

DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT

Beach Placement

U.S. Army Corps of Engineers, Philadelphia District

APPENDIX H FILL

BEACHFILL AT PORT MAHON, DELAWARE

- * Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.
- * See Joint Application Form Reference Guide - How to Calculate Square Feet, Cubic Feet, and Cubic Yards.

Corps of Engineers completed a feasibility report, which includes an environmental assessment for Port Mahon. A copy of the report is attached. Pertinent figures showing the location of the project as well as the design features are attached. Information from this report was extracted to supply the information that is requested in this appendix.

Note, as part of this application, project activities only include filling the beach with sand for environmental restoration in front of Route 89. No activities are proposed behind Route 89 as presented in the above referenced Corps report.

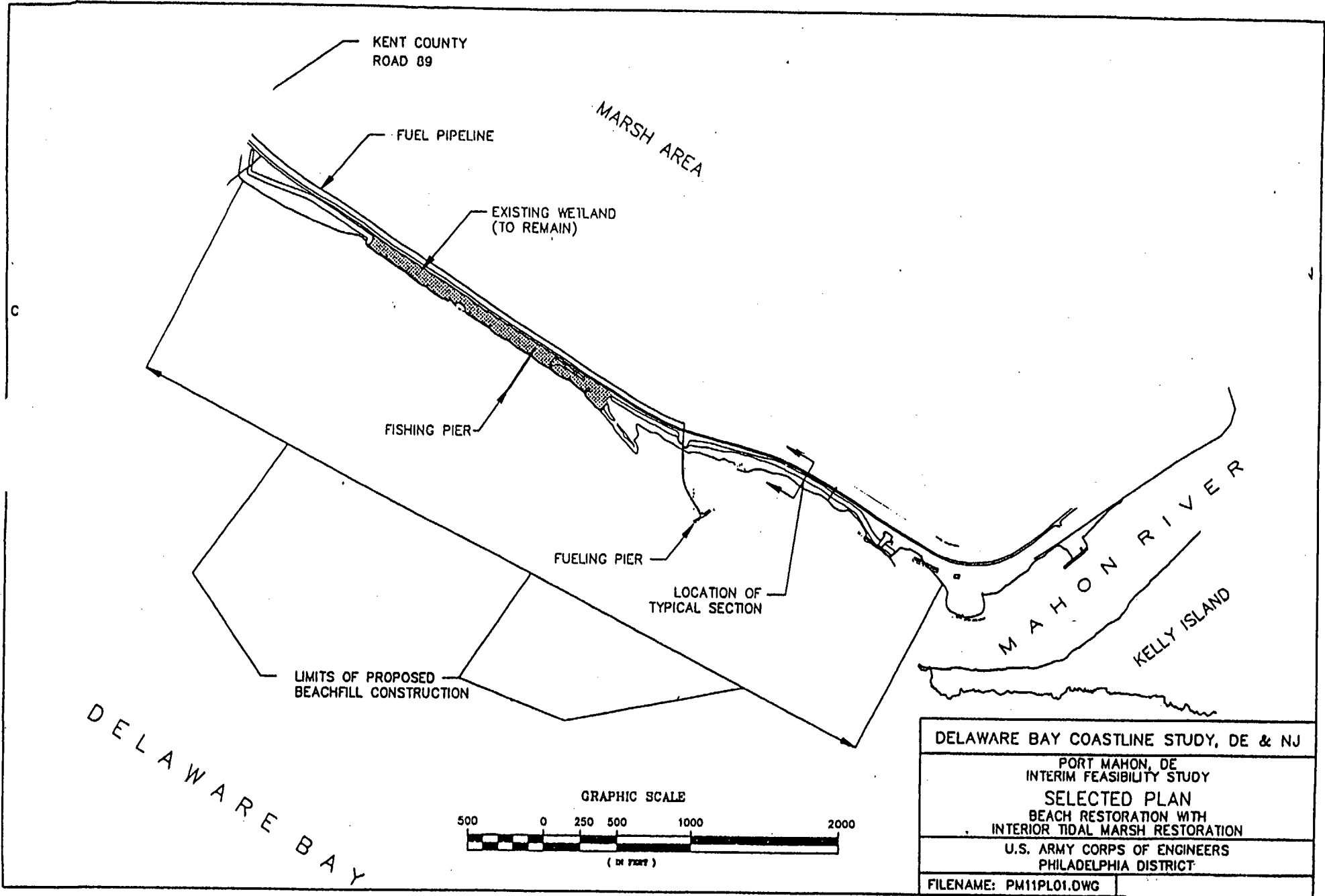
1. How many feet will the fill be placed channelward of the:

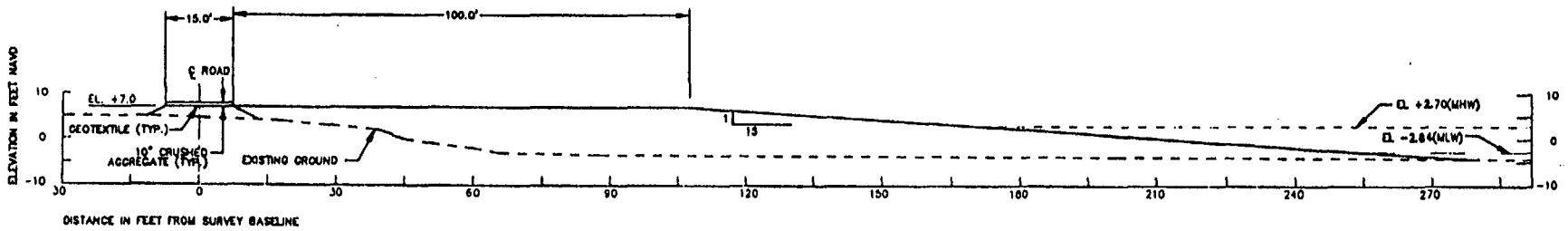
- A. Tidal waters: mean high water line? 240 ft. (Approx.)
 mean low water line? 200 ft. (Approx.)
- B. Non-tidal waters: ordinary high water line? ft.

2. How much fill will be located:

- A. on subaqueous land (channelward of mean high water) 248,000 sq. ft.
- B. on vegetated wetlands? 0 sq. ft. Approximately 1.8 acres of wetlands occur behind steel bulkhead sections adjacent to the road (Route 89) as measured from the 1988 air photos. It is noted that the actual area of wetland present is less than 1.8 acres due to the erosion that has continued to take place since 1988. This area will not be filled by the sand placement, but direct tidal flow from Delaware Bay will be cut off. Although the direct connection will be cut off, the pervious nature of the fill will allow for tidal variation. If the impact of this change causes degradation to the existing wetland, a culvert(s) could be constructed under the road to connect this area to the tidal marsh on the other side of Route 89 so that tidal flushing can be improved. In addition, sand fences will be placed at the marsh/sand boarder to help prevent sand from blowing into the marsh.

3. **The fill will be (check one)**
- A. Hauled in from upland sources
- B. Obtained from dredged material
4. **What is the total volume of fill? 306,000 cubic yards**
What is the total fill per running foot of shoreline? 59 cubic yards
5. **What method will be used to place the fill?** Hydraulic placement of sand via hopper dredge pipeline and graded with bulldozers.
6. **How will the fill be retained?** No retaining of fill due to the coarse nature of the beachfill material.
7. **State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)** 95 to 98% Sand; 2-5% Silt
8. **Describe the type(s) of structure(s) to be erected on the filled area (if any).** N/A
9. **What type of ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?** No ground cover will be used.





TYPICAL SECTION
BEACH RESTORATION
 N.T.S.

DELAWARE BAY COASTLINE STUDY, DE & NJ

PORT MAHON, DE
 INTERIM FEASIBILITY STUDY

BEACH RESTORATION SECTION

U.S. ARMY CORPS OF ENGINEERS
 PHILADELPHIA DISTRICT

FILENAME: PMSECRPT.DWG

APPENDIX H FILL

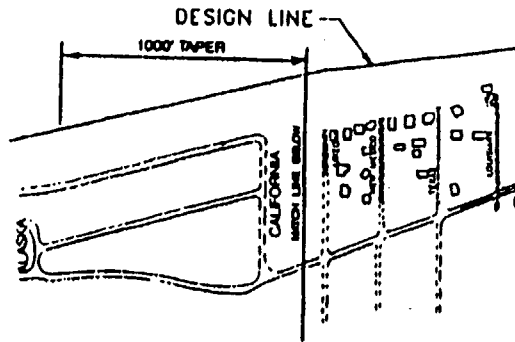
(BEACHFILL FOR BROADKILL BEACH, DELAWARE)

- * Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.
- * See Joint Application Form Reference Guide - How to Calculate Square Feet, Cubic Feet, and Cubic Yards.

Corps of Engineers completed a feasibility report, which includes an environmental assessment for Broadkill beach. A copy of the report is attached. Pertinent figures showing the location of the project as well as the design features are attached. Information from this report was extracted to supply the information that is requested in this appendix.

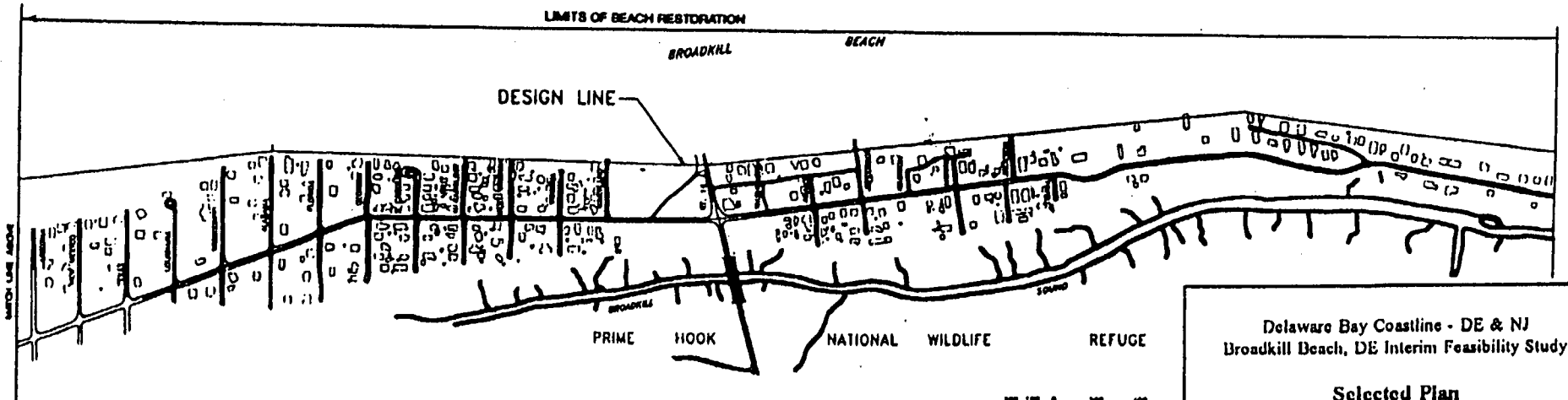
1. How many feet will the fill be placed channelward of the:
 - A. Tidal waters: mean high water line? 220 ft (Approx.)
mean low water line? 170 ft (Approx.)
 - B. Non-tidal waters: ordinary high water line? _____ ft.
2. How much fill will be located:
 - A. on subaqueous land (channelward of mean high water) 3,005,640 sq. ft. (69 acres) (220 ft wide by 14,600 ft long)
 - B. on vegetated wetlands? 0 sq. ft
3. The fill will be (check one)
 - A. _____ Hauled in from upland sources
 - B. x Obtained from dredged material
4. What is the total volume of fill? 1,305,000 cubic yards
What is the total fill per running foot of shoreline? 89 cubic yards (1,305,000 ÷ 14,600 ft long).
5. What method will be used to place the fill? Beachfill will be placed via hopper dredge pipeline and graded with bulldozers.
6. How will the fill be retained? No retaining of fill due to the coarse nature of the beachfill material. No retaining of fill is planned due to grain size compatibilities with existing beach.

7. **State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.) Greater than 95% sand material.**
8. **Describe the type(s) of structure(s) to be erected on the filled area (if any). N/A**
9. **What type of ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters? The dune will be planted with American beach grass (*Ammophila breviligulata*). Sand fencing would also be placed on the dunes.**



DELAWARE

BAY



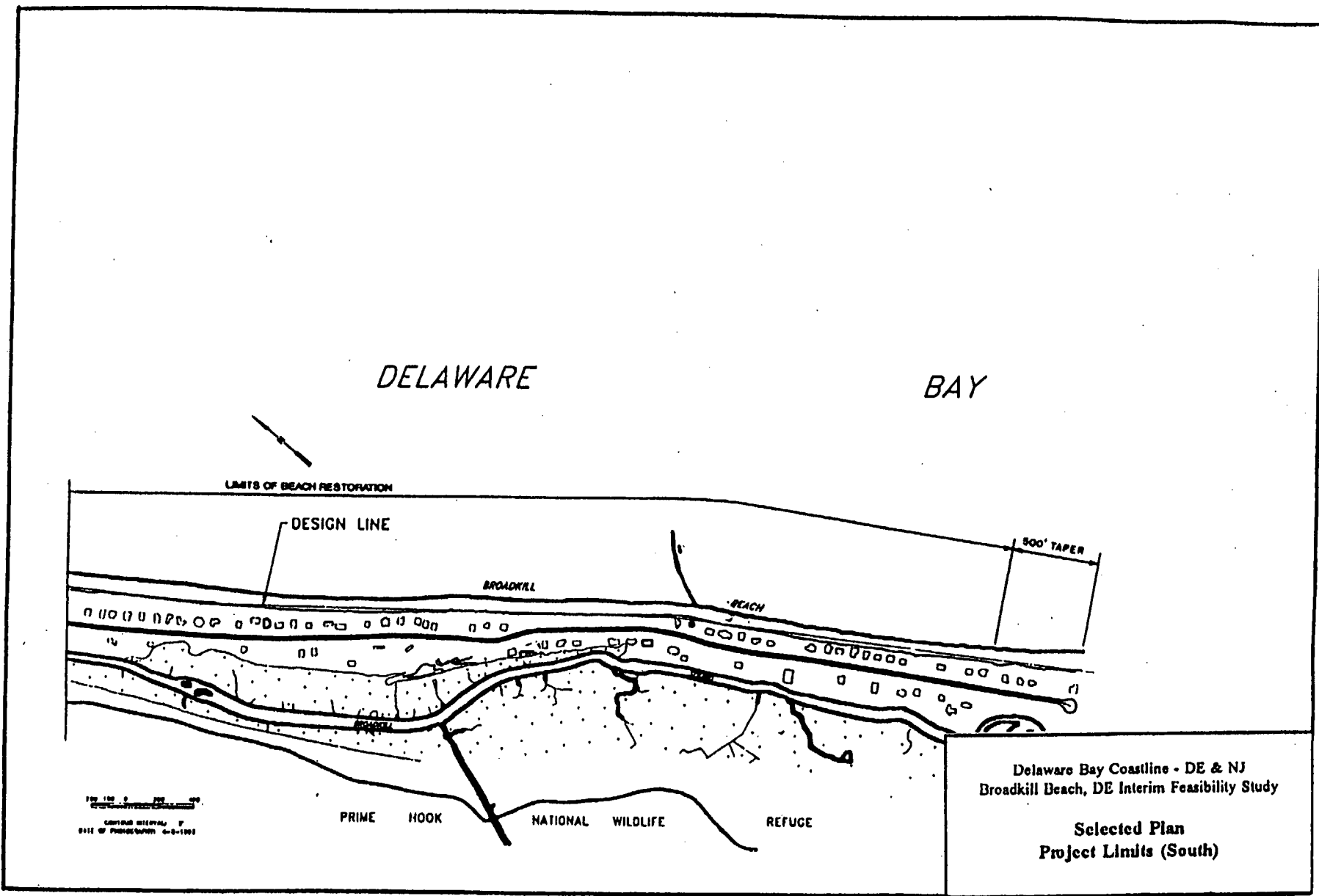
Delaware Bay Coastline - DE & NJ
Broadkill Beach, DE Interim Feasibility Study

Selected Plan
Project Limits (North)

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CONTAINS ORIGINAL
DATE OF PHOTOGRAPHS 4-8-1992

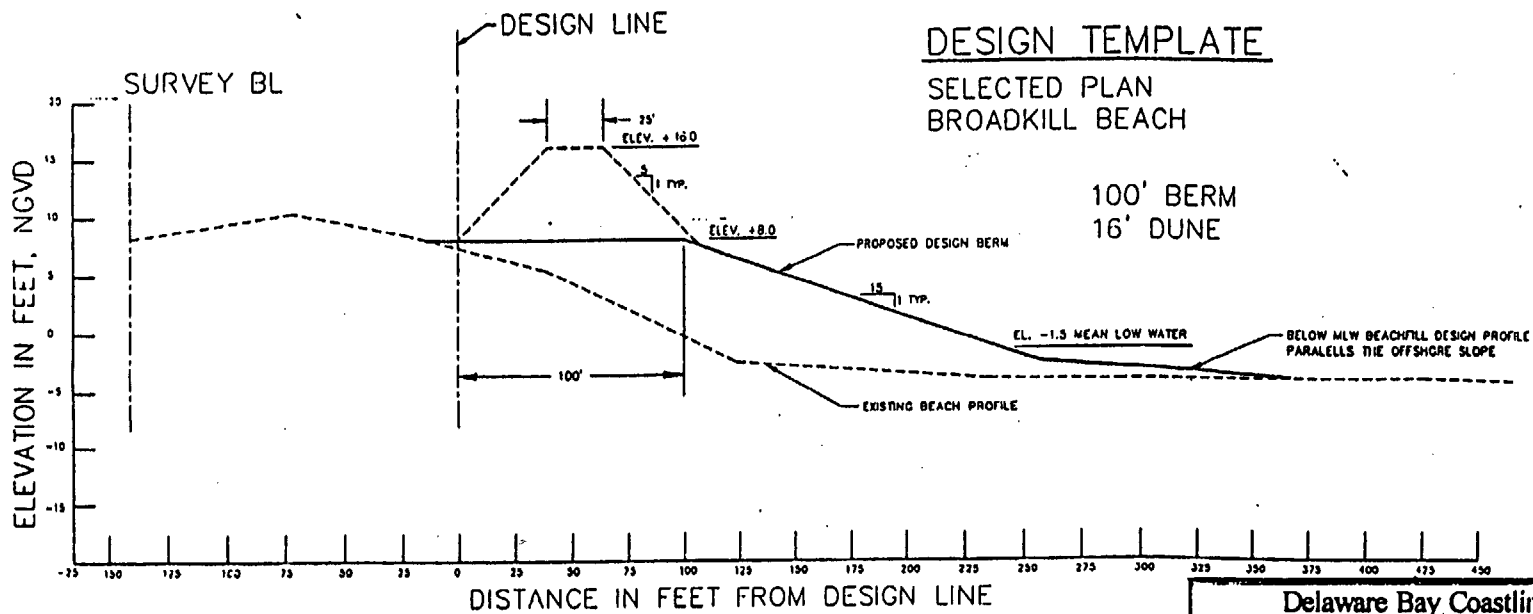
DELAWARE

BAY



Delaware Bay Coastline - DE & NJ
Broadkill Beach, DE Interim Feasibility Study

Selected Plan
Project Limits (South)



Delaware Bay Coastline - DE & NJ
 Broadkill Beach, DE Interim Feasibility Study

Typical Section of Selected Plan

APPENDIX H FILL

Beachfill for Rehoboth Beach/Dewey Beach, Delaware)

- * Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.
- * See Joint Application Form Reference Guide - How to Calculate Square Feet, Cubic Feet, and Cubic Yards.

Corps of Engineers completed a feasibility report, which includes an environmental assessment for Rehoboth Beach/Dewey Beach. A copy of the report is attached. Pertinent figures showing the location of the project as well as the design features are attached. Information from this report was extracted to supply the information that is requested in this appendix.

1. How many feet will the fill be placed channelward of the:
 - A. Tidal waters:

mean high water line?	<u>310 ft (Rehoboth);</u> <u>500 ft (Dewey) (Approx.)</u>
mean low water line?	<u>195 ft (Rehoboth);</u> <u>460 ft (Dewey) (Approx.)</u>
 - B. Non-tidal waters: ordinary high water line? _____ ft.

2. How much fill will be located:
 - A. On subaqueous land (channelward of mean high water) 4,847,600sq. ft.(111 acres)
 - B. On vegetated wetlands? None sq. ft

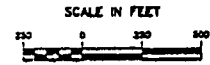
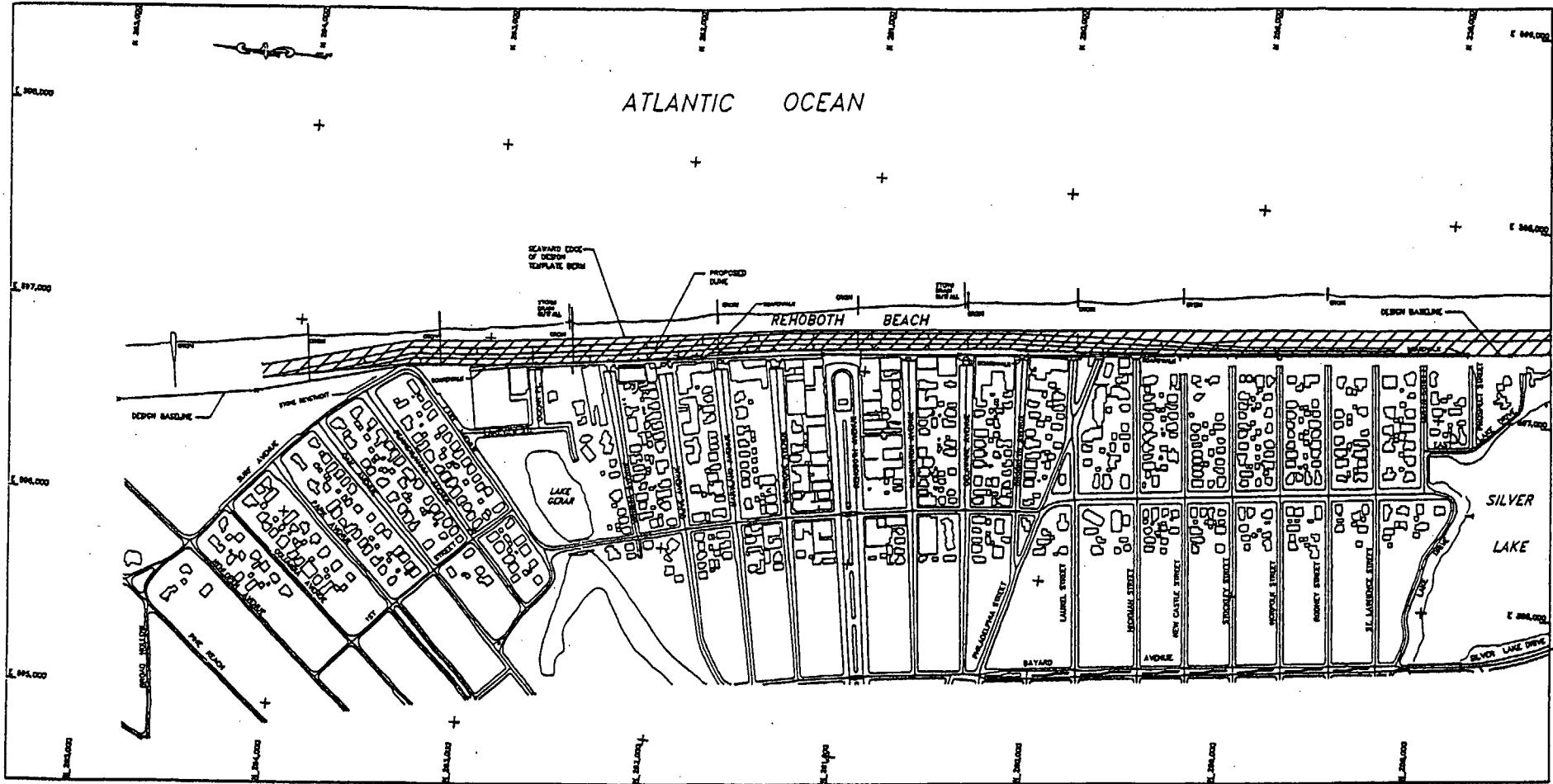
3. The fill will be (check one)
 - A. _____ Hauled in from upland sources
 - B. x Obtained from dredged material

4. What is the total volume of fill? 1,540,000 cubic yards

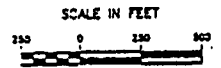
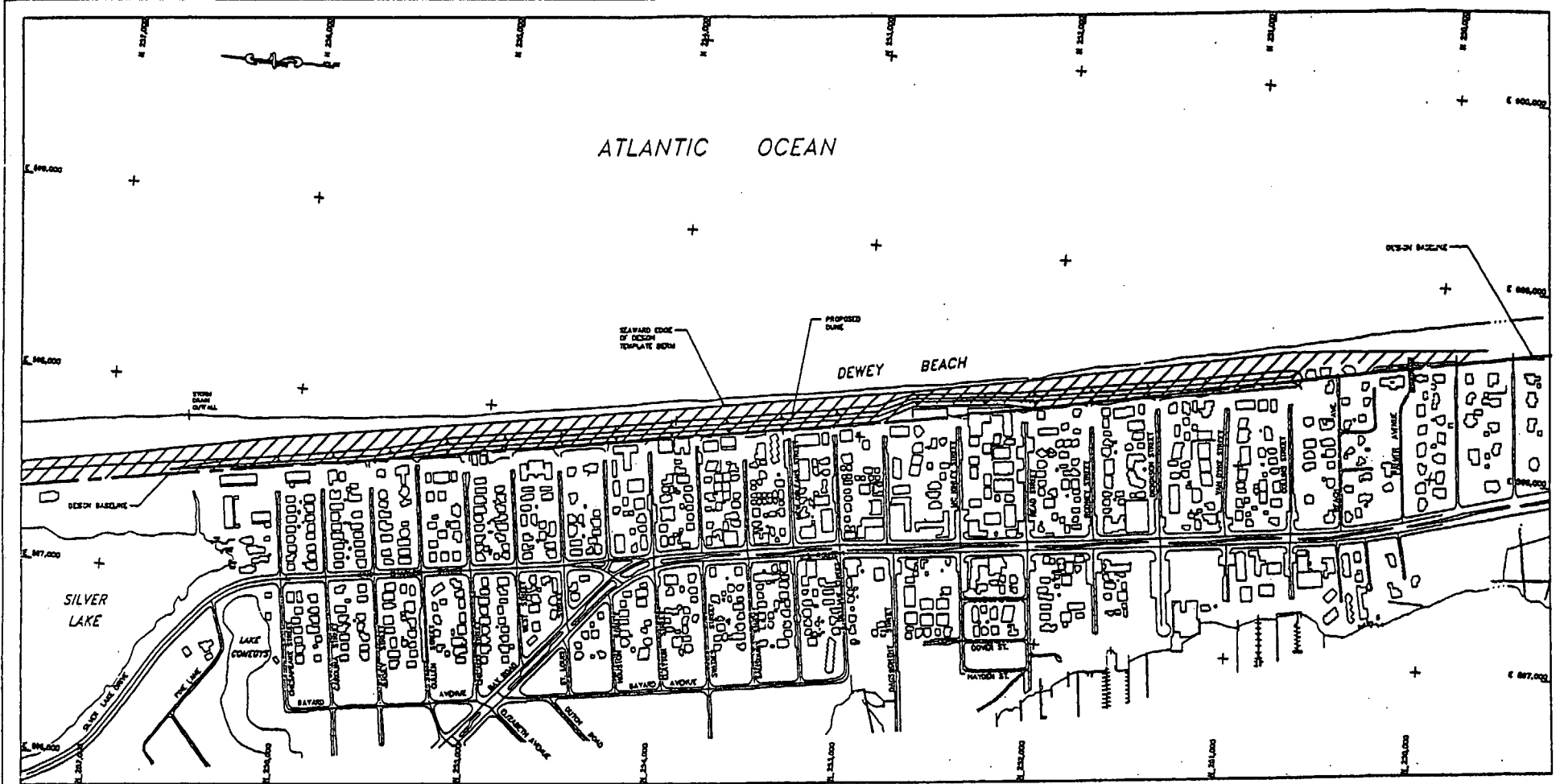
What is the total fill per running foot of shoreline? 126 cubic yards (1,540,000 cy ÷ 12,260 feet long).

5. **What method will be used to place the fill?** Beachfill will be placed hydraulically via hopper dredge pipeline and graded with bulldozers.
6. **How will the fill be retained?** No retaining of fill due to the coarse nature of the beachfill material. No retaining of fill is planned due to grain size compatibilities with existing beach.
7. **State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)** 95% to 100% sand and 0% to 5% silt.
8. **Describe the type(s) of structure(s) to be erected on the filled area (if any).** N/A
9. **What type of ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?** The dune will be planted with American beach grass (*Ammophila breviligulata*). Sand fencing would also be placed on the dunes.

ATLANTIC OCEAN



U.S. ARMY ENGINEER DISTRICT, PHOENIX, ARIZONA
CORPS OF ENGINEERS
PHILADELPHIA, PENNSYLVANIA
DELAWARE COAST
FEASIBILITY STUDY
REVIC AND REHOBOTH
BEACH STUDY AREA
PLAN LAYOUT
SELECTED PLAN
REHOBOTH BEACH
SHEET 1 OF 3



U.S. ARMY CORP. OF ENGRS. DISTRICT ENGINEER
 CORPS OF ENGINEERS
 PRELIMINARY PRELIMINARY
 DELAWARE COAST
 PLANNING STUDY
 DEWEY AND REDBURN
 BEACH STUDY AREA
 PLAN LAYOUT
 SELECTED PLAN
 DEWEY BEACH
 SHEET 3 OF 3

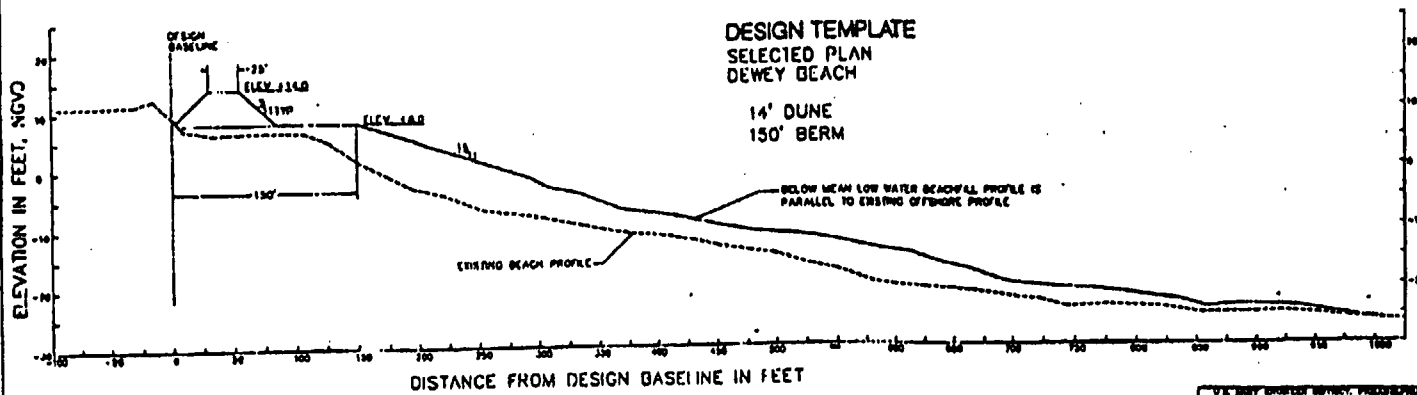
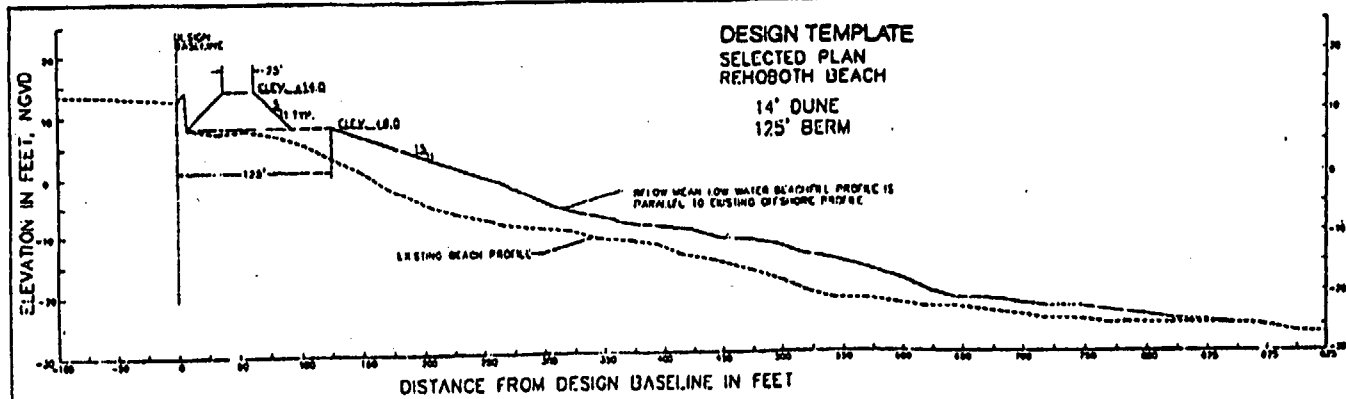


Figure 3-3.
Delaware Coast Feasibility Study
Design Templates for Selected
Plans at Rehoboth Beach and Dewey
Beach.

U.S. NAVY ENGINEERING CENTER
DEPT. OF DEFENSE
P.O. BOX 1318
PORT HURON, MICHIGAN 48131

NOV 1971

SELECTED PLAN