Construction of Bridge Support Frame for Inclined Walkway

AI Overview

A stable support frame for an inclined walkway can be constructed using modular support columns, cross frames, and bolted connections to ensure stability, ease of assembly, and adaptability to site conditions.Structural DesignFor inclined walkways, the support frame typically consists of support columns arranged in a rectangular or trapezoidal layout, connected by cross frames to form a rigid structure capable of resisting vertical loads, bending moments, and horizontal thrusts . The frame may include stiffeners at key points to enhance rigidity and prevent lateral deformation . The design should account for the slope of the walkway, ensuring that the connection line of the leg foundations is parallel to the deck for optimal load transfer .Modular AssemblyModern construction methods favor modular, bolted connections between support columns, cross frames, and lifting frames. Each support frame can be pre-assembled off-site or on-site, with installation discs, positioning columns, and grooves to ensure precise alignment . This modular approach allows for easy assembly and disassembly, reducing construction time and cost while maintaining structural stability .Anchoring and StabilityThe base of the support frame should be securely anchored to a concrete foundation or pre-buried sleeve, often using metal sleeves, bolts, and reinforcing bars to prevent movement under load . Hydraulic or mechanical lifting devices can be integrated to adjust the frame during construction, ensuring proper alignment with the inclined walkway . Rubber or metal subassemblies may be used at pivot points to accommodate minor angular deviations and reduce stress concentrations .Material ConsiderationsSteel is commonly used for support frames due to its high strength-to-weight ratio and ease of prefabrication . For pedestrian walkways, composite construction with a concrete deck on steel girders is often em...

Article Content

Suspended Bridge 1

The walkway cables are marked by the white dashed lines. Figure 4 shows the bridge without intermediate supports. Suspended bridge. What are some possible reasons to install intermediate

Frame bridges

Concrete strut frame bridges are more expensive than girder or arch bridges for long spans due to the falsework cost (expensive for inclined piers). Composite bridges, with inclined steel legs, installed

Suspended Bridge 1

The intermediate support consists of two reinforced concrete columns and a cross-beam made of timber that is connected to the columns by bolts and nuts. The walkway cables are marked by the white

V type pier inclined leg combined type support for continuous rigid ...

The invention belongs to a construction method for V-shaped slant legs of a continuous rigid frame bridge, and in particular relates to a construction method for the combined support and the layered

Support for inclined leg rigid frame bridge

In order to achieve the above object, the utility model provides a following technical scheme: the utility model provides a slant leg rigid frame support for bridge, includes base, nested...

Steel walkways – Weland AB

Weland offers various types of steel walkways. Everywhere, where accessibility and safety needs improving, steel walkways can be used.

Bridge Geometry Manual

Bridge Geometry Manual Publication No. FHWA-HIF-22-034 Infrastructure O ffice of Bridges and Structures

A novel fully removable walkway system with non ...

Historic steel structures are generally heritage constructions that must be preserved, where invasive operations such as welding or drilling cannot be performed. Any auxiliary structures installed

Design of steel footbridges

Composite beams, steel girders with a concrete slab acting as both a walkway floor and participating as a top flange, are a practical solution for medium span

Bridge Geometry Manual

geometry is fundamental accurately to successful on bridge bridge construction. and detailed Detailed drawings superstructures to engineers and technicia at a specific substructures.

CN111910520B

The invention discloses a construction method of a high-speed inclined leg crossing rigid frame overpass, which sequentially comprises the following steps: leveling a foundation according to a

Design of Steel Bridges Structures

In this way of construction, the beams are installed between the end supports, and concrete is poured. Until the concrete hardens, the loads due to dead weight of the beams and concrete are resisted by

The Accessible Design of Pedestrian Bridges

Adapting bridges that are not universally accessible requires challenging and expensive construction work. When accessibility issues are considered in the planning and design of new

Lifting and reinforcing method for bearing capacity of inclined leg ...

The inclined leg rigid frame bridge is a bridge with a bridge span structure (main beam) and a support (inclined leg) which are integrally connected in an inclined mode. Common reinforcing methods for

Construction method of highway-crossing inclined-leg rigid frame ...

According to the design plan of the support, the foundation shall be leveled, and the full support 1 of the inclined legs and the steel pipe column supporting the beam body shall be erected;

Analysis of inclined leg angle on stress of V-shaped Pier Rigid Frame ...

Taking daquanhu super large bridge as an example, the bridge is a prestressed concrete V-shaped rigid frame bridge, full width of bridge of 38.0m, and main girder of single box three

Crafting a Walkway on a Slope: A Step-by-Step Guide

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Design of Continuous Girder Bridge Inclined Support System

Abstract This paper takes the continuous girder bridge with inclined support as the object and establishes the finite element model with Midas for calculation and analysis. Combined with the

Frame bridges

Frequent types of frame bridges and their fields of application are illustrated on the right. Historically, frame bridges were often idealised to simplify global analysis by introducing hinges. This is still useful

Cable Stayed Bridges

A cable-stayed bridge is a structural system with a continuous girder (or bridge deck) supported by inclined stay cables from the towers (or pylons), as shown in Fig. 10.1. Form the mechanical point of

DESIGN OF BRIDGES

In particular, nine cylindrical influence surfaces have been considered for simply supported as well as continuous bridges, whose spans varied between 5 and 200 m.

DIMENSIONING OF WALKWAY IN REINFORCED CONCRETE

The place to be built a walkway may also influence the choice of the construction method followed, as it may not be appropriate to temporarily interrupt one or more lanes in the street for the proper support

Bridge Design to Eurocodes Worked examples

The workshop was held on 4-6 October 2010 in Vienna, Austria and was co-organized with CEN/TC250/Horizontal Group Bridges, the Austrian Federal Ministry for Transport, Innovation and

Maintenance & Inspection of Pneumatic Train Stop Mechanisms

For inclined moving walks, the points of intersection of pallet or beltway line on the incline and the horizontal line of the top and bottom landing plates at finish elevation.

Structural Steel Walkway Analysis

This document provides information on the design of a steel walkway, including: 1) There are 52 nodes and 52 elements in the space frame structure. 2) There are 3 basic load cases and 4 combination

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