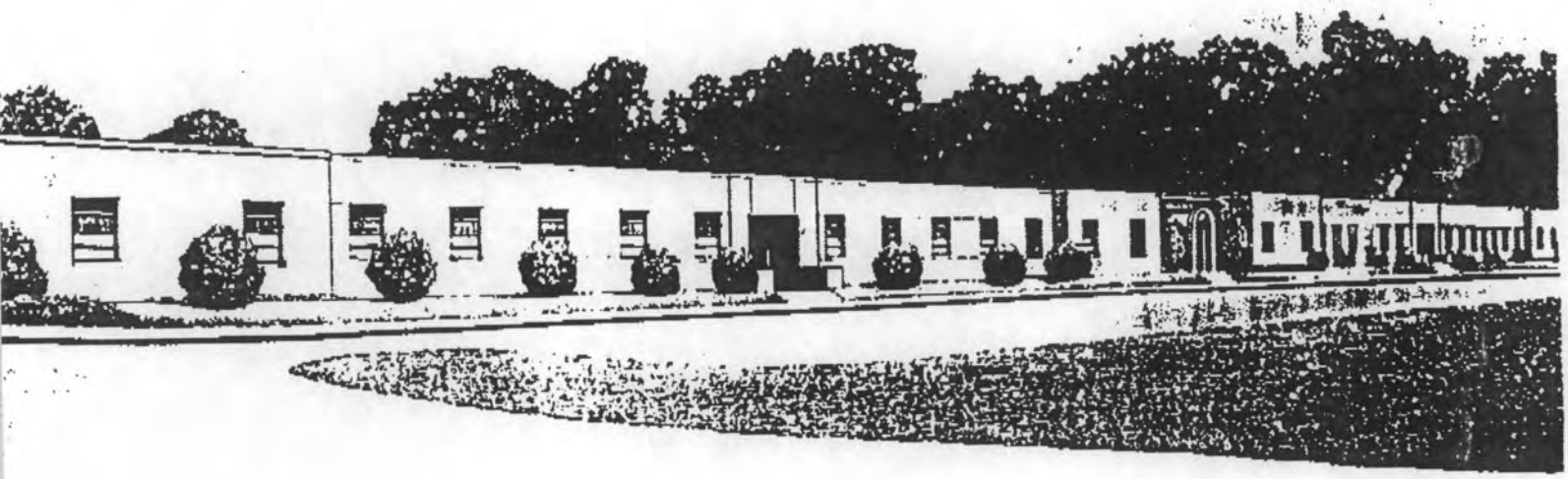

U.S.ARMY CORPS OF ENGINEERS
WATERWAYS EXPERIMENT STATION
COASTAL ENGINEERING RESEARCH CENTER

Date: 8-20-90		FAX No. (601) 634-3080
From: Ed Hands	Office Symbol: CD-SE	Telephone No.
To: Paul Bradley	Office Symbol:	Telephone No. 205-694-4264
Releaser s Signature: Joey Bragdon		No. Pages (Including Cover) 5

SUBJECT: Siting of a Fourth Berm South of Dauphin Island

TO: Paul Bradley

TEL# (205) 690-3319
FAX# (205) 694-4264

FROM: Ed Hands
August 17, 1990
TEL# 601 634-2088
FAX# 601 634-3080

1. In response to your call today, I estimated the dimensions of some berms that could be built with 30K cu yds of sand. It is impractical to try for more than 6 ft of relief with such a small quantity of material. Making some assumptions about grain size, bulking, slopes, and the likely ability to position 30 to 60 releases in the same area, 4 to 5 ft is a more realistic target relief and I expect most of the material to stay within a 400 ft radius of the release point.

2. Neil McLellan and I identified three alternative sites labelled A, B, and C on the accompanying table and maps.

Site A. Northwest of the Sand Island Bar

At this site we would try to get maximum relief on the gently sloping bottom. There would be no risk of interference with presently monitored berms, yet this site would be covered by the present survey lines. Observation of the fate of this sightly deeper, coarser-grained mound would be a useful extension to on-going work.

The only serious disadvantage we see is a possible interference with the pipeline that will be installed soon. I think you have better information on the exact location for this pipeline. Coincidence with the pipeline should disqualify Site A.

Site B. In front of the Sand Island Bar

Depths and flatness at Site B are similar to Site A. Besides avoiding the pipeline, Site B has the advantage of being in the area of densest survey coverage. It is is also well covered by grab samples. Precise positioning should be required to obtain maximum mounding.

The only problem with this site is that it could slightly complicate the interpretation of continued movement of the Sand Island Bar. On the other hand, the mound would be small and probably extend to no more than -18 ft mean lower low

Mobile Tidal Delta; and any lesser effect ,if identifiable, will improve our understanding of sheltering and interference between berms. At most sites we avoid large conical mounds that could refract or focus waves. At this site we could proceed without worry.

Site C. On top of the Sand Island Bar

If the quantity will be less than the presently estimated 30K cu yds, or the repeatability of positioning poorer than ±150 ft (LORAN precision for this location), building up the Bar at Site C would afford a nice demonstration of reuse and repeated erosional lowering on a disposal berm. Present depths at Site C are about -14 mllw. Steep slopes to the north and south away from Site C will spread the material more widely here than at Sites A and B. Placement along the crest of the bar could bring it up to -11 ft, which is only slightly shallower than achieved by the dredge *Atchafalaya* at this spot in 1988. Positioning would be easier here because the present bar would show clearly on the disposal vessel depth sounder.

Site	Easterly Coord	Northerly Coord	Approx. Depth
A	317,500′	70,500′	-21′
B	319,000′	68,500′	-23′
C	318,250′	70,550′	-14′

3. Each site could provide interesting results through a continuation of present survey plans. I have a slight preference for B if you can get conscientious positioning and 30 to 40K cu yds of material. If not, this brief discussion may help clarify the basis for choosing on of the other selections or some combination. I will not be in the office for the next 3 working days. Please call Neil (601/634-3006) if you have any questions.

Ed Hands

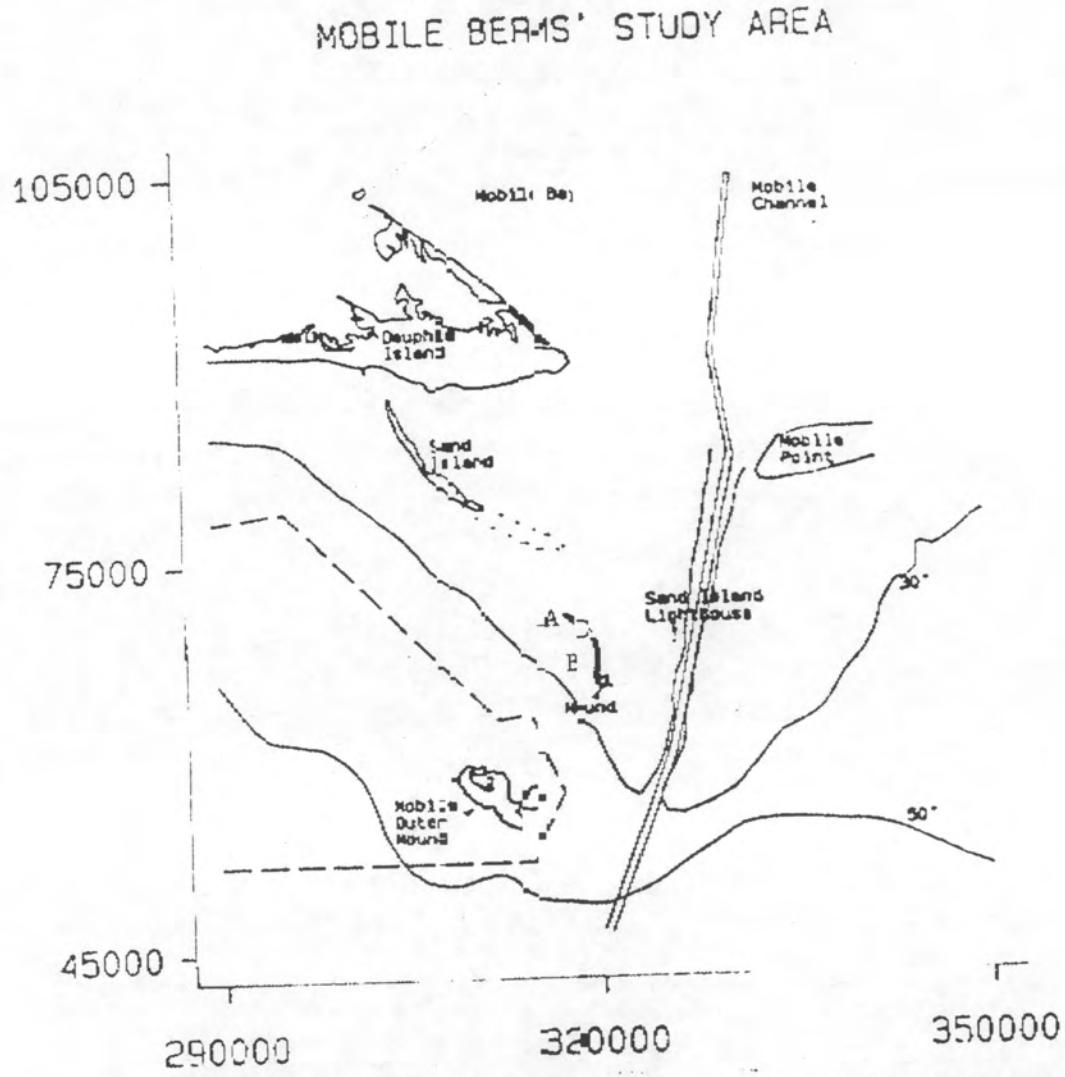

Figure Location map for Mobile Berms. The Mobile Outer Mound is here defined by the 40 and 25-ft contours. The Sand Island Berms are defined by the 16-ft contour. Depths are from a August 1988 survey. Axes labels refer to the Alabama State plane coordinate system in ft

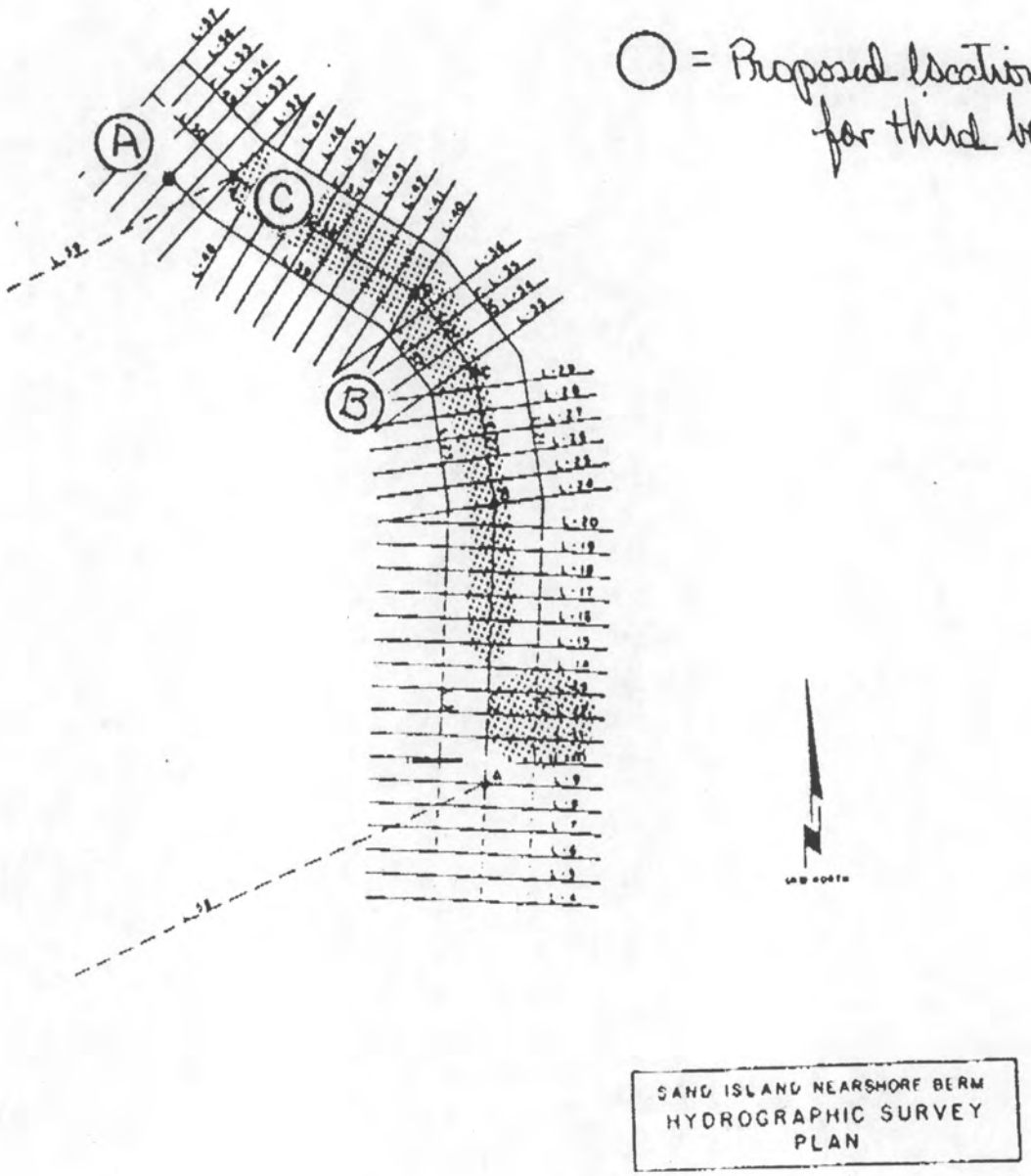

Figure Layout of sounding lines perpendicular to the local slope and at 200-ft line spacings. A few cross lines supplement coverage. Sequential surveys should always be based on the same line end points. (Hands and Bradley 1990).