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Erection Procedure of Aji-Gawa Bridge

Procédure de montage du pont Aji-Gawa

Bauverfahren für die Aji-Gawa Brücke

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The Aji-Gawa Bridge is a long-span cable-stayed bridge with a center span of 350 m and is a part of the Osaka Bay coastal route of the Hanshin Expressway System, which is a four lane highway, two lanes in each direction. The bridge spans the mouth of the Aji River. Since large vessels sail this river, a clearance of 184 m in width and 45.6 m in height is required below the bridge for the main fairway. Therefore, the bridge must be erected at a height of 52 m above the sea level, which presents rather severe conditions for its aerodynamic design.

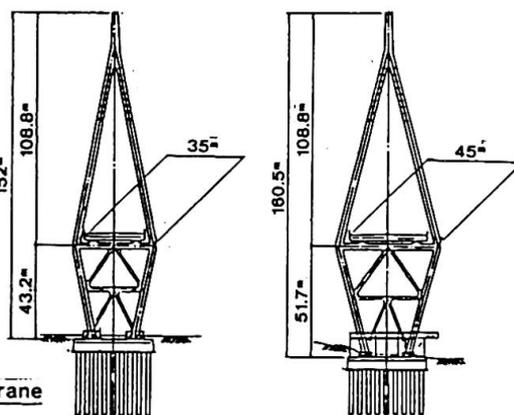
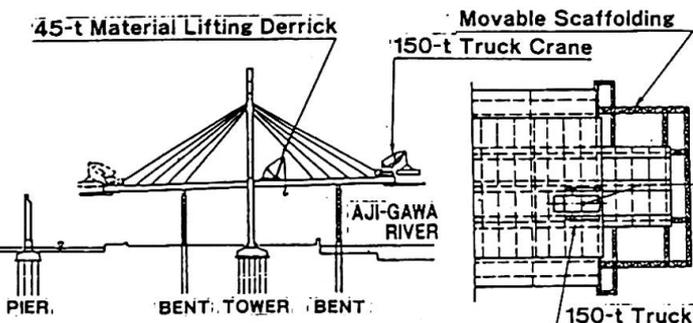
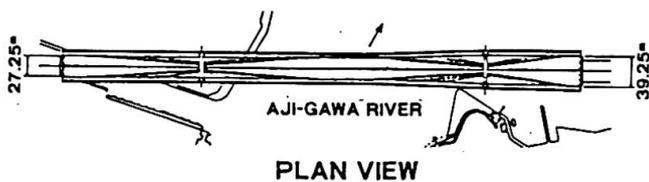
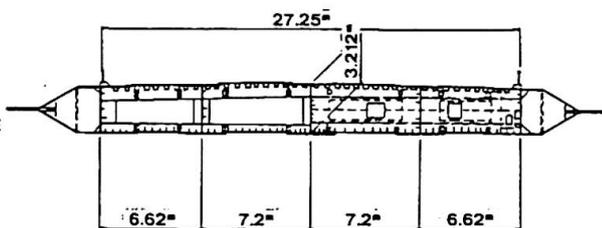
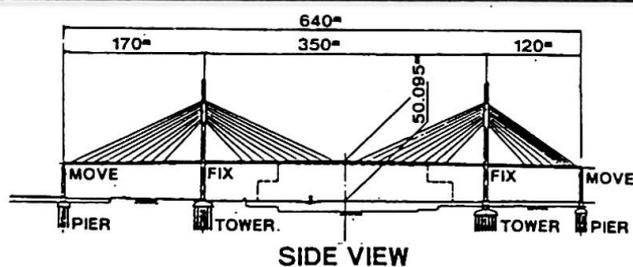
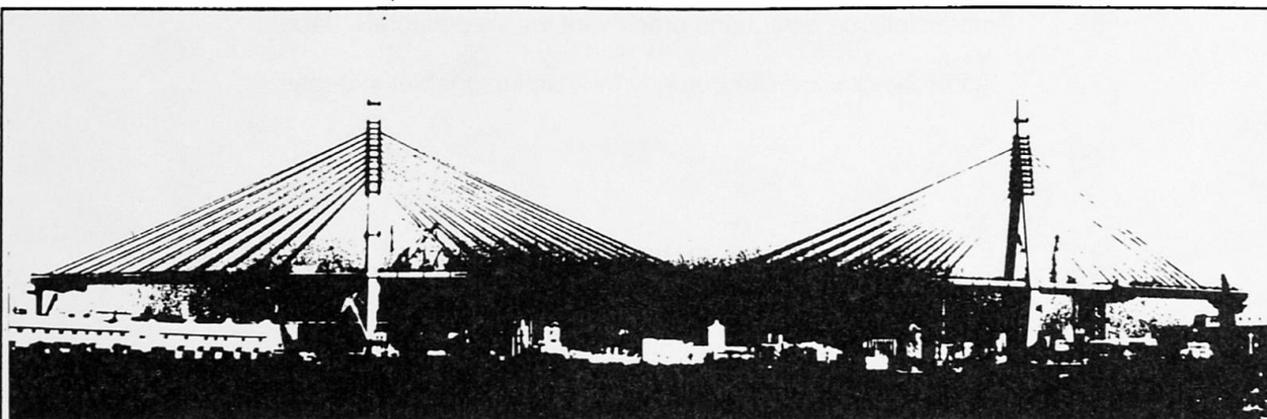
It is essential to select an erection procedure that is suitable for the geographic conditions of the erection site and the type of structure. In the case of this bridge, almost all of the structure is situated above the water which is geographically ideal for large-block erection by the flotation method using large floating cranes. However, since there are many large ferries sailing in the water area around the erection site, maintaining a sufficient fairway is the essential requirement for the erection. Therefore, some parts of the main girder are erected in large blocks with 3000-t floating cranes, after which the other parts that come immediately above the fairway are erected in small blocks by cantilevering.

As this erection procedure needs the strict control for the accuracy of the cable-stayed bridge, a new computer system was adopted.

Bridge Description

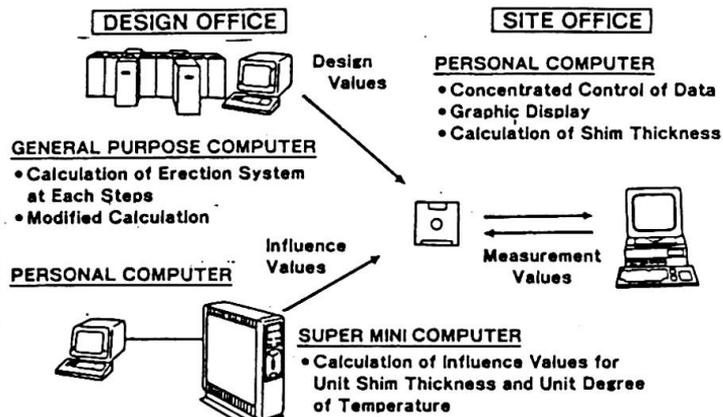
Type of Bridge	:	Cable-stayed bridge with a three span continuous box girder
Spans	:	120 m + 350 m + 170 m
Tower Height	:	165 m, A-shape
Traffic Capacity	:	4 lanes highway

ERECTION PROCEDURE OF AJI-GAWA BRIDGE (THREE-SPAN CABLE-STAYED BRIDGE)



Movement of movable scaffolding.
Erection of center I-girder, lower flange plates and deck plates.

SMALL-BLOCK ERECTION BY CANTILEVERING (STEP 2)



PRELIMINARY CALCULATION FOR ADJUSTMENT OF CABLE TENSION FORCE



ERECTION OF SUBSTRUCTURE