

COPY

U. S. DEPARTMENT OF COMMERCE
COAST & GEODETIC SURVEY
WASHINGTON 25, D. C.

In Reply address the Director
Coast & Geodetic Survey
and not the signer of this
letter
And Refer to No. 651-mc

Your file: LMNGS

10 April 1958

TO: District Engineer
New Orleans District
Corps of Engineers, U. S. Army
P. O. Box 267
New Orleans, Louisiana

Subject: Leveling in the Vicinity of New Orleans

Receipt is acknowledged of your letter of 27 February 1958, pertaining to the adjustment of leveling in the vicinity of New Orleans, Louisiana. The adjusted results for the 1955 releveing were published under date of 10 October 1957, copy of which is enclosed for your file.

The releveing of 1951 was undertaken as a reimbursable assignment and due to limited funds and also due to other commitments, we were not in a position to extend the leveling into more stable areas as we would have liked to have done. The releveing of 1955 which was extended both east and west of New Orleans brought out the fact that marks in New Orleans were settling by varying amounts.

In your letter of 5 January 1956 to Comdr. Robert A. Earle, Coast and Geodetic Survey, New Orleans, you stated that bench marks 1326/02.68 (USE), U 8, and A 10 appeared to be less reliable than most of the other marks. Yet our leveling shows these marks to have settled less than those referred to in your recent letter as being on stable structures.

In the adjustment of leveling, we try as far as possible to avoid changing previously adjusted values. However, where the changes in elevation are appreciable, the releveing would be unduly punished to fit it to previously adjusted values. We realize that changed elevations cause inconvenience to local engineers but the matter of settlement has been noted in a good many areas. Releveing in the vicinity of Galveston and Houston has shown that there is considerable change in this region, with a maximum of about 2.8 feet in the vicinity of Texas City. Other regions of settlement have been noted east of Little Rock, Arkansas, and in many regions of California. In fact, the more releveing that is accomplished, the more we lean toward the belief that there is no mark which can be trusted to remain absolutely stable and that any mark may undergo some change due to adjustments in the earth's crust. The setting of marks in substantial structures does not always guarantee their stability because often the changes are deep seated.

It is believed that until we have additional releveing to give us a better understanding of what changes have taken place in your region of interest, we should retain the adjusted elevations as published in the list enclosed. It is realized that often less confusion results by retaining the old elevations by local engineers and if this is the case

• C O P Y

in your instance, there are certainly no objections to your retaining previous values for your local use. In fact, field work by the U.S.E. accomplished around 1938 should be tied to our 1938 elevations and not the most recent elevations.

/s/ Charles Pierce
Charles Pierce
Rear Admiral, C&GS
Assistant Director

Enclosure (1)