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主管：中华人民共和国住房和城乡建设部

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● 本期看点

- 兰州市快速公交(BRT)道路交通工程设计要点综述
- 美国城市大桥在桥建设概英
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- 沥青混合料车辙试验方法、标准及影响因素研究综述



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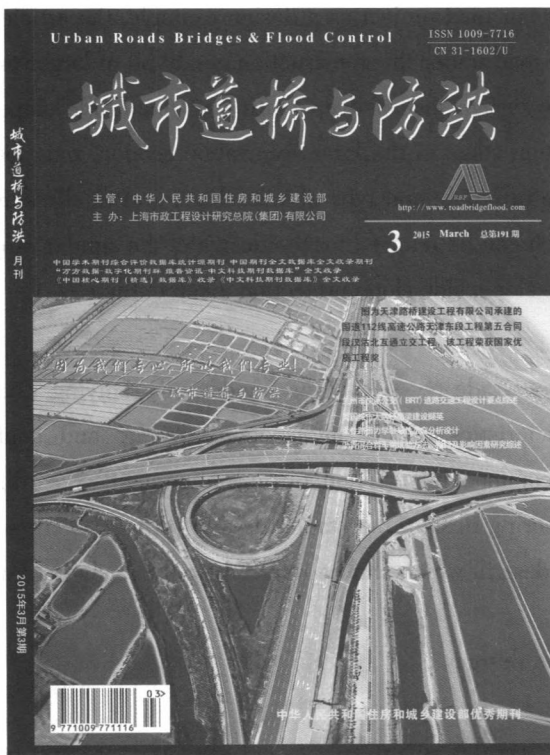
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Keywords: bus rapid transit (BRT), design, traffic organization, road traffic engineering

Summarization on Road Design of Plateau Road in Spaceflight Base Su Yingping, Zhong Hua, Li Jianqiang (4)

Abstract: Taking a spaceflight industrial base plateau road project as a design example, the article analyzes the line selection principle and thinking of plateau road under the construction condition of larger topography height difference and poor geology, introduces the design gist of deep cutting roadbed side slope and the monitoring requirements of side slope implementation stage in the large excavation section, puts forward the dynamic design idea, also introduces the protective principle and type of side slope, and finally sums up the matters for attention in the engineering design, which can be referred for the design of the similar projects.

Keywords: road design, plateau road, roadbed side slope, side slope protection, deep cutting

Selection and Design of Turning Alignment of Intersection at Grade Wang Weidong, Ji Jianying, Zhan Jun (7)

Abstract: This paper studies the traffic characteristics of the intersection turning, and analyzes the characteristics and application conditions of the common intersection turning alignment. According to the usual application experience of intersection engineering design, the standards and principles are selected to solve the problems for attention in the engineering design, which can be referred for the design of intersection at grade.

Keywords: intersection at grade, turning, alignment, design

Discussion on Setting of U-turn Lane of Plane Intersection of Urban Road Hu Zhangli (9)

Abstract: The intersection is the traffic throat to entire city. The reasonable organization of the U-turn vehicle and left-turn traffic flow can control the traffic operation quality of the whole intersection. The U-turn vehicles greatly disturb the traffic of left-turn vehicle and counter straight vehicle. The reasonable setting of U-turn lane has the important significance to improve the traffic capacity and service level of

intersection. The article analyzes the cause of U-turn traffic demand, puts forward three U-turn types of intersection, analyzes the advantages and disadvantages of each type, and discusses the design of U-turn lane. The relative experience can be referred for the similar projects.

Keywords: urban road, intersection, U-turn lane, setting

Elementary Discussion on Improvement Design of Urban Road Intersection Wu Lixin, Huang Hui (12)

Abstract: Taking the original intersection of Yufeng Road as an example, the article analyzes the main factors influencing the traffic capacity and service level of urban road intersection, specially sets forth the improvement contents and methods of intersection, and puts forward the detail improvement scheme of traffic of intersection at grade.

Keywords: intersection, improvement design, traffic capacity, service level

Design of Slow System by Visual Angle of Taking People as Main Body and Core Wang Xin (15)

Abstract: Under the visual angle of taking the people as the main body and core, the slow traffic is not only the traffic mode, is but also the important constituent part of urban activity system. It is required to consider the factors of slow space, slow subject and slow action for the people oriented. Taking the Zhuzhou Yunlong Avenue Project as an example, the article sets forth the design of slow system under the visual angle of taking the people as the main body and core. Its application effect is shown to reach the design objective and achieve the better economic and social benefits.

Keywords: slow system, design, Zhuzhou

Practical Application of High Liquid Limit Subgrade of High Grade Highway in Guangdong

..... Li Xuelian, Zhang Wen (17)

Abstract: The wave deformation, splashing mud slurry, horizontal and vertical cracks and other typical diseases are easily caused in subgrade and pavement if high liquid limit soil subgrade is not treated or not treated scientifically. By analyzing the distribution and engineering characteristics of high liquid limit soil, and its treatment engineering application of the typical high grade highway in Guangdong Province, the paper introduces the engineering classification of high liquid limit subgrade and sums up the treatment practical application of high liquid limit subgrade of high grade highway in Guangdong, which can be referred for the similar projects in this region.

Keywords: high grade highway, high liquid limit subgrade, Guangdong, treatment practice

Study on Present Situation of Compound Subgrade of Rigid Pile in Embankment Load Li Hui(20)

Abstract: The article describes the conception and the differences of compound subgrades, and points out that the study of stress status and settlement characteristics of compound subgrade in the flexible foundation of embankment has the important practical significance. The relative experience can be referred for the similar projects.

Keywords: compound subgrade, rigid foundation, flexible foundation, reinforced cushion

Study on Application of Plain Concrete Subgrade in Road Overhaul Liu Yong (23)

Abstract: In the design of asphalt pavement overhaul projects in China, the commonly used reinforcement measures are to dig and reconstruct the existing subgrade for the position of insufficient strength subgrade to

ensure its sufficient strength. The plain concrete is usually used as the reinforcing material of subgrade because of its good advantages of short curing time, high early strength and good integrity, and but it also has some disadvantages of high rigidity, easy to produce the reflection crack and etc. Taking a main road in Shanghai City as the research background, the paper studies and analyzes the key problems of plain concrete in the overhaul of urban roads, makes clearly the causes of fracture and subsidence of plain concrete plate, and puts forward corresponding measures for design of subgrade drainage and design of pavement structure.

Keywords: plain concrete, subgrade, road overhaul

Study on Key Technical Issues in Overhaul Design of Asphalt Pavement of Urban Trunk Road ... Li Shaoshuai(27)

Abstract: With the fast increment of urban traffic flow, the asphalt pavements of more and more urban trunk roads are damaged and are urgent to overhaul. The article studies and discusses the key issues of present pavement inspection and pavement status evaluation system in the design of overhaul projects. According to the engineering examples and aiming at the damage conditions of the different pavements, the article puts forward the relative curing countermeasures. The relative experience can be referred for the similar projects.

Keywords: urban main road, asphalt pavement, overhaul design

Study on Instability of Expansive Soil Slope and Its Prevention Xiang Ningbo(30)

Abstract: The expansive soil is more widely distributed. It is a high plasticity soil composed of hydrophilic mineral smectite and illite, and has the multi-fissures and strong swell shrink characteristics. Some side slope projects are easy to cause slide slope or landslide in this soil, which affects the traffic safety. The instability problem of expansive soil slope is more studied at home and abroad now, but the effect is not ideal. According to the cause of expansive soil slope instability and based on the different geological conditions, the individualized preventive study scheme is determined. The scheme of using flexible retaining, rigid retaining and 5-vegetation preventive measures is more suitable, which can have the good stability effect.

Keywords: expansive soil, side slope, stability, retaining technique, prevention

Parameterized Label of Municipal Road Plane Information Wang Qingyong(33)

Abstract: The article introduces the parameterized drawing technology. This drawing technology effectively solves the label problems of the common information in the plane design drawings of one-width road, double-width road, three-width road and four-width road of municipal road. The parameterized drawing can improve the design quality and drawing efficiency, and reduce the labor strength of design members.

Keywords: parameterized label, municipal road, plane information

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Construction of Long-span Urban Bridge in America Mu Xiangchun (36)

Abstract: The article introduces the master impression of urban bridge construction in New York, Pittsburgh and San Francisco of America, the classification of suspension bridge, arched bridge and cable-stayed bridge, and the investigation and study urban bridge collapses in America in recent years. The article introduces the relative inspiration and proposal for promoting the health development of urban bridge construction in China, which can be referred for the similar projects.

Keywords: investigation, America, urban bridge, bridge construction, relative inspiration

Design of Long-span V-shaped Pier Continuous Rigid Frame Bridge Zeng Tianbao, Zhang Lin (46)

Abstract: Taking a 25m+40m+25m V-shaped pier rigid frame bridge as the engineering background, the article preliminarily defines the pier arrangement and structure dimension of V-shaped pier continuous rigid frame bridge after the comparison of many aspects. The rationality of structure dimension is determined by checking and computation. The relative experience can be referred for the similar projects.

Keywords: V-shaped pier rigid frame bridge, bridge design, structure analysis

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Abstract: The cast-in-place cantilever method is fully to utilize the characteristics of the pre-stressed concrete under negative bending moment capacity, to transfer the positive bending moment in the middle of span to the negative bending moment of pivot point, and to improve the spanning capacity of bridge beam, which is more used in the projects. According to the engineering cases, the article analyzes and computes the cast-in-place cantilever bridge. The relative experience can be referred for the similar projects.

Keywords: cast-in-place cantilever, full pre-stressing, variable cross-section

Simplified Calculation Method of Cable Length and Conduit Installation Angle of Cable-stayed Bridge

..... Chen Rui (52)

Abstract: The mechanical property of the stayed cable of cable-stayed bridge is mainly analyzed by the catenary theory of hyperbolic function and the parabola theory of algebraic function. The parabola theory is simple and convenient, and the catenary theory is more close to practice and is more accurate. Based on the catenary theory, the article accurately computes the parameters of stayed cable and further simplifies the formula. The simplified formula can reflect the physical significance of stayed cable better. The convenient computation is suitable for the engineering application.

Keywords: stayed cable, catenary, simplified formula

Analysis on Influence of Auxiliary Pier on Stress of PC Single-pylon Cable-stayed Bridge Pang Wei (54)

Abstract: It is hard to make sure the ideal completion of single-pylon asymmetric cable-stayed bridge because of the greater difference between its main and side spans. Based on the design experience, the auxiliary pier constructed for the side span has the obvious improvement effect on the stress performance of this kind of cable-stayed bridge. With the help of the large finite element current computation software MIDAS CIVIL and combined with a practical example of PC single-pylon asymmetric cable-stayed bridge, the article computes and analyzes the influence of auxiliary pier on stress performance of single-pylon asymmetric cable-stayed bridge, which can be referred for the design of the similar cable-stayed bridges.

Keywords: PC single-pylon cable-stayed bridge, auxiliary pier, stayed cable, inner force, deformation

Design of Cable-stayed Bridge without Backstays in Caofeidian Interchanges to Port ... Ye Guoyong, Pan Xihong (57)

Abstract: The interchange to port in Tangcao Expressway is a single-pylon single-plane cable-stayed bridge without backstays. Its total length is 120m. Its spans are 47 m+73 m. Its full width is 34m. Its main girder, pylon and pier are all concrete structures. According to the characteristics of this bridge, its design of structure is different from any other cable-stayed bridges without backstays. The pylon is firstly separated from girder, the girder and pier consolidation structural type is used, and the main girder is the divided-piece box girder. Its stress is simple and the construction is convenient so as to avoid some faults of the integrated

wide bridge. The article introduces the structural treatment and stress characteristics of this bridge, and introduces its structural computation.

Keywords: interchange, cable-stayed bridge without back stay, separation of pylon and girder, consolidation of pier and girder

Master Design of Hefei City Fuyang Road (N) Elevated Bridge Zhu Jianfang, Wang Shoujun, Zhao Xinyuan, Cui Yunzhi(61)

Abstract: The article introduces the master design of Hefei City Fuyang Road (N) Elevated Bridge. Fuyang Road (N) is a part of the "middle longitudinal" road in the "six-longitudinal and six-horizontal" rapid road network of Hefei City, is a component of the south - north rapid road in Hefei, and is also the important road to go out of Hefei City northwards. The total length of the project is 9.3 km. The type of double-way six-lane ground road + double-way four ~ six - lane elevated bridge is used in the whole line. The whole line of elevated bridge spans the present railway and two special railways. Six pairs of parallel up and down ramps are constructed along the line. An interchange is constructed at the node intersected with the North Ring II Expressway. The superstructure of the elevated bridge is the pre-stressed concrete continuous box beam, and the substructure is the column pier.

Keywords: elevated bridge, pre-stressed concrete continuous box beam. Interchange, Fuyang Road (N)

Comparison and Selection of Railing Scheme for Chizhou Changjiang River Highway Bridge Yue Renhui, Zhu Jun, Zhang Baiyong(65)

Abstract: Based on the project of Chizhou Changjiang River Highway Bridge, the article discusses the railing scheme of the whole bridge. The article discusses the advantages and disadvantages of several common types of bridge railing in Anhui Province from the aspects of safety, beauty, economy, maintenance, construction and bridge load, and compares and selects the best scheme according to the characteristics of the project.

Keywords: bridge railing, anti-impact performance, comparison and selection of scheme

Discussion on Seismic Design of Bridges in Huizhou City Zeng Liqiang (69)

Abstract: The bridge as the important transportation passage of modern transportation has the high requirements to resist the earthquake. The article sums up the main destroying type of bridge in earthquake and the seismic design of bridge, and discusses the basic thinking and method of bridge seismic design in low intensity area by the example of Huizhou City. The relative experience can be referred for the similar bridges.

Keywords: bridge, low intensity area, seismic, method

Analysis of Hidden Danger and Solving Measures in Design of Road and Bridge Pei Weimin, Wang Jing, Ye Zhengquan (72)

Abstract: From the design of road and bridge, the article analyzes the general working principle necessarily followed in the design of road and bridge, sets forth the work gist in the design of road and bridge, analyzes the hidden dangers existing in the design, and studies the corresponding solving measures and methods. The relative experience can be referred for the similar projects.

Keywords: road and bridge, design, principle

Analysis on Design Gist of Municipal Engineering Bridge Wang Ming (74)

Abstract: With the continuous development of modern society, the demand of transportation enterprise on road is also continuously increased. At present, the existing municipal engineering bridges are generally safe and stable, but the serious damage problem also exists often to cause the collapse accidents and to cause the bad influence on the society. The safe operation of municipal engineering bridge is required to consider the design. Based on the design experience of municipal engineering bridge for many years, the issues for attention in the design are analyzed. In the design, it is considered to increase the computation load and to use the efficient anti-overturning structural measures so as to avoid the larger flaw. The continuous improvement of waterproof and drainage system of municipal bridge can make the bridges more durable under service.

Keywords: municipal bridge, transportation, design, pipeline

FLOOD CONTROL & DRAINAGE

General Investigation, Analysis and Countermeasures for Present Drainage Facilities in Jiangnan Urban Area of Ankang City Liu Haigang, Li Lijun, Liu Tingting (76)

Abstract: With the fast development of city and change of global climate, Ankang City as a frequently waterlogged city is facing the more severe challenge, and its waterlogging preventive work is extremely urgent. Taking Jiangnan Urban Area of Ankang City as an example, and according to the investigation of present drainage facilities, the article clearly analyzes the waterlogging cause, and further puts forward the waterlogging preventive measures. The relative experience can be referred for the similar projects.

Keywords: present drainage facilities, general investigation and analysis of pipe, waterlogging, waterlogging preventive measures

Study of Original Water Transfer Test at Middle Area of Wennan in Jiading District Yang Qi, Li Nianbin (79)

Abstract: According to the original water transfer test at the middle area of Wennan in Jiading District, the article analyzes the measured data of the different water transfer schemes, points out the problems existing in the present water transfer schemes, and puts forward the idea to solve the problems.

Keywords: water transfer, tested water flow, water quality

Elementary Discussion of 2014 Hangzhou City Xihu District Road Waterlogging Treatment Project Li Haiming (83)

Abstract:In 2013, the area of Hangzhou City is suffered of No.23 strong typhoon "Fett" harassment, which seriously affected the normal operation of city, in which Xihu District is the even more serious disaster area. Taking the extension section of Tianmushan Road (Gucui Road – Wuchang Entrance) as an example, the article sets forth the status, internal cause and external cause of road waterlogging along the line, and briefly introduces the implementation of 2014 Hangzhou City Xihu District Flood Control and Drainage Project (road waterlogging Treatment).

Keywords: Hangzhou City, Xihu District, waterlogging, engineering design

Study on Flood Control Scheme of Lanzhou City Section in Main Stream of Huanghe River Feng Hailei (86)

Abstract: The article firstly sets forth the present situation and the main existing problems of Lanzhou City Section in the main stream of Huanghe River, then introduces the design principle and scheme design of the flood control project, compares and selects the new embankment by aiming at various embankment sections

combined with the topography, and finally puts forward the maintenance reinforcing measures for the damaged riverbanks according to the practices.

Keywords: Huanghe River, flooding control, newly built, maintenance and reinforcement, scheme study

Further Analysis on Flood Control and Ecological Treatment of Square Donggou River

..... Zhang Cun, Dou Jinfa, Wu Hailiang (95)

Abstract: Taking the Square Donggou River of Jinan City as the study object, the article introduces the general situation and the present existing problems of water quality pollution, river deposition, river flood discharge and poor ecological effect of this river, points out the necessity of river treatment, and studies and draws up the river treatment measures. The effect analysis after river treatment validates the feasibility of river treatment. The article puts forward that the river treatment is not limited in the functional treatment of river, and should be more prominent of the human water harmony ecological management ideas.

Keywords: river, ecological management, greening beautification, self-purification of of water body

Discussion on Application of Drainage Model in Drainage Engineering

..... Li Wentao, Sui Jun, Niu Ying, Zhou Jianhua, Liu Chenglin, Tan Jinxin (100)

Abstract: The hydraulic model software InfoWorks ICM is used to establish the 2D drainage model of FY Road in Guangzhou City in order to analyze and estimate the hydraulic operation condition of present pipes, find out the cause of waterlogging, draw up the special solving scheme, check the design scheme, and guarantee the rationality and feasibility of scheme. The article introduces the application method and detail flow of 2D drainage model in the urban drainage projects, which can be referred for its application in the other areas.

Keywords: drainage pipe network, 2D model, data organization, design rainfall

Problems Existing in River Treatment and Effective Implementation of Water and Soil Conservation

..... Wei Yanli (104)

Abstract: Owing to the environmental complexity, the river treatment will not only affect the ecological environment, but also cause the greater influence on the evolvement of river at the lower reaches. Based on this, the article discusses the problems existing in the river treatment and the measures for the water and soil conservation by the practices.

Keywords: river treatment, water and soil conservation, effective implementation

Research Progress and Expectation of Electrode Ionization (EDI) Water Treatment Technology

..... Rong Mei, Liu Hongbin, Wang Jianyou (106)

Abstract: The article introduces the basic principle of the EDI technology, summarizes the application status of EDI technology in the preparation of pure water, the treatment of low-concentration heavy-metal wastewater and the separation of chemical industrial products, mainly sums up the optimization of membrane stack, filling material and bedding structure, analyzes the influence factor of EDI process, puts forward the existing problems and expects the development of the future EDI technology.

Keywords: EDI, water treatment, desalination

Analysis on Finite Element Computation of Plastic Manhole Closing-up Pyramid Structure

..... Wang Kanwen, Yang Jiachun, He Luyang (106)

Abstract: The universal finite element software Abaqus is used to compute and analyze the closing-up pyramid structure of plastic manhole. According to the observation and analysis of computation data, the conclusion shows the concentrating phenomenon of stress existing in the transiting area at the lower end of the closing-up pyramid, which can provide the important basis for the reasonable optimization of closing-up pyramid appearance of plastic manhole.

Keywords: plastic manhole, closing-up pyramid, finite element computation

MANAGEMENT & CONSTRUCTION

Design and Construction of Crossing-river Bracket for Cast-in-site Box Girder of Urban Elevated Bridge Gao Zeyan (109)

Abstract: Taking Taizhou East Ring Elevated Bridge as an engineering example, the article introduces the design and construction of crossing-river bracket for No.11 cast-in-site box girder for the elevated bridge, which can be referred for the design and construction of brackets for the similar bridges.

Keywords: elevated bridge, crossing-river bracket, combined type, full-bracket

Bracket Scheme and Stress Computation in 0# Section of Gangou Bridge in Longli Ecology City of China Railway Huang Wanlong (112)

Abstract: Combined with the practical engineering, the article introduces the application of triangle bracket in the construction of 0# section of Gangou Bridge in Longli Ecology City of China Railway. The layout of brackets to the elliptic radial state can effectively solve the problem of a large area of inclined web suspension around of box beam in 0# section. The software midas is used to accurately compute and analyze so as to guarantee the safety of bracket stress.

Keywords: 0# section, bracket, corbel, Bailey beam

Elementary Discussion on Tensioning Construction of Pressure Dispersed Anchorage Cable Shi q Changquan (116)

Abstract: With the construction extension of highway, railway, large-sized hydraulic (fire) power station, workshop and etc. to mountainous region and hilly area, the side slope is higher and higher and the geological condition is more and more complex. Therefore, the great pre-stressing anchorage projects are born at the right moment, and its superior mechanical property and durability of pressure dispersed anchorage cable get the wide attention. According to the analysis on tensioning construction of pressure dispersed anchorage cable, the article analyzes its stress characteristics and advantages.

Keywords: high excavated slope, pressure dispersed anchorage cable, tensioning construction

Application of Synchronous Jack in Process of Traveling Former Weng Huixia (118)

Abstract: According to the engineering practices, the article introduces how to apply the PLC synchronous hydraulic jack system as the traction system of traveling former to overcome many disadvantages existing in the process of the conventional traveling former. The practice proves that this technique has the good social and economic benefits and has the high popularizing value in the construction process of the similar projects.

Keywords: construction of traveling former, traveling former, PLC system, synchronous jack

Further Study on Application of Highway Bridge Construction Technology Huang Junhua (120)

Abstract: With the fast development of highway bridge construction, the construction task in the highway

bridge projects is increasingly burdensome in China. How to efficiently apply the construction technology in highway bridge project better and comprehensively promote the construction level of engineering projects has become the central issue universally for attention by the highway management department at all levels and the engineering construction units. Combined with the practical working experience, the article further discusses and studies the construction technology applied and the achievements obtained in the highway bridge engineering projects in the present stage of China.

Keywords: highway bridge engineering, construction technology, application

Analysis on Application of Pre-stressing Technique in Highway Bridge Construction Yu Fuli (123)

Abstract: The article introduces the application of pre-stressing technique in the highway bridge reinforcing construction and the steel reinforced concrete multi-span continuous beam, analyzes the time of pre-stressed tensioning and the blocking of steel pre-stressed reinforced pipe, and puts forward the solving methods.

Keywords: highway bridge, pre-stressing, construction technique, application analysis

Discussion of Erection Construction Technology of Steel Makeshift Bridge for Highway Bridge ... Sun Yafeng (125)

Abstract: Taking a practical project as an example, the article discusses the erection construction technology of steel makeshift bridge for highway bridge, analyzes the construction flow and layout gist of steel makeshift bridge, and discusses the insurance measures and the main construction method, which can be referred for the similar projects.

Keywords: highway bridge, erection of steel makeshift bridge, construction technology, discussion

Three-roll-shaft Paving Technology of Cement Concrete Deck Pavement Yu Xin (128)

Abstract: Taking a practical project as an example, the article introduces and analyzes the material and construction requirements of cement concrete deck pavement, and introduces the parameters and technological flow of three-roll-shaft paving technology of deck pavement.

Keywords: cement concrete, deck pavement, three-roll-shaft paving

Elementary Analysis on Cause and Prevention Measures of Common Surface Fault of Prefabricated Box Girder for High-speed Railway Liao Yongfang (130)

Abstract: The article introduces the common faults existing on the prefabricated box girder surface in Kunshan Girder Prefabrication Site for Beijing - Shanghai High-speed Railway, analyzes the causes of common faults, and briefly sets forth the prevention measures of common quality faults.

Keywords: prefabrication of box girder, surface, fault, prevention measures

Thinking and Proposal for Standard Setup of Traffic Sign and Marking of Newly Built and reconstructed Highway Yang Minyun (132)

Abstract: The article points out the problems existing in the present traffic sign and marking of the newly built and reconstructed highways, and puts forward the comments and proposals for standard setup of sign and marking of newly built and reconstructed highway in the aspects of design, construction, building management and etc. The relative experience can be referred for the similar projects.

Keywords: newly built and reconstructed highway, sign and marking, setup

STUDY ON SCIENCE & TECHNOLOGY

Orthogonal Analysis on Mechanical Sensitivity of Flexible Pavement ... Liao Caifeng, Jiang Guojie, Liu Yong (135)

Abstract: The orthogonal analysis method is used to analyze the mechanical sensitivities of the different flexible pavement design indices with the change of the thickness of pavement layer, and to obtain the influence degree of the thickness change of pavement structure layers on the design indexes under the two different conditions of equal economy and equal thickness. Based on this reason, the article introduces the contrast cases of pavement structures under the condition of only considering economy and thickness.

Keywords: flexible pavement, mechanical sensitivity, orthogonal analysis

Summarization of Rut Test Method, Index and Influence Factor of Asphalt Mixture Wan Qing (138)

Abstract: The rut fault has become the main fault of the asphalt pavement being the main pavement type in China. Therefore, the local researching members carry out a large of rut test methods, the evaluating indexes and the study of influence factors to prevent and inspect the rut faults. But there is no systematic and comprehensive introduction and analysis of this study. Therefore, it is very necessary to completely and systematically introduce and analyze the rut test method, evaluating indexes and influence factors.

Keywords: asphalt mixture, rut test, test method, evaluating index, influence factor

Turning Speed Characteristic and Forecast Model of No-signal T-type Intersection
..... Yang Zhen, Zheng Ting, Xiao Songlin (142)

Abstract: Taking a Class-II highway in Zhoushan as an example to collect the speed curve of vehicle passing through the no-signal T-type intersection at the free status, the article analyzes the speed characteristic of vehicle turning through the no-signal T-type intersection, focuses analysis on the vehicle speed at 80 m from the entrance line, vehicle speed distribution at entrance line and distribution of speed reduction position, and preliminarily defines the distribution position scheme of speed collection equipment. According to the speed values selected at the positions of 80 m, 50 m, 30 m and 20 m from the entrance line of intersection, the exponential function, Gaussian function, quadratic polynomial function and triple polynomial function are used separately to forecast the speeds at entrance line. The optimized function forecast model is defined.

Keywords: no-signal T-type intersection, speed characteristic, function fitting, function forecast model

Analysis on Influence of Theoretical Thickness of Deck Plate Concrete on Shrinkage Creep of Combined Beam Bridge Wu Yu, Deng Qinger, Yu Yang (147)

Abstract: Based on the *Public Budget Rules*, the article discusses the difference between the shrinkage strain and creep coefficients of deck plate in combined beam bridge given by the different theoretical thickness computation methods, and puts forward the use of the theoretical thickness computation shrinkage creep parameter method with the time change. According to the a 2 × 75 m continuous combined beam bridge and aiming at the different theoretical thicknesses of deck plate concrete, the finite element model is established to compute the deformation and stress caused by the structural shrinkage creep. The conclusion shows that the shrinkage creep effect now commonly applied is generally large by the method of sectional computing the theoretical thickness of deck plate concrete before the paving construction, and the partial computation result of steel combined beam structure is not safe.

Keywords: combined beam, theoretical thickness, shrinkage, creep

Study on Influence of Transverse Crack Parameter at Bedplate of Continuous Beam Bridge on Its Structure

..... Gao Tongyang (152)

Abstract: The crack problem of continuous beam bridge is more and more serious, and will influence the durability and structural bearing capacity of bridge. In order to master the influence of crack parameter on the box beam structure, and to provide the basis for the evaluation and reinforcement of the safety performance of the existing bridges, the software Ansys is used to simulate and analyze the influence of the crack parameters of cracking width and depth of crack at the bedplate of box beam on the beam stress and deflection.

Keywords: continuous beam bridge, transverse crack at bedplate, crack parameter, ANSYS model

Research on Risk Probability Models of Channel Ship–Bridge Collision

Li Peiyun, Hao Wei (155)

Abstract: At present, the ship–bridge collision risk has gradually become one of the tough problems facing the field of bridge engineering. Therefore, it is of great significance for probabilistic analysis and risk assessment. Six kinds of the ship–bridge collision probability model commonly used at home and abroad are compared. The Daitongyu model is selected as the basic model to make certain modification of the influence factor of collision and geometric probability integral interval. The principle of the normal distribution is used to calculate the total probability of ship–bridge collision. The ships not under command and under command are considered separately and the probabilities of these ship–bridge collisions are separately calculated so as to fully reveal the influence of these ships not under command and under command on the accidents. According to the probability and common norms, it is determined whether or not to take the protective measures. And the engineering examples are applied to illustrate the practicability of the modified model.

Keywords: ship–bridge collision, probability model, influence factor of collision, ship not under command

Comparison and Study of Antiskid Technical Index of Sidewalk Stone Tile

Yuan Haiyan (159)

Abstract: The article studies the antiskid performance of stone tile used for square and sidewalk. According to the comparison of the presently stipulated experiment methods, the different stones of various surfaces are inspected of antiskid performances. Based on the experiment result, the antiskid technical indexes of stone tile used for square and sidewalk are added in the stipulation.

Keywords: sidewalk stone tile, antiskid coefficient, pendulum instrument method, antiskid index

Study on Durability of Slurry Seal

Wei Hong, Bian Xiuqi (163)

Abstract: The function of slurry seal in the pavement maintenance is mainly waterproof and skid–resistant. And its durability can directly affect usability and service life of pavement. In order to study the durability of slurry seal, the tests of moisture stability and sliding resistance are selected to analyze the influence of cement content and asphalt–aggregate ratio on moisture stability as well as the influence of asphalt content and different temperatures on skid resistance in this paper. The study result shows that cement content and asphalt–aggregate ratio has a great influence on durability of slurry seal. It is important to choose asphalt–aggregate ratio according to aggregate gradation. Meanwhile, wet wheel abrasion test under the condition of freezing and thawing cycle shows that slurry seal can keep good durability in drastic temperature change.

Keywords: slurry seal, durability, experimental research. moisture stability. Skid resistance

APPLICATION OF ACHIEVEMENTS

Study on Application of Warm Mixed Flame Retardant Asphalt in Kunming Northwest City Expressway

..... Ma Jiachun, Li Yong, Wu Bo, Li Huayun, Gao Yunlong, Dong Jiangfeng, He Weiping (167)

Abstract: Based on the practical demands in the construction of Kunming Northwest City Expressway, the article studies the mixing ratio design, road use performance, construction technology, energy conservation and emission reduction, economic benefit and overall benefit of warm mixed flame retardant asphalt mixture. The result can provide the basis for the application of this mixture in the highway engineering, and especially in the large and long tunnels.

Keywords: warm mixed, retardant, construction technology, energy conservation and emission reduction, economic benefit

THE RELATIVE SPECIALITIES

Further Discussion on Master Design of Urban Road Cao Jianxin, Ning Pinghua (171)

Abstract: The construction of urban road is a complex systemic project. The specialties of the participated department are more. The quantity of coordination work is large. The requirement of the master design is also higher. The factors necessarily considered for the master design are more. Many aspects of project procedure, coordination work, construction cooperation and etc. should be considered besides the requirements of professional technique. The article discusses several aspects necessarily considered for the master design in detail, which have the referring value for the master design of urban road.

Keywords: urban road, master design, project procedure, coordination work

Research on Development Strategy of Air Purification Technology for Urban Underground Expressway

..... Xu Haiyong, Fan Yiqun, Ni Dan (175)

Abstract: The polluted gas from vehicle emission in urban underground expressway will contaminate ambient air quality either released through high chimney or tunnel access. The purification treatment of air pollutant in urban underground road has now become urgent with the establishment of the relative standards and the rising of domestic people's concern about the atmospheric environment in China. On the basis of summarizing the development history and the present application status of tunnel polluted air purification technologies in the foreign countries, the article analyzes the development strategy of introducing the air purification technology for the newly built underground expressway in China.

Keywords: underground expressway, air purification technology, development strategy

Thinking of Constructing Structure Deformation Joint for Underground Passage Xie Ming (180)

Abstract: Aiming at the leakage problem of deformation joint existing in the excavated underground passage now, it is proposed to increase the gap of deformation joint and to decrease the number of deformation joint in order to reach the objective of reducing the leakage risk point. Therefore, based on the structural feature of underground passage and concrete characteristic, the article analyzes the relationship of increasing deformation gap with early concrete constriction and seasonal temperature difference, and computes by the finite element simulation, and puts forward the technical measures taken for increasing the deformation gap. After the analysis and study, it is feasible to properly increase the deformation gap under the premise of

analyzing the temperature action and taking the reliable technical measures.

Keywords: underground passage, deformation joint, leakage, waterproof

Example of Accident Treatment of Opening Caisson in Sewage Pumping Station

..... Luo Xueping, Liang Yanjun (185)

Abstract: Combined with an engineering example, the article introduces the accident treatment and solving scheme of opening caisson in a sewage pumping station. The relative experience can be referred for the similar projects.

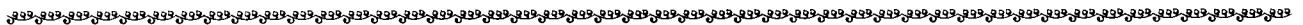
Keywords: sewage pumping station, accident of opening caisson, structure scheme

Further Discussion of City Style and Feature Planning

Liu Shusen (190)

Abstract: Baoding City is one of the national historical and cultural cities. Taking the city style and feature planning as an example, the article sets forth its planning conception and main style, and defines three core style areas and eight general landscape area according to the characteristics of urban construction of Baoding City and based on the functional structure of future city development.

Keywords: city style, special planning, Baoding City



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上海先为土木工程有限公司是国内知名的具备特种专业工程承包资质的专业公司，主要从事桥梁顶升、桥梁顶推、桥梁加固维修及支座更换、建筑物平移纠偏、结构补强等特种领域的设计、咨询和施工。公司拥有20余项桥梁顶升及建筑物移位方面的专利技术，是国家二级工法“大型桥梁整体顶升施工工法”的主要编制单位，获得过上海市科技进步奖一项，上海市公路协会科技进步奖一项。公司主要成员有3人次获得过上海市科技进步一等奖，4人获得过上海市科技进步二等奖。由公司独立完成的建筑物平移典型工程包括：大同展览馆平移旋转工程、上海梅林正广和大楼平移工程、上海市启秀实验中学东楼洋房平移修缮工程等。其中平移规模和难度最大的是大同市展览馆平移旋转工程。该建筑总面积达18 200 m²，平移总重量58 000 t，整体平移距离206 m，顺时针旋转90°。

由公司独立完成的典型桥梁顶升工程包括：同三国道（A30）跨上海横潦泾特大桥梁顶升工程、成都二环西路羊西立交与清水河立交整体调坡顶升工程、杭申线沪杭高速公路桥梁顶升工程等。桥梁顶升规模和难度最大的是A30跨横潦泾特大桥梁顶升工程。该桥全长779 m，主桥为85 m+125 m+85 m=295 m的三跨连续梁，整体顶升高度1.58 m，全桥顶升重量达48 000 t，是国内迄今为止规模及难度最大的顶升项目，并创造了吨位最大和跨径最大桥梁整体顶升工程两项世界纪录。

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