

全線復旧までの623日

Back to full service in 623 days

神戸市東灘区深江本町(ピルツ構造区間)

神戸市東灘区深江本町で延長635mにわたって18径間のプレストレストコンクリート橋が倒壊しました。支間中央部に吊桁を有する橋脚と橋桁が剛結されたピルツ構造が採用された区間で、17本のRC橋脚が柱の中間高さで破壊し、橋桁が北側に倒れました。

復旧では、ピルツ構造から橋桁と橋脚を分離する構造とし、地震力の低減を可能とする免震支承を採用しました。橋桁には重量が軽い鋼床版2箱桁、橋脚には橋軸直角方向に幅を広げた小判形RC橋脚を用いました。

Pilz structure in Fukae Honmachi, Higashinada-ku, Kobe

An 18-span prestressed concrete bridge collapsed for a length of 635 m in Fukae Honmachi, Higashinada-ku, Kobe. This section had a Pilz or mushroom-shaped structure in which the bridge piers and girders were rigidly connected to each other, with the mid-span girders suspended. The girders fell northward in the earthquake as 17 reinforced concrete piers collapsed at mid-height of the columns.

The piers and girders of the rebuilt structure are no longer connected to each other, with base isolators installed for a reduced seismic load. The dual box girders with steel deck are light in weight, and the reinforced concrete piers have expanded widths in the transverse direction.

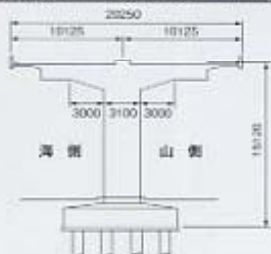


震災直後 Immediately after the earthquake

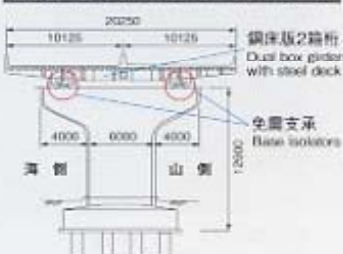


復旧後 Restored bridge

震災前断面 Cross-section before the earthquake



復旧後断面 Cross-section after the restoration



神戸市中央区波止場町(弁天高架橋)

神戸市中央区波止場町に位置する弁天高架橋は、複数のRC橋脚がせん断破壊し、落橋や主桁の座屈などの甚大な被害を受けました。早期復旧を図るため既存の杭基礎を再利用することとし、橋脚下端に免震支承を配置することで既存の杭基礎を補強不要としました。高い耐震性能を有する19径間連続の鋼床版立体ラーメン橋として復旧されました。

Benten Viaduct in Hatobacho, Chuo-ku, Kobe

The Benten Viaduct in Hatobacho, Chuo-ku, Kobe, was seriously damaged in the earthquake. Multiple reinforced concrete piers failed in shear, causing the bridge to fall and the main girders buckle. The existing pile foundation was reused for faster restoration, with base isolators placed at the bottom of the piers so that no strengthening was required on the old foundation. High seismic performance is achieved in this new 19-span continuous rigid frame bridge with steel deck.



震災直後 Immediately after the earthquake

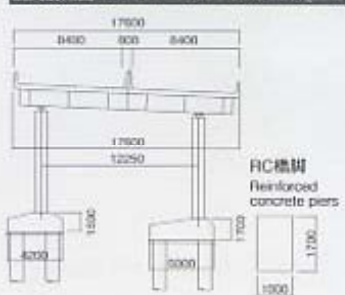


復旧後 Restored viaduct

弁天高架橋の構造(世界初の橋脚下部免震構造)

Structure of Benten Viaduct (world's first application of seismic isolation at the bridge pier bottom)

震災前断面 Cross-section before the earthquake



復旧後断面 Cross-section after the restoration

