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189 44'54' 44'55' 44'56' 44'57' 44'58' 44'59' 45'00' 45'01' 45'02' 45'03' 189

93°20' 93°19' 93°18' 93°17' 93°16' 93°15' 93°14' 93°13' 93°12'

SURVEY OF THE MISSISSIPPI RIVER

Made under the direction of the

MISSISSIPPI RIVER COMMISSION.

CHART Nº 189

Projected from a Trigonometrical Survey

Made in 1895.

SCALE 1:20,000

Feet

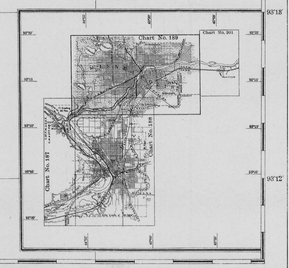
Meters

Statute Miles

ANOKA COUNTY
RAMSEY COUNTY
HENNEPIN COUNTY
DAKOTA COUNTY

INDEX CHART

SCALE 1:300,000



NOTES.

Elevations are given in feet above the Memphis datum plane which is 190.84 feet below the zero of the U. S. Engineers gauge at Memphis, Tenn., and approximately 5.13 feet below mean Gulf level at Biloxi, Miss.

Soundings are given in feet and tenths reduced for the fixed pin feet apart on the bottom lands and river banks. The elevations of the water above the Memphis datum are indicated by figures which are placed on the higher side of the lines to show the direction of the slopes.

Lines of benchmarks, called stone lines, are placed normal to the river at intervals of about three miles and are numbered consecutively from Cairo, Ills., northward. The benchmark is a flat tile, 12 inches square, set about 2 feet below the surface of the ground and surrounded by a 2 inch iron pipe 4 feet long. The upper figures preceding the sign ⏥ indicate the number of the stone line and the lower figures give the number of the benchmark on the line; the numbers following are the elevations of the tiles or pipes. Other benchmarks have their elevations given to the nearest foot.

The shore line is not reduced to the slope of the soundings, but is plotted as surveyed. Dates in the river bed indicate the days on which soundings were made.

Soundings are expressed in fat and are reduced for this chart in two parts, one below and the other above St. Anthonys falls. Below St. Anthonys falls the stage is 4.4 feet above ordinary low water and corresponds to a water surface elevation at stone line No. 765 of 723.0 feet and a gauge reading of 27.3 feet on the gauge at the "Lower Dam Power House".

Above St. Anthonys falls the stage is 4.0 feet above ordinary low water and corresponds to a water surface elevation at stone line No. 765 of 809.0 feet.

AUTHORITIES.

The Secondary Triangulation and Precise Levels were done under the direction of Captain H.E.Wintermann, Corps of Engineers, U.S.A., Secretary Mississippi River Commission. The Topographical and Hydrographical field work was done under the direction of Captain Mason M.Patrick, Corps of Engineers, U.S.A., Secretary Mississippi River Commission. The mapping was done under the direction of Captain Mason M.Patrick, Corps of Engineers, U.S.A., Secretary Mississippi River Commission, and Captain G.P.Howell, Corps of Engineers, U.S.A., Secretary Mississippi River Commission.

Latitudes and Longitudes, are derived geodetically from the Cairo Astronomical Station, established in 1891, by Captain Mason M.Patrick, Corps of Engineers, U.S.A., and First Lieutenant D.W.Lockwood, Corps of Engineers, U.S.A.

Secondary Triangulation, Precise Levels and Stone Lines, in 1895, Assistant Engineer A.T.Morrow, Chief of Party.

Precise Levels, by W.S.Williams.

Topography and Hydrography, in May, June and November 1895, Assistant Engineer A.T.Morrow, Chief of Party.

Ordinary Levels, by W.C.Lenoir.

Topography, by W.S.Williams, F.G.Hay, E.J.Thomas and M.J.Powers.

Hydrography, by W.S.Williams, F.G.Hay, and F.E.Whitney.

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