REINFORCED CONCRETE STRUCTURES IN THE CONSTRUCTION OF SMALL AND MEDIUM-LENGTH BRIDGES ON RAILWAYS

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Annotasiya. Will perpendicularly of the planet to the straight line. Mutually perpendicular planet. The straight line between the two and determine the means and planet planet. A straight line which is perpendicular to the plane passing through you at any given second, this plane is mutual perpendicular. The angle between the straight line and the plane, as this is the angle between a straight line of a given projective plane I ortogonal. The angle between the two-plane angle between two straight lines that are perpendicular to the line of their intersection with a linear measure.

Key words: *a straight line perpendicular to the planet in a mutually perpendicular planet, the straight line between the means and the planet.*

The subject of "Descriptive Geometry and Engineering Graphics" has its own history, like other subjects. This science has developed as a result of human practical activities, such as the construction of housing, defensive fortifications, and railways, as well as the production of various machines, ships, and household items.

Drawing occupies a special place in modern production. Because every day in our factories, various stoves, machines and mechanisms, household items and many other things are prepared. They cannot be made without drawings. Individual parts of machines and tools are made according to drawings, and complex mechanisms are assembled from finished parts.

Drawing is essentially a graphical means of information (information) transmission, which is the most understandable means of expressing a technical idea.

Drawings are sent from one factory to another, from one country to another. Any specialist who can read a drawing will understand them, and by looking at them, he will learn the structure of the most complex machine. Therefore, anyone who wants to become literate in the field of technology must know and master descriptive geometry and engineering graphics. However, drawings are not only necessary for technicians, but also for professionals in many professions. Based on drawings, residential buildings, dams, mines, power plants, railways and highways are built, clothes, shoes are sewn, furniture is made, and cities and villages are landscaped. To master and develop a technique, a skilled worker, engineer, designer, and draftsman must be able to both design and read a drawing, because a drawing is one of the tools for studying the things around us, the world that exists.

"Descriptive Geometry and Engineering Graphics" is a broad field of study, and given the rapid pace of technological development in today's fast-paced world, this subject is considered a fundamental and important one for engineers. . The purpose of teaching the subject of descriptive geometry and engineering graphics is to form and develop students' spatial imagination, knowledge, skills, and abilities necessary for preparing engineering documents.

The Masters under construction are the engineers responsible for the iron roads. In order to increase the economic potential of our country, develop the rail transport system based on the requirements of the time, successfully implement reforms in the industry, science must be mastered.

Until now, concrete and reinforced concrete remain the main structural materials in terms of its technical and economic indicators. They stand in one of the most advanced places in the overall system of production of building structures in the world.

Reinforced concrete is mainly used in the construction of small and medium-length bridges on railways. Reinforced concrete bridges represent 60÷70% of bridges on railways. The relatively low cost of construction, low operating costs, reliability, and durability are the advantages of reinforced concrete bridges.

The Railways of Uzbekistan are developing rapidly and become the main territorial part of the world transport logistics system. The Angren-Pop railway track currently under construction is a clear example of this. Numerous reinforced concrete bridges were also built and under construction on this track. This requires the training of specialists who know the structures of reinforced concrete bridges, who have the skills to calculate them, build them.

A structure that carries a transport highway over an obstacle is called a bridge.

A bridge structure consists of a deck that covers the span between the abutments and intermediate supports and transfers the load from the temporary loads to the ground through the supports (Figure 8.1). Over Intermediate devices, a bridge polotnos is placed, on which vehicles move.

The most important dimensions and types of bridges are:

- small bridge – when the total length of the bridge is up to 25m;
- medium bridge – when the total length of the bridge is from 25 to 100m;
- large bridge – when the full length of the bridge is greater than 100m;
- length of the bridge – the distance between the axes passing through the outer edges of the extreme supports of the bridge;
- The net span of the bridge L0 is the sum of the net lengths of the spans (i.e. the water passage line) along the average line between the lower water level (SPS) and the upper water level (SYuS);

- bridge height H – distance from the SPS to the road surface;
- clear height of the bridge H0 – distance from the SYuS to the underside of the intermediate structure;
- The construction height of the bridge h is the distance from under the rail (over the carriageway) to the bottom of the span.
- base height-distance from base top to grunt;
- account space-two adjacent supports of the intermediate device distance between Reliance axes;
- width of the bridge – the open distance between the rails on both sides;
- width of the span – the distance between the axes of the extreme main beams;
- width of the carriageway – the distance between the inner edges of the safety strips;
- width of the carriageway – the distance between the barriers;
- approach road tracks – road sections adjacent to the bridge from two sides (for small bridges – 50m, for medium bridges – 200m, for large bridges – 500m);
- old bridges – bridges built to standards before 1907 and have been in operation for more than 100 years;
- overpass – a bridge structure designed to carry one transport highway over another at different levels;
- viaduct – a bridge structure designed to carry a road over a deep ravine (gorge);
- aqueduct – a bridge structure designed to carry water;
- overpass – a bridge structure designed to carry a road at some height above ground level;
- Supporting part – a structure located on supports that transmits the load from the span to the support.

Classification of bridges is carried out according to the following criteria:

- by function-railway, motorway, City, footbridges and mixed (for iron and motorway Trasport), special (for pipeline conductors and other communications) bridges.

- according to the static scheme and the nature of operation under load - girder, truss, arch, cable, suspension and combined bridges.

Drawings of concrete and reinforced concrete structures.

Conditional images of core (fittings) products and elements of reinforced concrete devices. General rules for the laying of drawings of reinforced concrete structures.

Drawings of elements of monolithic (integral) and prefabricated reinforced concrete structures. Drawings of metal structures. Reinforced concrete structures.

Building elements made of steel reinforced concrete are called reinforced concrete structures.When concrete is resistant to compression, it cannot withstand stretching.Therefore, frames are made from steel fittings, bringing concrete structures to a level where they can withstand stretching.

All reinforced concrete structures will be integrated and prefabricated, depending on the preparation.

Integral reinforced concrete structures are constructed on construction sites. Some buildings and structures can be constructed from integral reinforced concrete.

Precast reinforced concrete structures are manufactured in special factories and delivered to construction sites.

Reinforced concrete structures include slabs, beams, foundations, columns, panel walls, blocks, stairs, etc. Block 1 for the foundation, logs 2, 3 for concrete walls, closing Plate 4, ora closing plate 5 with round holes, regel or longitudinal beam 6, column 7, stair March 8.

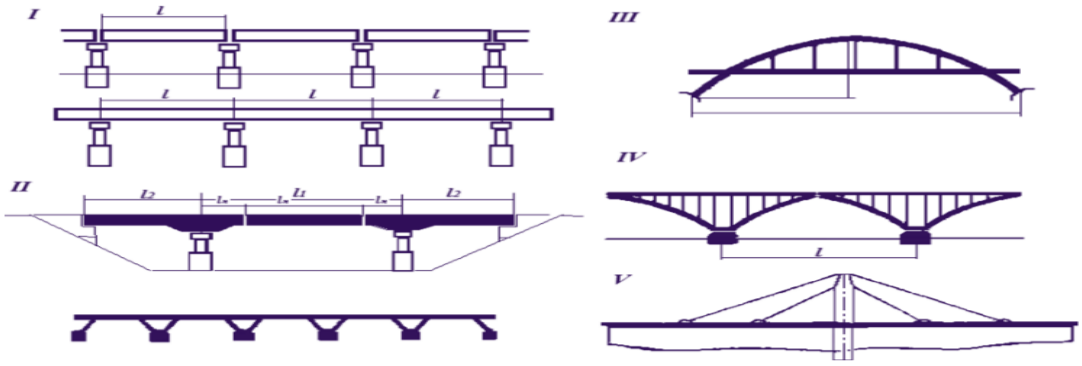
The image of the protruding patterned slab for the balcony 9, the slab for the balcony 10 is shown.

Natural stones include natural stones, baked bricks, and concrete blocks.

Natural stones are mainly used in the foundations of buildings, while artificial stones are used to build the walls of buildings. Figure 9.5 shows various brick and block samples.

The main systems of reinforced concrete bridges are presented. Beam-cut systems are the most common. They are used to cover small and medium spans. The stress state of such a span device under the given span and loads depends mainly on the shape and dimensions of the cross-section of the main beams.

To cover large spans with trussed structures, unsupported or cantilever systems are used. They can be made of prefabricated or monolithic reinforced concrete.



Main systems of reinforced concrete bridges: I – beam; II-frame;

III-arcali; IV – mixed; V – vantli; 1 – cut; 2 – not cut; 3 – console.

The advantage of non-sheared systems is the fluidity of the bending line, low consumption of material on intermediate devices and supports, the use of intermediate devices by various methods (longitudinal push, suspension concreting, suspension assembly, etc.).) include the possibility of construction with a slope, while the disadvantages include uneven settlement of the supports, concrete penetration (shrinkage) and fluidity (creep), and sensitivity to temperature fluctuations. Temperature variability refers to the fact that the temperatures of elements in different zones of the intermediate structure (for example: the plate, the beam rib, the bottom belt) are different.

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