



Design and Expansion of the Sebastian Inlet Sand Trap

*National Conference on Beach Preservation
Technology*

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Marty Smithson SID Administrator*

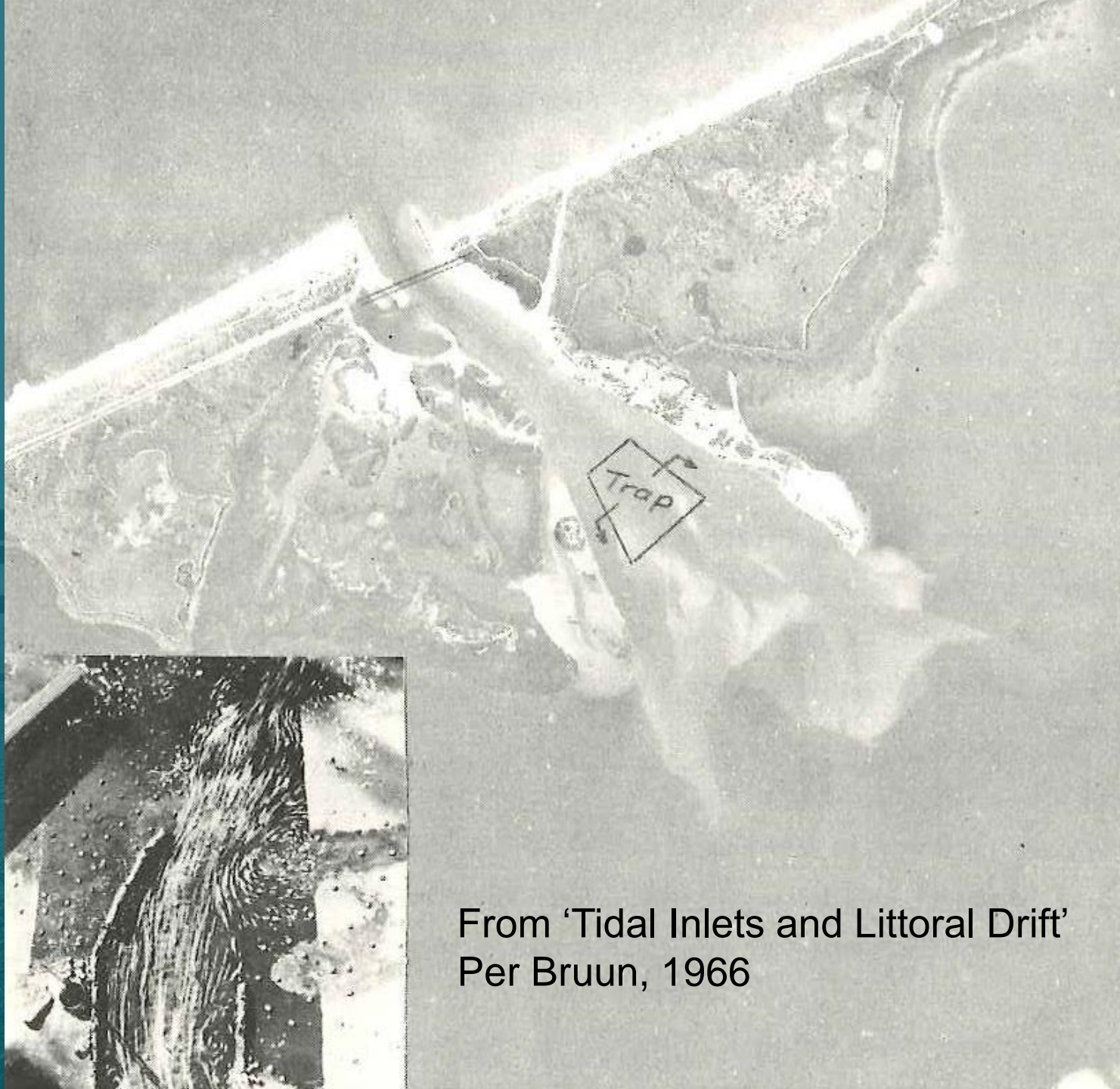
February 5, 2015





Sebastian Inlet

- Florida East Coast Inlet
- Stabilized around 1924
- Two methods of sand bypassing –
 - Natural (ebb shoal)
 - Interior Sand Trap
- Sebastian Inlet District
- Sebastian Inlet State Park



From 'Tidal Inlets and Littoral Drift'
Per Bruun, 1966







Project Goals

- Clean Out Sand Trap
- Expand Capacity
- Recover Beach Compatible Sand
- Don't Place Rock on the Beach





Technical Issues

- Irregular Bathymetry
- Range of Materials (including Rock)
- Complex and Disturbed Geology
- Aquatic Preserve
- Project Specifications



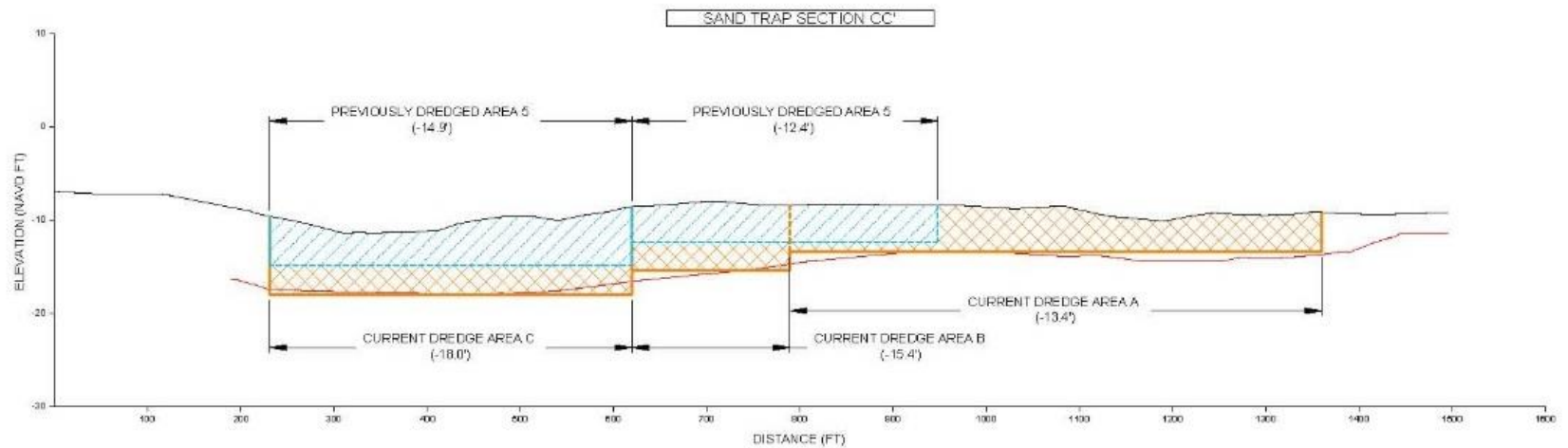
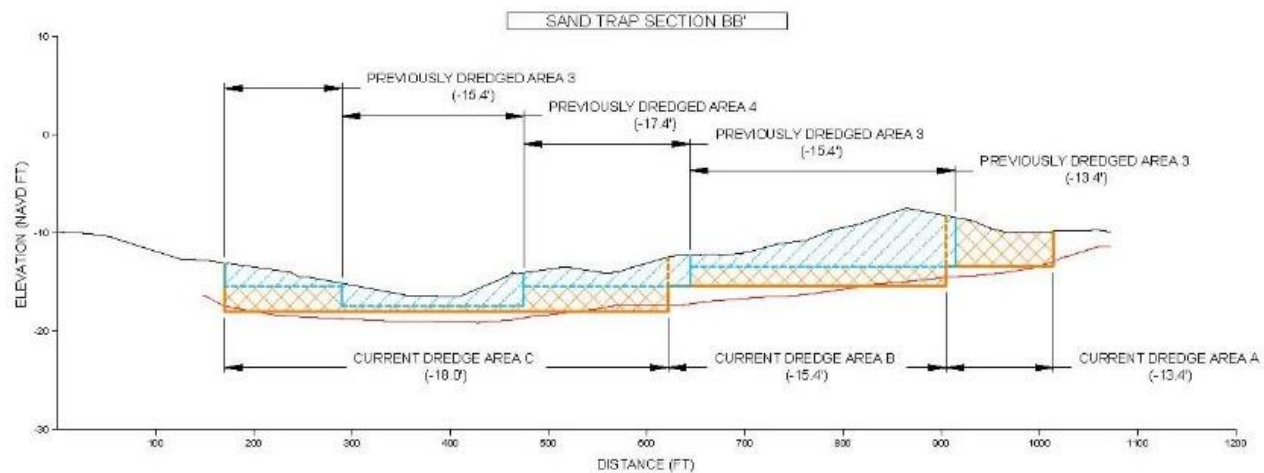
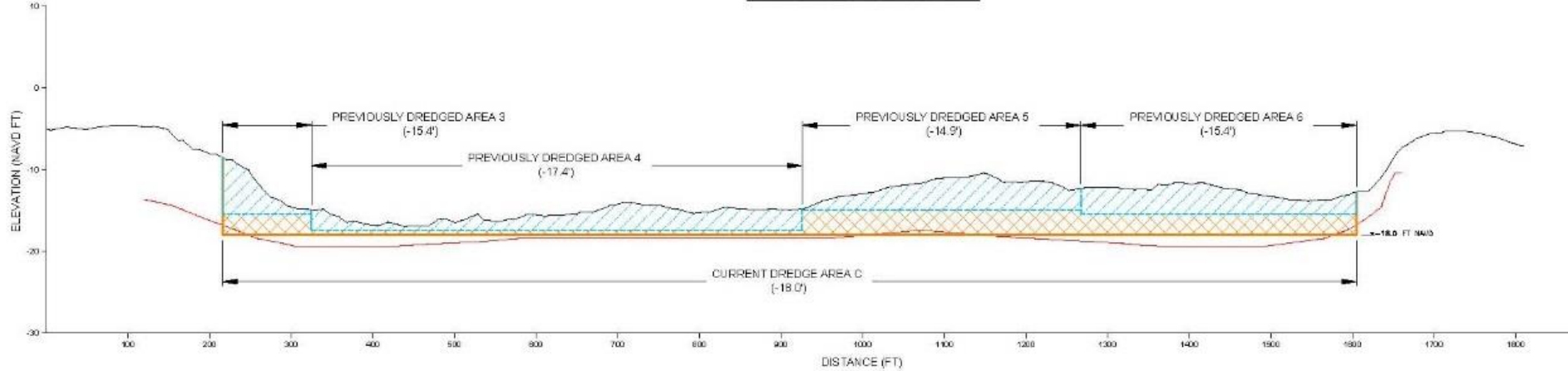
Dredged Material Management Area (DMMA)





Project Phases

- 1. Pump Clean Sand to Beach**
- 2. Screen Sand with Rock on Beach**
- 3. Dredge Rock/Sand with Discharge to DMMA**
- 4. Screen DMMA Material**
- 5. Place DMMA Material on Beach**



PHASE 1: Beach Placement of Clean Sand

**Jeri-B – 14" Cutter/suction Dredge (2,400 HP)
Orion Marine Construction**

Phase 2: Beach Screening



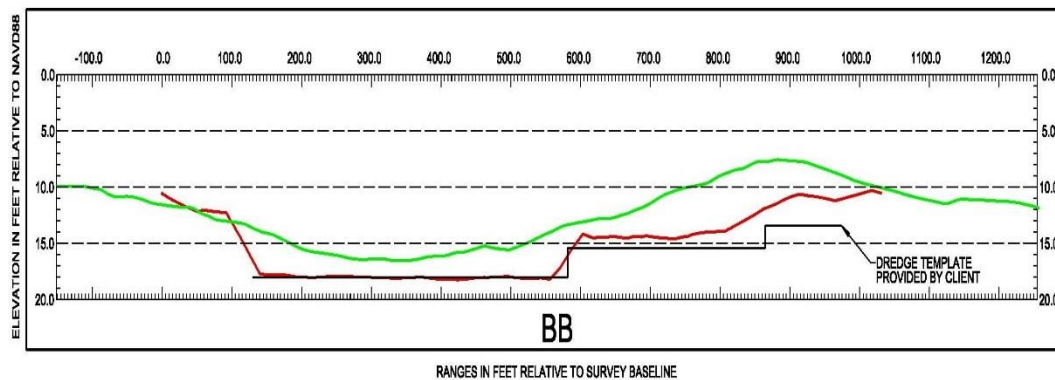
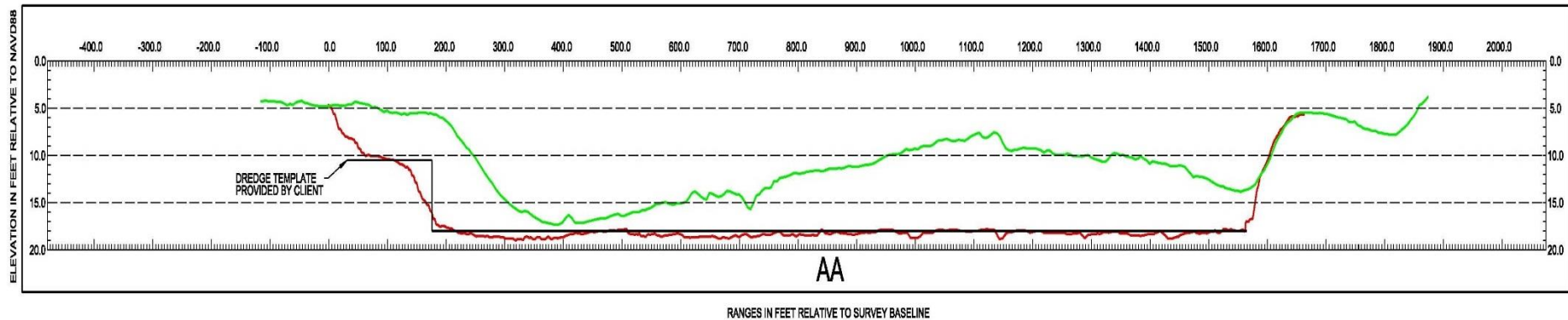
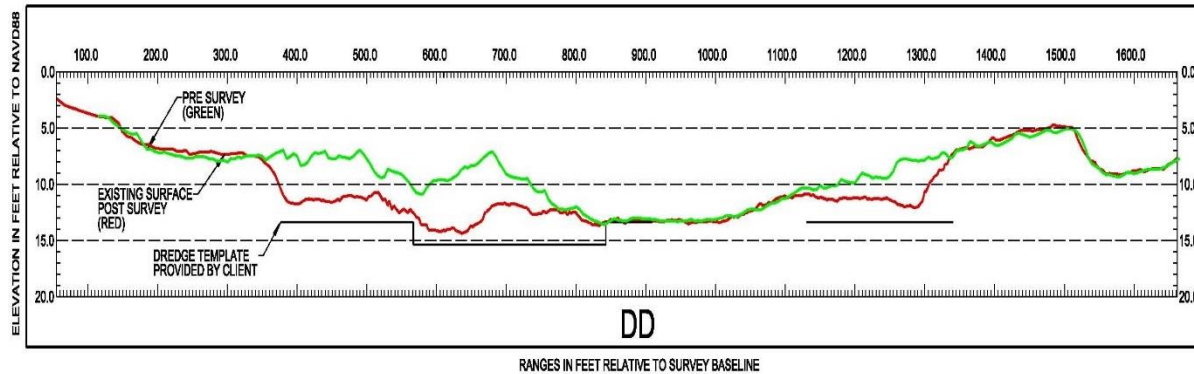
Beach Rock Stockpile – 3 Days



PHASE 3: DMMA Discharge



Post-Dredge Condition



Phase 4: DMMA Screening



Sand Stockpile – Mount Sebastian



Screened Rock





Project Summary

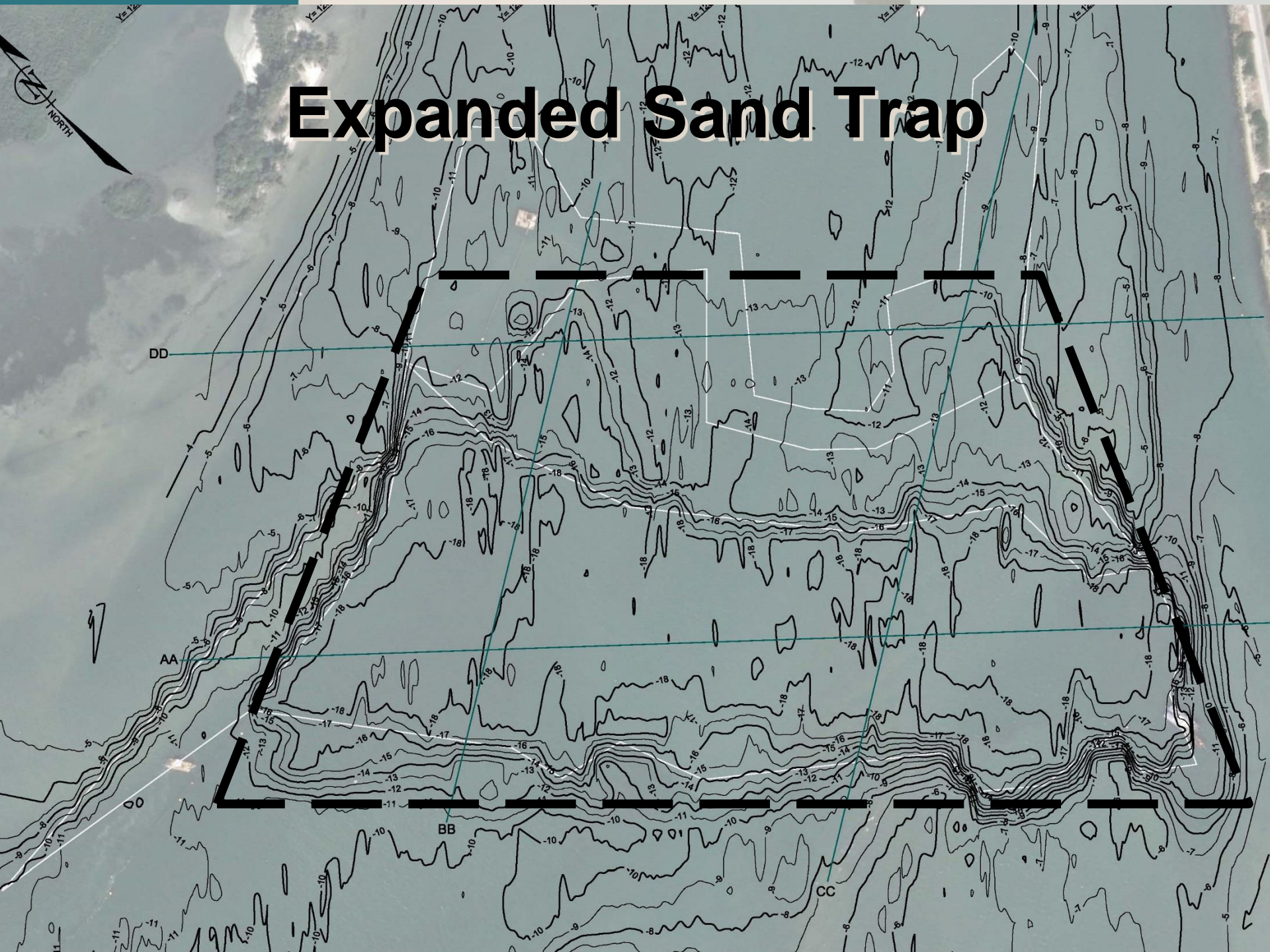
- Beach Placement 112,000 cy
- DMMA Placement 50,000+ cy
- Expanded Trap Capacity –
~200,000 cy (including adjacent
channel)
- Maintenance Interval ~ 5-6 years



Project Takeaways

- Efficient excavation of range of material types including rock with 14" cutter/suction dredge
- Demonstrated ability to process and screen range of materials (DMMA)
- Demonstrated ability to excavate under Aquatic Preserve Restrictions
- Realization of expanded sand trap concept

Expanded Sand Trap





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