

# STATE OF RHODE ISLAND

## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

### PARKS AND RECREATION GUIDANCE DOCUMENT FOR THE DEVELOPMENT AND OPERATION OF BEAVERTAIL STATE PARK, JAMESTOWN, RHODE ISLAND

#### 1 Purpose

- A. It is the intention of the Rhode Island Department of Environmental Management ("DEM") to obtain 170 acres of federal surplus land on the Beavertail area of Jamestown, Rhode Island. The Department has worked with the Town of Jamestown ("Town") toward creation of a Beavertail State Park which would be made up of the surplus land and 26 additional acres now owned or controlled by the Town. In moving toward creation of the park the Department and the Town have analyzed the characteristics of the land in question and have drawn plans for a park which will meet the needs of users while preserving the fragile ecological, scenic and historical characteristics of Beavertail. This plan is explained and described in the attached documents, known as the Beavertail Descriptive Plan, which is attached hereto. The Beavertail Descriptive Plan portrays the size of the Park, and describes the manner in which it is to be developed. The Beavertail Descriptive Plan includes the following:
1. Maps (1 - 11) and narrative statements which describe the physical characteristics of the site including topography, slopes, soils, vegetation, hydrology, geology, existing roads and existing buildings.
  2. A proposed development plan (Map 12) which is drawn from and supported by the findings.

#### 2 Findings

- A. Analysis of the physical and biological characteristics of the Beavertail Peninsula, as described and portrayed below, compels the following findings and conclusions relative to the peninsula and its development as a park:
1. Topography: The topography of Beavertail creates quite a subtle landform except for certain places along the shoreline where the land drops dramatically 20 to 30 feet to the ocean. The rest of the land gently rolls up to a slight crown 72 feet above sea level. This crown unfortunately peaks just to the west of the main road so any view of the ocean from the main road is completely cut off. Any conception of being on a peninsula with ocean on three sides is totally diminished until you reach the very tip where the topography and vegetation finally open up to the ocean.

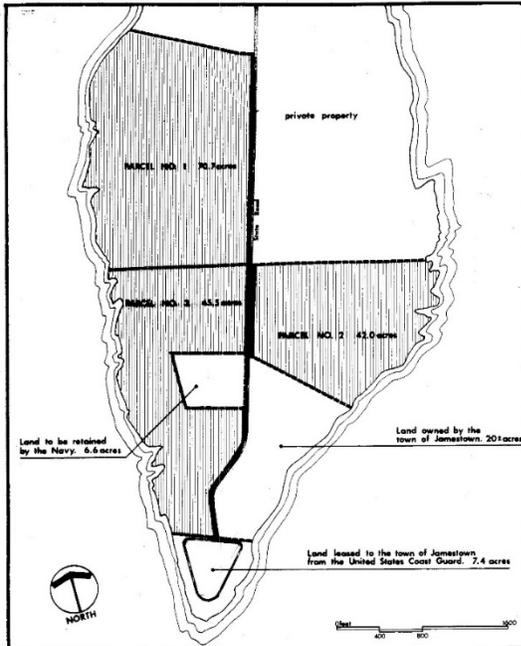
One solution that would allow a park visitor to know what type of landform he was approaching would be to pull the main road up and over the crown. This would enable a commanding view of the ocean as well as experiencing the landscape as it rolled down to the rocky shoreline, yet would have an acceptably small impact on existing soils and vegetation.

2. Slope: The slope is not a major development factor of Beavertail except for along the shoreline. For most of the land this slope ranges from 0 - 8 percent but as it was pointed out in topography, the drop to the ocean along the shoreline can range from 15 percent to well over 60 percent. The western shoreline is the one that presents the most problems. The nature of the geology (see Map 6) plus the constant battering from the wind and sea has caused this abrupt change from a gently rolling landscape to the rocky shoreline cliffs.
  - a. As spectacular as these cliffs may be, they also present some dangers to people who happen to step carelessly. To combat this, the actual shore trail must be rebuilt on only stable areas where soil and rock erosion is minimal. The trail also must be incorporated into the slope in certain places to act as retaining walls and thus reduce soil erosion.
  - b. Another precautionary measure which must be taken is to locate any activities, such as picnicking where small children may wander about, in other areas that present no hazards.
3. Soils: Within the soils found at Beavertail some have very slow permeability in the substratum. (See Mapping Units 29A, 29B, and 48). This will create problems locating septic tank absorption fields. Location of any sanitary facility must be within the Newport series (See Mapping Units 10A, 10B, and 10C) and then only if the proper percolation tests show suitability.
  - a. Another factor to deal with when working with the soils is that Beavertail is covered with a very thin layer of top soil. This can be easily compacted if not properly managed. Any amount of severe compaction would result in loss of the plant material and eventually soil erosion. To eliminate any unnecessary soil compaction the existing roads must be utilized to the maximum extent possible when developing the new road system.
  - b. The overall soil configuration limits high intensity public use because of restrictions on disposal of wastes and because of potential impacts of over-use on vegetation.
4. Vegetation: The vegetation, as shown in Map 4 of this Part is broken into three distinct classes, high vegetation, low vegetation and field vegetation.

Field vegetation is currently the most predominant on the proposed park site but is now undergoing a field succession process that allows the growth of the lower plants (bay-berry, wild cherry and red cedar).

- a. Since field succession is a natural process, no major steps will be taken to prevent the land from reverting back to a denser vegetation. Some measures though will be initiated to assure optical views of the ocean and any growth of higher vegetation (8 ft. and above) would serve to frame these views.
  - b. Rare and endangered plant species are present on the site. Already there have been two site visits with specialists to determine the exact location of such plant material. Proposed roads and paths have been altered so as not to jeopardize their existence. All proposed improvements must be reviewed to insure that no rare plant species are adversely affected.
5. Hydrology: The hydrology of Beavertail which is illustrated in Map 5 is relatively simple. There are two small wetlands, one of which is drained by intermittent streams. The remainder of the site drainage is unorganized and flows directly into the Bay. The site lacks significant fresh water resources: thus development is limited by water supply. The high water table in and surrounding the wetlands excludes construction or major development of those areas. The road which travels across the intermittent streams follows the paths of existing roads so that the necessary culverts must just be retained; wetlands will not be filled. Picnic and parking areas in the plan are not to be located on wet soils. Much of the site can accept on-site sewage disposal; any future rest room facilities will be located on suitable soils.
6. Geology: The geology of the site as described in Map 6 consists of schistose conglomerate and sandstone bedrock which is overlain with 15 - 20 feet of glacial till which includes acres of gravel and sand. The exposed bedrock around the shoreline is steeply sloping along the west shore and slopes more gradually on the east shore. In each case the rock ledges which have been eroded by wave action present attractive scenic views.
7. Existing Roads: An important piece of the inventory stage was the mapping of existing roads (Map 7). This is because the park development must minimize any unnecessary removal of plant material and cause the least disturbance to the soils. The existing road beds which were mostly gravel and left behind by the Navy served to determine how a new park loop road could be incorporated to circulate people through different areas of the site. The field roads, most of them made by fishermen, have also been utilized to lay out a 2 mile bicycle route.

### 3 Maps



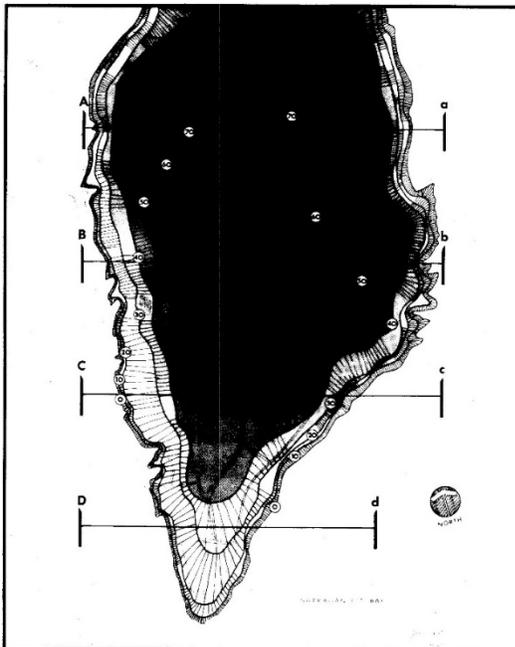
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**BEAVERTAIL**

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**TOPOGRAPHY**

**SECTIONS**

HORIZONTAL SCALE 1 inch = 400 feet  
VERTICAL SCALE 1 inch = 200 feet

A Abandoned Naval Buildings

B

C Naval Communication Center

D

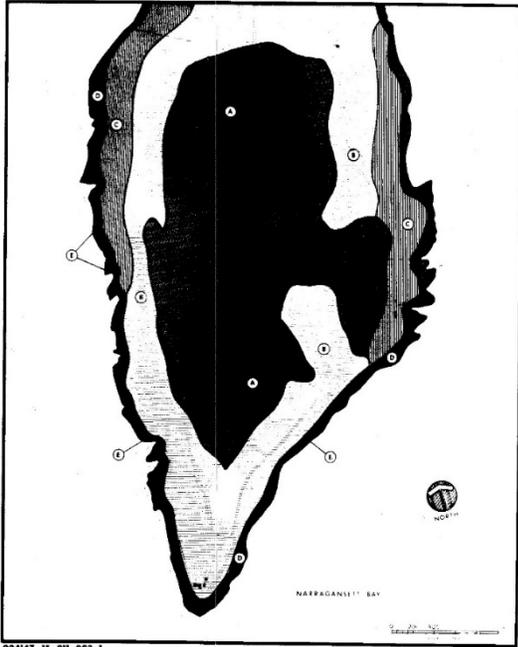
Beaver Tail Road

NORTH

**INVENTORY SHEET NO. 1**

**BEAVERTAIL**

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### SLOPE

#### KEY

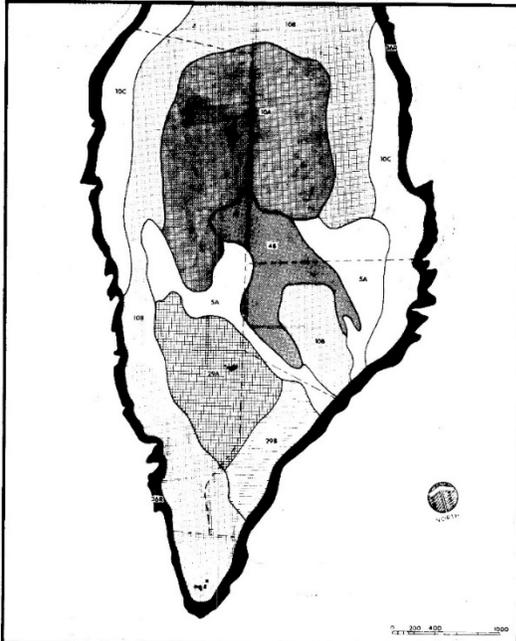
The slope of the land is expressed in terms of percent. For example, a slope of 3 percent means a difference in elevation of three feet for each 100 feet of horizontal distance. In the map symbol, slope class is indicated by a letter as follows:

- 0-2 percent slope
- 3-8 percent slope
- 8-15 percent slope
- 15-25 percent slope
- 25 and over percent slope

The photo below indicates how most of Beavertail's landscape gradually slopes from the main road towards the shore. View is from the west shore looking in a southeasterly direction.



INVENTORY SHEET NO. **2**  
**BEAVERTAIL**



### SOILS KEY

**10A** Neopark silt loam, 0 to 3 percent slopes  
**10B** Neopark silt loam, 3 to 8 percent slopes  
**10C** Neopark silt loam, 8 to 15 percent slopes

**99A** Neopark silt loam, 0 to 3 percent slopes  
**99B** Neopark silt loam, 3 to 8 percent slopes  
**99C** Neopark silt loam, 8 to 15 percent slopes

**99D** Neopark silt loam, 0 to 3 percent slopes  
**99E** Neopark silt loam, 3 to 8 percent slopes  
**99F** Neopark silt loam, 8 to 15 percent slopes

**99G** Neopark silt loam, 0 to 3 percent slopes  
**99H** Neopark silt loam, 3 to 8 percent slopes  
**99I** Neopark silt loam, 8 to 15 percent slopes

**99J** Neopark silt loam, 0 to 3 percent slopes  
**99K** Neopark silt loam, 3 to 8 percent slopes  
**99L** Neopark silt loam, 8 to 15 percent slopes

**99M** Neopark silt loam, 0 to 3 percent slopes  
**99N** Neopark silt loam, 3 to 8 percent slopes  
**99O** Neopark silt loam, 8 to 15 percent slopes

**99P** Neopark silt loam, 0 to 3 percent slopes  
**99Q** Neopark silt loam, 3 to 8 percent slopes  
**99R** Neopark silt loam, 8 to 15 percent slopes

**99S** Neopark silt loam, 0 to 3 percent slopes  
**99T** Neopark silt loam, 3 to 8 percent slopes  
**99U** Neopark silt loam, 8 to 15 percent slopes

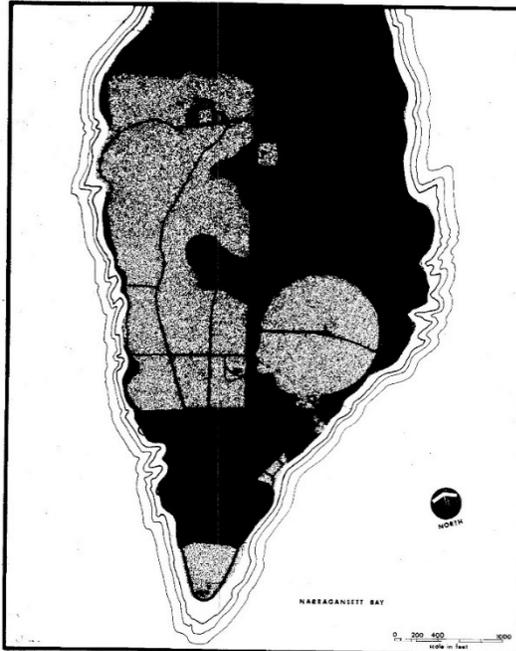
**99V** Neopark silt loam, 0 to 3 percent slopes  
**99W** Neopark silt loam, 3 to 8 percent slopes  
**99X** Neopark silt loam, 8 to 15 percent slopes

**99Y** Neopark silt loam, 0 to 3 percent slopes  
**99Z** Neopark silt loam, 3 to 8 percent slopes

INVENTORY SHEET NO. **3**

**BEAVERTAIL**

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### VEGETATION

**CLASS I**  
 High Vegetation 8 ft & above  
 mapping symbol: [stippled pattern]

**CLASS II**  
 Low Vegetation 2 ft to 8 ft  
 mapping symbol: [dotted pattern]

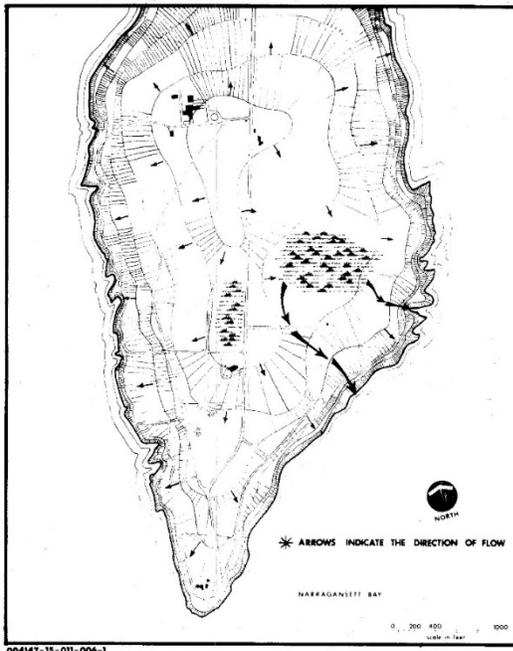
**CLASS III**  
 Field Vegetation  
 mapping symbol: [cross-hatched pattern]

INVENTORY SHEET NO. **4**

**BEAVERTAIL**

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## HYDROLOGY

Except for two small wetlands, the entire Beavertail peninsula drains directly into the ocean. (See adjacent map.)

The larger of the two, located at the southeast corner of the site, eventually does drain to the ocean by two underground streams. These streams are evident by the reed grasses growing along the water-logged soil.\*

The smaller wetland is situated just west of Beavertail Road. It is fairly insignificant except during spring when the ground water table is at its highest level.



Reed grass is a good indication of fairly wet areas.



The culvert above allows for drainage of the east side swamp.

\* The soil, at a general deposit, is designated as U111. It consists of boulders, gravel, sand, silt and clay; unconsolidated, poorly sorted and unstratified. It has an average thickness of 75 feet and forms a thin, discontinuous matrix over the bedrock. Generally this soil is a poor waterbearing material, yielding out more than 2 to 3 gal to a large diameter dug well.

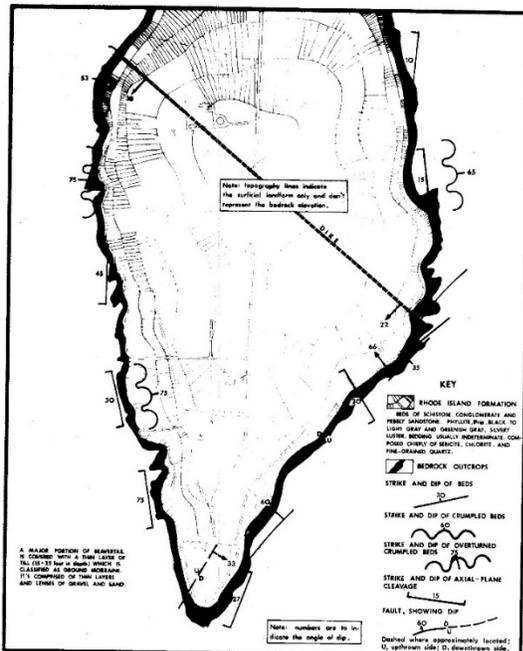
INVENTORY

SHEET NO.

**BEAVERTAIL**

**5**

BT 4147 DR 33 SEC 2



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## GEOLOGY



Looking south along the east shoreline



Looking north along the west shoreline

Bedrock formations in the Beavertail area consist of Silurian conglomerate and poorly crystalline. The age of these rocks are determined to be in the early Pennsylvanian age and are classified as the Rhode Island Formation.

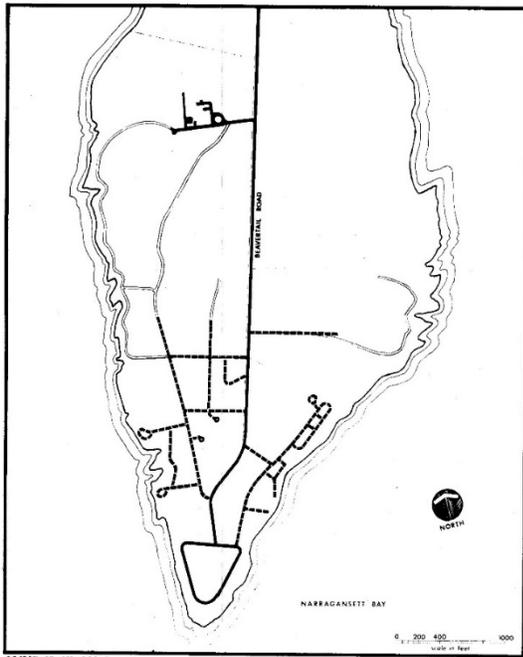
The most unique feature of the bedrock along Beavertail's shoreline is the remarkable difference between horizontal bedding of the west shore and the very steep side of the bedrock on the east shore. Notice erosion has caused the bedrock along the west shore to be tilted into the east where both rocky and sandy beaches can be found.

INVENTORY

SHEET NO.

**BEAVERTAIL**

**6**



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### EXISTING ROADS



CLASS I  
Paved Roadbed  
mapping symbol



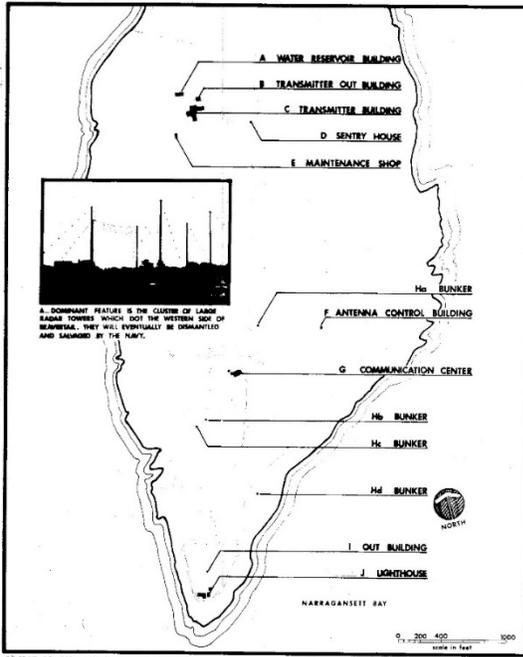
CLASS II  
Dirt or Gravel Roadway  
mapping symbol



CLASS III  
Field Access Lane  
mapping symbol

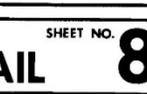


INVENTORY SHEET NO. **7**  
**BEAVERTAIL**



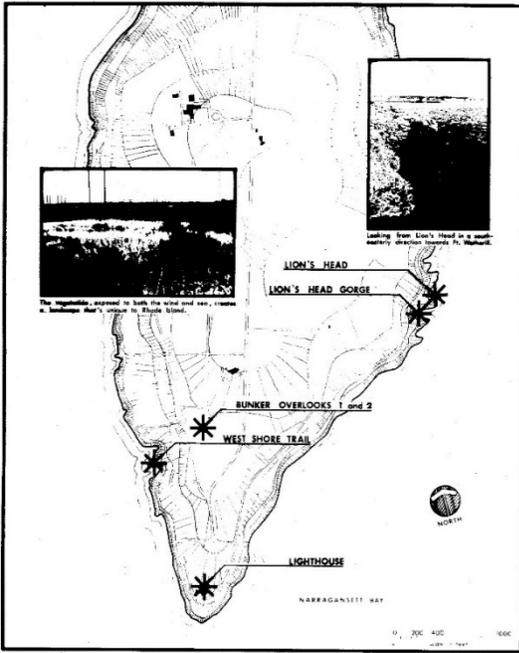
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### EXISTING BUILDINGS



INVENTORY SHEET NO. **8**  
**BEAVERTAIL**

BY ALAY FOR US CAP 4



### SPECIAL FEATURES

**LION'S HEAD** The name was given the rock formation because the head of the water surging into the straits resembles that of a lion's nose.

**LION'S HEAD GORGE** The 40 foot wide gap offers a spectacular view of the west shore.

**THE WEST SHORE TRAIL** offers a different experience of rocks and water.

**THE BUNKER OVERLOOK** provides one of the best panoramic views.

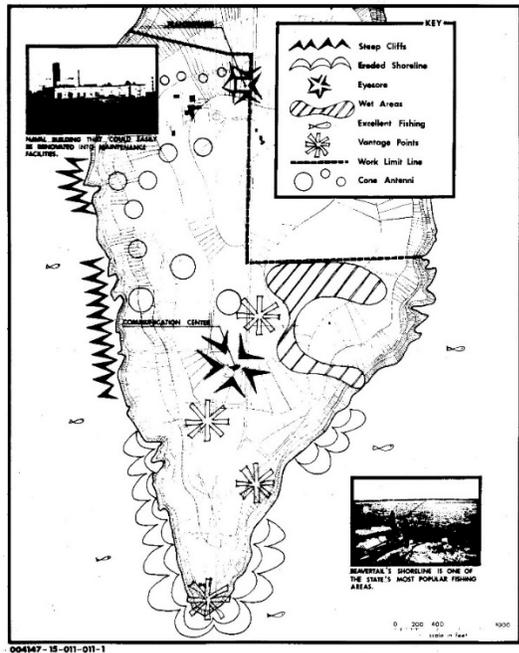
**THE BEAVERTAIL LIGHTHOUSE** has always been a popular attraction.

One of the four bunkers that can be found at Beavertail.

INVENTORY SHEET NO. **9**

## BEAVERTAIL

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### SITE ANALYSIS

Erosion along the shoreline that was caused by heavy foot traffic.

Transformer at the northern end of the site which should be screened with plant material.

Dissipated fence along the main road that should be removed.

SHEET NO. **10**

## BEAVERTAIL

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