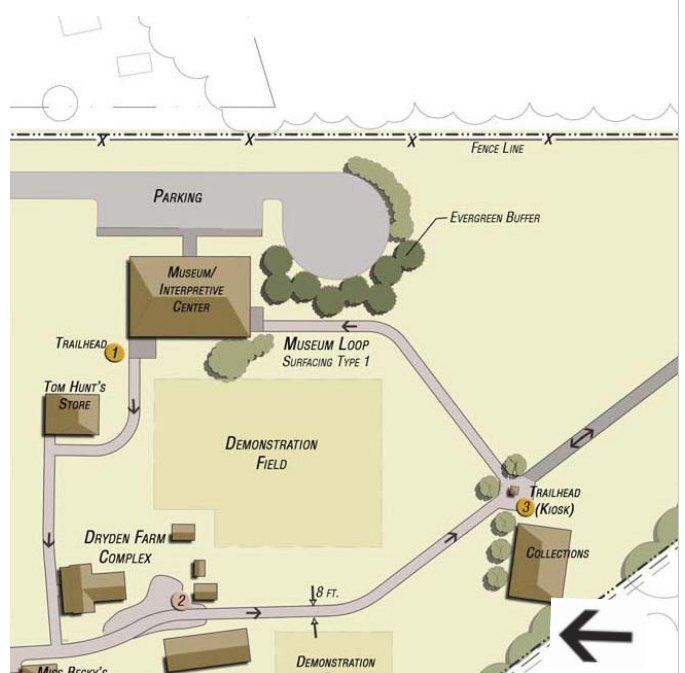
SEMI-FINAL DESIGN

Concepts A & B were presented to the museum consultant and members December 14, 2005. The meeting yielded a more clear and concise vision of the marsh trail and its role with the overall museum master plan. CDAC team members benefited from a wealth of constructive comments and advice. The semi-final concept reflects the following changes and improvements:

- The addition of gates at Sir Ralph Lane access point
- The removal of trail access from Sir Ralph Lane
- The addition of a controlled access museum complex loop trail and the relocation of the Marsh Trail trailhead
- The addition of buffer planting adjacent to the proposed parking lot
- Bridge and trail construction sufficient to allow light vehicular access from the Sir Ralph Lane service entrance to the boat and collections buildings and to the southern portions of the property.
- The addition of a fence along the north and northwestern boundaries of the property.
- The extension of the observation pier into the marsh to the edge of Topping Creek.
- The addition of a 30' riparian buffer to either side of the drainage ditch. *It is recommended that the mowing regime be reduced to once or twice a year in this zone to promote growth of the native species and increase the buffering capacity (nutrients and sediment) of the vegetation.



Concept B- The marsh loop trail extends into the 50' RPA and the buildings have been moved to facilitate a more cohesive design



Semi-final design- The addition of a controlled access museum loop trail

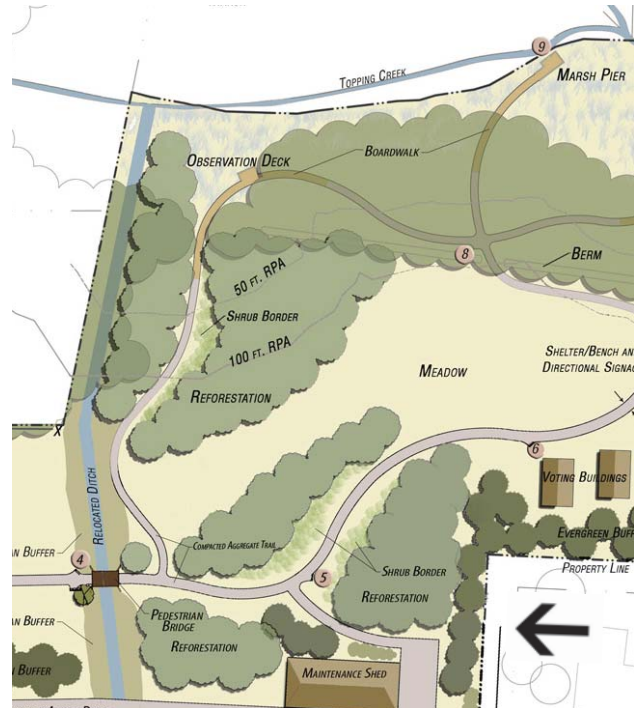
DESIGN cont'd:

The CDAC team developed character studies of the proposed structures, articulated and differentiated between trail surfacing options, and refined the concepts and locations for interpretive stops. There is also an additional, more secluded, observation deck in the northern reaches of the marsh loop trail segment.

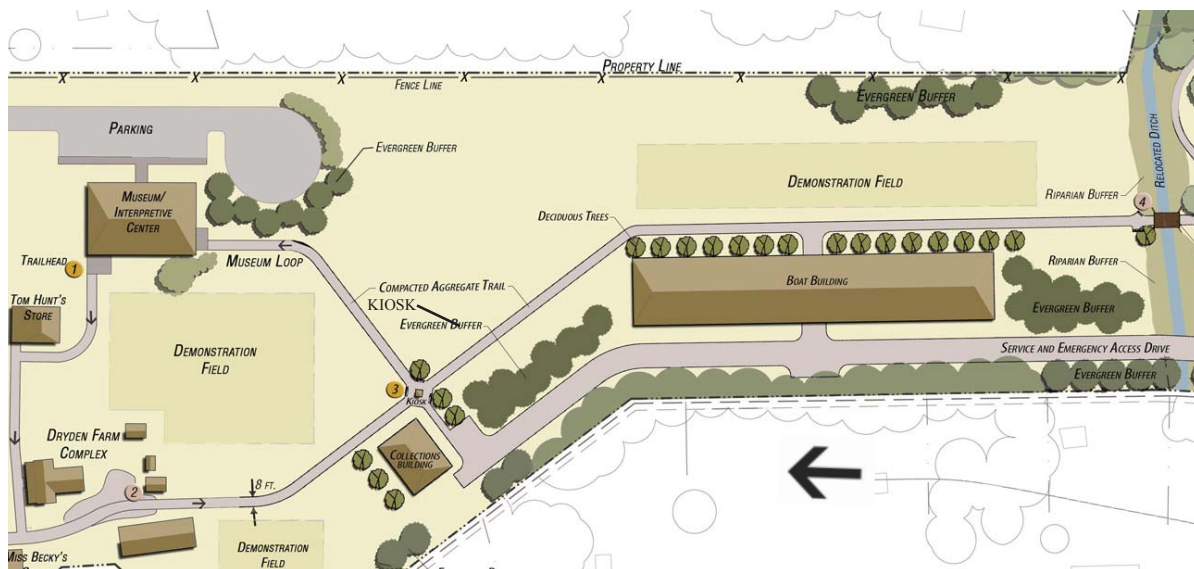
FINAL DESIGN

The final design concept reflects changes made in response to the February 2006 meeting. These changes include

- The addition of a gated access to the Dryden Farm Complex from Poquoson Avenue.
- The addition of a vehicular access road along the western boundary from Sir Ralph Lane.
- A reconfiguring of the egress from Sir Ralph Lane.
- Shifting the boat and collections buildings to make way for the access road.
- A reduction of the width of the trail in certain sections from 10 feet to 8 feet.
- The addition of evergreen buffering north of the boat building to screen the access road.
- The trail bridge is reinstated as pedestrian-only.



Final design- South of the drainage ditch, the marsh loop trail includes two marsh overlooks and the access from Sir Ralph lane is gated to allow only service vehicles.



Final design- Addition of a service road to the boat building and the collections building runs along the Western boundary of the site.



INTERPRETIVE TRAIL SIGNS:

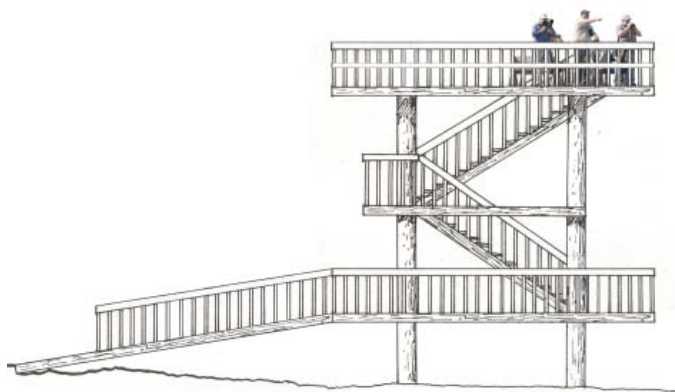
1. **TRAILHEAD A**-INTRODUCTION TO THE MUSEUM LOOP TRAIL, TRAIL LENGTHS, AND INTRODUCTION TO MUSEUM AND TOM HUNT'S STORE.
2. **DRYDEN FARM COMPLEX**- HISTORY OF THE FARM COMPLEX, EXAMPLES OF LOCAL AGRICULTURE, AND HISTORICAL FIGURES FROM POQUOSON.
3. **TRAILHEAD B**- INTRODUCTION TO THE GREAT MARSH EXPERIENCE TRAIL, MAP OF THE TRAIL SYSTEM, AND SYNOPSIS OF EDUCATIONAL OPPORTUNITIES.
4. **RIPARIAN CORRIDOR**- DITCH ECOSYSTEM AND RELATIONSHIPS BETWEEN STORM-WATER RUNOFF AND WATER QUALITY.
5. **REFORESTATION**- PURPOSE OF REFORESTATION, RENDERINGS DEPICTING THE PROCESS, AND DIRECTIONAL SIGNAGE.
6. **VOTING BUILDINGS**- HISTORY OF THE BUILDINGS AND THE IMPORTANCE OF MEADOW HABITAT.
7. **OBSERVATION TOWER**- LANGLEY AIRFORCE BASE, ENDEMIC BIRD SPECIES, AND CLIMATIC OVERVIEW OF POQUOSON.
8. **BERM**- HISTORICAL SIGNIFICANCE OF BERM, NATIVE AND INTRODUCED PLANT SPECIES, AND DIRECTIONAL SIGNAGE.
9. **MARSH PIER**- MARSH HABITAT, TOPPING CREEK HABITAT, AND EXPLANATION OF RIPARIAN PROTECTION AREA.

LENGTH OF MUSEUM LOOP-900 FEET
 LENGTH OF MARSH TRAIL, TOWER TO BRIDGE-1,280 FEET
 LENGTH OF INTERPRETIVE TRAIL, KIOSK TO TOWER-1,500 FEET

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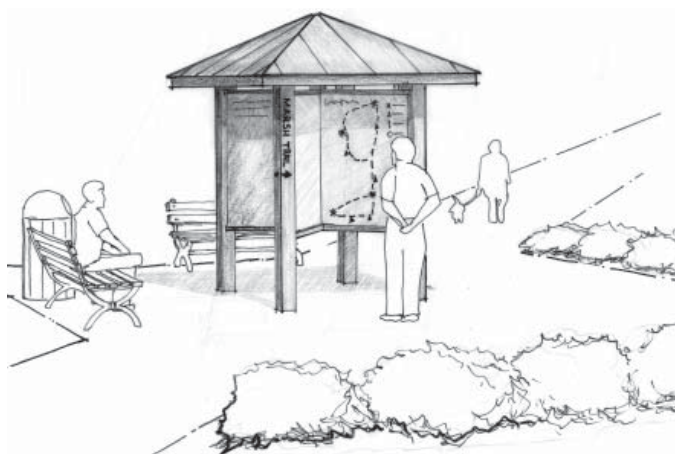
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DESIGN cont'd:



Observation Tower

By the request of the museum members, the CDAC design team has sited an observation tower near the southern boundary of the property. In addition, the CDAC team drafted a preliminary character sketch to guide design development of the tower. The tower is intended to afford views of the marsh, Topping Creek, and Langley Airforce Base to the south. The tower should be sized to accommodate groups as large as 30 for brief intervals. Proposed dimensions for the upper deck are 22'x24'. The top deck should be of sufficient height to allow views over adjacent tree tops to the marsh. While access to the upper deck is via stairs, a lower observation platform is to be accessible via a ramp constructed to comply with ADA standards.



Trailhead kiosk

The kiosk is sited at the trailhead of the marsh trail. The kiosk serves as a landmark to guide visitors, marking a key decision point. Visitors approaching the kiosk from the Dryden Farm Complex can either choose to turn left and return to the proposed museum interpretive center/gift shop or continue ahead to the Great Marsh Experience Trail. The kiosk will display a diagrammatic site/trail map and list critical information about the trail. Sufficient space is provided for posting of additional interpretive material, perhaps pertaining to the agricultural history of this site and area. Finally, note the provision of seating adjacent to the kiosk. Travel distances between seating do not exceed 700 feet throughout the trail system.



DESIGN cont'd:



Pedestrian bridge and rest stop

The following are conceptual recommendations of the CDAC team regarding the interpretive signs. The numbers correspond to those provided on the final design concept plan.

1. Trailhead A-Introduction to the museum loop trail, trail lengths, and introduction to museum and Tom Hunt's store.
2. Dryden Farm Complex- History of the farm complex, examples of local agriculture, and historical figures from Poquoson.
3. Trailhead B- Introduction to the Great Marsh Experience Trail, map of the trail system, and synopsis of educational opportunities.
4. Riparian Corridor- Ditch ecosystem and relationships between stormwater runoff and water quality.
5. Reforestation- Purpose of reforestation, renderings depicting the process, and directional signage.
6. Voting Buildings- History of the buildings and the importance of meadow habitat.
7. Observation Tower- Langley Airforce Base, endemic bird species, and climatic overview of Poquoson.
8. Berm- Historical significance of berm, native and introduced plant species, and directional signage.
9. Marsh Pier- Marsh habitat, Topping Creek habitat, and explanation of Riparian Protection Area.

The marsh trail is to cross the drainage ditch via a pedestrian bridge. The trail bed and railing of the bridge should be wooden. The bridge is an important symbolic point in the sequence of the trail experience. It marks a transition from the open agricultural zone representing historic land use to the more enclosed contemporary reforestation zone. This zone prepares trail users for eventual transition to forest and marsh. A rest stop and interpretive sign are located adjacent to the bridge; the sign is designated interpretive sign #4 of the final design concept. The interpretive stop will offer educational information about the ecology of the drainage ditch and the concept of riparian buffer establishment to promote water quality. This stop is an integral part of a network of stops, which will combine to provide an educational narrative outlining the history of the site, local agricultural practices, the community's maritime history, the region's ecology, and responsible land stewardship practices.



Marsh Pier

The marsh pier is a spur off the marsh trail loop segment that extends to the edge of Topping Creek. The pier ends in a 14'x10' observation deck with railings. The pier will afford important immersion experiences and allow intimate proximity with the tidal creek ecosystem. Seating should be incorporated into the railing design.



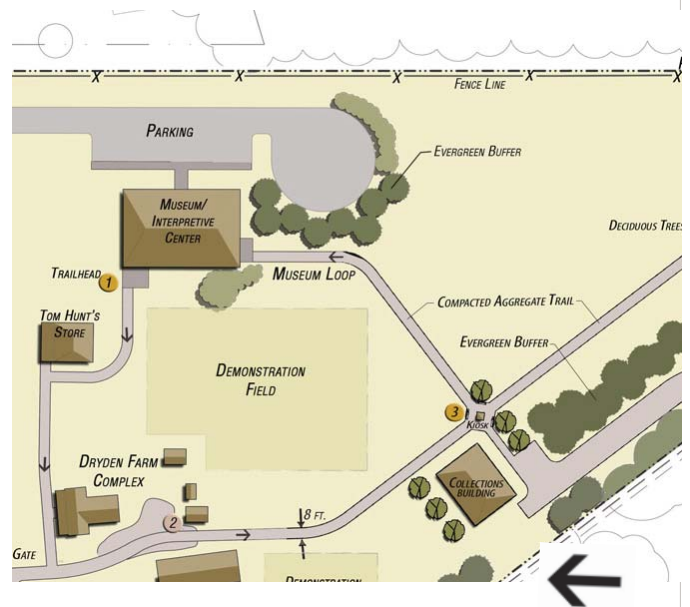
DESIGN cont'd:

The marsh loop segment of the trail skirts the edge of the marsh. The intent is to provide a profound and varied experience of the rich environment at the marsh edge. The trail is aligned to take advantage of existing highpoints along the marsh's perimeter. However, the exact horizontal alignment of the trail should be determined in the field. The field-sited trail should be responsive to existing vegetation to minimize the impacts and the need for clearing. The elevation of the boardwalk's skeletal support structure should be sufficient to stay clear of periodic tidal fluctuations and minor flooding, while remaining close to the marsh surface to maximize the potential for rich experience.



Marsh boardwalk

The CDAC team initially planned a trailhead for the marsh trail next to the Dryden Farm barn with pathways for the farm complex to be developed in subsequent planning efforts. However, discussions with museum members and consultants suggested that a more holistic and integrated approach would be necessary. In close consultation with museum representatives, the CDAC team developed a short controlled access loop trail to service the interpretive core of the museum grounds. Beginning at the proposed history museum and interpretive center, the museum loop provides sequenced access to Tom Hunt's Store, the Dryden Farm House, Miss Becky's Store, the Dryden Farm outbuildings, the agricultural demonstration area, the collections building, the marsh trail, and the museum gift shop. It offers visitors a choice of taking a short walking tour (900') of the museum grounds or a more extensive tour of the grounds and the Great Marsh Experience Trail.



The Dryden Farm Complex trail



CONCLUSION:

When completed, the Great Marsh Experience Trail promises to be a true asset to the Poquoson Museum, the surrounding community, and the City of Poquoson at large. As a critical component of the Poquoson Museum campus, the trail will offer visitors a rich experience of the unique cultural and environmental qualities found within Poquoson. The trail will help to preserve memories of the past ways of dwelling and relationships with the landscape for the enrichment of generations to come.

Incorporating a holistic vision of the museum campus, the trail master plan is a sound, functional foundation on which museum officials can base future decisions and spearhead fundraising activities. As a community resource, the planning, construction, and maintenance of the trail and its supporting landscape offers ample opportunity for public participation. Additionally, the access provided by the trail to the rich marsh environment and the planned interpretive stations will be resources for an area educators wishing to conduct outdoor activities in a safe and supportive environment. The 3/4 mile circuit walk is a significant asset for the promotion of active lifestyles.

Perhaps most importantly, the completed trail landscape will be a wonderful venue for demonstrating responsible land stewardship practices. The trail landscape will be a strong example to guide the conversion of marginal agricultural lands into land uses that truly benefit the community. Not only will the landscape improve wildlife habitat, increase local biodiversity, and improve the quality of water that drains from the site, it will act as a demonstration venue for important and innovative management practices. Such practices include riparian buffers, reforestation, and the preservation of significant historic landscape forms. The project promises to influence the thinking of current and future generations at a scale which reaches well beyond the confines of the site.



APPENDICES:





PICTURESQUE MARSHLAND VEGETATION



LOOKING NORTH ACROSS THE MARSH



LOOKING WEST FROM THE MARSH DOWN THE DRAINAGE EASEMENT



LOOKING SOUTH TOWARD THE PROPERTY BOUNDARY



NEW CONSTRUCTION ADJACENT TO THE SOUTH WEST BOUNDARY



LOOKING WEST TOWARD SIR RALPH LANE



LOOKING WEST ACROSS THE FIELD DOWN THE DRAINAGE DITCH



LOOKING NORTH TOWARD THE DRYDEN FARM HOUSE



LOOKING SOUTH FROM THE DRYDEN FARM HOUSE



LOOKING WEST TOWARD DRYDEN FARM COMPLEX



VIEW TOWARD LANGLEY AIR FORCE BASE



THE NOLAND TRAIL AT THE MARINER'S MUSEUM



TOM HUNT'S GENERAL STORE- TO BE RELOCATED



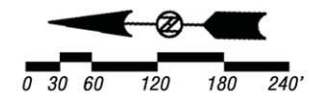
MAKING PLANS FOR THE MUSEUM'S FUTURE



LENGTH OF TRAIL, TRAILHEAD TO TOWER- 1,720 FEET

LENGTH OF TRAIL LOOP-630 FEET

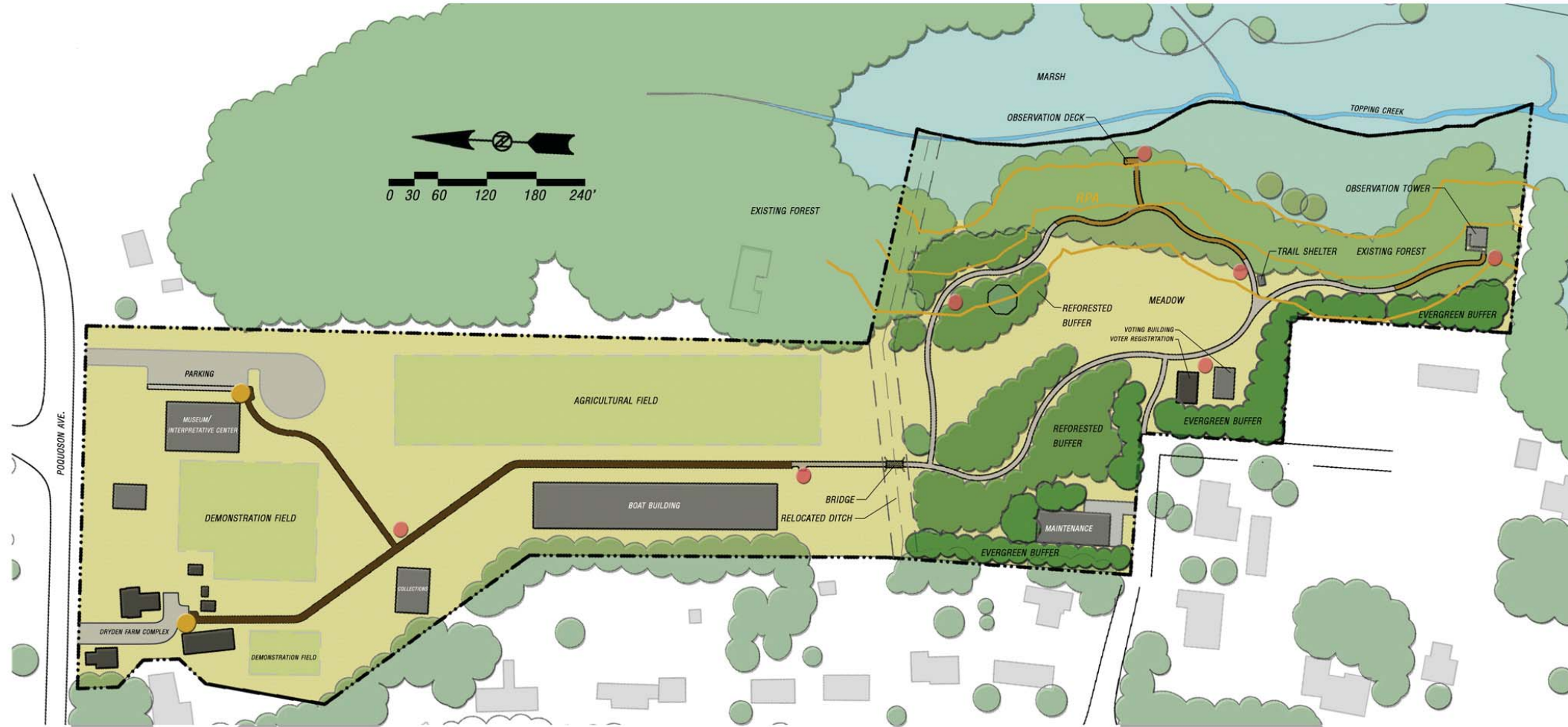
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- TRAIL HEAD
- INTERPRETATIVE SIGNAGE
- PAVED TRAIL SURFACE
- COMPACTED AGGREGATE TRAIL SURFACE
- BOARDWALK
- PROPOSED STRUCTURES
- EXISTING STRUCTURES



LENGTH OF TRAIL, TRAILHEAD TO TOWER-1,770 FEET

LENGTH OF MARSH LOOP-700 FEET

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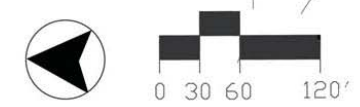


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- INTERPRETIVE TRAIL SIGNS:**
- 1. TRAILHEAD A-** INTRODUCTION TO THE MUSEUM LOOP TRAIL, TRAIL LENGTHS, AND INTRODUCTION TO MUSEUM AND TOM HUNT'S STORE.
 - 2. DRYDEN FARM COMPLEX-** HISTORY OF THE FARM COMPLEX, EXAMPLES OF LOCAL AGRICULTURE, AND HISTORICAL FIGURES FROM POQUOSON.
 - 3. TRAILHEAD B-** INTRODUCTION TO THE GREAT MARSH EXPERIENCE TRAIL, MAP OF THE TRAIL SYSTEM, AND SYNOPSIS OF EDUCATIONAL OPPORTUNITIES.
 - 4. RIPARIAN CORRIDOR-** DITCH ECOSYSTEM AND RELATIONSHIPS BETWEEN STORM-WATER RUNOFF AND WATER QUALITY.
 - 5. REFORESTATION-** PURPOSE OF REFORESTATION, RENDERINGS DEPICTING THE PROCESS, AND DIRECTIONAL SIGNAGE.
 - 6. VOTING BUILDINGS-** HISTORY OF THE BUILDINGS AND THE IMPORTANCE OF MEADOW HABITAT.
 - 7. OBSERVATION TOWER-** LANGLEY AIRFORCE BASE, ENDEMIC BIRD SPECIES, AND CLIMATIC OVERVIEW OF POQUOSON.
 - 8. BERM-** HISTORICAL SIGNIFICANCE OF BERM, NATIVE AND INTRODUCED PLANT SPECIES, AND DIRECTIONAL SIGNAGE.
 - 9. MARSH PIER-** MARSH HABITAT, TOPPING CREEK HABITAT, AND EXPLANATION OF RIPARIAN PROTECTION AREA.

LENGTH OF MUSEUM LOOP-900 FEET
 LENGTH OF MARSH TRAIL, TOWER TO BRIDGE-1,280 FEET
 LENGTH OF INTERPRETIVE TRAIL, KIOSK TO TOWER-1,500 FEET

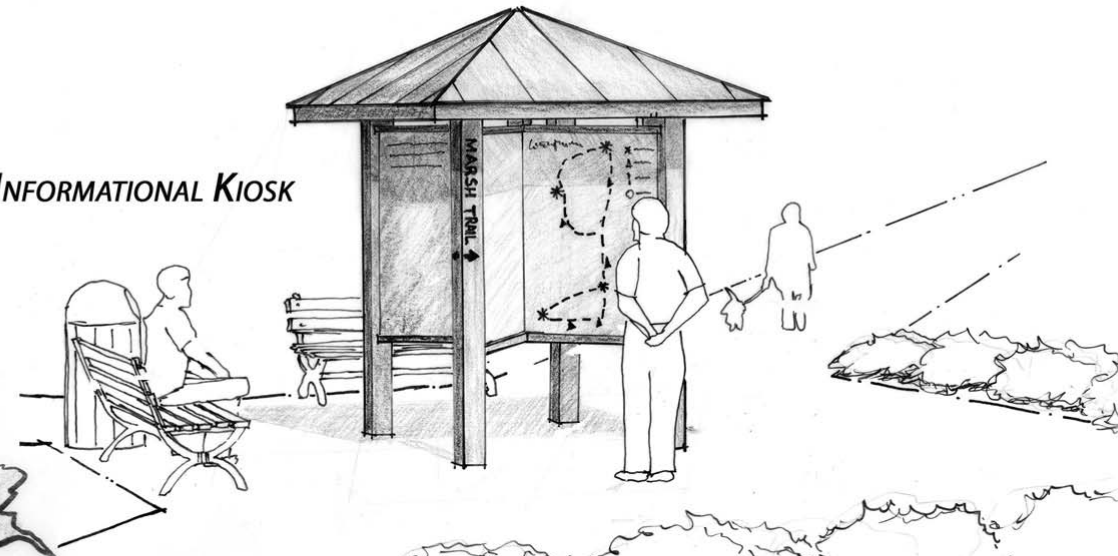


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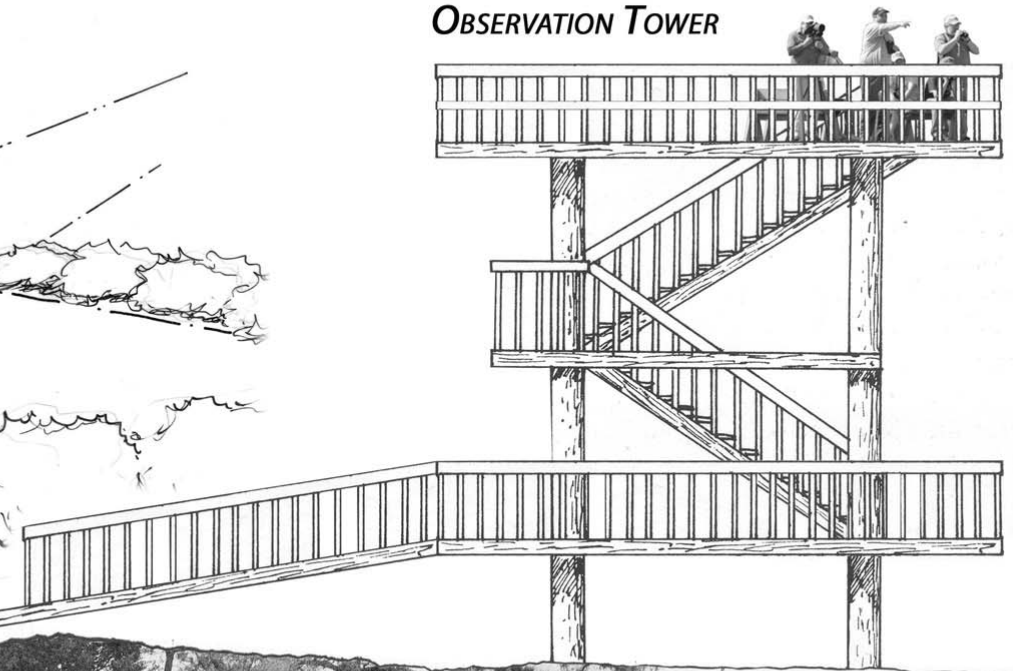
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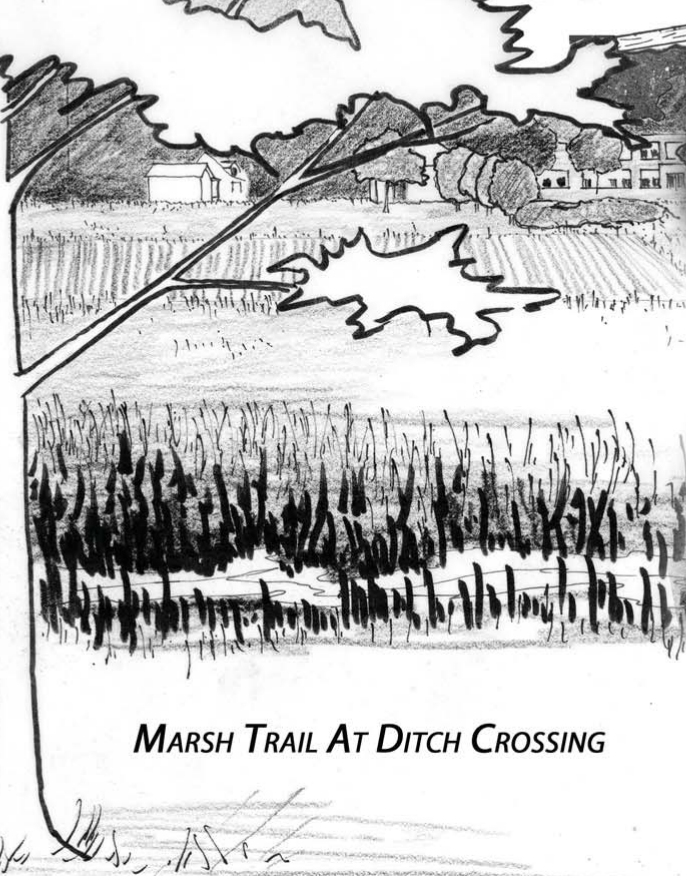
TRAILHEAD AND INFORMATIONAL KIOSK



OBSERVATION TOWER

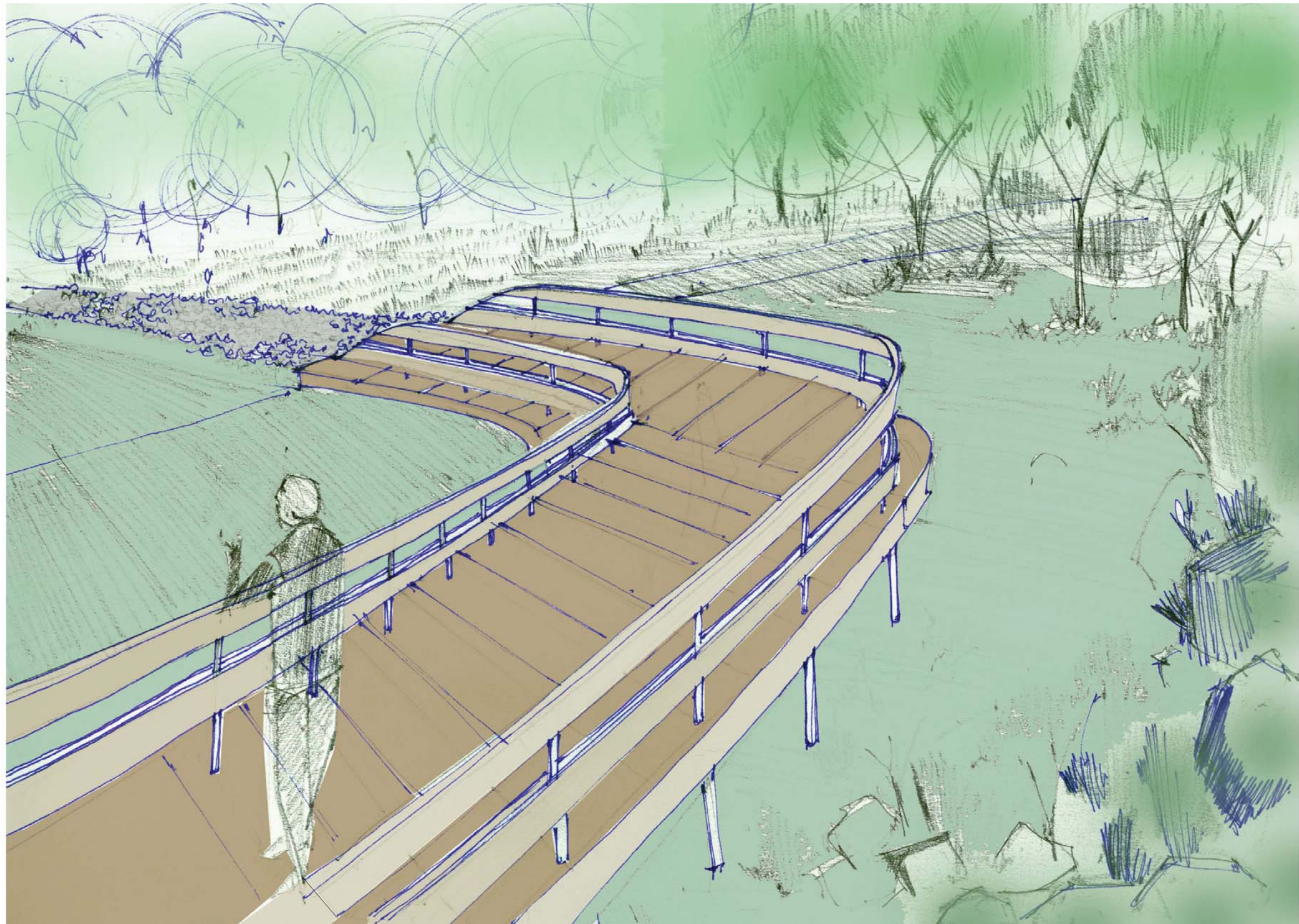


MARSH TRAIL AT DITCH CROSSING



MARSH TRAIL BOARDWALK





SIGNAGE EXAMPLES:



Signage example from AMD+ART, Vintondale, PA



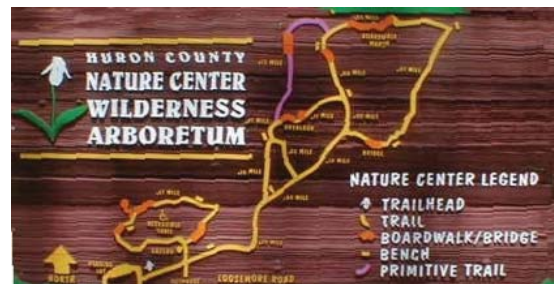
Signage example from City of Port Moody, British Columbia, Canada



Signage example from Creeper Trail, Abingdon, Virginia



Signage example from Lady Bird Johnson Wildflower Center, Austin, TX



Signage example from Huron County Nature Center Wilderness Arboretum, Michigan

EXISTING PLANT INVENTORY (For Topping Creek Marsh Area):

Shrubs

Baccharis halimifolia
Groundsel Tree



Myrica cerifera
South Wax Myrtle



Grasses

Andropogon gerardii
Big Blue Star



Phragmites australis
Common Reed



Juncus roeckerianis
Needlerush



Spartina cynosuroides
Big Cordgrass



Spartina patens
Salt Hat Grass



Vines

Smilax rotundifolia
Common Greenbriar



Herbaceous

Solidago canadensis
Goldenrod



Trees

Quercus laurifolia
Laurel Oak



Pinus taeda
Loblolly Pine



Liquidambar styraciflua
Sweetgum



Quercus virginiana
Live Oak



Juniperus virginiana
Eastern Red Cedar



REFORESTATION/FOREST BUFFER:

Areas of reforestation are designated in the Final Concept. The objectives of the proposed forest buffer are fourfold:

- 1) Reforestation will significantly decrease maintenance requirements in the proposed areas.
- 2) Reforestation with native plantings will increase biodiversity on the museum grounds. As a result, visitors will enjoy increased contact with naturalized environments and wildlife.
- 3) The reforested areas will signal a transition from the historic agricultural land use adjacent to the museum core to the naturalized setting of the marsh and marsh edge. The addition of vertical elements--trees--along the trail will provide a more varied, sheltered experience for trail users.
- 4) Reforestation of portions of the museum property will decrease the quantity and rate of stormwater runoff. In addition, increased forest cover will improve the overall quality of water discharged from the property via the drainage ditch.

The following are excellent resources to help guide the planning and implementation of reforested areas:

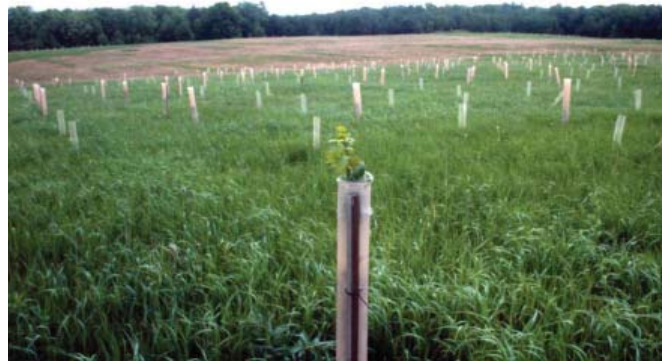
Virginia Cooperative Extension publications 420-405, 420-155, 420-151 available at www.ext.vt.edu/pubs/forestry.html.

Virginia Natural Heritage Program--Riparian Forest Buffers available at www.state.va.us/dcr/dnh/riparian.htm.

Native species lists available at www.state.va.us/dcr/dnh/native.htm.

Invasive species information available at the following sites:

- <http://www.invasivespeciesinfo.gov/>
- <http://oncampus.richmond.edu/academics/biology/plants/>
- www.virginiaplaces.org/natural/invasive.html



Tree seedlings establish quickly under the protection of shelter tubes.



Unidentified volunteers plant seedlings and erect shelters in a field.

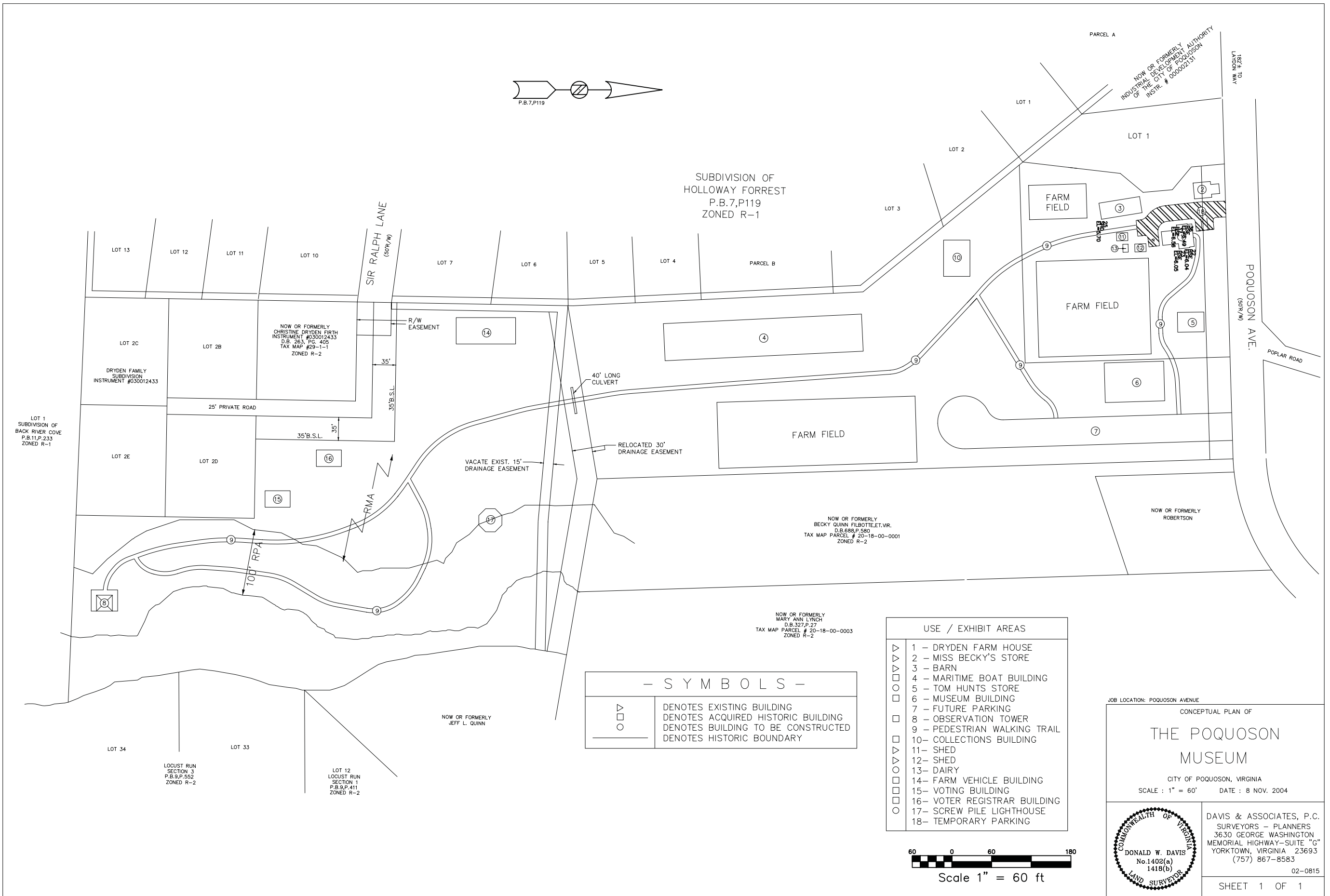
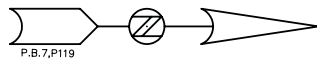


The reforestation effort offers a significant opportunity to involve the community and increase the museum's volunteer base.

TRAIL SHELTER:

The Final Concept proposes a Shelter/Bench at the southern terminous of the proposed meadow--just east of the voting buildings. The shelter in the photograph below depicts the intent of the proposed shelter. The shelter will provide trail users a place to pause and rest while offering protection from midday sun and unexpected rains. In addition, the shelter will serve as a landmark. Sited adjacent to a trail junction, the shelter will help make the trail system legible for users. The plan dimensions of the proposed shelter are approximately 8x10 feet.

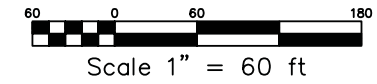




- S Y M B O L S -

◁	DENOTES EXISTING BUILDING
◻	DENOTES ACQUIRED HISTORIC BUILDING
○	DENOTES BUILDING TO BE CONSTRUCTED
—	DENOTES HISTORIC BOUNDARY

USE / EXHIBIT AREAS	
◻	1 - DRYDEN FARM HOUSE
◻	2 - MISS BECKY'S STORE
◻	3 - BARN
◻	4 - MARITIME BOAT BUILDING
◻	5 - TOM HUNTS STORE
◻	6 - MUSEUM BUILDING
◻	7 - FUTURE PARKING
◻	8 - OBSERVATION TOWER
◻	9 - PEDESTRIAN WALKING TRAIL
◻	10- COLLECTIONS BUILDING
◻	11- SHED
◻	12- SHED
◻	13- DAIRY
◻	14- FARM VEHICLE BUILDING
◻	15- VOTING BUILDING
◻	16- VOTER REGISTRAR BUILDING
○	17- SCREW PILE LIGHTHOUSE
○	18- TEMPORARY PARKING



JOB LOCATION: POQUOSON AVENUE

CONCEPTUAL PLAN OF

THE POQUOSON MUSEUM

CITY OF POQUOSON, VIRGINIA

SCALE : 1" = 60' DATE : 8 NOV. 2004

DONALD W. DAVIS
No. 1402(a)
1418(b)
LAND SURVEYOR

DAVIS & ASSOCIATES, P.C.
SURVEYORS - PLANNERS
3630 GEORGE WASHINGTON
MEMORIAL HIGHWAY-SUITE "G"
YORKTOWN, VIRGINIA 23693
(757) 867-8583

02-0815

SHEET 1 OF 1