The chief feature of interest and novelty about your proposed bridge is the fact that spans of 734 and 618 feet, respectively, are required across the two arms of the East River, at an elevation of at least 130 feet above one of the most busily navigated streams in this country. These great spans, although forming but one-eighth of the total length of the structure, will cost considerably more than one-half of the whole, and, with one single exception, are unprecedented for railroad purposes. The Niagara Suspension Bridge, of 800 feet clear span, alone surpasses the length of the proposed spans, while the following railroad bridges approach this magnitude:

The Cincinnati Southern Bridge, truss, 517 feet span clear.  
The St. Louis Bridge, braced arch, 515 feet span clear.  
The Kuilenburg Bridge, trussed girder, 493 feet span clear.  
The Britannia Bridge, tubular girder, 460 feet span clear.  
The Saltash Bridge, double bowstring girder, 455 feet span clear.  
The Cincinnati Bridge, truss, 420 feet span clear.  
The Louisville Bridge, trussed girder, 400 feet span clear.  
The Diershau Bridge, lattice girder, 398 feet span clear.  
The Conway Bridge, tubular girder, 400 feet span clear.

Our examinations of the strains and computations, therefore, have principally been directed to the plans for the two long spans; and although we have also given due attention to those for the approaches and lesser spans, our discussion of the merits and demerits of the various designs will here mainly be confined to those proposed for the stretches across the East River, as these form the most novel and costly features of your structure.

The remainder of the work is of no unusual character, and the requirements are readily provided for by the types of metallic structures in common use.

DISCUSSION OF PLANS.

I. The plan submitted by Mr. L. W. Wright for the long spans consists of a species of lattice girder, with considerable cambre, as shown on plate I.

There are no strain sheets or estimates.