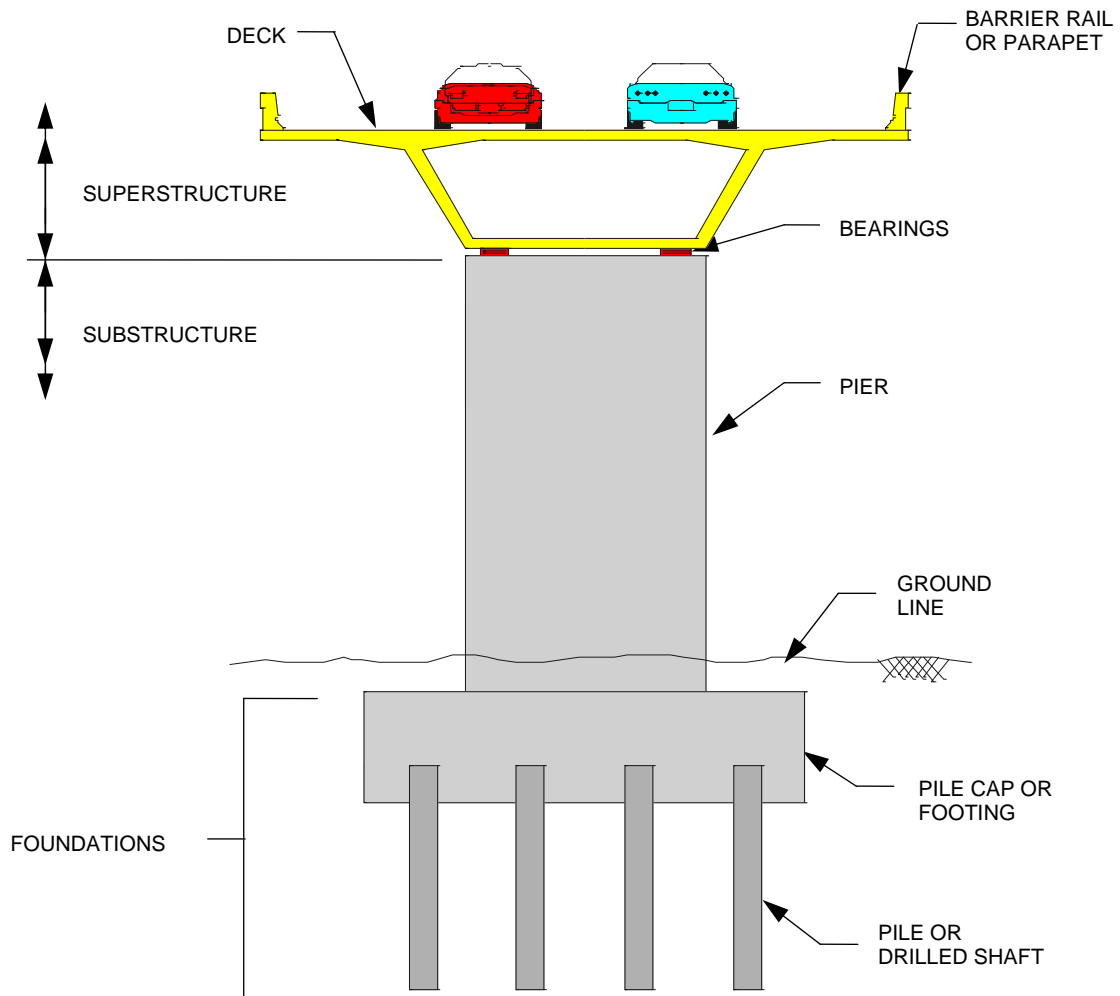


Glossary of Common Bridge Terms and Elements



Abutment: Earth-retaining structures supporting the superstructure at each end of the structure.

Barrier Rail: Safety device along edges of a bridge to prevent vehicles from going over the sides. See Figure 1. Interior barriers separate two-directional travel and prevent vehicles from crossing over into oncoming traffic.

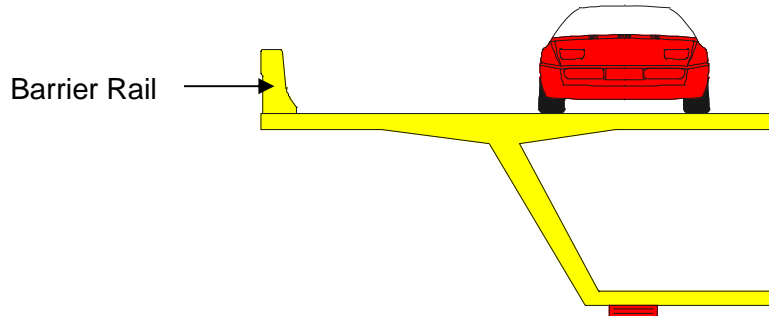


Figure 1

Cantilever Construction (Unidirectional): Erection method used in building over water. The superstructure is built from each side of the piers and meets in the center of the main span, over the river. See Figure 2.



Figure 2

Casting Yard: Established area, typically near a construction site, where forms are built for pre-casting concrete segments. Segments are typically stored prior to erection in the same yard.

Deck: The bridge floor; the surface that supports the vehicular traffic. See Figure 3.

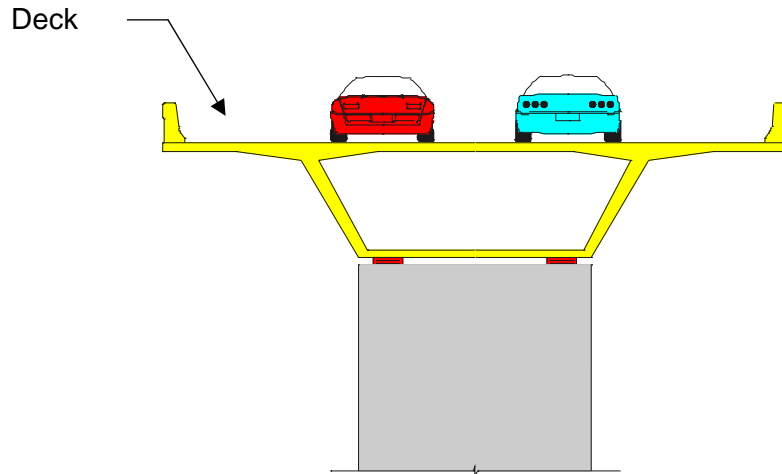


Figure 3

Drilled Shaft: The “legs” of the bridge that support the piers and pile cap or footing located underneath the water or ground line.

Embankment: A raised area of fill used in roadway approaches. In some cases, retaining walls are used to support or “hold in” the fill area where other constraints exist adjacent to the approaches.

Footing/Foundation: The base to a column or wall that transfers loads from the substructure to the soil. See Figures 4A & 4B.



Figure 4A



Figure 4B

Formwork: The molds or forms in which concrete segments are cast.

Falsework: Temporary supports to support construction loads. Typically removed once construction is completed.

Grade: The slope of a road, channel, or natural ground (usually given in %).

Longitudinal: Used to describe the axis of a bridge along the length of the bridge that proceeds from abutment to abutment.

Mainspan: The center or primary span of the bridge over the river, typically the longest span of the bridge.

Median: The area between two roadways carrying traffic in opposite directions.

Pier: A vertical structure that supports the bridge superstructure. Piers transfer forces from the superstructure to the foundations. See Figure 5.



Figure 5

Pile: A long steel or prestressed concrete member that has been driven vertically into the ground to support the foundations.

Pile Footing: A concrete footing supported by piles, sometimes referred to as a pile cap, or a pile cap footing.

Post-tensioning: Application of tensile forces to the steel tendons after the segments are in place. These forces allow the span to carry the desired loads.

Precast Concrete: Concrete that is cast in a form before it is transported and placed in its final position.

Right of Way: Property boundaries in which the bridge or roadway may be constructed within.

Segmental Box Girder: Precast concrete box girder type superstructure segments, which are constructed in short lengths and erected together in final position to complete the bridge. See Figure 6.



Figure 6

Shoulder: Portion of the roadway adjacent to travel lanes. Exterior shoulders accommodate stopped vehicles for emergency use. Interior shoulders are for driver safety. Required shoulder widths vary based on road and bridge design considerations.

Span: Section of superstructure between supports. The span is the length between supports.

Substructure: All portions of the structure below the bearings (pylon, piers, columns, and foundations) that support the superstructure.

Superstructure: The top portion of the structure that vehicles drive over, which is supported by the substructure.

Tendon: Steel strands used for post tensioning.

Tension: A force that is used to stretch (stress) tendons.

Transverse: Used to describe the axis of a bridge that lies perpendicular or radial to the longitudinal axis.

Vertical Curve: Curvature of the roadway or bridge in the vertical plane.