



*Photo by Doug Wilcox*

## Braddock Bay Restoration Public Meeting

The U.S. Army Corps of Engineers, in cooperation with the U.S. Environmental Protection Agency, New York State Department of Environmental Conservation and Town of Greece, have completed the design for ecosystem restoration at Braddock Bay, Monroe County, NY, and will present the final plans for implementation.

Website: <http://www.bit.ly/BraddockBay>

**Thursday, May 7, 2015**

6:30 p.m. - 8:30 p.m.

Eastman Room

Town of Greece Town Hall

1 Vince Tofany Blvd • Greece, New York



**US Army Corps  
of Engineers.**

Buffalo District

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Great Lakes  
RESTORATION



# Braddock Bay Final Design

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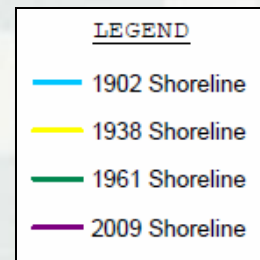
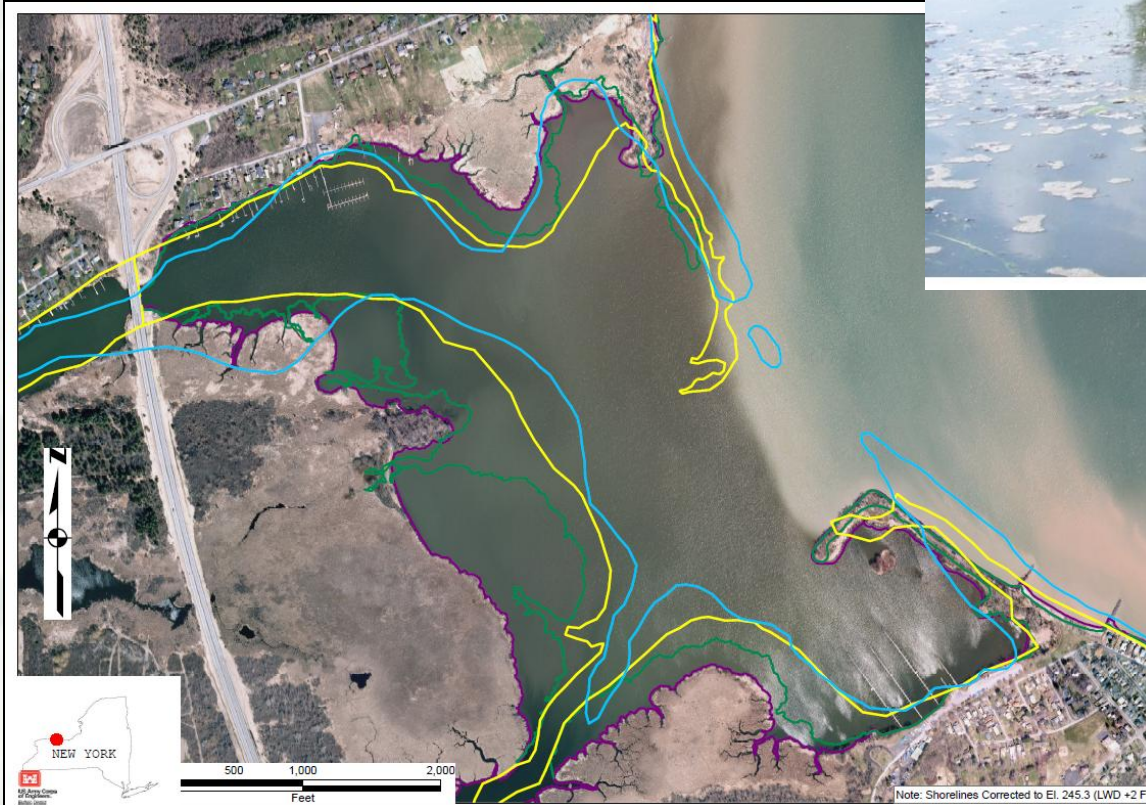
# Agenda

1. Project Presentation
2. Town of Greece Perspective
3. Poster Session – Q&A

**Note:** Comments received tonight will be submitted to the USACE Regulatory office in regards to the current permit application for Braddock Bay Ecosystem Restoration



# Shoreline 1902-2009



# Problems

- Erosion/Wetland Loss
- Degraded Wetland Quality

# Objectives

1. Restore wetland and habitat diversity in Braddock Bay to improve its suitability for fish and wildlife including northern pike, American mink, and the state listed black tern during the planning period of 2015-2065
2. Protect Braddock Bay wetlands from erosion during planning period of 2015-2065

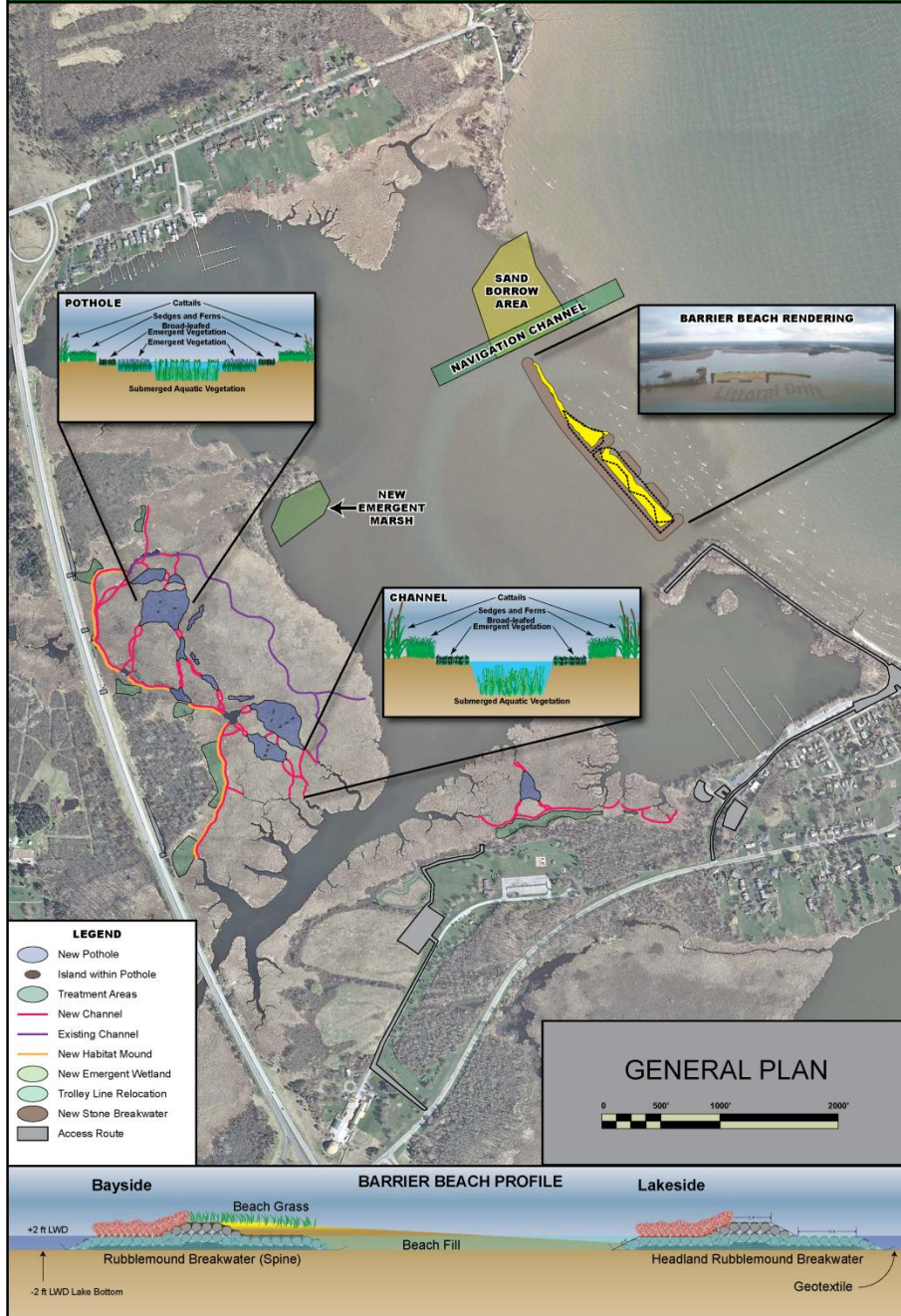


# Project Constraints

- **Avoid impacts to nutrient dynamics** of Braddock Bay that will worsen eutrophication
- **Avoid negatively impacting navigability** and operation of marinas
- **Avoid** negative impacts to Lake Ontario **littoral drift system**
- **Avoid inducing sedimentation** in Braddock Bay that will negatively impact ecosystem process, navigation, or compromise existing infrastructure
- Avoid excessive disturbances to intact coastal habitat at Braddock Bay
- Avoid impacts to intact wetland habitat already existing in Braddock Bay
- Avoid project activities that will increase extent of invasive species
- Limited or no construction methods may be allowed during fish spawning and avian breeding time periods



# Braddock Bay Ecosystem Restoration Final Design



# Adaptive Management

## How will we know if its working?

### **Objectives**

1. Restore wetland habitat diversity and suitability for wildlife
  - ▶ Emergent and submerged vegetation monitoring, fish, bird, and amphibian surveys
2. Protect Braddock Bay wetlands from erosion
  - ▶ Analysis of aerial imagery

### **Constraints**

1. Avoid negative impacts to navigation
  - ▶ Bathymetric surveys
2. Avoid negative impacts to littoral drift
  - ▶ Analysis of aerial imagery
3. Avoid negative impacts to trophic state
  - ▶ Water quality monitoring and submerged aquatic vegetation surveys





# Adaptive Management

## What do we do if it is not working?

1. Additional habitat enhancements
2. Structural modifications
3. Excavate “relief valve”



# Next Steps

- May 7- Public Meeting for Final Design
- May 2015 - Sign Interagency Agreement for Construction
- August 2015 – Begin Construction
- September 2016 – Substantially Complete Construction
- Spring 2017 – Final Landscaping and Planting
- Summer 2017 – Monitoring and Adaptive Management

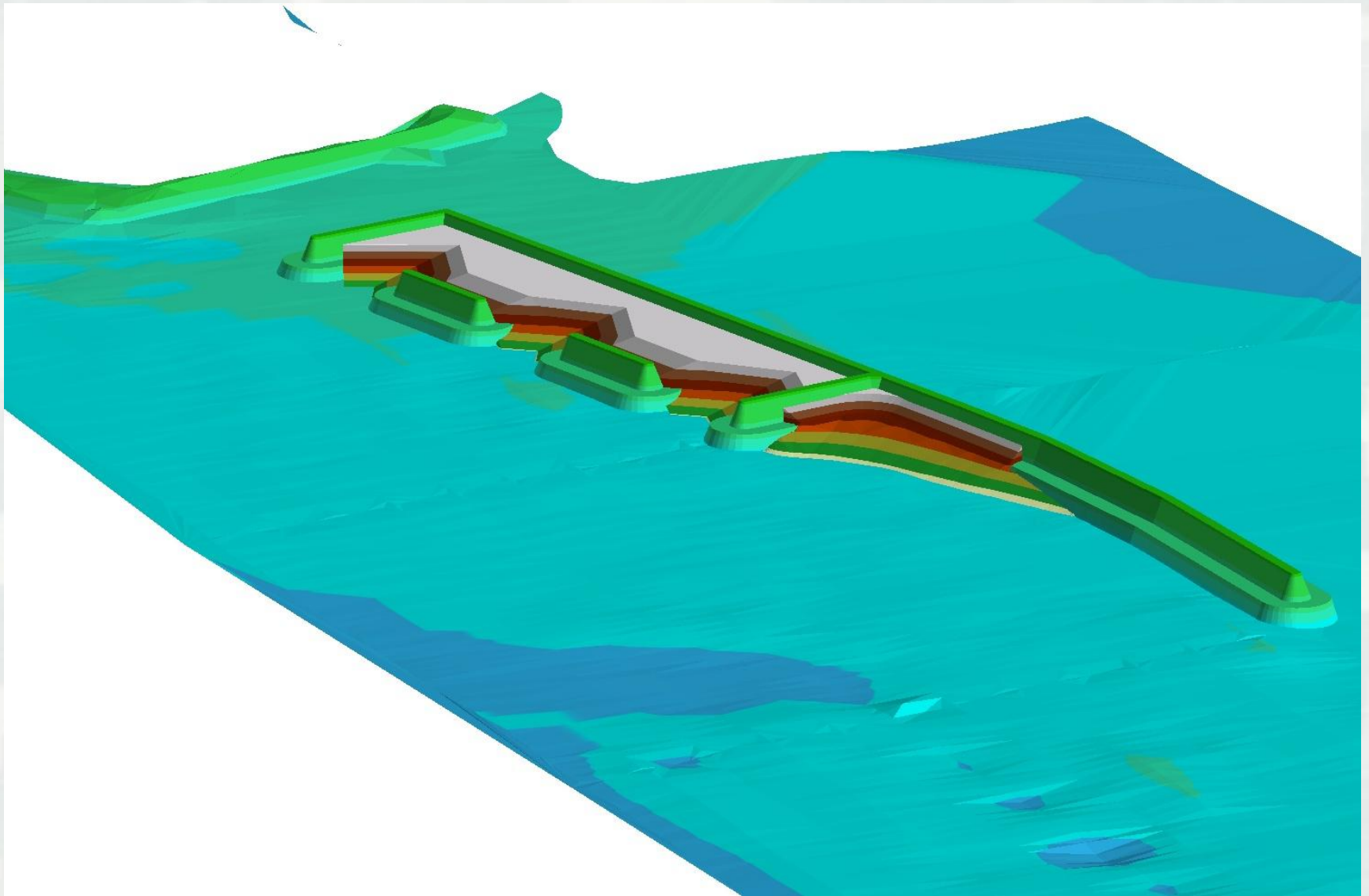




# Navigation Channel

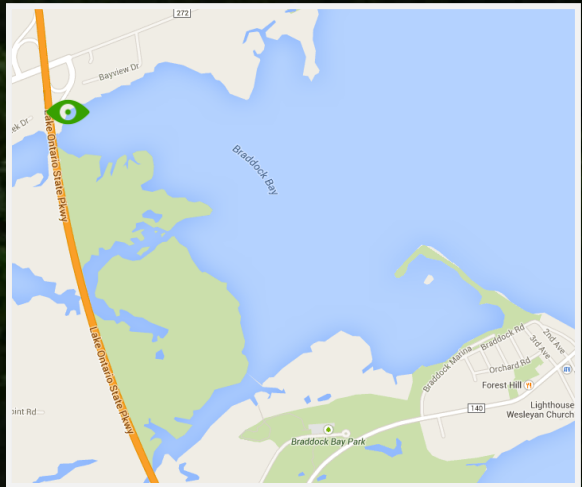


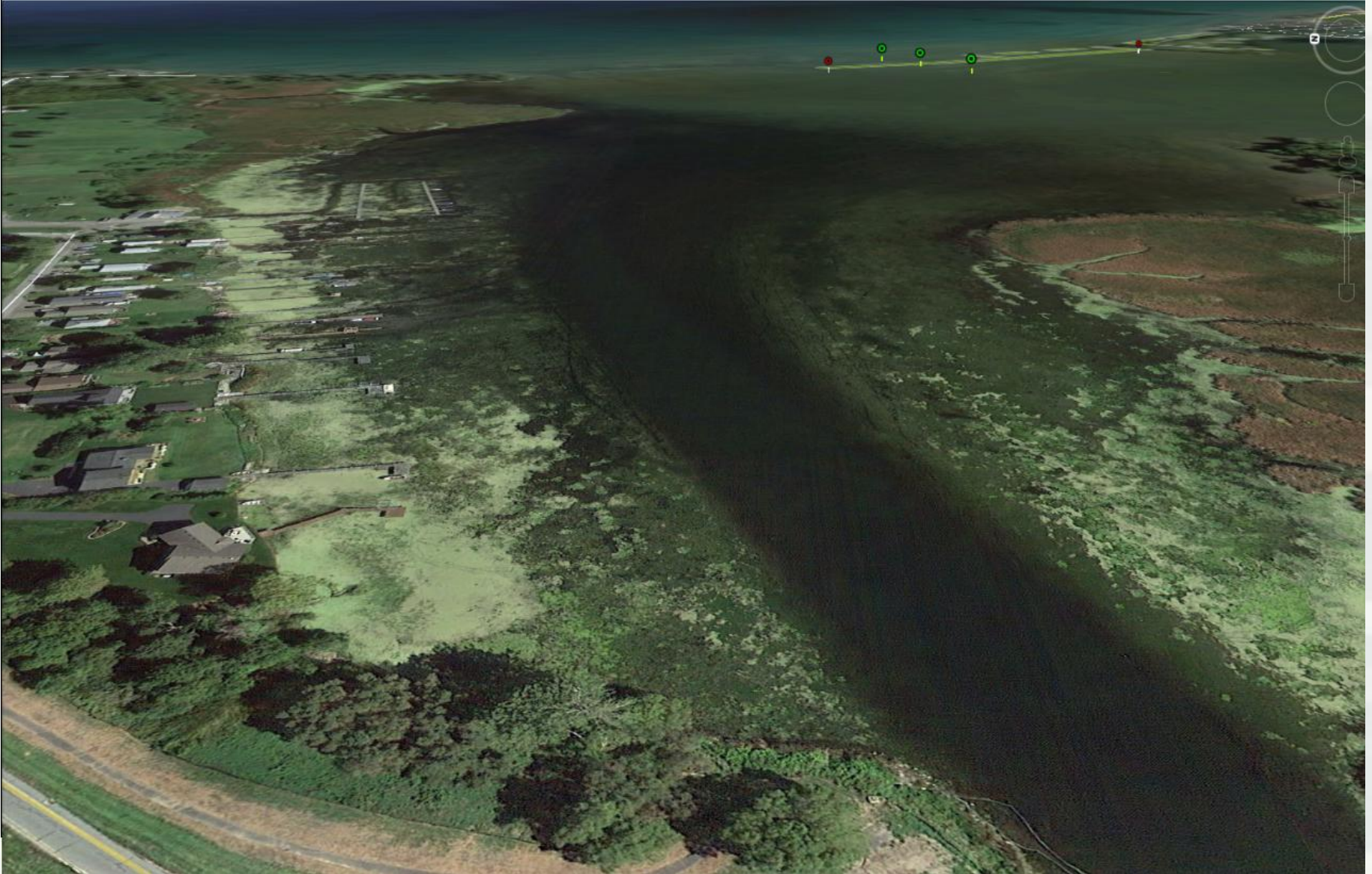
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**Note: Barrier Beach and topography shown with 5X vertical exaggeration**







# View Shed

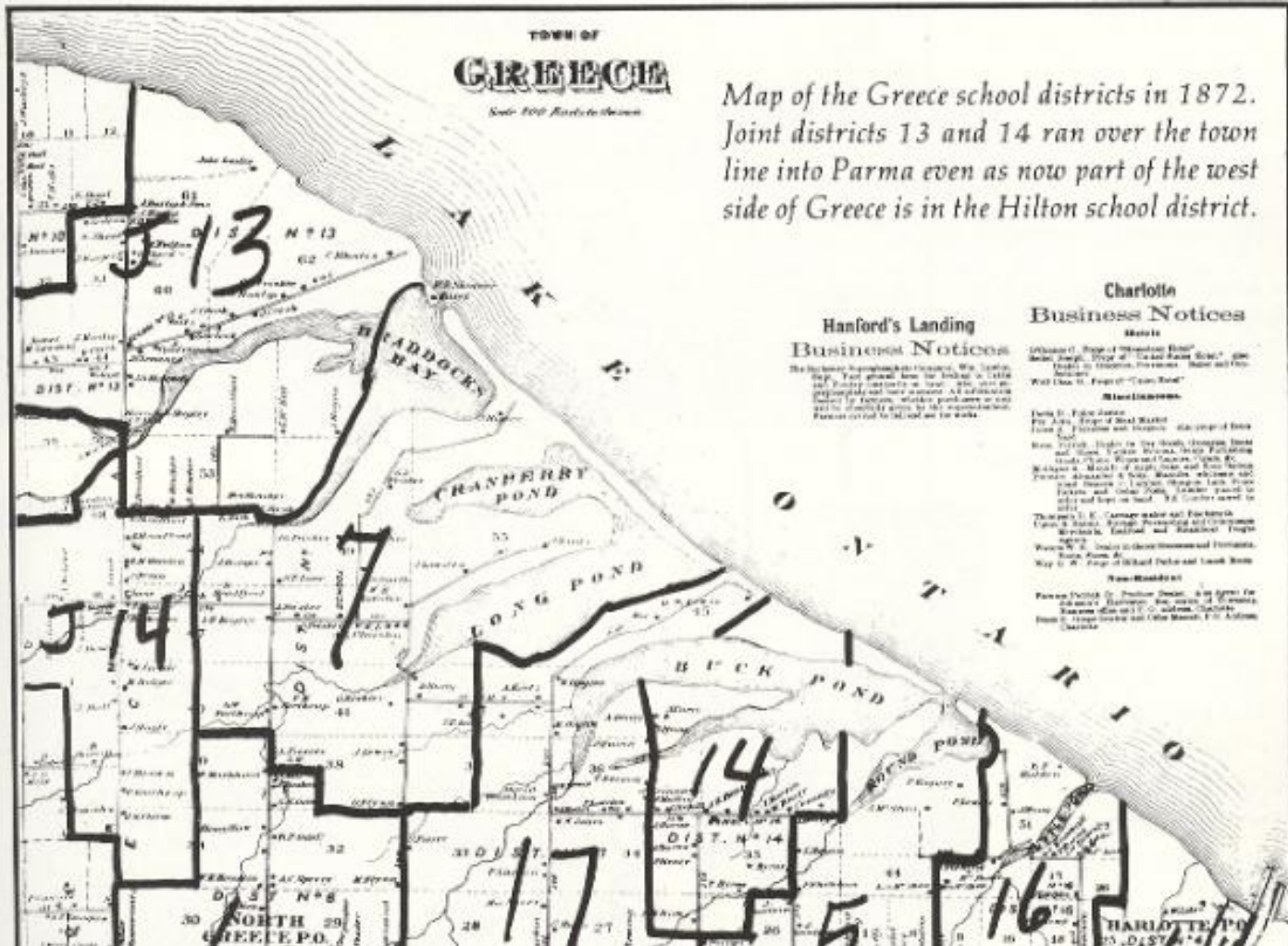


# Recent Questions

- Sedimentation in the bay?
- How will this affect navigation?
- Was there a historic barrier beach?



# Was there a historic barrier beach?

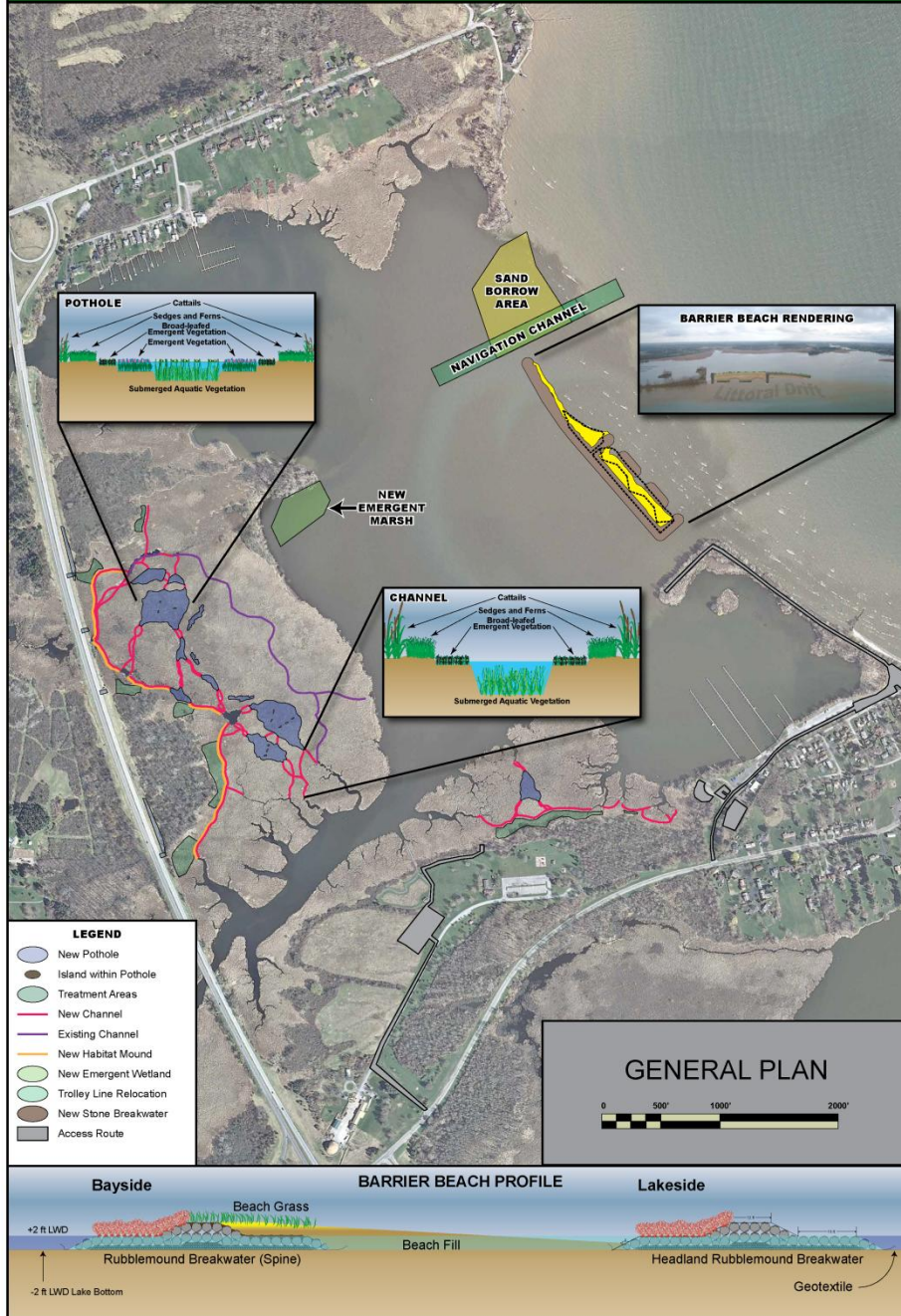




# Braddock Bay Ecosystem Restoration



## Town of Greece Perspective



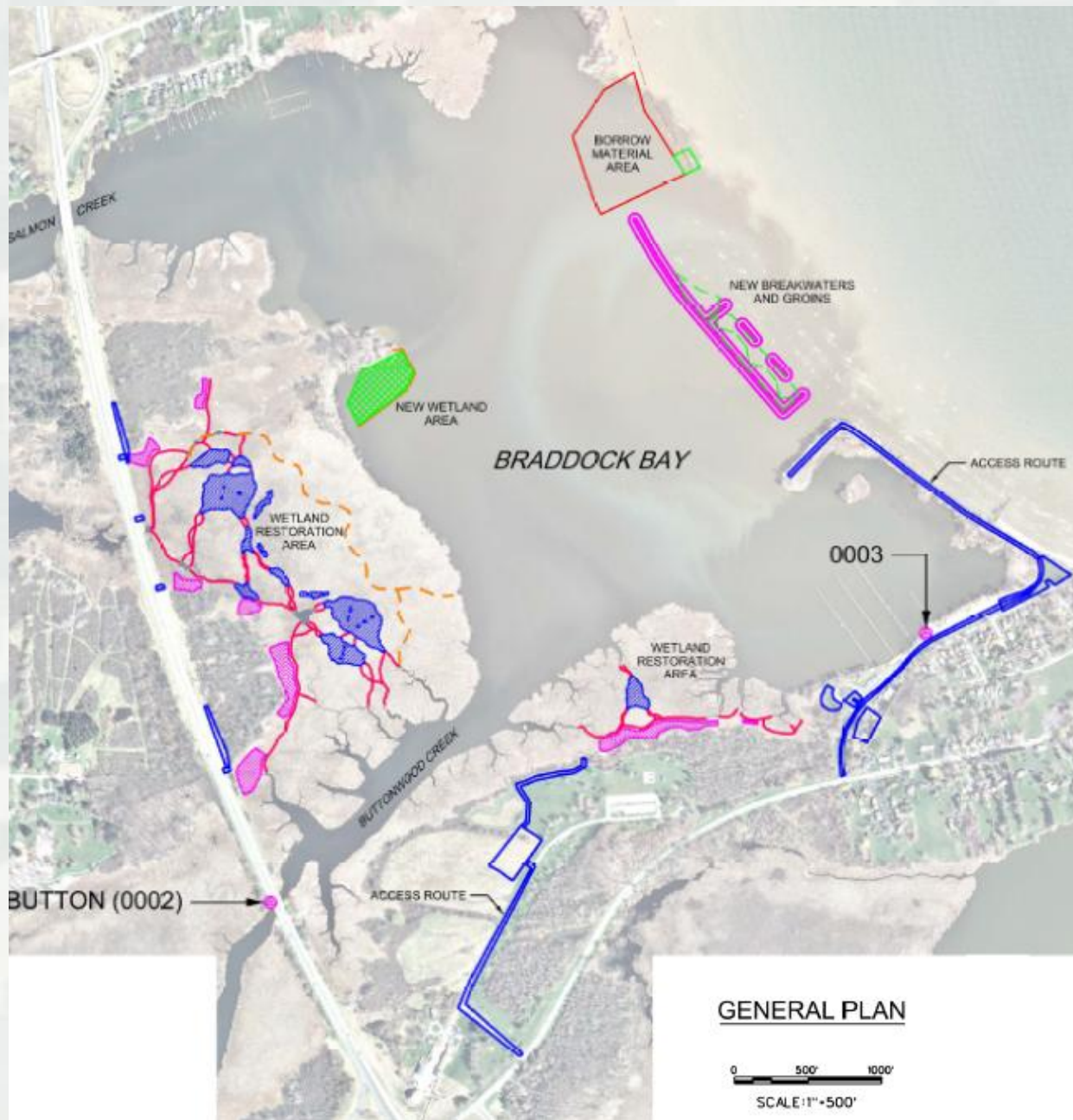


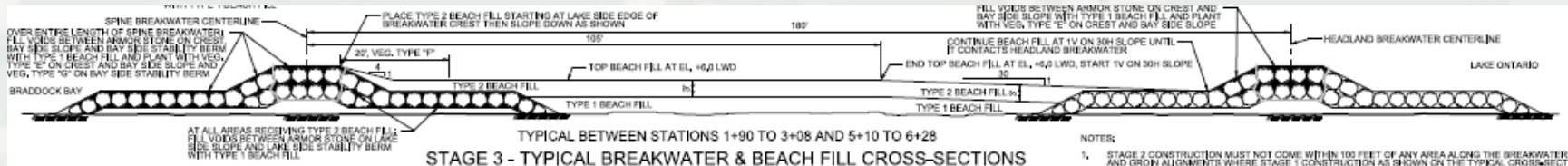
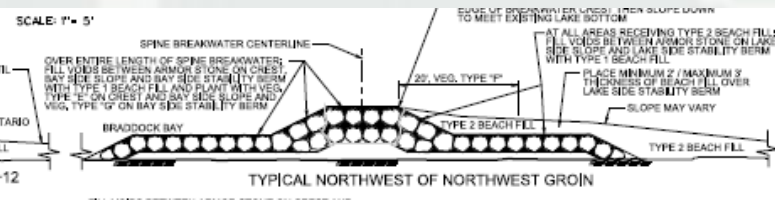
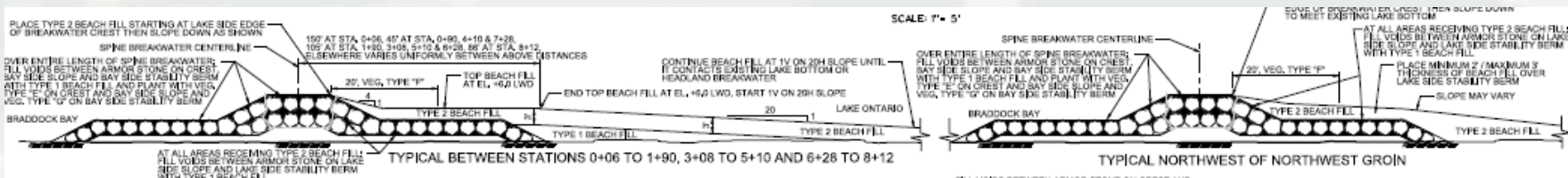
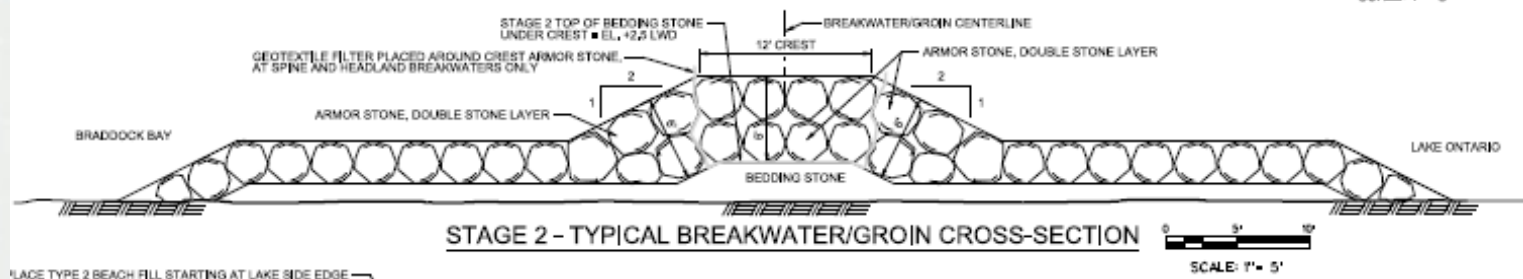
# Poster Presentations

Photo by Brian Hansen



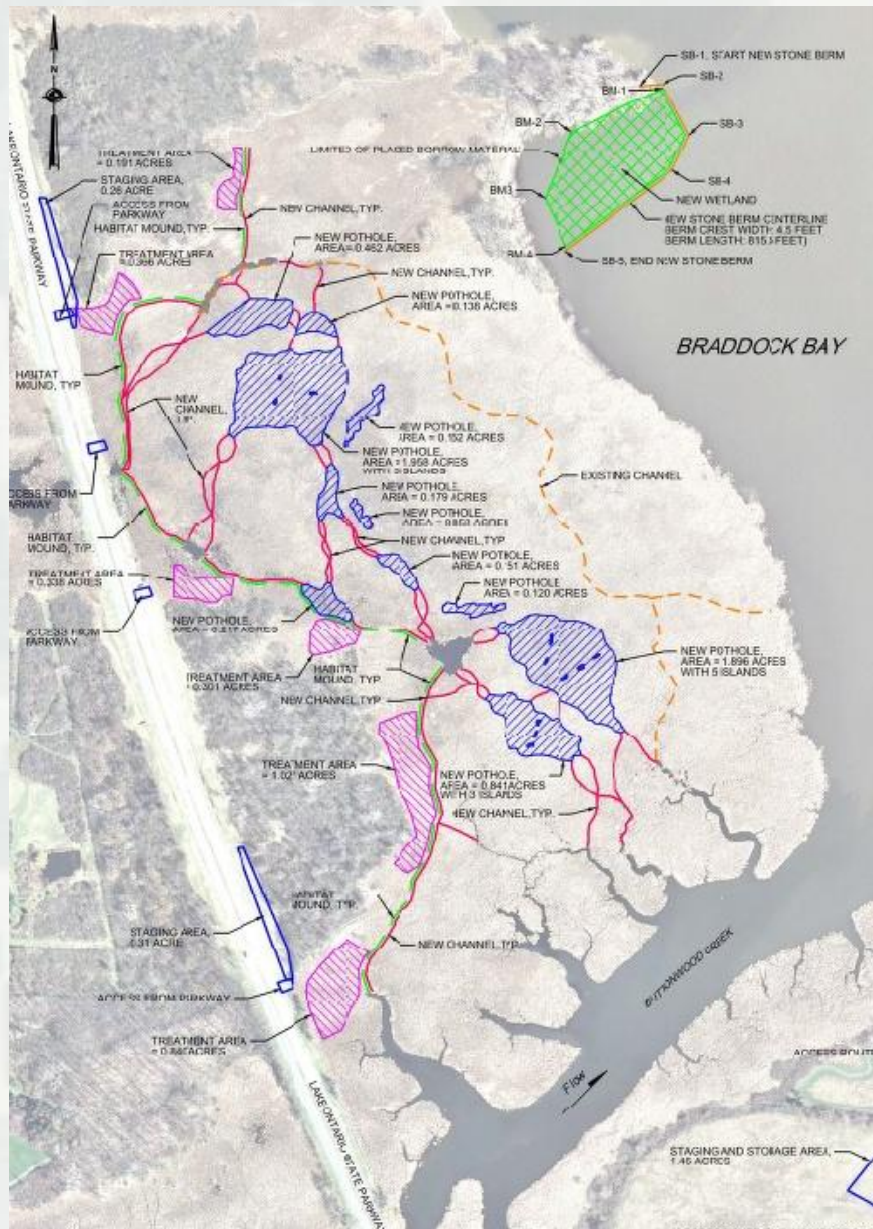
# Design Plan





NOTES:  
 1. STAGE 2 CONSTRUCTION MUST NOT COME WITHIN 100 FEET OF ANY AREA ALONG THE BREAKWATER AND GROIN ALIGNMENTS WHERE STAGE 1 CONSTRUCTION IS SHOWN ON THE TYPICAL CROSS-SECTION ON THIS SHEET HAS NOT BEEN COMPLETED IN ITS ENTIRETY.





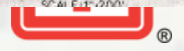
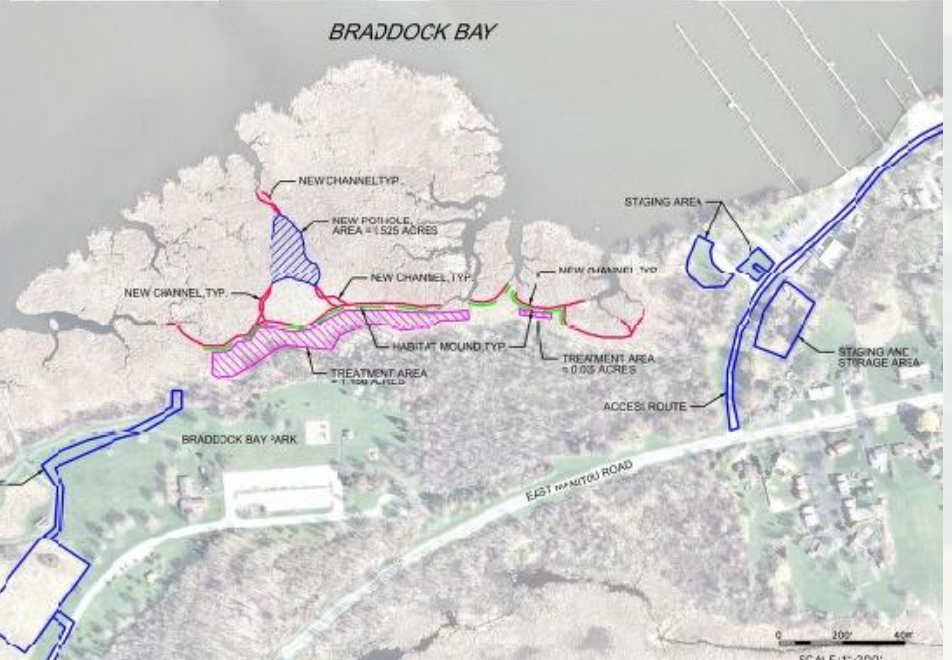
### LEGEND

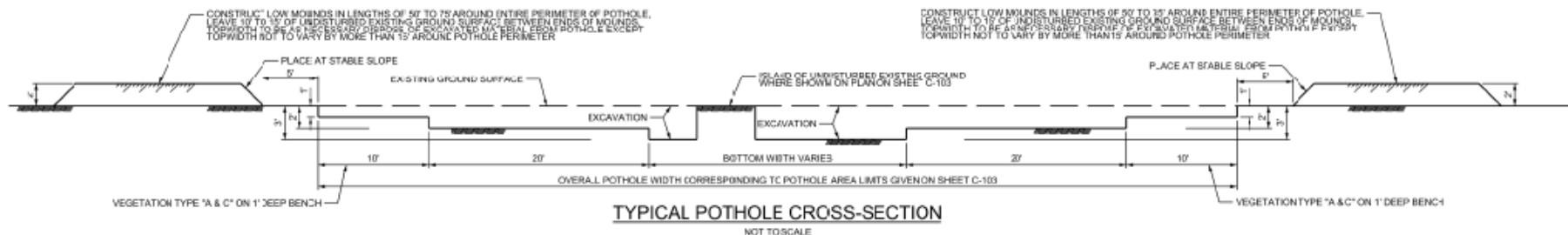
- NEW POTHOLE
- ISLAND WITHIN POTHOLE
- TREATMENT AREA
- NEW CHANNEL
- EXISTING CHANNEL
- NEW HABITAT MOUND
- NEW STONE BERM CENTERLINE
- NEW WETLAND

NEW STONE BERM CENTERLINE COORDINATES			
SB-1	E=1378202	N=1208166	
SB-2	E=1378281	N=1208173	
SB-3	E=1378367	N=1208007	
SB-4	E=1378314	N=1207982	
SB-5	E=1378023	N=1207927	

NEW WETLAND LIMIT OF PLACED BOTTOM MATERIAL COORDINATES			
BM-1	E=1378277	N=1208160	
BM-2	E=1377922	N=1208017	
BM-3	E=1377802	N=1207933	
BM-4	E=1377874	N=1207851	

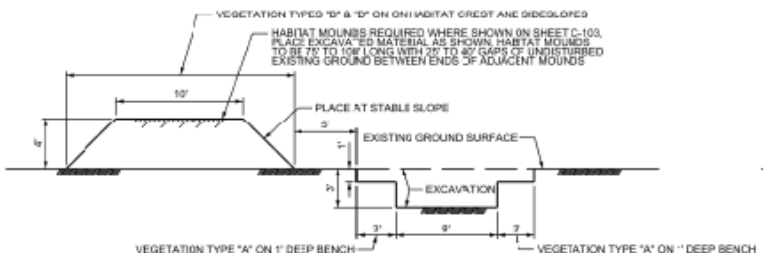
- NOTES:
- TOTAL LENGTH OF NEW CHANNEL CONSTRUCTION IS 11000 FEET.
  - ACREAGE OF NEW EMERGENT WETLAND IS 2.77 ACRES.
  - TOTAL AREA OF THE NEW POLE-HOLE CONSTRUCTION MUST BE AS SHOWN ON THE PLAN.
  - TOTAL AREA OF TREATMENT AREAS MUST BE AS SHOWN ON THE PLAN.
  - TOTAL LENGTH OF HABITAT MOUNDS IS 4700 FEET WHICH INCLUDES GAP LENGTHS BETWEEN ADJACENT MOUNDS.
  - THE CONTRACTOR MUST THOROUGHLY FIELD LOCATE ALL NEW FEATURES INCLUDING TREATMENT AREAS SHOWN ON THIS SHEET BY OBTAINING THE HORIZONTAL POSITION ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (WEST ZONE) OF THE POLYLINES REPRESENTING THESE FEATURES IN THE MICROSTATION CAD DRAWINGS PROVIDED BY THE GOVERNMENT. ALL NEW FEATURES MUST BE STAKED OUT IN THE FIELD BEFORE COMMENCING CONSTRUCTION OF THE FEATURES. SEE SPECIFICATIONS FOR STAKING REQUIREMENTS.
  - NEW CHANNELS MUST BEGIN OR TERMINATE AT EXISTING OR NEW OPEN BODIES OF WATER AS SHOWN ON THE PLAN ON THIS SHEET. THE CONTRACTOR MUST ALTER THE HORIZONTAL ALIGNMENT OF THE NEW CHANNELS FROM THAT SHOWN ON THIS SHEET WHEN AND AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
  - THE CONTRACTOR MUST ALTER THE HORIZONTAL LIMITS OF THE NEW POTHOLES AND TREATMENT AREAS FROM THAT SHOWN ON THIS SHEET WHEN AND AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
  - THE CONTRACTOR'S PERSONNEL AND EQUIPMENT SHALL ONLY MOVE AND OPERATE WITHIN THE HORIZONTAL LIMITS OF THE NEW CHANNELS, NEW POTHOLES, NEW HABITAT AND LOW MOUNDS, AND TREATMENT AREAS AS SHOWN ON THIS SHEET AND FURTHER DEFINED ON THE CROSS SECTIONS SHOWN ON SHEET C-502. MOVEMENT OR SURFACES IN CHANNELS, ISLANDS AND LOW MOUNDS, AND TREATMENT AREAS AND EXISTING LAND AREAS MUST BE KEPT TO A MINIMUM ONLY AS NECESSARY TO REACH AREAS OF NEW WORK AND WILL ONLY BE ALLOWED AS APPROVED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
  - THE ISLAND WITHIN THE NEW POTHOLE MUST CONSIST OF ARCAD OF UNDISTURBED GROUND.
  - THE START OF THE NEW STONE BERM MAY BE RELOCATED IN THE FIELD BY THE CONTRACTING OFFICER'S REPRESENTATIVE TO BETTER TIE INTO HIGH GROUND.





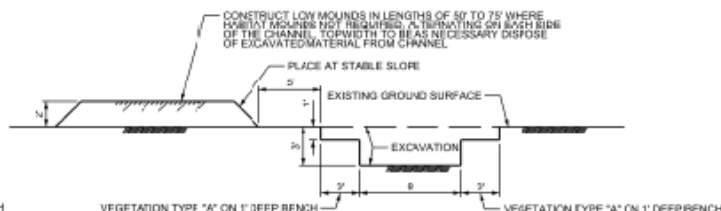
**TYPICAL POT HOLE CROSS-SECTION**

NOT TO SCALE



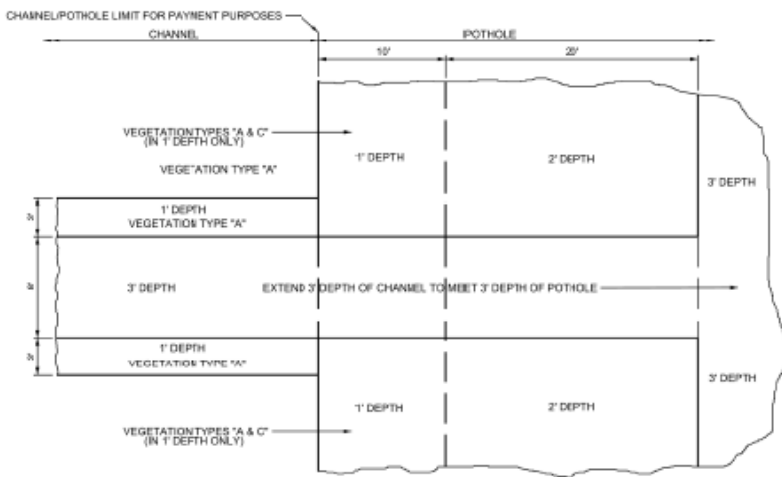
**TYPICAL CROSS-SECTION - CHANNEL WITH HABITAT MOUND**

NOT TO SCALE



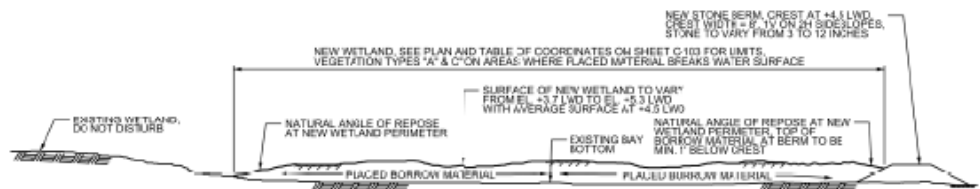
**TYPICAL CROSS-SECTION - CHANNEL WITH LOW MOUND**

NOT TO SCALE



**TYPICAL CHANNEL & POT HOLE INTERSECTION DETAIL**

NOT TO SCALE



**TYPICAL NEW EMERGENT WETLAND CROSS-SECTION**

NOT TO SCALE

VEGETATION PLANTING REQUIREMENTS	
TYPE	VEGETATION
A	EMERGENT WETLAND SEED MIX
B	SEDGE GRASS MEADOW SEED MIX
C	EMERGENT PLUGS
D	SEDGE GRASS MEADOW PLUGS

**NOTES:**

- ALL MATERIAL FROM POT HOLE AND CHANNEL EXCAVATION MUST BE REUSED TO CONSTRUCT HABITAT MOUNDS AND LOW MOUNDS AS SHOWN ON THIS SHEET. HABITAT MOUNDS MUST BE CONSTRUCTED TO THE HEIGHT AND WIDTH DIMENSIONS SHOWN. LOW MOUNDS MUST BE CONSTRUCTED TO THE HEIGHT SHOWN BUT WIDTHS WILL VARY AND BE BASED ON THE QUANTITY OF MATERIAL AVAILABLE FROM EXCAVATION AREAS.
- VERTICAL EXCAVATION CUTS SHOWN ON THE CROSS SECTIONS MAY BE IRREGULAR AS LONG AS THE ACTUAL HORIZONTAL DIMENSIONS OF THE PROJECT FEATURES IN THE FIELD ARE AN AVERAGE OF THE DIMENSIONS SHOWN ON THE CROSS SECTIONS.
- VEGETATION MUST BE ONLY BE PLANTED WHERE SHOWN ON THE CROSS SECTIONS AND AS DEFINED ON THE TABLE ON THIS SHEET. SEE CONTRACT SPECIFICATIONS FOR FURTHER VEGETATION PLANTING REQUIREMENTS.

