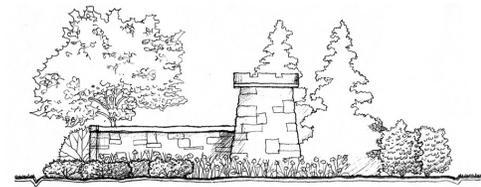


Northcoast Design Build, LLC



**LANDSCAPE NARRATIVE FOR
LIGHTHOUSE IMPROVEMENT PLAN
SWAN'S ISLAND, ME**

**Northcoast Design Build, LLC
October 5th, 2009**

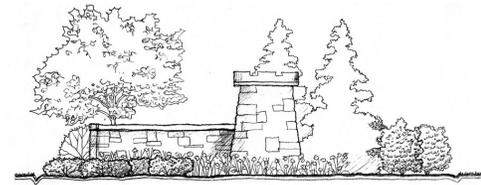


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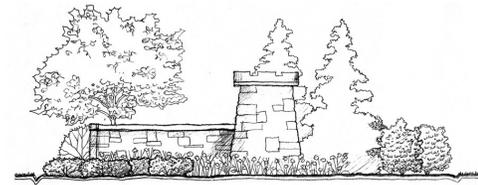
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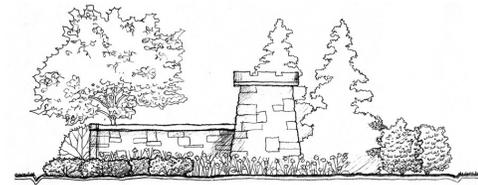
Introduction to the Lighthouse Drawings:

Site Description: This lighthouse sits on the mounded 20 acre Hockamock peninsula surrounded on two sides by the Atlantic Ocean, and on its northeastern side is Burnt Coat Harbor. At its highest midland point it stretches 100 feet out of the water; contrast to one of its flatter locations at 50 feet in elevation where the Lighthouse and Keeper's House stands. Steep slopes cover most of the perimeter of the site where it nearly falls directly down into the water below, providing incredible views, yet allows for slow descent along its face to either its southern beach or its northern historical Indian Burying site. The majority of the site is covered in heavily wooded forest while approximately 1.5 acres remains transient and open.

In accordance to the Strategic Plan for Landscape laid out by Past Designs, the submitted Landscape Improvement Plans by Northcoast Design Build respects their three over-arching philosophical goals of using construction and material techniques that are close to historic treatment, remaining sensitive to the natural built environment, and maintaining safe passage of the public through the landscape (a manner fitting to other State and National Parks such as Acadia National Park will be utilized for the trail systems and risk of users to the site with proper signage and the like. The Island's Lighthouse Committee will seek this out). It is important that the visitors to this site understand the stewardship practices and expectations placed on them with regards to the ecology of this place.

Design Priorities Defined:

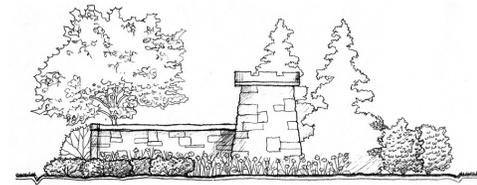
- a) ADA compliant ramp access to the front entrance of the Keeper's Inn (*earlier due date*)
- b) Walk System around the Keeper's Inn with safe access to all points of interest:
 1. Trail systems & pathways
 2. Parking areas
 3. Other buildings on site (Fuel House, Lighthouse, Bell tower, possible dock, etc.)
- c) Trail System that plots the route around the Hockamock Head peninsula and its connection points regarding:
 1. Parking areas
 2. Points of interest (Burying Point, Lighthouse, Beach areas, education and environmental stations and respite spots along the trail system)
- d) Design minimum 10 potential parking areas with functionality of use and flow to the site (both entering and exiting). Be sure to include a means of a bus to get around the site.
- e) Designate areas for signage (i.e. parking/trails/entrance/points of interest)
- f) Design the bicycle parking area designed for 15-20 biking visitors at any one point in time (consider room to expand the bicycle count to 40 in the future).
- g) Design a stairway solution that connect the Keeper's Inn to the Fuel House
- h) Improve drainage situation around the base of the Keeper's Inn
- i) Identify a permanent location for the Flagpole so it remains near the Keeper's Inn and in sight from a boater's view, yet does not interrupt the vista when looking out from land toward the ocean.
- j) Locate and design areas for good viewing around the grounds, both on the trails and any pull off points in general. Location points designed to best suite educational or environmental uses.



There were twelve plan drawings in total created for the Lighthouse Committee. Two base maps, a site analysis, two preliminary plans, five grading options, and two final plans. Each drawing addresses a different topic and vantage point for the Lighthouse Property, and they are as follows:

- 1) **LP-Base-1** 50 scale Base Map drawing of the entire 20 acre property,
- 2) **LP-Base-2** 10 scale Base Map drawing near the lighthouse,
- 3) **LP-Anay-1** 50 scale Analysis drawing of the entire 20 acre property,
- 4) **LP-Prelim-1** 50 scale Preliminary drawing of the entire 20 acre property,
- 5) **LP-Prelim-2** 10 scale Preliminary drawing near the lighthouse,
- 6) **G-1** 10 scale Grading Plan 1st option for the entrance ramp
- 7) **G-2** 10 scale Grading Plan 2nd option for the entrance ramp
- 8) **G-3** 10 scale Grading Plan 3rd option for the entrance ramp
- 9) **G-4** 10 scale Grading Plan 4th option for the entrance ramp
- 10) **LP-Final-1** 50 scale Final Master Plan drawing of the entire 20 acre property,
- 11) **LP-Final-2** 10 scale Final Master Plan drawing near the Lighthouse, and
- 12) **G-1B** 10 scale Final Grading Plan 5th and final option at of the entrance ramp

*It is important to note that all elevations and points identified in the maps are not a certainty. A survey was not conducted and designs were based on small collection of elevation points shot on site and raw elevations provided by **USGS maps**.*



Narrative for the Lighthouse Improvement Plan:

The narrative for this project will focus in on the three final drawings submitted to the Lighthouse Committee on August 25th, 2009.

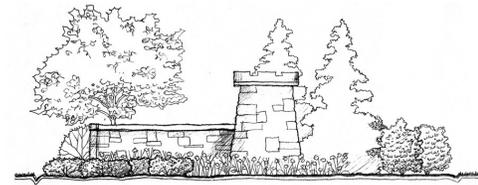
- LP-Final-1** 50 scale Final Plan drawing of the entire 20 acre property,
- LP-Final-2** 10 scale Final Plan drawing near the Lighthouse, and
- G-1B** 10 scale Final Grading Plan at of the entrance ramp leading to the Keeper's House.

Drawing LP-Final-1: This 50 scale plan incorporates many important site features such as the property line extents, the water's edge, grade elevations, vehicular access, building structures, parking options, hiking trails that connect visitors from points of parking to key destinations for study or viewing purposes, utility/electrical lines, naturally cleared areas, beaches, and the Island's lobster pound. A number of these elements will be highlighted to better convey how the site will be utilized.

- Vehicular Circulation & Parking: The historical preservation of the lighthouse and its surroundings coupled with the future increase in program use necessitates the need for a new comprehensive circulation plan. Currently the approach road leading to the lighthouse has a signature entrance sign posted alongside it prior to its plunging deep into the property's wooded canopy. The road is narrow and winding as it climbs through the hillside forest to an upper ridge before settling back down again to the clearing where the lighthouse resides. The road does not easily accommodate two-way traffic, and the parking situation is essentially nondescript.

The plan follows the guidelines laid out by the committee to increase parking with a minimum of 10 spaces along the approach road and up near the lighthouse. ADA standards require that at least one space be allotted for handicap parking by the lighthouse itself. Due to the nature of Swans Island's granite bedrock being so near the surface of the ground, it was imperative to locate flat areas along the approach road for parking. The plan also allots for more parking space in the future with the creation of an additional road that connects back to the approach road; generating a complete 360 degree loop. The new portion of the "loop" road will use of the property's cleared electrical utility easement, and in-turn provide better accommodation for large oversized vehicles needing to access the site from time to time.

This new loop will accommodate ALL incoming and exiting traffic by creating a one-way traffic circle. Only when one advances further into the site passed the loop will one-way traffic cease. The new portion of road for this loop requires incoming traffic to keep to the right and climb up the slope to the open utility corridor, currently providing space for the lighthouse's overhead electric line (Photo 1), and would rejoin back to the original road with enough turning radius for large vehicles such as busses and trucks to enter back on to the old traffic road and exit the site. This utility corridor has already been cleared of trees and brush and would allow excellent space to house 14 or more parking spaces, with a connection point for the walking trails. Parking in this portion of the site could also accommodate 3 additional bus/truck parking spaces if needed.



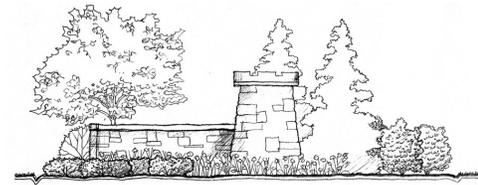
The addition of the loop will alleviate the burden of expanding real estate down by the lighthouse for larger vehicular needs, and with the increased automobile traffic, there will not be adequate room to accommodate large vehicular traffic such as a bus down by the keeper's house on a regular basis, unless blocked off for specific events. Once the loop has been constructed, a sign will be posted stating that no vehicles over 18' in length are allowed beyond the loop, with the exception of emergency vehicles.

Continuing down to the lighthouse, a designed pull-off area for cars and/or emergency vehicles has been included to allow two-way traffic to pass. Further along, an additional 8 parking spaces have been designed where a gravel pull off spot currently resides. (Photo 2) The parking areas provide access to the site's trail system, encouraging an exploration of the site on foot. The remainder of the approach road from this point will be covered in the Drawing LP-Final-2.

- **Trail System:** The majority of the site is covered by natural woodlands (Photo 3), and the lay of the land features a linear ridge running through its center roughly parallel to its northern and southern coast lines; virtually creating two sides to the peninsula. Due to the topographical configuration in accordance to the natural weather, climate patterns and the path of the sun, there have been two very different environments birthed beneath this forest canopy. To the north of the ridge line, the wooded understory has a very inward Jurassic feel with its stony, mossy, and shaded setting. To the south the woods have a very open, warm Smoky Mountain experience with its expansive views, albeit in this case out to the ocean. A natural trail system exists along the outer perimeter near the water's edge, possibly created by deer (Photo 4), and circulates around from the keeper's house down to the southern stony beach and then proceeds along the lower terrain beyond the property line, and over to a vacant plot of land near the site's main entrance sign. The trail picks back up across the street behind an existing shed to the north along a treacherous steep pathway lined with rope near to the lobster pound, down to another beach front and then back up along the water's edge to the keeper's house; thus completing one entire trail.

The Lighthouse Committee has requested a trail system that plots around Hockamock Head peninsula with connections to parking and points of interest that meet certain criteria. First the trails serve the purpose of getting people away from the man-made built environment to experience the natural landscape. This causes them to slow down and engages their senses such as sight and smell. Secondly they serve a function of circulating people around the site to visit various places, to access the lighthouse, the parking spaces, the beaches, and more importantly the incredible views and vistas that exist. Lastly they serve as access routes to outdoor classrooms and gathering points designed to feature particular environmental, historical, biological, horticultural elements, etc.

This new comprehensive trail system will cover both the southern and northern passes on the property by essentially creating two mirrored looping trails. Each follow their original deer paths before cutting up the hillside terrains towards the upper ridge, thus avoiding treacherous areas, while staying within the property limits, then back down again to rendezvous back to their trail-heads. At certain connection points along the upper ridge, trails from each side meet up to near the main approach road at the parking nodes, creating opportunities for the visitor to leave their drive behind to enjoy the landscape on their way to the Light Station.



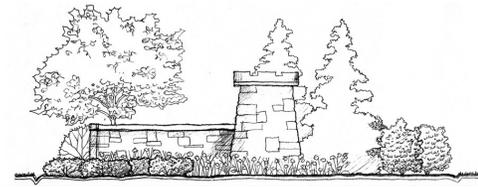
In their entirety, the trails provide a gracious workout covering over 4,000 linear feet. An entire mile of walking space may be accommodated by adding the distance of the main entrance road to the trail experience. Each loop provides access the water front via the beaches, while only the southern loop lends itself to the most incredible views that stretch well beyond the shoreline when a hiker breaks through the wooded pass to a clearing at the top summit point.

- **Gathering Points:** There are many unique assets associated to Hockamock peninsula. Guest can explore a variety of things such as the amazing views along the southern trail (Photo 5), first-hand experience with the geology and marine life of the southern shore (Photo 6), the powerful wind that has blow down trees above the southern beachfront (Photo 7), the historic Indian burying site along the northern beach front (Photo 8), the Jurassic moss and rock ledges along the northern trail (Photo 9), and the internal wooded forest that removes the guest from the Island/water experience and transports them into what appears to be similar to the Smoky Mountains of Virginia (Photo 10).

Ten locations have been allocated for Gathering Points along the trail system throughout the site. Several have been chosen for their views out to sea while others have been suggested for outdoor classroom use. These rooms are meant for learning and discovery of natural phenomena and lessons that occur in the world spanning the many subject spectrums of science, mathematics, and history. From a graduate student's cartography thesis to a grade school student's bug collection, this site can be a playground for learning.

Drawing LP-Final-2: This 10 scale plan zooms directly over the tip of Hockamock Head, showing the site's structural constitution with the lighthouse, the approach road, parking, topography and shoreline, the dichotomy between the underbrush/grass areas and tree canopy, trail-head entrances, locations to the bike rack and portable toilet, and the pedestrian circulation routes. The detail shown on this plan emphasizes the relationship between building structures and their use, and how the visitor can best utilize the site. The Lighthouse Committee requested for a design that includes solutions for a walk system to march around the Keeper's House similar to that shown from the 1930's, some parking near the Keeper's House, a bicycle rack area for up to 15-20 bikes, a means for an emergency vehicles to navigate up near the Lighthouse and Keeper's House, design a stairway solution to connect the Fuel House to the Keeper's House, improve drainage around the Keeper's House, provide good location for the flagpole, and most of all to design an earthen ADA compliant ramp to the front entrance of the Keeper's House (the math for this is covered in drawing G-1B).

- **Approach Road & Parking:** The approach road continuing to the lighthouse has a proposed change for the sharp turn before leading down to the lighthouse. (Photo 11) Emergency vehicles will find it easier to navigate this corner by enlarging the turning radius. Down by the keeper's house, 7 parking spaces have been designed, 2 of them for handicap guests with multiple uses in mind. These two spaces will double as turn-around space for safety vehicles in the event of an emergency. This concept will need to pass the Building/Fire Inspector's approval (if it will not pass, one handicap space will move over to the first of the other 5 proposed parking spaces to keep with ADA compliancy, reducing the total spaces to 5 and the number of handicap spaces to one. This would leave the turn-around area unencumbered).



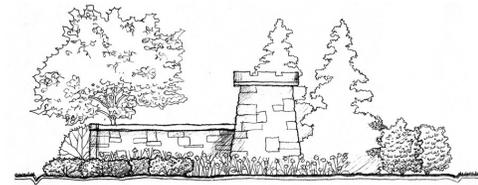
The end of the road will be shortened 5 feet, providing relief from the building, allowing the new slope to meet with a natural elevation height similar to that found in a 1930's photos. (Photo 12)

- Walk System & Circulation: The walks around the lighthouse in the 1930's were wood planking suspended above the ground to help maintain a clear and steady path in an environment where rocky terrain and constant wet conditions made traversing the site difficult. The system of walks wrapped around the Keeper's House in a similar rectangular manner as shown in the new design. The call for a permanent pathway is rooted in the need for visitors to follow a predetermined route of circulation giving them sure footing as they travel around the Keeper's House, and keeping with the path system known to the site nearly 80 years ago. This will be one of the highest trafficked areas on foot and should require a suggested route lest guests begin to generate their own pathways in the lawn creating muddy trail systems which could cause further erosion and safety issues. The walkway will be 3 foot wide with a hard and consistent surface material for ADA accessibility standards, especially when it comes to a visitor using the aid of a walking device such as a cane. This walk requires steps placed strategically to blend with the existing terrain to minimize interruptions to the landscape. The steps are suggested to be made of granite with exposed 14 inch treads and 6 inch risers (similar to that seen in Photo 13).

Only the walkway to the southwest side of the Keeper's House will have substantial ground construction to support the walk system, improve drainage, and add to the aesthetic value of the premise. The corner will gain better use and flow for all users and provide a less complicated corner for viewing and access. Very large boulder work will be installed to simulate natural rock outcroppings, holding fast the new hillside and crafting a tiered system of retention, making the entire walkway possible.

There are three wooden structures identified on the plan and associated with this walk system around the Keeper's House, Lighthouse, and Fuel House: an 8 foot wide solid wooden staircase with 14 inch treads and 6 inch risers leading from the back porch of the Keeper's House to the ground level, a 3 foot wide solid catwalk-like staircase with 14 inch treads and 6 inch risers leading from the walk up to the lighthouse door, and a 3.5 foot by 4 foot wooden platform porch with railings for the Fuel House entrance. All wooden staircase structures should have a solid enclosed look to them so guests do not see the ground peering back to them from between each tread. All rail systems associated with these built structures should be consistent with those found on the wooden catwalk leading to the Bell Tower.

The existing path to the Fuel House is difficult to traverse and has a very inconsistent slope. The design calls for a new 3 foot wide stair-pathway to be built using 14 inch by 10 inch granite curbs stones backfilled with of crushed aggregate to construct an ascending step (tread and riser) system. The tread portion of the granite should be the full 14 inch side while the 10 inch side gets buried partway, exposing only 6 inches of its riser. Modifications of materials for this step system can be applied, but it is important that each stone should be anchored into place, laid upon a solid base to prevent erosion and movement when used over time by countless number of guests. It must maintain the specified 6 inch riser with a minimum 12 inch tread.



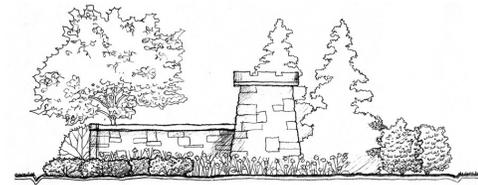
The earthen ramp entrance to the Keeper's House will be discussed in greater detail under the Drawing G-1B. It has been designed with very large boulders strategically stacked and anchored around its perimeter to create the best illusion possible that they were natural rock outcroppings, and placed in such a tight solid manner that they can enclose the aggregate base that will be pressed down within. The new topography associated with this grade change will cause water to still flow around the base of the building rather than to flow directly to it, and will create a swale that is continued with the grade reestablished along the western side of the Keeper's House (as indicated 3 paragraphs above). The remainder of this ramp is discussed in the Drawing G-1B below.

- **Bicycle Parking & Portable Bathroom:** Lastly the need for a bicycle parking area, a place for trash bins, and a location for a port-a-john has been requested by the committee. A level platform has been designed to house parked bicycles along the main approach road. This wooden structure will be 20 feet by 7.5 feet with an attached 3.5 foot by 7.5 foot section for two built-in trash receptacles at its western end. A metal rack stand (Photo 14) capable of retaining 20 bikes will be bolted down and, if necessary, a railing can be constructed along the edge of the raised platform. It should be noted that to keep it flat, the platform nearest the approach road will appear low to the ground while the remainder of it will suspend naturally above the waterway as the topography of the site falls away from the road. Culvert piping should be buried in the waterway below so that the underside of the structure does little to invite a wildlife refuge. The culvert will attach to the drain system that exists in the center of the parking/approach road design, and will run the length underground before opening up just beyond the trail system entering onto the Southern loop trail.

Built into the west end of the bicycle platform are the two trash receptors. They are designed to hide away trash bins inside which may be accessed by unlocking/opening their front wooden doorways to empty them out. There are two large openings at the top of the receptors built from recycled plastic that can withstand messy situations and be easily cleaned when trash is improperly disposed.

The port-a-john is an essential element to have on site in the event that the Keeper's House is locked up and guests need a restroom. An 8 foot by 6 foot wooden platform with vertical walls constructed to screen the bright colors of the port-a-johns has been designed to house one or possibly two portable toilets for outdoor use. The size of the platform is calculated to comfortably fit the toilets as well as provide some form of privacy from those using the site. Screening the colors of the toilets will help maintain a litter-free, natural view of the site.

- **Flag Pole Placement:** The flagpole dates back to the 1930's when it stood near the Keeper's House in plain view of all sea vessels navigating below. It is important to maintaining its existence in accordance with historic ownership and operation of the site by the United States military and government. The current flagpole is anchored down with a large concrete base necessary to support the pole in the lawn just outside the Keeper's House's steps. This is an acceptable site, although it does extract from the entire lawn terrace for programming use (such as wedding, parties and the like), and it breaks up the panoramic view for all those who might want to gaze out from the porch to the ocean beyond (Photo 15).

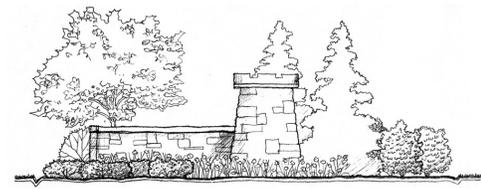


A more appealing site would be to move it several feet down the hillside and 20 feet closer to the Lighthouse as shown in the plan; placed where it won't lessen its view or impact to sea goers and the like, nor complicate access for one to raise or lower of the flag. Its concrete base will not be visible to visitors of the site, and it will appear meant to fit with the construction of the buildings, paths, and open spaces. Its alignment will be with the eastern walk between the Lighthouse and Keeper's House as guests approach the southern terrace.

Drawing G-1B: This 10 scale drawing depicts the final agreement by the Lighthouse Committee to provide access from the parking area to and around the Keeper's house with an earthen ramp and walk system. There are 4 important points to consider before analyzing G-1B:

- 1) The walk with steps shown along the Western length of the Keeper's House is built into a hillside that has been raised with tamped fill soil/stone aggregate. The walk itself should have an aggregate stone base that meets the building codes on the Island. All remaining pathways that circulate around the building have slope ranges of 0-4%. In most cases slopes less than 5% do not require a hand rail system, and would need to have the approval of local building authority (designs will need to pass ADA approval).
- 2) All earthen ramps utilize large boulder work to retain their construction and to hold them in place.
- 3) 3 foot wide paths are suggested to be constructed with hard stone-like material (i.e. sandstone) around the entire building, which would be in keeping with the 0.8 friction coefficient for ADA requirements in the case of handicap user (such as a walker with a cane) accessing them. This also identifies the area of pedestrian traffic flow so users know where the main suggestive routes are for them to explore. (See internet sites on page 14 for additional information on friction coefficients).
- 4) It is important to note that this example is an attempt to pass ADA's code compliancy while trying to minimize the use/need for railings. Railings and fences detract from the historic use of the site and the natural beauty of views to be found on these grounds. They would also restrict the users from directly interacting with the site as it was found in its original form.

G-1B Analysis: This earthen ramp style allows ADA compliant wheelchair access to the Keeper's house but not to the remaining portions of the site. Those guests can be taken through the Keeper's House to the south porch for viewing the ocean and grounds. This plan requires excavation of the last 30 feet of the driveway nearest the Keeper's house. The driveway will slope downward to best meet the new elevation outside the house. The last 5 feet of driveway surface will be eliminated to lessen the effect of the drive impeding upon the house, which currently creates a pinch point and would not allow for usability of this selected ramp. The existing retaining wall will be removed with additional fill soil added along the buildings foundation to make a sloped walkway (3' wide) leading up to the earthen ramp to the Keeper's House entrance (The soil put along the foundation is to slope at a minimum of 2% to get the water to exit and flow from the building's entrance to the Southwest hillside). The minimum 5x5 foot landing is at the bottom of a 5% sloped earthen ramp. The ramp is 6 foot wide with plenty of room to allow two wheelchairs to pass one another and should not require a railing system since it is less than a 5% slope. A level landing greater than the 5x5 foot requirement allows the user to enter the house and negotiate through the front door.



Photograph Examples:



Photo 1: The electric utility easement corridor



Photo 2: The gravel pull-off for future parking

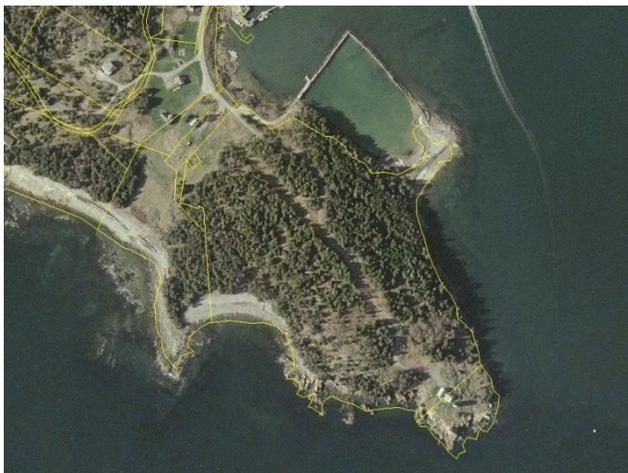


Photo 3: A satellite image displaying the amount of woodland canopy covering the site



Photo 4: The natural path system existing on the site that was perhaps an original deer path

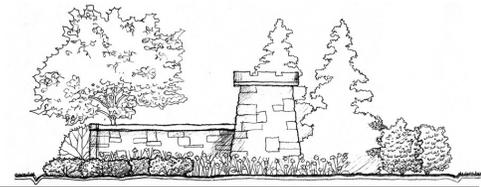


Photo 5: View out to the ocean from the southern trail leading to the stony beach



Photo 6: The geological rock outcroppings near the stony beach bringing access to the marine life to the site



Photo 7: A view of the trees blow down above the stony beach from the natural occurring winds



Photo 8: The Indian burial beachfront near the lobster pound

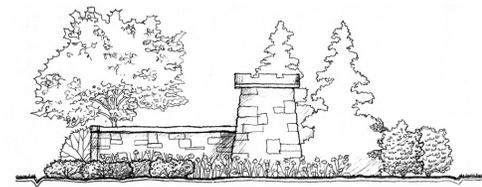


Photo 9: Typical rock ledges found along the northern trail



Photo 10: A view near the summit of the southern trail that appears similar to what would be seen hiking in the Smokey Mountains



Photo 11: A view of the Keepers House and the Approach road below the last/sharp turn in the road that large vehicles have difficulty navigating



Photo 12: An original photo of Roland sitting on the existing boulder near the entrance to the Keeper's House, showing the original landscape paths and the lack of the high terrain near the corner of the Keeper's House

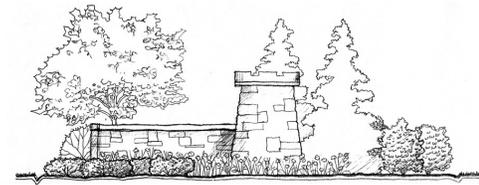


Photo 13: An example of the granite steps incorporated in the walk system around the Keeper's House and the steps leading down to the Fuel House



Photo 14: An example of the metal rack bolted down to the wooden bicycle parking platform



Photo 15: This photo displays the current flagpole location breaking up the view to the ocean as seen from the Keeper's House porch

List of ADA Friction Coefficient Articles for the Ramp & Walk System

- <http://www.safety-engineer.com/adasurfaces.htm>
- http://www.adata.org/adaportal/Facility_Access/ADAAG/Appendix/ADAAG_Appendix_4-5.html
- <http://www.safeguard-technology.com/resource-center/test-results/coefficient-friction.htm>
- <http://julianne8617458.myceo.me/2009/09/25/wheelchair-ramps-how-to-construct-them-within-the-ada-specifications/>