

Analysis of Subgrade Construction Technology of Road and Bridge

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Abstract: With the continuous development of the socialist market economy in our country, the national policy to constantly improve and road traffic and transportation will continue to progress, China Road and bridge engineering construction both speed and scale have made a major breakthrough. The rapid development of road and bridge engineering construction technology requirements are more and more high, the new era of new background, to strengthen the road and Bridge subgrade construction technology analysis has important practical significance. This article is conducted to provide some ideas for the further development of our country in the road and Bridge subgrade construction technology in China in the road and Bridge subgrade construction technology development status, and explore the road and Bridge subgrade construction technology strategy research.

Keywords: Road and bridge; Roadbed; Construction technology; Strategy analysis

1. Introduction

Subgrade which constitute road and bridge an important part, is also the road pavement and bridge and theme of the project based where, it and the tunnel, grab grain are connected to each other, common bear some traffic generated by the load. The subgrade is the main part of the road and bridge, and it is also the Department of road and bridge foundation, and the road to jointly bear the role of a series of load. So want to improve the quality of roadbed construction, then the road and Bridge in the construction of the roadbed analysis is imperative. Although China has accumulated a wealth of experience in the construction of road and bridge construction technology has made great progress, but in the actual road and bridge construction process, a lot of problems still exist. This paper mainly studies the road and bridge construction technology strategy, in order to provide reference for the further development of road and Bridge subgrade construction technology in our country.

2. Roadbed Fill and Roadbed Compaction

Subgrade filling and compaction construction technology is the first step in the construction of road and bridge construction, and is also a very important step. Subgrade fill and compaction technology of the roadbed directly affect the strength and stability of the roadbed. Roadbed fill and roadbed compaction construction technology mainly includes the following aspects. First, subgrade filling. National right in the road and Bridge subgrade fill has strict requirements, but also for road and Bridge subgrade fill has a more detailed provisions. Highway and highway pavement base of 0-30cm below

the roadbed filler CBR value should be greater than 8, roadbed and fill the following, the corresponding provisions of values. Second, subgrade compaction. Large tonnage roller should be used in compaction of road bridge subgrade, which can greatly improve the degree of compaction of road and Bridge subgrade. However, the construction personnel should take special measures to carry out special measures for the subgrade of special humid area.

3. Subgrade Drainage

3.1. Types of drainage

Water is the key factor that affects the strength and stability of subgrade. If the water is too much, it is easy to cause erosion. Therefore, to do a good job of road and Bridge subgrade drainage work, can effectively reduce the damage of water for road and bridge subgrade. Therefore, the construction personnel should pay attention to drainage work for road and bridge subgrade. Road and Bridge subgrade drainage work mainly includes the following points. First, ground drainage. Surface drainage is the focus of road and Bridge subgrade drainage, the construction unit should pay more attention to the construction quality control of the ground drainage. Second, underground drainage. Currently China Road and Bridge subgrade underground drainage ditch, blind ditch, sewer, and in the construction of underground drainage of this in several ways, the construction unit should carefully consider. Third, pavement drainage. Pavement drainage is mainly aimed at the rain water is too large to cause the road surface erosion, reduce the erosion of rain on the road.

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3.2. In the key technical measures to set up

According to the scheme each time points before the next step beam construction joints sealed platform supporting reinforced to penetrate into the box, improve the relevant protection facilities; in the first film to erection in place to take four temporary support measures, edge beam erection in place timely installation control panel; the second beam before beam falling, for temporary connection of welded steel, before and during and after the welding, each of not less than three reinforced, ensure that the beam body. The connection is reliable, falling after the beam bearing diaphragm welding four steel; steel wire rope recycling strictly according to slip rope with the operation, a head of a slow devolution, another head slowly increase until it is completely out of the deck.

Soft soil foundation treatment is an important part of road and bridge construction, soft soil foundation treatment technology has a direct impact on the road and bridge stability and life. For soft soil foundation treatment technology mainly includes the following aspects. First, the lime soil compaction pile. Lime soil compaction pile is mainly applied to soft soil water is too large or too small

Use of technology, soft soil water is too large, can join the right amount of lime powder, moisture content is too small can advance the soil internal add appropriate amount of water, ensure the lime soil compaction pile give full play to the role. Second, lightweight embankment. In road and Bridge subgrade construction process, adding lightweight materials, can enhance the stability and strength of road and bridge construction. Heavy compaction test method was used to determine the maximum dry bulk density of 9-12KN/m³, silicon drilling

type fly ash is small, not plastic, but the liquid limit of about 64%, the best water content of 37-41%, has a good compaction performance. Fly ash embankment slope surface 1-2m clay coated to slope stability and to the rough, the roadbed top surface with coarse grain on closed thick 0.3-0.5m.

3.3. Side beam erection of key technical measures

In July 22, 2008, the quality supervision and inspection center of the Ministry of Railways on the side beam weight monitoring results were 169.4t and 168.8t, showed that the edge of the beam to meet the requirements of the erection. 45m edge girder erection and operation schemes according to the steps as follows: points before the edge beam lifted from has frame beam surface vias, the beam is temporarily stored in a plane had been in the beam, do not release the hook. After the edge points do sliding down to lift the beam, pad stone tops 1-2cm, continue to cross. Move to the top of the secondary side of the beam is temporarily down and lay the temporary support. Bridging machine is traversing to has good frame bridge, double guiding girder hoisting method for single girder crane way. Bridging machine is traversing to the secondary side of single guide beam edge beam is hoisted by beam position, lifting height is higher than that of 1-2cm can support. Bridging machine traversing to edge beam position accurately, beam falling. Lay the support after the bridge machine traversing to beam position, set up, maximum plastic deformation 7mm, elastic deformation 12mm. In accordance with the requirements of the construction drawings, the beam body does not set the camber degree. Therefore, the setting value of the camber of the formwork should be considered to be the deformation of the pre press. The elastic deformation of the support system is reflected by the end of the transmission.

4. Roadbed Protection

Roadbed protection is road and Bridge subgrade construction is extremely important part, subgrade for a long time due to the exposure to outside by the erosion of wind, frost, rain and snow, roadbed problem is affirmative. Therefore, strengthening the subgrade protection is necessary for the construction unit of the roadbed construction process. Roadbed protection technology mainly includes the following two aspects content. First, slope protection. Slope protection is the foundation of road and bridge roadbed protection, along with the acceleration of China's road and bridge construction, slope protection has become an important part of road and bridge roadbed protection. Highway slope, the grass slope is high, the stone and grass protection frame. Second, erosion protection. High strength geogrid instead of wire do stone cage, hit the water surfing or polyester poly amine lipid geotechnical fabric made of

concrete slope protection mold bag support panel door free of the slope.

5. Soft Soil Foundation Treatment

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6. Summary

In short, we can see that the subgrade construction quality of good and bad will directly determine the overall quality of the road and bridge project. In the process of construction, the soil, temperature, humidity and a series of factors, such as the integration of research, to develop a suitable roadbed construction program, in the process of the construction of strict supervision, so as to ensure the best quality of road and bridge. China in the road and Bridge subgrade construction technology has accumulated rich experience has made significant progress, but in the actual road and Bridge subgrade

construction process, the existence of many problems seriously affects the road and Bridge subgrade construction quality. Road and Bridge subgrade construction personnel should problems exist in the research of road and Bridge subgrade construction technology, innovation road and Bridge subgrade construction technology strategy, stable can uninstall uninstall the classification unload.

Prestressed pipe pile support, safe and reliable, can fully guarantee the construction quality, low investment, low cost, scaffold materials turnover quickly, to meet the needs of rapid construction, economic efficiency is obvious. To provide reference for similar projects in the future. The project across the existing Beijing Guangzhou line frame beams operating in, correct hazard identification, safety and technical measures to guarantee the reliable, to ensure that the bridge erecting machine in the blockade and smooth hole and the frame beam, always make sure that the construction safety and the safety of existing lines, provides the reference for the construction of similar projects in the future.

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