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January 14, 1971.

Los Angeles Section , American Society of Civil Engineers.

History & Heritage Committee.

Subject: Colorado River Suspension Pipe Bridge.

Location: Across Colorado River near Blythe, California.

Owner: El Paso Natural Gas Co., El Paso, Texas.

Engineer: Matthews and Kenan.

Significant Date: Designed in 1946 and constructed in 1947.

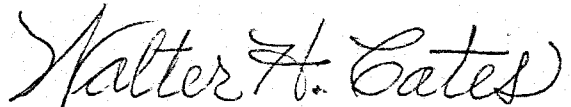
It was the first major suspension type pipe bridge built in the Los Angeles Section area (Riverside County).

It represented an innovation in this type and magnitude of a river pipe crossing.

Description: A suspension bridge with a clear span of 1,020 feet.

It supports a 30 inch diameter welded steel high pressure gas pipeline across the Colorado River. It is designed to resist high lateral wind loads. A photograph accompanies this description.

The Board of Directors of the Los Angeles Section of the American Society of Civil Engineers has designated this fine structure as an historic American civil engineering landmark in the Los Angeles Section area.



Walter H. Cates, Chairman.

El Paso Natural Gas Company

El Paso, Texas 79999

J. F. EICHELMANN
SENIOR VICE PRESIDENT

June 19, 1970

Mr. W. H. Cates
940 W. Duarte Road
Arcadia, California 91006

Dear Mr. Cates:

I am sending herewith information requested on the design criteria of the pipeline bridge across the Colorado River near Blythe, California. I would like to apologize for being so late in sending this information, but I have had trouble compiling it since Mr. Wilder Kenan, who was the design engineer, has been retired and has been out of reach.

The structure was constructed by Pittsburgh-Des Moines Steel Company of Pittsburgh, Pennsylvania and the cables were supplied by John A. Roebling & Sons.

The following are answers to questions in your letter of June 11, 1970.

1. Year constructed: 1947.
2. Owner: The structure is jointly owned by El Paso Natural Gas Company and Pacific Lighting Service Company.
3. Design Engineers: Matthews and Kenan, Consulting Engineers, San Antonio, Texas.
4. Gas Operating Pressure: 650 psig normal and 810 psig maximum.
5. Method of Resisting Wind Pressure and Earthquakes: Wind resistance taken care of by wind cables. The structure was designed considering all factors including wind and earthquakes.
6. Maximum wind pressure Design: 100 mph.

7. Method of Construction:

- a. The main piers were made up of steel caissons, 11 feet in diameter and 56 feet long. These caissons were sunk by excavating within them and by applying a load to the top of them during the sinking operation. After the caissons reached desired grade, several steel bearing piles were driven into the bottom of each caisson. A seal course of concrete was then poured, plus a concrete core and a cap on which was built the pier superstructure.
- b. The concrete anchors were built in open excavations and also contained steel bearing piles. The concrete was formed and poured in the customary manner.
- c. The steel towers and wind arms were erected in the conventional manner.
- d. The cables were pulled across the river from one anchor to the other and lifted up into position on the tops of the main towers and at the outward ends of the wind arms. The suspender cables were erected next, pulling the cables into proper position.
- e. The pipe was placed on the bridge by erecting it on platforms on each end of the bridge, pushing the pipe out toward the center of the bridge in order to apply symmetrical load on the bridge as the pipe was placed. The riser pipes on each end of the bridge are supported on steel bearing pile supports.

8. Any other Pertinent Information:

- a. The pipeline on the bridge is 30" O.D. x .438 WT X-52 line pipe.
- b. The main span is 1020 feet long.
- c. The distance between anchor faces is 1853' 6".

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- d. There is a vertical clearance of approximately 44 feet between the bottom of the pipe and normal water elevation at the center of the span.
- e. The over-all height of the structure is approximately 122' 6".
- f. The steel towers are 116' 6" high and 26' wide from centerline to centerline of main columns. The main columns consist of 30" wide flange - 190 lb/ft.
- g. There are two cantilever wind trusses on each tower. The top and bottom chords of the trusses are 16" wide flange - 36 lb/ft. There are two 2 3/4" O.D. main cables prestressed and two 1 3/4" O.D. wind cables prestressed. The main suspenders are 5/8" O.D. galvanized 19 wire Siemens Martin Strand.

For whatever information you may find, I am including a set of drawings.

We hope this information will be of help to you and appreciate very much the History and Heritage Committee of the Los Angeles Section, ASCE declaring this structure as a civil engineering landmark. If you need any more information, please call on me.

Sincerely,

EL PASO NATURAL GAS COMPANY


J. F. Eichelmann
Senior Vice President

JFE:m

encl.

cc: J. A. Millen

Pacific Lighting Service Company