

城市道桥与防洪

主管：中华人民共和国住房和城乡建设部

主办：上海市政工程设计研究总院(集团)有限公司



<http://www.roadbridgeflood.com>

8

2013 August 总第172期

中国学术期刊综合评价数据库统计源期刊 中国期刊全文数据库全文收录期刊
“万方数据-数字化期刊群 维普资讯-中文科技期刊数据库”全文收录
《中国核心期刊(精选)数据库》收录 《中文科技期刊数据库》全文收录

图为上海公路桥梁(集团)有限公司
施工的上海沪青平高速立交工程

因为我们专心 所以我们专业!

《城市道桥与防洪》

● 本期看点

- 宜居城市道路横断面布置形式选择标准
- 大跨度连续梁桥的延性抗震分析
- 污水规划中采用差异化用水量指标预测城市污水排放量
- 地铁隧道施工对既有桥梁结构安全影响分析



万方数据

中华人民共和国住房和城乡建设部优秀期刊

中华人民共和国住房和城乡建设部优秀期刊

城市道桥与防洪 (月刊)

CHENGSHI DAOQIAO YU FANGHONG

2013 年 第 8 期 (总第 172 期)

2013 年 8 月 15 日出版

1984 年创刊

主管: 中华人民共和国住房和城乡建设部
主办: 上海市政工程设计研究总院(集团)有限公司
协办: 全国城市道路与桥梁技术情报网

编辑委员会(第七届)

主任委员: 徐 健

副主任委员: 穆祥纯 刘旭锴 靖泽文

委 员:(以姓氏笔画为序)

丁心红	马国纲	王玉秀	王怀清
王 磊	卢永成	朱家祥	李建民
李 汾	李承根	刘伟杰	朱南松
朱海鹏	杨佩昆	陈翰新	陈德玖
陈文艳	汪宝国	童景盛	邵玉振
张澎涛	张 鹤	张子龙	杨 斌
和坤玲	周松国	贺志宏	姜天鹤
姜 健	肖晓春	钟强文	周文波
徐 波	徐新华	高中俊	贾军政
隋 军	龚 剑	蒋 乐	蒋中贵
韩振勇	董泽龙	贾锦国	葛以衡

出 版:《城市道桥与防洪》编辑部

总 编 辑: 骆燕妮

责任编辑: 叶 露

编 辑: 周盛伟 杨建华

英文校审: 孙宁萍 常 红

摄 影: 何业兴

地址: 上海市中山北二路 901 号 邮编: 200092

电话: (021) 51298850 传真: (021) 51298850

来稿邮箱: cdq@smedi.com

国外发行: 中国国际图书贸易总公司 代号: BM 1859

排版印刷: 上海竟成印务有限公司

地址: 上海市纪念路 500 号 邮编: 200434

中国标准连续出版物号: CN 31-1602/U

广告许可证号: 3101020080007

目 次

道路交通

- 宜居城市道路横断面布置形式选择标准 曾 伟, 董 彪, 赵娟娟, 王朝辉(1)
- 城市道路机动车道宽度取值探讨 王德蜜, 姜 迪(6)
- 城市准快速路规划设计关键技术初探 汪 洋(9)
- 快速公交(BRT)车站设计方法浅析 李 薇(13)
- 天津滨海新区高速公路网结构整合分析 方恒亮, 曾 伟, 蒋宏伟(15)
- 重庆古木峰互通式立交设计方案的研究 李 量(20)
- 长春市两横两纵快速路横断面布置形式选择浅析 葛 娟, 练象平, 李明剑(23)
- 鄂尔多斯横十一路新建工程总体方案设计 张大伟, 顾玉新(28)
- 深圳市南山区欧洲城周边交通特性分析及工程设计探讨 黄 伟(31)
- 深圳市东部过境高速公路连接线工程隧道分合流端交通组织的初步研究 曾欣铨(35)
- 福州市南江滨东大道设计要点探讨 张 建(40)
- 青岛双埠立交改造方案设计 朱婧颖(44)
- 武汉市阳靠路(五一南路-汉施公路)滑坡整治设计 汪启运(47)
- 奥米无机纤维在冻土地区对沥青混凝土性能的影响 孙殿武, 齐庆祥, 王 莉, 齐 钦, 高会刚(50)
- 水泥路面加铺罩面适应性分析 刘华兵(52)
- 透水性混凝土路面性能综述 刘丹丹(55)
- 停车诱导系统在智能交通管理中的应用 施 敏(59)
- 地下水位对地基载荷试验影响的讨论 薛兆锋(61)
- 泡沫轻质土在桥头地基处理中的运用 ... 邵建惠, 虞险峰(64)
- 有限元法在基坑边坡稳定分析中应用 圣树斌(68)
- 低噪声微表处在高速公路养护中的应用 王宁勇(71)
- 骨架密实型水泥稳定材料组成设计新方法探讨 王守君, 邵玉振, 任瑞波(74)
- 管道加固处的道路结构设计 张忠桥(76)
- 长江口铁板砂作为路基路面材料的应用研究 蔡辉泉, 孙瑞华(78)
- 解决高速公路沥青路面水损害早期损坏的技术途径 汪法仁(83)

桥梁结构

- 大跨度连续梁桥的延性抗震分析 王文欣, 肖 杰, 杨立坡, 刘博海(85)
- 斜拉桥监测应力与温度的相关分析 顾 纲, 王修勇, 杨 琪(89)
- 弹性悬链线解答在斜拉桥施工控制无应力状态法的应用 郝 俊(92)
- 城市立交匝道桥下部结构设计要点 刘 双, 栗燕娜, 郭 友(96)
- 单箱多室波形钢腹板箱梁桥设计方法探讨 潘 岑, 肖汝诚(101)
- 浅谈承台布置设计 陈中生(104)

期刊基本参数: CN 31-1602/U * 1984 * m * A4 * 378 * zh * P * ¥ 18.00 * 10000 * 118 * 2013-08

- 湖北随县烈山湖大桥主桥正交异性桥面板方案设计研究 艾伏平,陶兴,熊礼鹏(107)
- 小沙湾黄河桥主塔锚固区应力分析 宋晓辉,白洁(110)
- 简析提高桥梁抗震能力的设计方法 仲照红(113)
- 塘汉快速路永定新河特大桥方案比选 王秀艳,张振学(116)
- 惠州市中心区西枝江大桥改造设计探讨 杨庆祥(118)
- 南宁市核心区旧桥景观改造 季丽萍(121)
- 温度对拱桥短吊杆应力的影响 何江(126)
- 绥江特大桥水中基础钢板桩围堰设计计算实例 肖劲洪(131)
- 异型门架式桥墩的设计 李超(134)
- 桥梁结构抗震分析的一点浅见 雷艳妮(138)
- 某城市钢筋混凝土桥梁裂缝成因及危害分析 周凤华(142)
- 浅析市政工程中水泥混凝土桥梁裂缝问题 崔刚,何延峰,袁庆文,何正杰(146)
- 大跨刚架拱桥病害分析及加固研究 ... 胡森,孙晓龙,张伟(148)

防洪排水

- 污水规划中采用差异化用水量指标预测城市污水排放量 方娟,曹进(151)
- 湿陷性黄土地区排水工程设计要点分析 ... 李彤,石红(154)
- 龙耀路越江隧道给排水消防系统设计介绍 樊华青(158)
- 路面边缘排水系统的应用与分析 谢鑫(164)
- 关于公路路基排水系统设计及施工的研究 宋万里(166)
- 软土地区市政给排水管道设计要点概述 余一彦(169)
- 上海市中心城区道路积水改善工程设计中需注意的几点问题 ... 探讨 杨燕华(171)
- 小型水库除险加固之防渗方式探讨 ... 袁翠平,薛辉,沈昊(175)
- 马市防洪堤透水地基防渗的技术措施 戴晶(177)
- 厦门地铁1号线车辆维修基地防洪设计研究 梁新梅(178)
- 青岛即墨青威路地下泵站设计的分析 孙运磊,郭松松,赵淑梅,庄贵(183)
- 浅谈重庆涪陵污水处理厂结构设计要点 贝晗(186)
- 影响城市排水管道经济造价的设计因素 逯瑶(188)
- 新建水池对老桩基的运用 臧海龙,牟晓伟,王瑾(190)
- 浅谈基坑计算方面的一些经验和体会 ... 陈志根,顾鑫,卢桦(192)
- 顶管技术在某污水管道工程的应用 梁志扬(196)

管理施工

- 地铁隧道施工对既有桥梁结构安全影响分析 王舜(198)
- 浅析城市道路施工期临时交通组织 朱彬(201)
- 低瓦斯隧道施工中瓦斯处理方案研究 纪宁波(203)
- 狭小空间底模支设施工技术 陈慧芳(207)
- 具有近距离保护建筑物的深基坑设计施工中FCEC工法的应用分析 晁东辉(210)
- 深圳市前海地区某市政道路软土路基设计 沙亮(214)
- 小议水泥稳定土的工程应用 贾志忠(216)
- 压密注浆技术在混凝土路面养护中的应用 高军海(219)
- 市政道路土方工程施工研究 李树阳(222)
- 嘉闵高架路(春申铁路段)北竹港过水框架扩孔工程设计与施工技术 尹富秋,蔡襄,刘勇军(225)
- 金凤高速公路沥青混凝土路面的施工技术 胡海滨(232)
- 小跨径桥梁支座安装质量控制 章凯(235)
- 预应力混凝土连续梁桥边跨现浇段方案优化及桥梁结构的影响分析 伍川(237)
- 盖挖顺作法在京广北路隧道设计与施工中的应用 ... 李选栋(240)
- 高速铁路圆端形实体墩混凝土温度监测试验分析 ... 杨灿宣(243)
- 橡胶沥青加铺层在龙泉驿北干道改造工程中的应用 ... 唐云华(247)
- 浅谈横流泵闸墩墙裂缝产生的原因及处理 李念斌,陈浩楷,何健智(250)

编委成员单位(排列不分前后)

主任编委单位:

上海市政工程设计研究总院(集团)有限公司

副主任编委单位:

北京市市政工程设计研究总院

天津市市政工程设计研究院

武汉市防汛指挥部

编委单位:

南京市水利规划设计院有限责任公司

中国市政工程西南设计研究总院

同济大学

上海隧道工程股份有限公司

上海市市政规划设计研究院

广东省建筑设计研究院

广州市市政工程设计研究院

沈阳市市政工程设计研究院

中国市政工程西北设计研究院有限公司

中国市政工程华北设计研究总院

上海市城市建设设计研究总院

武汉市市政工程设计研究院有限责任公司

武汉市城市防洪勘测设计院

武汉市水务科学研究院

西安市政设计研究院有限公司

重庆市设计院

重庆市勘测院

林同棧国际工程咨询(中国)有限公司

济南市市政工程设计研究院有限责任公司

成都市市政工程设计研究院

重庆市市政设计研究院

上海建工(集团)总公司

上海城建(集团)公司

上海公路桥梁(集团)有限公司

上海城建市政工程(集团)有限公司

杭州市市政工程集团有限公司

深圳市市政设计研究院有限公司

天津城建集团有限公司

上海市隧道工程轨道交通设计研究院

浙江省大成建设(集团)有限公司

杭州市城建设计研究院有限公司

兰州市城市建设设计院

上海中鑫建设咨询有限公司

上海市政交通设计研究院有限公司

中铁第一勘察设计院(集团)有限公司

上海浦东路桥建设股份有限公司

上海市建设工程管理有限公司

上海市市政工程建设发展有限公司

保定市城乡规划设计研究院

消石灰在微表处施工中的应用 许杰(253)

浅谈桥梁施工中预应力技术的应用 程存江,林爽,刘秀芝(256)

深水拉森钢板桩围堰施工方法 杨新应,邵明丽(258)

泡沫轻质土施工中的排管工艺 李频(260)

浅谈地铁防水高性能混凝土的配合比设计与质量控制
..... 黄金福,许小冰(264)

装配式钢筋混凝土梁式桥梁的病害及加固设计 李剑清(267)

市政道路设施养护主要病害原因分析与处理方案探讨
..... 万尚武(270)

浅谈市政工程项目施工综合管理 刘继伟,杜庆锋(273)

浅谈西干线老管保护方法 吕惠农(276)

浅谈投资监理在建设项目全过程中对造价控制的作用
..... 张爱明,李丽(278)

先张法折线配筋预应力混凝土T梁施工监测 刘炎(280)

浅谈S6公路立柱无落地脚手架施工管理 李德要(283)

某护坡工程边坡塌方成因浅析及处治措施 郑朝炜(287)

浅谈混凝土路面产生裂缝的原因及预防措施 陈晓娟(291)

黑色混凝土处治道路检查井病害探讨 张守城(293)

桥梁型钢伸缩缝维修探讨 茅卫生(296)

市政道路造价的影响要素与控制对策分析 白玉斌(298)

纤维封层在金都路“白改黑”工程的应用 马鲜妮(300)

科技研究

排水性沥青稳定碎石配合比设计及性能研究
..... 狄升贯,侯明业,赵娟娟,王新岐(303)

土壤固化剂固化石灰土在盐渍化软土地区路基的应用研究
..... 杜立平,王新岐(307)

超大跨径斜拉桥焊接细节热点应力集中系数研究 李元兵(310)

基于水稳定性能的Sasobit温拌沥青混合料应用研究 杨保兴(314)

基于交通预测模型的城市综合交通枢纽选址方法 柯水平(317)

不同水泥混凝土桥面防水粘结层材料试验研究 宋建宁(321)

填充墙布置对钢筋混凝土框架结构抗震性能影响研究
..... 杜长虹,赵栩(325)

软土中静压桩残余应力特性研究 葛潇(328)

利用直接拉伸试验机评价沥青裂缝密封胶的低温性能
..... 许杰(331)

建筑施工对周围环境的影响研究 吴庆,段加燕(334)

深基坑开挖中“坑中坑”问题及影响因素研究 史海莹(339)

成果应用

TF非接触平衡梁在沥青路面上面层摊铺中的应用 李伟(344)

“多功能一体式”限高门架的研究和应用 钟翔(348)

塑料套管混凝土桩(TC桩)在临港新城环湖三路桥台后软基
处理中的应用 王伟(351)

高强钢筋在桥梁结构工程中的应用 邓惠晗(353)

相关专业

新机动车驾驶证考试制度浅析及场地改造方案设计 翟雪(357)

干坞在大型沉管隧道工程中的应用 熊刚,王艳宁(360)

金港广场B区基础施工过程“海关钟楼”保护的技术措施
..... 王庭文(362)

一体化污泥干化焚烧装置工艺控制参数的优化及运行 黄毅(365)

芯层微孔发泡管材的制备 黄书琴(368)

生态旱厕在四川藏区牧民居住点的应用研究 王飞,谢鲁(371)

产品介绍

隔声通风窗的设计与应用 苟元国(374)

工作探索

浅谈企业内部控制基本规范的实施 郑民(377)

广告索引

封一 上海公路桥梁(集团)有限公司

封二 上海嘉洁环保工程有限公司

封三 上海繁荣道路建设工程有限公司

封四 上海天演建筑物移位工程有限公司

广前1 青岛市润邦化工建材有限公司

广前2 上海申花钢管有限公司

广前3 上海市政工程设计研究总院(集团)有限公司研究院

广前4 上海申华声学装备有限公司

广前5 上海汇城建筑装饰有限公司

广前6 福建和盛塑业有限公司

广前7 北京路桥中交科技有限公司

广前8 上海万朗管业有限公司

广前9 柳州欧维姆机械股份有限公司

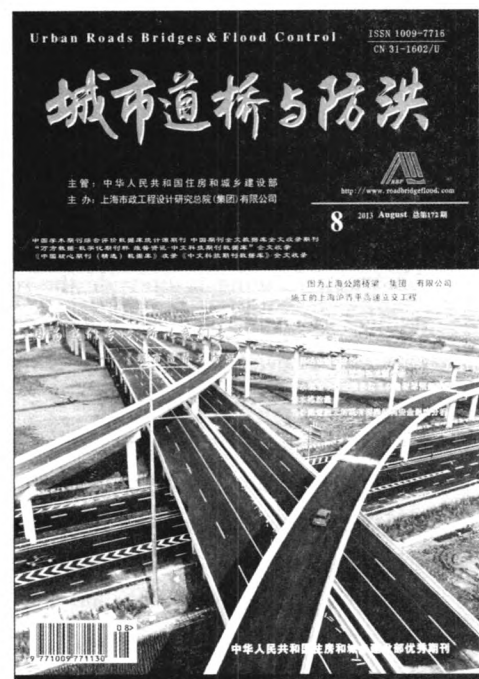
广前10 北京鸿业科技有限公司

广后1 上海有正工程软件有限公司

广后2 上海强路路基材料有限公司

广后3 上海邦辰建筑工程材料有限公司

广后4 上海米金商贸有限公司



Urban Roads, Bridges & Flood Control

(Monthly)

Number 8, 2013(Total Number 172)

CONTENTS

ROADS & COMMUNICATION

Selection Standard of Road Cross-section Layout in Livable City

..... Zeng Wei, Dong Biao, Zhao Juanjuan, Wang Chaohui(1)

Abstract: In order to make the urban road better satisfy the requirements of convenient transportation and beautiful landscape of the livable city, the traffic jam and the environmental pollution can be reduced by a reasonable cross-section layout to form an energy-saving and environment-friendly travel method of transportation. On the basis of that, the article studies the road cross-section layout standard of the livable city from the aspects of the traffic capacities of motored vehicle lane, non-motorized vehicle lane and sidewalks, and the width of red line etc. Based on the traffic capacity of one motored-vehicle lane, the article considers and calculates all the influence factors to give the traffic capacity standard of different grades and different lanes. According to the traffic capacities of the non-motored vehicle lane and sidewalk stipulated in the standard, and the position and service level of the comprehensive facilities, the article determines the traffic capacities of the non-motored vehicle lane and sidewalk of the different grades and different cross sections. By comprehensively considering the influence factors of traffic flow operation, traffic safety and road greening, the article determines the minimum red line width of road in the different grades and the different sections. The selection standard is provided for the layout of the road cross section of livable city according to the traffic capacity standard and the minimum red line width.

Keywords: cross section, selection standard, traffic capacity, minimum red line width

Discussion of Width Value for Motored Vehicle Lane of Urban Road

..... Wang Demi, Jiang Di (6)

Abstract: The motored vehicle lane width of urban road directly determines the road width and is related to the urban construction development. Combined with the urban road norm, the article discusses the width value of the urban road motored vehicle lane. The relative experience can be referred for the similar projects.

Keywords: urban road, motored vehicle lane, width value

Preliminary Discussion on Key Planning Design Technology of Urban Express Way

..... Wang Yang(9)

Abstract: In order to upgrade the road traffic service level, and to provide the high-efficient high-quality traffic service for the urban economic development and urban life, the express way is greatly planned to construct in every city of China. Owing to the disputing factor of expensive construction cost to construct the express way in the central area, the serious lag is led in the construction of expressway network, which has limited the built expressways fully to play its function and efficiency. The express way is constructed by properly lowering the standards in the partial cities. The article analyzes the necessity to plan and construct the express way in the cities of China now, sums up the present situation in the planning and construction of urban express way in China, and puts forward the functions - "extension, supplement, connection and transition" of express way, and the key planning and design elements of design speed, one-way traffic capacity and etc. of express way.

Keywords: express way, function positioning, design speed, traffic capacity

Elementary Analysis on Design Method of Bus Rapid Transit (BRT) Station

..... Li Wei(13)

Abstract: A station is not only the important component and bottleneck of BRT system to play the important role in the traffic capacity and the stable operation of the whole system, but also the important intermedium with the passengers. The design of BRT platform also plays the important role in the traffic capacity and the operation stability of the whole system as well as the attraction of passengers. The article analyzes the design methods of platform shape, scale, position, appearance, auxiliary facilities and etc. in order to provide the valuable reference for the design and construction of the other BRT systems at home and abroad.

Keywords: BRT, station, scale, shape, building appearance

Analysis on Integration of Expressway Network Structure in Binhai New Area of Tianjin City Fang Hengliang, Zeng Wei, Jiang Hongwei(15)

Abstract: In order to continuous upgrade the national strategic positioning of Binhai New Area and to optimize the expressway network structure of the area, the article analyzes the expressway network structure and function of the area, sets forth the planned expressway network structure of the area from four aspects of the external big channel, road network congestion, theoretical length and connectivity, explains the present function of expressway network in the area, and puts forward the problems existing in the expressway network of Binhai New Area and the integration proposal.

Keywords: Binhai New Area, expressway network, structure, function

Study of Changqing Gumufeng Interchange Design Scheme Li Liang(20)

Abstract: The selection and design of urban interchange are more and more important, and especially the existing grade intersection has to be reconstructed into the interchange with the increment of traffic volume. There are more involved factors and the design difficulty is larger. The article studies the design concept, design principle and design method of the existing grade intersections to be reconstructed into the interchange by the engineering cases in detail.

Keywords: grade intersection, reconstruction, interchange, design study

Elementary Analysis on Selection of Cross Section Layout of Two horizontal and Two Vertical Expressways in Changchun City Ge Juan, Lian Xiangping, Li Mingjian(23)

Abstract: By surveying and analyzing of the existing cross sections of two horizontal and two vertical expressways in Changchun City now, the article summarizes some shortcomings of the cross-sectional design and planning of the existing roads in the aspects of urban area functional division, public space utilization, lane separator design and road afforesting layout. Combined with the domestic construction experience of expressway and the demand characteristics of road traffic, the article puts forward the cross section layout scheme suitable for two horizontal and two vertical expressways in Changchun City. Its aim is to build a better traffic environment.

Keywords: expressway, cross section layout, layout form of cross section, Changchun City

Design of Master Scheme for Eerduosi Hengshiyi Road New Construction Project ... Zhang Dawei, Gu Yuxin(28)

Abstract: The article introduces the master scheme design of Eerduosi Hengshiyi Road New Construction Project. The design concept embodies the combination of the short term with the long term, the determination of technical standards according to the local circumstances, the reasonable arrangement of joint and the layout of passages in the engineering design. The article introduces the master scheme and the joint scheme of this engineering design in detail. The relative experience can be referred for the similar projects.

Keywords: technical standard, master scheme design, Eerduosi

Analysis of Traffic Specificity and Discussion of Engineering Design in Europe Town of Shenzhen City Nanshan District Huang Wei(31)

Abstract: Aiming at the influence of the newly built large commercial shopping center on the urban traffic and according to the practices of Shenzhen, the article puts forward the reasonable traffic organization and improvement scheme. The reasonable engineering design scheme is used in the limited construction land.

Keywords: Shenzhen City, large-scale integrated commercial shopping center, traffic improvement, separation of passenger and freight, operation effect

Preliminary Study on Traffic Organization of Tunnel Separated and Combined Flow Ends Zeng Xinquan(35)

Abstract: With the fast development of urbanization course, the ground land resource is more and more limited. The utilization of underground space has become the important direction of city development. The underground space is also started to use in the construction of municipal road, and even the underground interchange will be also inevitably used in the construction of urban roads. Combined with the design scheme of tunnel separated and combined flow ends of Shenzhen Eastern Transit Expressway Connection Line Project, the article preliminarily studies and discusses its traffic organization, which can be referred for the future development of urban tunnel.

Keywords: tunnel, separated and combined flow ends, traffic organization

Discussion on Design Gist of Fuzhou Nanjiangbin East Avenue Zhang Jian(40)

Abstract: Taking Fuzhou Nanjiangbin East Avenue Project as an example, the article discusses the design of Jiangbin Road and the urban planning, and the relationship of the flood control dyke and the public service space along the line in order to construct Nanjiangbin East Avenue into the high quality of urban landscape avenue integrating the mountain, water and city. Its design gist can be referred for the similar projects.

Keywords: Jiangbin Road, landscape, accessibility, urban design, flood control dyke, riverside space, public facilities

Design of Qingdao Shuangbu Interchange Reconstruction Scheme Zhu Jingying(44)

Abstract: Through the comparison and analysis of Qingdao Shuangbu Interchange Reconstruction Scheme, the article sets forth the issues for attention in the whole reconstruction of interchange, and sums up the practical experience in the design of reconstruction scheme, which can be referred for the similar projects.

Keywords: hub interchange, reconstruction, scheme design.

Treatment and Design of Landslide in Yangkao Road (Wuyi Road (S) ~ Hanshi Highway) of Wuhan City

..... Wang Qiyun(47)

Abstract: The article introduces the slope treatment work in the K2+600 ~ K2+900 section of Wuhan Yangkao Road (Wuyi Road (S) ~ Hanshi Highway) New Project. According to the analysis of the destroying characteristics and influence factors of this slope, the article puts forward the relative slope treatment scheme.

Keywords: slope, stability, evaluation, treatment scheme, design

Influence of Naomi Inorganic Fiber on Asphalt Concrete Performance in Frozen Soil Region

..... Sun Dianwu, Qi Qingxiang, Wang Li, Qi Qin, Gao Huigang(50)

Abstract: According to the slitting test, freeze-thaw splitting test, immersion Marshall test, low-temperature bending and rutting test of two asphalt mixtures, and the viewing result of engineering test road of Xinnong - Xizhongdao Highway (Jiaoliudao - Tongshuigou), the article analyzes the adaptability of Naomi inorganic fiber asphalt mixture in the seasonal frozen soil and permafrost regions. The study gives that the water stability, low-temperature stability and high-temperature stability of asphalt mixtures added with Naomi inorganic fiber are all obviously improved under the same asphalt contents. The result shows that the Naomi inorganic fiber asphalt mixture has the good using value in the highway construction of the frozen soil regions.

Keywords: Naomi inorganic fiber, asphalt mixture, frozen soil region

Analysis on Applicability of Cement Pavement Overlay Liu Huabin(52)

Abstract: According to the construction data collected from the cement pavement overlay projects of three national highways in the town section of Heze City, the article introduces the investigations of traffic flow and axle load condition, and analyzes the applicability of overlay engineering in the relative roads from three aspects, i.e. the selection of overlay materials, the thickness and combination of structural layer, and the anti-cracking effect. The study shows that the reflecting crack preventive effects of three highway overlay projects are good,

and the driving quality and anti-slip performance are excellent able to better adapt the road requirements.

Keywords: cement pavement, overlay, structural combination, reflecting crack, applicability

Summarization of Porous Concrete Pavement Performance Liu Dandan(55)

Abstract: Taking the strength performance and porous performance of porous concrete as the study objective, the article focuses on the influences of aggregate performance, water cement ratio, cement aggregate ratio and porosity on these two performances, which can be referred for the similar projects.

Keywords: porous concrete pavement, strength, porous, influence factor

Application of Parking Guidance System in Intelligent Traffic Management Shi Min(59)

Abstract: The article sets forth the background and content to implement the parking guidance system project, and introduces the detail thinking and the implementation scheme of information collection, analysis treatment, data issue and information classification to set up the parking guidance system. Combined with the introduction of an engineering case, the article analyzes the operation advantages and disadvantages of parking guidance in the area traffic, which can be the basic materials for the better guidance of area traffic system.

Keywords: intelligent traffic, parking guidance, dynamic and static traffic, Class III guidance

Discussion of Influence of Underwater Level on Foundation Load Test Xue Zhaofeng(61)

Abstract: The article discusses the influence of underwater level on the foundation load test. According to the preliminary analysis and comparison of the variation of foundation bearing capacity of gravel pile composite foundation in the soft subgrade treated section of Cha (Erhan) Ge (Ermu) Expressway under the conditions of the adjacent test points and the different underwater levels, the result shows the height of underwater level in the test field has the great influence on the test result, the bearing capacity reduces while the underwater level rises and the bearing capacity improves while the underwater level reduces. The article proposes that it should be to understand the weather of test field firstly during the loading test, and the test should be implemented when the underwater level is minimum, finally the weather situation of test period and the underwater level height of test point should be made clearly in the test report.

Keywords: underwater level, loading test, influence

Application of Foam Light Soil in Treatment of Bridgehead Foundation Shao Jianhui, Yu Xianfeng(64)

Abstract: Based on the characteristics of soft soil foundation in the coastal regions, the article analyzes the harmfulness of bridgehead bump and its causes, and combined with the engineering cases, validates the applicability of foam light soil in the treatment of bridgehead foundation in the coastal regions, which can be referred for the implementation of the similar projects.

Keywords: foam light soil, soft soil foundation, treatment of bridgehead foundation, settlement after construction

Application of Finite Element Method in Analysis of Slope Stability for Foundation Pit Sheng Shubin(68)

Abstract: This paper briefly introduces the analysis of the slope stability for foundation pit by the finite element analysis software, namely by the strength reduction finite element method to analyze the safety factor of slope stability.

Keywords: finite element, slope, stability, strength reduction method, analysis

Application of Low-noise Micro-surfacing Technology in Maintenance of Expressway Wang Ningyong(71)

Abstract: The low-noise micro-surfacing technology has the good anti-slip and waterproof performance as well as the traditional micro-surfacing technology, but its driving noise is smaller than the traditional technology. According to the summarization of the laboratory test, tested road construction and road performance inspection result of the low-noise micro-surfacing technology, the article analyzes and discusses the design principle, suitable condition and practical application of this technology, which can be referred for its application in the maintenance of expressways.

Keywords: low noise, micro-surfacing, expressway, maintenance, application

Discussion on New Method of Composition Design of Dense Framework Cement Stabilized Material

..... Wang Shoujun, Shao Yuzhen, Ren Ruibo(74)

Abstract: On the basis of test and referring materials, the article analyzes the principle of mixing ratio design of the dense framework cement stabilized material, and discusses and puts forward the calculation method of mixing ratio design of the mixture and the calculation methods of the maximum dry density and the optimum water content so as to lighten the laboratory testing workload and labor strength of the mixing ratio design of the cement stabilized material.

Keywords: dense framework, cement stabilized material, design of mixing ration, maximum dry density, optimum water content, calculation method

Design of Road structure at Pipe Reinforcement Zhang Zhongqiao(76)

Abstract: The article puts forward the protection measures for the common municipal pipelines of high-pressure gas pipe, water conveying pipe, low-voltage cable, communication cable, water supply pipe, drainage pipe, low-pressure gas pipe, electric power pipe, communication pipe, small caliber plastic drainage pipe and etc. in the road structure design of pipeline reinforcement, which can decrease the destroying accidents of municipal pipelines.

Keywords: municipal pipeline, reinforcement measures, protection principle

Study on Iron Sand at Mouth of Changjiang River Used for Roadbed Pavement Material

..... Cai Huiquan, Sun Ruihua(78)

Abstract: Combined with the engineering cases, the article introduces the study on the iron sand at the mouth of Changjiang River used for the roadbed pavement material. There is no further study on the road using performance, design method, construction technology and engineering practice of the river sand, especially this special material of the iron sand hydraulically filled at the mouth of Changjiang River. Its study is just at the starting stage, and no more related contents are in the standard. The road engineers are short of the basic knowledge and understanding on the design indexes, i.e. the compaction degree, resilience modulus, CBR value and etc. of the sand filled at the mouth of Changjiang River used for the roadbed pavement material. Therefore, this study replenishes the above cognizing contents, solves the difficulty of no soil in this project, and specially studies the material properties, mixture properties, construction technologies and control indexes of the iron sand at the mouth of Changjiang River used for the road paving material so as to provide the guidance and reference for its popularization and application.

Keywords: sand of Changjing River, lime and fly ash sand, mixing ratio, roadbed material, pavement material

Technical Approach to Finish off Early Water Damage of Expressway Asphalt Pavement Wang Faren(83)

Abstract: Based on the universality and damage of water damage existing in the asphalt pavements and according to the forming cause of early water damage of expressway asphalt pavement, the article focuses deeper discussion on the technical approach to finish off the early water damage of expressway asphalt pavement from five aspects of scientifically determining the void ratio and gradation of asphalt pavement surface layer of expressway and etc. The results can be referred for the similar projects.

Keywords: expressway, asphalt pavement, water damage, early damage

BRIDGES & STRUCTURES

Analysis of Seismic Ductility for Long Span Continuous Bridge ... Wang Wenxin, Xiao Jie, Yang Lipo, Liu Bohai(85)

Abstract: The article sets forth the analysis of seismic ductility of a long span continuous bridge. The elastic-plastic energy dissipation device is installed in the fixed pier of a long span continuous beam in strong earthquake area, which can efficiently reduce the huge horizontal shear exerted on the fixed pier. On this basis, the article conducts the design of seismic ductility for the fixed pier, and analyzes and compares the influences of the different factors on the structural ductility. The result shows that the considered ductility of

fixed pier can efficiently reduce the bending moment on the bottom fixed pier. Moreover, the stirrup ratio and axial compression ratio have a more obvious influence on ductile coefficient of fixed pier. With the main longitudinal reinforcement ratio decreases, the yield curvature and the ultimate curvature will decrease, and the effect on the ductility coefficient is smaller.

Keywords: bridge engineering, long-span continuous bridge, seismic ductility design, nonlinear time history analysis

Analysis on Relativity of Monitoring Stress and Temperature of Cable-stayed Bridge

..... Gu Gang, Wang Xiuyong, Yang Qi(89)

Abstract: Based on the health monitoring system of Jiujiang Bridge, the article studies the stress and its temperature achieved by the monitoring of a concrete cable-stayed bridge. The article analyzes the relativity of the achieved stress and its relative temperature. The result shows that the relativity is very strong between the both. According to the daily average value of one-month monitoring data, the article selects the proper standard value to achieve various relative stress values and the relative temperature values. The article further discusses the relationship between the both, then gives the trend equation of temperature stress by the least square method, and finally set up the safety threshold reasonably on the basis of eliminating the temperature trend and evaluates its status. The result shows that this analysis method is feasible and can be used to the other projects.

Keywords: health monitoring system, data analysis, relativity, stress, temperature

Application of Elastic Catenary Solutions in Unstressed State Method of Cable-stayed Bridge Construction Control

..... Hao Jun(92)

Abstract: The cable adjustment of cable-stayed bridge is a more complex process in the beam segment casting. The unstressed state method sets up the relationship among the different construction states by the unstressed length of cable. The cable pull-out capacity is used to control the cable adjustment to make its aim definite and its operation simple. The geometric nonlinear effect must be considered in the calculation of cable unstressed length. The article sets forth the use of elastic catenary solutions to calculate the cable unstressed length, and compares this result with the equivalent elastic modulus method proposed in the standard. The both are good. The application of equivalent elastic modulus method in the construction control of cable-stayed bridge unstressed state method can satisfy the accuracy requirements for the projects. The unstressed state construction control method and the calculation process mentioned in this article can be referred for the construction of the similar bridges.

Keywords: unstressed state method, construction control, elastic catenary solutions, equivalent elastic modulus method

Design Gist for Substructure of Urban Interchange Ramp Bridge

..... Liu Shuang, Li Yanna, Guo You(96)

Abstract: Compared with the conventional bridges, the structure and stress of ramp bridge have its particularity. Combined with a practical design example of an urban interchange ramp bridge, this article sums up the design gist of substructure of ramp bridge, which can be discussed with the peers.

Keywords: urban interchange, ramp bridge, substructure, double-column pier, design gist

Discussion on Design Method of Steel Single-box Multi-cell Corrugated Web Box Girder Bridge

..... Pan Cen, Xiao Rucheng(101)

Abstract: In order to ensure the shear strength, it is often required to use more webs when the steel corrugated web box girder is applied to the wide bridge deck, as the result, there is the steel single-box multi-cell corrugated web combined box girder bridge. However, the common software can not correctly simulate this kind of section shape in the establishment of single girder model. Therefore, taking a steel single-box two-cell corrugated web three-span continuous girder bridge as an example, the article compares and analyzes the built grillage model and the simplified single-girder model, and validates the applicability of these two models by the solid models, which can be referred for the design and study of this bridge shape.

Keywords: midas, grillage method, abaqus, steel corrugated web, continuous girder

Elementary Discussion on Design of Base Slab Layout Chen Zhongsheng(104)

Abstract: There are the different layout modes of base slab. The different layout modes will be with the different stresses. The counter force of pile foundation is resulted in the difference. The article briefly analyzes the difference of the pile foundation stresses by two conventional layout modes. The relative experience can be referred for the similar projects.

Keywords: layout of base slab, counter force of pile foundation, calculation

Study on Design of Orthotropic Deck Plate Scheme for Main Bridge of Hubei Province Sui County Lieshan Lake Bridge Ai Fuping, Tao Xing, Xiong Lipeng(107)

Abstract: Combined with the engineering case of Lieshan Lake Bridge, the article analyzes the construction requirements of orthotropic deck plate, compares the pavement of steel deck, puts forward the steel fiber concrete deck pavement scheme, and sums up and recommends the steel beam design scheme.

Keywords: arch bridge, steel orthotropic deck plate, pavement

Analysis on Stress of Main Pylon Anchorage Zone of Yellow River Bridge in Xiaoshawan ... Song Xiaohui, Bai Jie(110)

Abstract: The article firstly introduces the structure composition of the Xiaoshawan Yellow River Bridge, introduces the construction of cable pylon and the layout of circle pre-stressing in detail, then introduces the process of model establishment and the selection of calculation parameter, and finally proves that the stress of the main pylon anchorage zone of this bridge can satisfy the standard requirements.

Keywords: cable pylon anchorage zone, circle pre-stressing, finite element, stress analysis

Briefly Analysis of Design Method for Improving Seismic Capacity of Bridge Zhong Zhaohong(113)

Abstract: Since the reform and open in China, the construction scale of bridge engineering and the quantity of engineering project construction are all greatly developed. The technical members are required to better do the seismic design of bridge in the design and construction of bridge. The scientific technical means can efficiently improve the seismic capacity of bridge to guarantee the traffic safety of bridge. The article discusses and analyzes the design method for improving the seismic capacity of bridge.

Keywords: bridge, seismic capacity, design, further analysis

Scheme Comparison and Selection of Yongding New River Bridge in Tanghan Expressway

..... Wang Xiuyan, Zhang Zhenxue(116)

Abstract: Yongding New River Bridge in Tanghan Expressway is composed of the approach bridges at the south and north sides, and the main span. The article introduces the comparison and selection of the design schemes for the main span of Yongding New River Bridge. Based on the comprehension of bridge position construction conditions and according to two schemes of the low-pylon cable-stayed bridge and the variable cross-section continuous girder, the article compares the landscapes, constructions, costs, durability and etc.

Keywords: low-pylon cable-stayed bridge, variable cross-section, continuous girder, master design, scheme comparison and selection

Discussion on Reconstruction Design of Xizhi Bridge in Center Area of Huizhou City Yang Qingxiang(118)

Abstract: With the fast development of economic society, the auto possessive quantity of urban motored vehicle is continuously fast increased. The traffic pressure of the crossing - river bridge in the center area of many cities linking up with all areas of cities increasingly increases, which is commonly easy to become the bottleneck road section of urban traffic congestion. Therefore, how to scientifically reasonably implement the overall planning and design, to improve the road network traffic capacity of the whole area and to produce its optimal comprehensive benefit have become an important subject in the reconstruction or the new construction of bridge in the center area of city. Taking Huizhou Xizhi Bridge Reconstruction Project as an example, the article introduces the design methods in the selection of bridge scheme, traffic organization of bridge and surrounding

roads, and comprehensive utilization of bridgehead public land, which can be referred for the similar projects.

Keywords: urban center, crossing-river bridge, traffic organization, planning and design

Reconstruction of Old Bridge Landscape in Core Area of Nanning City Ji Liping(121)

Abstract: According to the practice of the Bridge Beautification Lighting Upgrading Component in South Lake Zhupaichong River System Environment Comprehensive Rehabilitation Project, the article firstly puts forward the master tactics of "District Planning" for the bridge reconstruction, and then further studies and discovers the historical and cultural connotations of the surrounding areas to enhance the original design theme and to show the specific regional characteristics. The landscape decoration and the illumination lighting are integrated in the design method so as to achieve the seamless, harmony and unity of the landscape effect.

Keywords: reconstruction of old bridge, district planning, integrated design, landscape decoration, illumination lighting

Influence of Temperature on Short Suspender Stress of Arch Bridge He Jiang(126)

Abstract: The health inspection result of the existing arch bridges shows that the short suspender is one of the most vulnerable components of arch bridges. If two ends of the short suspender are concreted with the arch rib and bridge deck, the measured data of surface temperature of the suspender can give the distribution law of temperature around the suspender, and the radial temperature gradient can give the cross-sectional temperature distribution model of suspender. The article discusses the local temperature difference stress and its distribution law of short suspender according to the temperature distribution model. Based on the theoretical derivation and the parameter analysis of the suspender section stress in the overall temperature difference load, the article discusses the non-uniform stress distribution of suspender section and the range of stress magnification coefficient.

Keywords: arch bridge, suspender, stress distribution law, local temperature difference load, overall temperature difference load

Design and Calculation of Steel Sheet Piling Cofferdam in Deep Water Foundation Construction of Suijiang River Bridge Xiao Jinhong(131)

Abstract: The article introduces the theory, method and gist in the design and calculation of steel sheet piling cofferdam in the deep water foundation construction by the practical case of steel sheet piling cofferdam in the deep water foundation construction of the main bridge for Suijiang River Bridge in Fozhao Line of the Pearl River Delta Intercity Rail Transit.

Keywords: deep water foundation, Larsen steel sheet pile, cofferdam, design and calculation

Design of Special-shaped Frame Bridge Pier Li Chao(134)

Abstract: The article introduces and analyzes the design and calculation of several special-shaped frame bridge piers in the practical projects, which can be referred for the selection of the substructure for the bridges crossing the complex road sections.

Keywords: frame bridge pier, design, cantilever, foundation beam, soil spring

A humble Opinion on Anti-seismic Analysis of Bridge Structure Lei Yanni(138)

Abstract: The article introduces the perceptual knowledge of bridge earthquake calamity, the cause and revelation of earthquake calamity, the earthquake force theory and the anti-seismic design method. According to the understanding of the partial problems in "08 rules", the article analyzes and discusses the bridge seismic prevention. The relative experience can be referred for the similar projects.

Keywords: earthquake calamity, cause and revelation of earthquake calamity, earthquake force theory, anti-seismic design method

Analysis on Crack Causes and Hazard of an Urban Reinforced Concrete Bridge Zhou Fenghua(142)

Abstract: According to the detail surveying of crack state of an existing reinforced concrete bridge in Qingdao City and combined with the load and test inspection results, the article analyzes various crack causes and

hazards, and puts forward the relative crack treatment and preventive measures.

Keywords: reinforced concrete, bridge, crack, cause analysis, preventive measures

Elementary Analysis on Crack of Cement Concrete Bridge in Municipal Engineering

..... Cui Gang, He Yanfeng, Yuan Qingwen, He Zhengjie(146)

Abstract: The article focuses setting forth on the crack cause and its type of cement concrete bridge in the municipal engineering, and puts forward the solving methods and preventive measures for various causes of cracks, which can be referred for the similar projects.

Keywords: concrete bridge, crack cause, solving method, preventive measures

Fault Analysis and Reinforcement Study of Long-span Rigid Frame Arch Bridge

..... Hu Miao, Sun Xiaolong, Zhang Wei(148)

Abstract: The cracks of the large joints of the main arch, the damage of the transverse beam and the other faults are found in the security inspection of a rigid frame arch bridge. Based on the filed inspection result, the article analyzes the common fault types and causes of rigid frame arch bridge, evaluates the whole technical situation of this bridge by BCI, and based on the evaluating result, puts forward the targeted proposal for the reinforcement of rigid frame arch bridge. The inspection result and the proposed reinforcement measures are referred for the fault treatment of the similar arch bridges.

Keywords: rigid frame arch bridge, faults, reinforcement

FLOOD CONTROL & DRAINAGE

Application of Different Water Consumption Index to Forecast Urban Sewage Discharge in Sewage Planning

..... Fang Juan, Cao Jin(151)

Abstract: The forecast of urban sewage discharge is the basic work required for the planning, design, operation and management of sewage system. It is very significant to scientifically and reasonably forecast the sewage discharge for the construction planning of wastewater treatment plant and drainage pipeline network. Based on the practical situation of water supply and drainage in Qingdao, the article uses the different water consumption index to calculate the sewage flow of each sewage system in the different sewage flow forecast methods, and analyzes the causes of the difference from the forecast result of sewage flow so as to provide the reference for the forecast of sewage flow in the similar cities.

Keywords: sewage discharge, difference water consumption index, forecast of sewage flow

Analysis on Design Gist of Drainage Engineering in Collapsible Loess Area

..... Li Tong, Shi Hong(154)

Abstract: As the special poor soil layer, the collapsible loess field has the important effect on the drainage engineering. Fully to understanding the characteristics of collapsible loess and the different treatment methods of collapsible loess field is conducive to the optimization design of drainage engineering and is of the important directive significance to the engineering implementation. Based on the engineering cases of the partial collapsible loess fields in Datong City, the article analyzes the design gist of drainage engineering. The analysis result can be referred for the drainage engineering design in the collapsible loess areas.

Keywords: collapsible loess, drainage, design gist

Introduction on Design of Water Supply and Drainage Fire Extinguisher System for Longyao Road Crossing-river Tunnel

..... Fan Huaqing(158)

Abstract: Longyao Road Crossing-river Tunnel connects Shanghai South Railway Station and Pudong Yaohua Area, and is the importantly composed part of Shanghai World Expo Crossing-river Project. The requirements for the water supply and drainage fire extinguisher system are higher. The systems are the water supply, fire extinguisher, wastewater and rainwater systems within the tunnel. The article firstly introduces the basic situation of Longyao Road Crossing-river Tunnel, then analyzes the selection of water supply and drainage systems,

describes the detail engineering contents of the tunnel, and finally puts forward the problem required to be further studied.

Keywords: Longyao Road Crossing-river Tunnel, water supply and drainage, fire extinguisher system, foam water spraying system, fire hydrant system, extinguisher

Application and Analysis of Pavement Edge Drainage System Xie Xin(164)

Abstract: This paper introduces the composition of the pavement edge drainage system in Huqingping Highway. The hydraulic computation and the practical application effect can explain that this system can drain away the water in the pavement structure quickly so as to extend the service life of road.

Keywords: rubblization, infiltration, coefficient of permeability, pavement edge drainage system

Study on Design and Construction of Highway Roadbed Drainage System Song Wanli(166)

Abstract: The water is the main factor in many deforming and destructing factors of highway roadbed. Therefore, it is very important to pay attention to the design and construction of the drainage system for the highway roadbed. The article firstly points out the main contents in the drainage design of highway roadbed, then puts forward the general principle in the drainage design of highway roadbed, introduces the design of the drainage system for highway roadbed, and finally discusses the relative issues in the drainage construction of highway roadbed in order to promote the continuous advancement in the design and construction of highway roadbed drainage so as to guarantee the service quality and service life of highway.

Keywords: highway roadbed, drainage system, design, construction

Summarization of Design Gist for Municipal Water Supply and Drainage Pipelines in Soft Soil Region

..... Yu Yiyang(169)

Abstract: Aiming at the engineering design difficulties of municipal water supply and drainage pipelines in the soft soil regions, and based on the practical experience in the engineering design of municipal water supply and drainage pipeline, the article completely analyzes and sums up four aspects of the soft soil foundation treatment, pipe construction method selection, pipe material selection and non-uniform settlement detail treatment.

Keywords: soft soil region, water supply and drainage pipelines, non-uniform settlement, foundation treatment, construction method

Discussion of Several Problems for Attention in Shanghai Downtown Road Waterlog Improvement Engineering Design Yang Yanhua(171)

Abstract: The article briefly introduces the main cause of the road waterlog in Shanghai downtown and the relative solving schemes. Aiming at the characteristics of the dense buildings and the complicated municipal pipelines in Shanghai downtown, the article discusses several problems for attention in the design process.

Keywords: road waterlog point, pipe position, pipe material, problem for attention

Discussion on Seepage Prevention Mode of Anti-danger Reinforcement for Small-sized Reservoir

..... Yuan Cuiping, Xue Hui, Shen Hao(175)

Abstract: Combined with the engineering practical experience in the anti-danger reinforcement seepage prevention of many small-sized reservoirs in Nanjing, the article sums up the general seepage prevention methods of the small-sized reservoir, and aiming at the different seepage causes, gives the proposed seepage prevention measures. The relative experience can be referred for the similar projects.

Keywords: small-sized reservoir, anti-danger reinforcement, seepage prevention, phreatic line

Technical Measures of Seepage Prevention for Permeable Foundation of Flood Control Dam in Mashi Section

..... Dai Jing(177)

Abstract: The article sets forth the problems existing in the permeable foundation of 3500-m flood control dam in Mashi Section of Dandong City along Yalu River, and puts forward the technical measures of vertical

anti-seepage geo-membrane for the economic loss brought from the historical floods.

Keywords: flood control dam, piping, vertical anti-seepage, Dandong City

Study on Flood Control Design of Train Maintenance Base for Metro Line 1 in Xiamen Liang Xinmei(178)

Abstract: The article introduces the flood control design of the train maintenance base for Metro Line 1 in Xiamen. On the basis of analyzing the basic conditions of the sewage surrounding the maintenance base, rainwater drainage of filed ground, design flood flow, box culvert water capacity and etc., the article calculates various characteristics of the reservoir engineering in rock area and rechecks. Aiming at the existing problems, the article puts forward the relative reconstruction measures as so to make the flood control facilities within the whole area more perfected.

Keywords: Xiamen Metro Maintenance Base, flood control, design, recheck, reconstruction measures

Analysis on Design of Underground Pumping Station in Jimo Qingwei Road of Qingdao Sun Yunlei, Guo Songsong, Zhao Sumei, Zhuang Gui(183)

Abstract: The embedded sewage lifting facilities and pipe engineering in Jimo Qingwei Road of Qingdao are significant to perfect the sewage discharge system of Longyuan River. The article analyzes the design concepts and gist of the plane layout, water proofing, deodorization, ventilation and technological flow of the underground pumping station in this project.

Keywords: Qingwei Road, underground pumping station, layout analysis, technological flow

Elementary Discussion on Design Gist of Structures for Chongqing Fuling Wastewater Treatment Plant Bei Han(186)

Abstract: Combined with the design principle of WWTP, the article introduces the structural design requirements of Chongqing Fuling Wastewater Treatment Plant, and sets forth the technical issues of elevation design, foundation treatment, drainage technology and etc. of WWTP by the engineering cases.

Keywords: WWTP, structure design, elevation design, gravel cushion, blind ditch

Influence of Design Factor on Economic Construction Cost of Urban Drainage Pipeline Lu Yao(188)

Abstract: According to the analysis, the construction cost of drainage pipeline is mainly determined by the pipe diameter, embedding depth, pipe material and etc. The article sets forth that the designers have to select and adjust the different pipe diameters, gradients and pipe connections under the conditions of pipe material determination and the same flows so as to produce several design schemes, and discusses how to determine the most economic design scheme.

Keywords: drainage pipeline, construction cost, pipe diameter, embedding depth, pipe material, gradient

Application of Old Pile Foundation in Newly Built Water Tank Zang Hailong, Mou Xiaowei, Wang Jin(190)

Abstract: The article introduces the utilization of the existing pile foundation in the reconstruction of wastewater treatment plant by the engineering cases, which provides a design concept of economizing the construction cost and shortening the construction period for the reconstruction projects.

Keywords: WWTP, reconstruction, pile foundation, to connect pile, to cut pile, to repair pile

Elementary Discussion of Some Experience and Lessons in Calculation of Foundation Pit Chen Zhigen, Gu Xin, Lu Hua(192)

Abstract: The design and budget work of water conservancy project are mainly involved to the pump sluice, water gate, box culvert, bridge, river regulation, flood control demonstration and etc. The above water conservancy works more come down to the foundation pit engineering. It is often required to carry out the calculation and recheck of foundation pit in these engineering works. Some experience and lessons are accumulated in the calculation of foundation pit, which can be referred for the similar projects.

Keywords: foundation pit, calculation, experience, lessons

Application of Jacking Pipe Technology in Sewage Pipeline Project Liang Zhiyang(196)
Abstract: On the basis of summing up the construction experience of a sewage engineering pipeline project, the article analyzes and discusses various problems existing in the construction practices by the jacking pipe construction technology, and puts forward its preventive treatment measures, which can be referred for the similar projects.
Keywords: jacking pipe technology, construction, sewage pipe

MANAGEMENT & CONSTRUCTION

Analysis on Influence of Metro Tunnel Construction on Structure Safety of Existing Bridge Wang Shun(198)
Abstract: The construction of metro tunnels will cause an influence on the existing bridges. In order to guarantee the safety of bridge structure, the article studies and analyzes the settlement control of bridge foundation by the finite element program, and puts forward the settlement control index, which can be referred for the site construction monitoring.
Keywords: metro tunnel, foundation settlement, crack

Elementary Analysis of Provisional Traffic Organization in Urban Road Construction Zhu Bin(201)
Abstract: With the speeding up of city construction course, the problem of traffic organization brought by the urban road maintenance has become one cause of the urban road traffic congestion. The article sets forth the key technical issues of the traffic organization in the construction period including the relative technical standards, management system and rules, and puts forward the expectation of provisional traffic organization of the construction period.
Keywords: provisional traffic organization, urban road, management system

Study of Gas Treatment Scheme in Low-gas Tunnel Construction Ji Ningbo(203)
Abstract: In the low-gas tunnel construction, the gas in tunnel is the great hidden danger in the construction security and will bring the serious health injury to the construction members. Therefore, it is necessary to study how to efficiently treat the gas in the tunnel construction and to make various risks reduce the minimum. Combined with the construction of Wangjiawan Tunnel, the article introduces the design of tunnel ventilation, the preparation of the systemic monitoring scheme and the establishment of the professional inspecting test team so as to provide the guarantee for the safe construction of Wangjiawan Tunnel, and also to be referred for the design of gas treatment scheme in the similar tunnel constructions.
Keywords: low-gas tunnel construction, construction security, gas treatment

Construction Technology of Bottom Formwork Support in Narrow Space Chen Huifang(207)
Abstract: The article mainly discusses how to efficiently construct the bottom formwork support in 100-mm narrow space and how to guarantee the quality of cast-in-situ concrete track beam. At the same time, the bottom formwork must be conveniently and smoothly taken out to ensure the service safety of station structure.
Keywords: track beam, narrow space, bottom formwork support, implementation effect

Appliance and Analysis of FCEC Method in Design and Construction of Deep Foundation Pit with Protection of Buildings in Short Distance Chao Donghui(210)
Abstract: Astor House Hotel is an excellent historical building of Shanghai. The distance between BW-1 foundation pit and the hotel foundation is only 1.7 m. For available protecting the hotel, the $\Phi 800$ -mm secant pile is used in the design of this pit building envelope, and the frame casing pile method (FCEC) is used in the construction of this project. By comparing the advantages and disadvantages of several common cast-in-situ pile methods, the article introduces a new casing construction technology. According to the analysis of the settlements in the simple-pile test and row-pile construction by FCEC method, the result shows that the FCEC method has the advantages of small turbulence on the surrounding soil body, easy controlling and

no pollution. The method can be widely applied in the soft soil regions.

Keywords: deep foundation pit, FCEC method, protection of buildings, Astor House Hotel

Design of a Municipal Road Soft Soil Roadbed in Qianhai Area of Shenzhen City Sha Liang(214)

Abstract: The article sets forth the foundation reinforcement method of plug drain preloading, cement mixing pile, CFG pile and combined treatment in the construction of a municipal road project in Qianhai Area of Shenzhen City according to the different treatment demands. The good effect is achieved.

Keywords: plug drain preloading method, cement mixing pile, CFG pile, combined treatment, soft soil roadbed

Elementary Discussion on Engineering Application of Cement Stabilized Soil Jia Zhizhong(216)

Abstract: The article introduces the cement stabilized soil material in the aspects of using technological matters needing attention, curing principle and raw material requirement, which can be referred for the popularization and application of this structure in the projects.

Keywords: cement stabilized soil, curing, construction

Application of Pressure Grouting Technology in Concrete Pavement Maintenance Gao Junhai(219)

Abstract: The pressure grouting technology is more commonly used in the road maintenance of China, and is widely popularized especially in the reconstruction of concrete pavement. Taking a project as an example, the article analyzes this technology from aspects of theory and construction, which can be referred for the improvement of road maintenance.

Keywords: pressure grouting, deflection, design, construction, plate cavity

Study on Earthwork Engineering of Municipal Road Li Shuyang(222)

Abstract: Every link is involved to the earthwork engineering in the construction of municipal road. Therefore, the construction efficiency and construction quality of earthwork engineering have the obvious influence on the construction quality of road engineering. The article discusses three aspects firstly to analyze the whole construction process and the construction preparation process in order to make clear the whole content of earthwork engineering, then to discuss the earthwork excavation and transport methods, and the construction quality control contents, and finally studies the construction of earthwork backfill engineering on this basis.

Keywords: earthwork engineering, municipal road engineering, earthwork backfill, excavation and transport engineering

Design and Construction Technology of Water Frame Expanding Project of Beizhu Harbor in Jiamin Elevated Road (Chunshen Railway Section) Yi Fuqiu, Cai Xiang, Liu Yongjun(225)

Abstract: In recent years, there are more practices of the frame bridge jacking construction to underpass the existing railways, but there is few in number cast-in-situ construction under the main railway. Owing to the poor geological condition of Shanghai, the on-line period of cast-in-situ frame construction for the beam is long with the high safety risk, but the operation of motor train unit is highly required. Therefore, the selection and the optimization of construction scheme are more important. Taking the design and construction of the frame bridge expanding project to underpass the existing Huchun Railway in Beizhu Harbor as an example, the article sums up some experience of the cast-in-situ frame bridge under the existing railway, which can be referred for the similar construction on the railways.

Keywords: underpass, existing railway, frame bridge, cast-in-situ, construction

Construction Technology of Jinfeng Expressway Asphalt Concrete Pavement Hu Haibin(232)

Abstract: The development of expressway is continuously speeded up and its position is more and more important in the transportation. The new construction technologies are continuously used in the road construction, especially more new technologies are used in the construction of asphalt concrete pavement, which play the great role in the pavement construction. Based on this, the article sums up and further discusses the construction method and technology used for the asphalt concrete pavement of expressway, which can be referred for the similar projects.

Keywords: expressway, asphalt concrete pavement, construction technology

Control of Support Installation Quality for Short-span Bridge Zhang Kai(235)

Abstract: The article firstly analyzes the role of bridge support, sums up the quality problems commonly caused in the installation construction of bridge support, then analyzes the causes of the quality problems, and finally puts forward the reasonable proposals of installing the bridge support and ensuring the support installation quality according to the engineering cases.

Keywords: short-span bridge, support installation, quality, control measures

Optimization of Side Span Cast-in-situ Section Scheme for Pre-stressed Concrete Continuous Girder Bridge and Analysis of Influence on Bridge Structure Wu Chuan(237)

Abstract: The article introduces the optimization of the construction scheme for the side span cast-in-situ section of (40+64+40) m pre-stressed concrete continuous girder bridge of Majiatang Bridge, and then compares and analyzes the alignment and stress of the optimized bridge structure with the original design scheme. The comparison and the analysis show that the optimized scheme can satisfy the design requirements, shorten the construction period and reduce the engineering construction cost. The results accumulate the valuable experience for the construction of the similar bridge projects.

Keywords: continuous girder, side span, alignment and stress, optimization scheme

Application of Cover-excavation Method in Design and Construction of Jinguang Road (N) Tunnel Li Xuandong(240)

Abstract: Combined with the engineering practice of Jinguang Road (N) Tunnel in Zhengzhou City, the article introduces the application of cover-excavation method in urban tunnels, which can be referred for the design and construction of the future similar underground projects in the bustling sections.

Keywords: tunnel, cover-excavation method, pavement system, military beam, construction

Monitoring, Test and Analysis of Concrete Temperature for Round-ended Solid Pier Yang Canxuan(243)

Abstract: The article introduces the monitoring test of concrete temperature of round-ended solid pier for Bailong River Bridge. On the basis of monitoring the concrete temperature of round-ended solid pier, the article analyzes its change rule and determines the dismantling template time of concrete construction for the round-ended solid pier in order to provide the theoretical basis for the filed practical construction. According to the theoretical calculation of adiabatic temperature rise and practical temperature peak value of the concrete, the article points out the reason of the data difference between the theoretical calculation and the practical monitoring.

Keywords: mass concrete, temperature, monitoring temperature peak, dismantling template time, Bailong River Bridge

Application of Rubber Asphalt Overlay in Longquanyi North Road Reconstruction Project ... Tang Yunhua(247)

Abstract: The article introduces the application of rubber asphalt overlay in the road reconstruction project. The rubber asphalt has the excellent road performance and can satisfy the requirements of driving comfort, noise reduction, reflection crack decrement, waterproof and anti-slip performances through its application in the Chengdu Longquanyi North road reconstruction Project. Also the project upgrades the city landscape, environmental protection and economy in order to accumulate the design and construction experience for the reconstruction of urban cement concrete pavement overlay.

Keywords: rubber asphalt, cement concrete pavement reconstruction, overlay, design, construction

Elementary Discussion on Crack Cause and Treatment of Hengli Pump and Sluice Pier Li Nianbin, Chen Haokai, He Jianzhi(250)

Abstract: The cracks from the pier concrete structure are more common in the pump and sluice engineering. The cracks are through and are also non-through. The most cracks happen within one month after 10 days of

pouring the pier concrete. It is required to treat the pier crack in time. The appearance and the durability of pier concrete structure will be affected if bad treatment. The article analyzes the crack cause of piers in Hengli Pump and Sluice of Jiading, and specially puts forward the crack treatment scheme. The construction unit treats the pier cracks by this treatment scheme. According to the inspection and operation practice, the treatment scheme is feasible to achieve the treatment effect.

Keywords: pump and sluice pier, concrete, crack, treatment

Application of Slaked Lime in Micro-surfacing Construction Xu Jie(253)

Abstract: The ordinary Portland cement is generally used as the stuffing in the micro-surfacing construction. The slaked lime is allowed to use as the stuffing in the technical guidance of micro-surfacing and slurry seal coat, but there are a few practices of the slaked lime used as the stuffing. The article mainly introduces the application practices of the slaked lime used as the stuffing in the micro-surfacing construction. The result shows that the slaked lime has the good effect in the micro-surfacing construction.

Keywords: slaked lime, micro-surfacing, construction application

Elementary Discussion on Application of Pre-stressing Technology in Bridge Construction Cheng Cunjiang, Lin Shuang, Liu Xiuzhi(256)

Abstract: The pre-stressing technology, as a construction technology, is more widely used in the road and bridge construction in China. The main reason is that the pre-stressing technology has the advantages the other construction technologies are hard to compare. The technology can make the maximum strength of the building materials effectively utilized and also make the bridge span increased while its structure weight is decreased. But in order to ensure the pre-stressing technology able to be better applied in the construction of bridges, the construction members are still required to perfect the construction and scheme designs, and the technology of the construction members and the quality control are also highly required. The complexity of the technology is a great characteristic of pre-stressing technological construction. Combined with the practical cases, the article analyzes the gist of the pre-stressing technology in the bridge construction. Its aim is to improve the bridge construction quality to some extent.

Keywords: bridge construction, pre-stressing technology, construction application, quality control

Construction Method of Deepwater Larsen Steel Sheet Pile Cofferdam Yang Xinying, Shao Mingli(258)

Abstract: In the present construction of road and bridge in China, the cofferdam method is used to construct the most underwater pile foundation base slabs of crossing-river bridges. All cofferdams are commonly the soil-rock cofferdam, reinforced concrete open caisson cofferdam, steel boxed cofferdam, steel sheet pile cofferdam and etc. How to select the methods to construct the cofferdams in the complex geology is the key in the study of each construction project. The article discusses the construction methods of bridge base slab by Larsen steel sheet pile cofferdam in deepwater area, which can be referred for the similar projects.

Keywords: deepwater, Larsen steel sheet pile, comparison and selection of schemes, hanging and sinking the steel casing, supporting system, sinking, insertion, back cover

Pipe Laying Technology in foam Light Soil Construction Li Ping(260)

Abstract: According to the engineering cases, the article briefly summarizes the keys and the difficulties in the links of the pipe laying design, construction, test and acceptance in the foam light soil construction.

Keywords: rail traffic, foam light soil, finished manhole, drainage pipe

Elementary Discussion on Mixing Ratio Design and Quality Control of Waterproof High-performance Concrete for Metro Huang Jinfu, Xu Xiaobing(264)

Abstract: Based on the technical requirements for the production and application of waterproof high-performance concrete in Line 1 Phase II Project in Guangzhou - Foshan Section of Pearl River Delta Intercity Rapid Rail Transit, the article elementarily discusses the mixing ratio design and quality control of waterproof high-performance concrete for the metro engineering.

Keywords: metro engineering, waterproof concrete, mixing ratio design, quality control

Faults and Reinforcement Design of Assembled Steel Reinforced Concrete Beam Bridge Li Jianqing(267)

Abstract: The article firstly analyzes the fault form and the fault forming cause of the assembled steel reinforced concrete beam bridge, then puts forward several proposals for the work improvement, and finally sets forth the bridge reinforcement technologies of enlarging the section, changing the structural system, and reinforcing the steel plate, fiber composite material and external pre-stressing.

Keywords: assembled steel reinforced concrete beam bridge, fault form, forming cause, proposal for work improvement, reinforcement technology

Analysis of Main Fault Cause and Discussion of Treatment Scheme in Maintenance of Municipal Road Facilities

..... Wan Shangwu(270)

Abstract: The article introduces the main faults of municipal road facilities, analyzes the fault causes of crack, pond, pit and etc. in the secondary maintenance, manhole cover, concrete changed to asphalt, housing estate entrance, construction joint and etc. of four public pipelines, and puts forward the targeted treatment scheme in order to prevent the further fault cause of municipal road facilities, efficiently to improve the maintenance life and to economize the maintenance funds of municipal road facilities.

Keywords: main fault of municipal road facilities, cause analysis, treatment scheme

Elementary Discussion on Integrated Management of Municipal Engineering Projects

..... Liu Jiwei, Du Qingfeng(273)

Abstract: Since the reform and open, the municipal engineering construction industry has been rapidly developed and the management work of municipal engineering construction has been paid more and more attention by the people in China. The article sums up the construction management experience for many years, and sets forth the experience of several issues in the integrated management of the municipal engineering construction process in order to promote and guarantee the long-term development of enterprises.

Keywords: municipal engineering construction, objective organization, integrated management

Elementary Discussion on Protection Method of Old Pipelines in West Trunk Line Lv Huinong(276)

Abstract: The article briefly introduces the background of Shanghai West Trunk Line, sets forth several protection methods of the old pipelines in the west trunk line, and compares several protection methods from many aspects.

Keywords: West Trunk Line, protection of old pipeline, comparison of methods

Elementary Discussion of Investment Supervision in Whole Process of Construction Engineering Cost Control ...

..... Zhang Aiming, Li Li(278)

Abstract: At present, the construction engineering cost is valued and controlled by stages in China, namely to prepare the investment estimation in the project proposal stage, to prepare the budgetary estimation in the preliminary design stage, to prepare the engineering budget in the construction drawing stage, and to prepare the final accounts of the completion in the check and acceptance stage of the completion. The carelessness and negligence of any link will directly affect the engineering investment. The article introduces the theory of investment supervision, and discusses the feasibility and necessity of investment supervision to help the owners to control the construction costs of the construction projects in every stage.

Keywords: multi-valuation, whole process management, investment supervision

Construction Monitoring of Pre-tensioning Method Fold Line Reinforcement Pre-stressed Concrete T-beam

..... Liu Yan(280)

Abstract: The pre-tensioning method fold line reinforcement pre-stressed concrete can avoid the influences of hole blocking up, non-compacting grouting, pre-stressing failure and etc. on the structure quality and durability possibly happening if using the post-tensioning method, and also can efficiently control the

development of diagonal concrete crack with the wild prospect of its application. The 50-m fold line reinforcement pre-stressed concrete pre-tensioned T-beam is used for a bridge. The article introduces the monitoring of its construction process. The result shows that the total loss of pre-stressing is 5.57% and the tensioning pedestal is safe and reliable in the tensioning process of steel strand.

Keywords: pre-tensioning method, fold line reinforcement, construction monitoring

Elementary Discussion on Construction Management of Column Non-landing Scaffold for S6 Highway Li Deyao(283)

Abstract: The application of the new technology will cause the problems to the relative management. Based on the practice of S6 Highway, the article sums up the construction management of column non-landing scaffold, which can be referred for the similar construction management.

Keywords: S6 Highway, non-landing scaffold, construction process, control management

Elementary Analysis on Slope Collapse Cause of a Protection Project and Treatment Measures

..... Zheng Chaowei(287)

Abstract: The slope collapse is a common fault in the building slope protection works. The design scheme and the construction quality of the slope protection play a decisive role in the slope stability. Taking the building slope of a plot as an example, the article discusses and analyzes the forms, reasons and features of the slope collapse, and proposes the relevant treatment measures.

Keywords: slope, collapse, treatment measures, protection, strengthening

Elementary Discussion on Crack Cause and Preventive Measures of Concrete Pavement - - - Chen Xiaojuan(291)

Abstract: The cement concrete pavement has the advantages of high strength, good stability, good durability, good flatness and roughness, low curing and maintenance funds and etc. It is widely used in the municipal construction, but the appearance of concrete crack is more common. Taking a project of Guangdong Heyuan as an example, the article analyzes the crack cause of concrete pavement, and puts forward a series of preventive measures.

Keywords: concrete pavement, crack, cause, preventive measures

Discussion of Road Manhole Faults Treated by Using Black Concrete

..... Zhang Shoucheng(293)

Abstract: Based on investigation of typical urban road manhole quality, and through statistical analysis, the result shows that the major faults of manhole are the subsidence and the manhole edge damage, and the fault causes are the low-quality manhole cover, no fixed ring beam and insufficient concrete strength of manhole edge. The article recommends the treatment measures of manhole fault, and focuses discussion on the technology and characteristics of the black concrete to treat the manhole faults.

Keywords: black concrete, manhole fault, manhole cover, road

Discussion on Repair and Maintenance of Section Steel Expansion Joint of Bridge

..... Mao Weisheng(296)

Abstract: The article introduces the method and technology of the repair and maintenance of the section steel expansion joint of bridge, comprehensively compares the advantages and disadvantages of the common repair methods and maintenance materials from the construction technology, cost and material, and puts forward the more reasonable and effective proposals of maintenance so as to guide the repair and maintenance of bridge, which can be referred for the similar projects.

Keywords: steel section expansion joint, elastic concrete, mould method, rapid concrete, steel fiber

Analysis of Influence Factor and Control Countermeasure for Construction Cost of Municipal Road

..... Bai Yubin(298)

Abstract: The construction of municipal road is related to the process of urbanization. The natural environment and construction environment influence its construction quality to some extent. The control of construction cost of municipal roads is the key of the municipal road construction. The influence factors of construction

cost contain many aspects. On the basis of summarizing the previous work, the article analyzes the influence factors of construction cost of municipal road in the multiple levels, and according to the practical experience for many years, gives the control countermeasures for the construction cost of municipal roads in two aspects of the preparative stage and the construction stage of project.

Keywords: municipal road, analysis of construction cost, influence factor, control countermeasures

Application of Fiber Seal Coat in Jindu Road “White to Black” Project Ma Xianni(300)

Abstract: This paper introduces the function, material requirements, construction technology and acceptance standard of fiber seal coat in the pavement structure of Jindu Road “White to Black” Project. The practical application effect shows that the fiber seal coat plays the role of the lower seal coat and the stress absorbent bed to some extent.

Keywords: fiber seal coat, lower seal coat, stress absorbent bed, construction technology

STUDY ON SCIENCE & TECHNOLOGY

Mixing Ratio Design and Property Study of Drainage Asphalt Stabilized Macadam Di Shengguan, Hou Mingye, Zhao Juanjuan, Wang Xinqi(303)

Abstract: According to the survey of the drainage base gradation and combined with the drainage asphalt stabilized macadam gradation range recommended in the asphalt pavement construction standard in China, the article introduces the mixing ratio design of drainage asphalt stabilized macadam. On the basis of design gradation, the article systematically studies the high-temperature properties, water stabilities and penetrability of the mixture separately added with the ordinary asphalt and SBS modified asphalt, which can be referred and provide some technical support for the application of drainage asphalt stabilized macadam in China.

Keywords: road engineering, asphalt stabilized macadam, design of mixing ratio, road property

Application of Soil Curing Agent Cured Lime Soil in Roadbed of Salinized Soft Soil Region Du Liping, Wang Xinqi(307)

Abstract: The article analyzes the feasibility of the soil curing agent cured lime soil for road construction when the roadbed is constructed in salinized soft soil region. Taking a road project of textile economic zone in the typical salinized soft soil region as an example, the article analyzes the geology and salt content of the textile economic zone. By the compaction test of soil curing agent cured soil (5% lime + 95% raw soil + curing agent), unconfined compression strength (7 d), indoor resilient modulus and CBR tests, the results show that the soil curing agent cured soil (5% lime + 95% raw soil + curing agent) can satisfy the requirements within the roadbed range of the relative roadbed standard. The article compares and analyzes the advantages and disadvantages of the lime soil (12%) and the curing agent cured lime soil (5% lime + 95% raw soil + curing agent) to construct the roadbed in the tested section of roads in the textile economic zone from the deflection, outdoor resilient modulus and CBR tests, and the construction cost of the tested road section.

Keywords: soil curing agent, salinized, soft soil region, Binhai New Area

Study on Hot Spot Stress Concentration Coefficient of Welding Details of Over-long Span Cable-stayed Bridge

..... Li Yuanbing(310)

Abstract: By the study of a cable-stayed bridge and based on the extrapolation method and Dong method, the article studies the hot spot stress concentration effect of the steel box beam welding details of an over-long span cable-stayed bridge, defines the hot spot stress calculation method, and tests and analyzes the weld toe stress concentration effect of each main welding detail. The result shows that the influence of boundary condition is not obvious on the calculation result. It is required to pay attention to the greater influence of mesh density on the calculation result.

Keywords: coarse model, sub-model, hot spot stress concentration coefficient, extrapolation method

- Study on Application of Sasobit Warm Mix Asphalt Mixture Based on Moisture Stability Performance Yang Baoxing(314)
- Abstract:** The warm mix asphalt mixture can reduce the construction temperature and has the advantage of energy saving and environmental protection. Compared with the hot mix asphalt mixture, the moisture stability performance of warm mix asphalt mixture is worse, but can be improved by the mode of adding the modifier. The article introduces its test study. The laboratory test shows that the adding of 1%~2% cement or hydrated lime can obviously improve the moisture stability performance of warm mix asphalt mixture. The use effect of the tested road validates that the warm mix asphalt mixture has the better using performance.
- Keywords:** warm mix asphalt mixture, moisture stability performance, freeze–thaw splitting strength
- Method to Select Site of Urban Comprehensive Transportation Hub Based on Traffic Forecast Model Ke Shuiping(317)
- Abstract:** The article sets forth the factor to affect the planning and design of comprehensive transportation hub, and introduces a method to select the site of comprehensive transportation hub. Based on the transportation four–stage model, several recommended schemes are made up. The article selects the final scheme with the highest comprehensive evaluation from the recommended schemes by the modified analytic hierarchy process, and introduces an example to explain the detail application process of this method, which provides a feasible operation scheme for the planning and selection of the site for the urban comprehensive transportation hub.
- Keywords:** comprehensive transportation hub, transportation four–stage model, Beckmann model, analytic hierarchy process
- Study on Test of Different Waterproof Adhesive Layer Materials for Cement Concrete Bridge Deck Song Jianning(321)
- Abstract:** The waterproof adhesive layer of bridge deck can firmly bond the asphalt paving layer and the cement concrete deck plate into a whole, and is the crucial layer in the deck pavement system. After analyzing the waterproof adhesive failure model, the article compares and studies the basic properties of two waterproof adhesive materials of waterborne epoxy asphalt and SBS modified asphalt, and comprehensively evaluates the different influence factors of mechanical properties on the above two waterproof adhesive materials through the laboratory simulating tests. The result shows that the waterproof adhesive layer of waterborne epoxy asphalt has the excellent comprehensive property in order to provide the scientific basis for reasonably selecting the waterproof adhesive materials.
- Keywords:** deck pavement, waterproof adhesive layer, waterborne epoxy asphalt, pullout test
- Study on Influence of Infilled Wall Arrangement on Seismic Performance of Reinforced Concrete Frame Structure Du Changhong, Zhao Xu(325)
- Abstract:** According to the simulating calculation of the different infilled wall arrangement schemes in the frame structure, and comparison and analysis of the calculation results, the article finds the great influence of the infilled wall on the overall stiffness, considers to pay attention to the design of infilled wall as the non–structural component in the structural design, and sets up the uniform arrangement of infilled wall frame structure can make the structure stiffness improve, deformation reduce, but make the structure ductility reduce. And nonuniform arrangement of infilled wall frame structure will make the structure stiffness change suddenly to form the thin weak layer unfavorable for seismic resistance. The improper arrangement can also form the conclusion of the short column. The relative experience can be referred for the design of frame structure buildings in high seismic intensity area.
- Keywords:** frame structure, infilled wall, seismic resistance
- Study on Residual Stress characteristics of Static Pressure Pile in Soft Soil Ge Xiao(328)
- Abstract:** The existence of the static pressure residual stress will result in the change of the pile load transfer characteristics in the work load. The article studies the influence factors of the pile length, pile diameter, pile

rigidity and soil frictional coefficient on the residual stress of static pressure pile in the soft soil region by the numerical simulation method, and considers that the residual stress distribution form of static pressure pile has no relation with the above factors, but the residual stress scope is closely related with the above factors. The relative experience can be referred for the similar projects.

Keywords: residual stress, static pressure pile, soft soil, numerical simulation

Application of Direct Tensile Tester (DTT) to Evaluate Low Temperature Performance of Asphalt Crack Sealant

..... Xu Jie(331)

Abstract: The article introduces the application of DTT to evaluate the low temperature performance of asphalt crack sealant. The DTT is applied to achieve the thermal stress changes of the sealants in the different temperature sections from -30°C to 5°C by selecting six hot pouring sealants and two cold pouring sealants, and the relationship between tensile stress and temperature change of the different sealants in the temperature lapse. The result shows that the thermal stress can be used to divide the bonding capacities of the different asphalt crack sealants. In addition, the result of the tensile stress and strain of the different asphalt sealants shows that the DTT can be used to classify the crack sealants based on the low temperature performance of asphalt at -29°C .

Keywords: DTT, crack sealant, thermal stress, low temperature performance

Research on Influence of Building Construction on Surrounding Environment Wu Qing, Duan Jiayan(334)

Abstract: On the basis of the previous comprehensive research, the paper introduces the establishment of three-dimensional soil finite element model by ANSYS. The time interval function exerted with the strength on the ANSYS model simulates the function produced from the driving hammer to attack on the ground. The paper contrasts the test result with computational solution, and confirms the ANSYS model in the variable value of each control parameter and the calculating correction of the model establishment. To the elastic modulus value of soil, the paper uses a simple experiment able to calculate its number range, which provides a basis for the analysis of the later similar theory. This paper confirms the above analysis conclusion by analyzing empirical datum in the time domain and the frequency range. The paper researches and analyzes the vibrating isolation result of surface vibration by the vibrating isolation trench. The result shows that the vibration isolation of the trench has the obvious effect.

Keywords: impact, isolation trench, vibration source

Study on Problem of Pit-in-pit in Deep Pit Excavation and Its Influence Shi Haiying(339)

Abstract: The pit-in-pit appearance is very common in foundation pit engineering. There is a little study in this field. The engineers have to rely on the experience to determine its influence range. Many accidents are caused by the unsuitable design and construction for pit-in-pit. This paper analyzes the greater deformation in the excavation of pit-in-pit in a project because of not according to the design construction conditions. On this basis, the article qualitatively analyzes the pit-in-pit by the large finite element software ABAQUS, and gives the elementary quantization conclusion by the existing elastic mechanics solutions through the simplified model.

Keywords: foundation pit, pit-in-pit, finite element, half space problem

APPLICATION OF ACHIEVEMENTS

Application of TF Non-contact Balanced Beam in Top Layer Paving of Asphalt Pavement Li Wei(344)

Abstract: The article briefly describes the characteristics, application scope, constitution, installation and the main parameter settings of TF non-contact balanced beam. Combined with the practical application in the top layer paving of asphalt pavement of 1#~5# Road and compared with 6#~8# Road constructed by the contact balanced beam, the article gives the relative conclusions in the raise of evenness index, the estimation of the optimum paving speed and the improvement of asphalt mixture rolling quality.

Keywords: TF non-contact balanced beam, asphalt pavement, paving, application

Study and Application of “Multifunctional integrated” High-limit Frame Zhong Xiang(348)

Abstract: The article firstly sets forth the functions of the high-limit frame set up for the road traffic engineering and its present problems, then puts forward the scheme and characteristics of the “multifunctional integrated” high-limit frame, and finally introduces the application effect of this new frame in the viaduct system of Chengdu.

Keywords: road traffic facilities, “multifunctional integrated” high-limit frame, technical scheme, functional characteristic, using effect

Application of Plastic Tube Cast-in-place Concrete Pile (TC pile) in Treatment of Abutment Soft Base in Lingang New Town Huanghu Road (Third) Wang Wei(351)

Abstract: In recent years, the pile soil compound base treatment method is more and more widely used in the soft soil roadbed reinforcing project. As a new roadbed treatment technology, TC pile has the characteristics of high bearing capacity, reliable pile quality, small influence on the surrounding environment, rapid construction speed, obvious treatment effect and etc. Its application prospect is very wide. From the practical projects, the article completely introduces the application of TC pile in the treatment of abutment soft base, which can be referred for the similar projects.

Keywords: bridgehead bump, soft base treatment, TC pile, construction technology

Application of High-tensile Reinforcing Steel in Bridge Structure Engineering Deng Huihan(353)

Abstract: The article introduces the definition, classification, outstanding property and application value of the high-tensile reinforcing steel. According to the construction application status, economical environmental benefit analysis and popularizing use status of high-tensile reinforcing steel, the article sets forth the significance and necessity of popularizing and applying the high-tensile reinforcing steel. Based on the condition of its service in the present bridge structural projects, the article analyzes the restricting factors for popularizing and applying the high-tensile reinforcing steel. Combined with the model cases, the article analyzes and compares the amount of each reinforcing steel material in the bridge engineering, sets forth and sums up the reasonable application of high-tensile reinforcing steel in the bridge structure, and puts forward the proposal for its development.

Keywords: high-tensile reinforcing steel, outstanding property, economical environmental benefit, energy conservation and environmental protection, leading reinforcing steel, reasonable usage

THE RELATIVE SPECIALITIES

Elementary Analysis of New Motored Vehicle Driver Examination System and Design of Field Reconstruction Scheme Zhai Xue(357)

Abstract: Taking Shenyang Bakeshu Driver Examination Center as the engineering background, the article analyzes the adjusted subjects in the driver examination system. Based on the design principle and stipulations, the reconstruction of the relative subject examination fields are planned and designed, which can be referred for the planning and design of the other driver examination fields.

Keywords: new driver examination system, adjustment of subject content, plane and vertical planning design

Application of Dry Dock in Large Immersed Tunnel Project Xiong Gang, Wang Yanning(360)

Abstract: With the technological maturity of immersed tunnel and the continuous accumulation of construction experience, there are more than ten immersed tunnels under the service and construction in China. The design of dry dock is the key and the difficulty in the design of immersed tunnel. The different types of dry dock are suitable for the different engineering conditions. The article systematically sums up the superiorities

and the limitations of the axes dry dock, independent dry dock and movable dry dock, and introduces the design experience of dry docks for some immersed tunnels under the operation and construction in China.

Keywords: immersed tunnel, independent dry dock, axes dry dock, movable dry dock, prefabrication of pipe segment

Technical Measures for Protection of "Customs Bell Tower" in Foundation Construction of Jingang Plaza B District Wang Tingwen(362)

Abstract: The protection of "Customs Bell Tower" is involved in the foundation engineering construction of the business-living buildings in Jingang Plaza B District of Shantou City. The article introduces the technical measures taken for the pile foundation construction, foundation pit supporting, foundation pit dewatering and drainage, foundation pit excavation and groundwater recharge replenishment in order to protect the "Customs Bell Tower".

Keywords: foundation engineering, construction, "Customs Bell Tower", Protection, Technical measures

Optimization of Technological Control Parameters of Integrated Sludge Drying Incineration Device and Its Operation Huang Yi(365)

Abstract: The sludge drying incineration device in Hangzhou Qige Wastewater Treatment Plant is the first integrated sludge drying incineration device with the intellectual property and many invention patents independently researched and developed by the Chinese Academy of Sciences in China. Owing to the new technique and new technology of the sludge drying incineration firstly realizing in the industrial application, it is the basic requirement how to progressively optimize the theoretical design technological parameters in the technological equipment operation through the thermal adjustment and the test operation under the premise of the safe operation, and how to realize or improve the theoretical load of technological equipment design so as to make the optimized technological control parameters more satisfy the operation requirement of the technological equipment in site. The article firstly introduces the adjustment of integrated sludge drying incineration device and its operation problems, then analyzes the problem causes, and finally describes the adjustment of technological equipment and control parameters so as to make the device under the normal operation.

Keywords: sludge drying incineration, adjustment and operation, control optimization

Preparation of Core Layer Micropore Foaming Pipe Huang Shuqin(368)

Abstract: The core layer micropore foaming pipe is a new pipe material. Its inner and outer walls are the solid wall layer and its core layer is the micropore foaming layer. The article summarizes the production equipment of core layer micropore foaming pipe and the preparation method of micropore foaming core layer as well as its application prospect. The article focuses introduction on the differences in two extruding equipments, and the super saturated gas method of the foaming agent with supercritical CO₂ to prepare the micropore foaming plastic, and expects the further development of core layer micropore foaming pipe.

Keywords: core layer, micropore foaming, supercritical CO₂

Study on Application of Ecological Dry Toilet in Sichuan Tibetan Herdsmen Residence ... Wang Fei, Xie Lu(371)

Abstract: The ecological dry urine directing toilet has the biological urine characteristic to realize the harmless treatment. Combined with the geographical environmental characteristics and the residential living form of the Sichuan Tibetan Herdsmen Residences, the article analyzes and discusses the operation mechanism, using mode, management method and etc. of the ecological dry urine directing toilet, studies its application in the planning design, and puts forward some solving methods. The application of ecological dry urine directing toilet in Sichuan Tibetan Residence can efficiently treat the human dejecta, and has the great realistic meaning to protect the ecological environment, to promote the health and epidemic prevention guarantee, and to improve the living quality of herdsmen, which can be referred for the planning construction work of the similar regions.

Keywords: ecological dry toilet, application study, design optimization, Sichuan Tibetan Region

PRODUCT INTRODUCTION

Design and Application of Acoustic Ventilation Window Gou Yuanguo(374)

Abstract: The article describes the design background of acoustic ventilation window, introduces the design principle, basic type, sound insulation effect, ventilation effect, thermal insulation and energy saving, and introduces the cases of acoustic ventilation window.

Keywords: acoustic ventilation window, design principle, sound insulation effect, thermal insulation and energy saving

WORK & DISCOVERY

Elementary Discussion on Implementation of Enterprise Internal Control Basic Norm Zheng Min(377)

Abstract: Taking the *Enterprise Internal Control Basic Norm* and *Enterprise Internal Control Supporting Guidelines* issued by five ministries and commissions of the Ministry of Finance, Securities Regulatory Commission, the Audit Commission, China Banking Regulatory Commission, the China Insurance Regulatory Commission as the background, the article sets forth the comprehension for the enterprise internal control basic norm, analyzes the problems faced in the implementation of the internal control, and puts forward several key points how to implement the enterprise internal control.

Keywords: enterprise, internal control, basic norm, implementaiton

.....

Excellent Journal of the Ministry of Housing and Urban-Rural Development of PRC

Urban Roads, Bridges & Flood Control

Monthly

Number 8, 2013 (Total Number 172)

Publication on August 15th, 2013

<http://www.roadbridgeflood.com>

Start publication in 1984 Scope of issue: Issue at home and abroad

Department responsible for the work: the Construction Ministry in PRC

Sponsor: Shanghai Municipal Engineering Design & Research Institute

Editor & issue: Editorial department of "Urban Roads, Bridges & Flood Control"

Editor-in-chief: Luo Yanni

Address: No.901 Zhongshan Bei Er Road, Shanghai

P.C.: 200092

Tel.: (021)51298850

Fax: (021)51298850

E-mail: cdq@smedi.com

ISSN 1009-7716

CN 31-1602/U

Domestic price: 18 yuan RMB

**Journal of Municipal Engineering Branch of China Society of Civil Engineering
and Municipal Design Branch of China Society of Prospecting Design**