吴兴征老师指导的2016级土木工程毕业设计列表（2020年）

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1	Stability analysis of typical seawalls in Lanshan section of Rizhao, Shandong	20161603051	Xiaoliang Fan	A01
2	Internal Force Calculation and Design of Shield Tunnel in Soft Soil Layers	20161603130	Yi Yang	A02
3	Design of shallow buried rectangular reinforced concrete frame structure	20161603231	Zhiyuan Qiu	A03
4	Calculation of Internal Force of Light-Anchor Support Structure and its Design	20161603099	Shixing Han	A04
5	Design of composite foundation of lime-soil pile and CFG pile for small high-rise residential buildings in Tianxiacheng society of Langfang City	20161603040	Rui Zhou	A05
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9	Design for composite foundation of conjunctive use of CFG pile and compacted sand pile in Jishuitan Hospital	20161603021	Junjie Zhang	A09
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No	毕设论文题目	学号	姓名	备注
1	山东日照岚山区段典型海堤的稳定分析	2016160051	范晓亮	A01

海堤是用来保护沿海区域人民生命和财产的重要屏障，是海洋经济开发战略的基础设施。造成海堤失事破坏主要有两个原因：一是由于波浪和潮汐等不确定因素造成堤顶越浪量过大，从而使得海堤堤坡受到冲刷侵蚀；二是海堤地基多为软土，其变形大、承载能力低，在自身重力和水荷载作用下，容易导致海堤发生边坡失稳破坏，因此在海堤的设计过程中必须要考虑这两个问题。

本文分析了越浪量和边坡稳定的研究现状，对常用的计算模型和方法进行了简单描述。对于越浪量公式主要介绍了我国规范方法和 Owen 越浪量公式，在边坡分析中主要介绍了极限平衡法中的瑞典条分法和毕肖普法。并结合实际工程案例进行了越浪量计算和边坡稳定安全系数计算。通过变动的波浪要素和海堤几何形状等参数，在 R 语言平台上绘制了越浪安全系数与海堤高程、临海侧坡角的关系曲线，对比了两种方法的计算结果。边坡稳定分析则采用 Rocscience Slide 软件上通过建立不同工况的模型完成了对边坡稳定安全系数的计算。

关键词： 海堤稳定；越浪量计算；边坡分析；安全系数

The seawall is an important barrier for protecting the safety of people's lives and property in coastal areas, and it is an infrastructure of the marine economic development strategy. According to the data, there are two major failure modes of a seawall. The one is that the wave-induced discharge at the top of the seawall is too large due to uncertain factors such as waves and tides, which causes the failure of the seawall slope. The other is that seawall foundation are soft soils, which have low bearing capacity and is easy to produce large deformation. Under the influence of external forces such as self-weight and water load on the seawall, it is easy to cause the failure of the seawall slope. Consequently, these two issues should be considered for a design of seawalls.

A state-of-art of the calculation of overtopping and slope stability is reviewed, and the commonly used numerical models are simply described. In the case of overtopping, the specification standard method and Owen overtopping formula are introduced. In the case of slope analysis, the Felenius method and Bishop method based on the limited equilibrium theory are introduced. In addition, the discharge due to wave overtopping and the safety factor of slope for an real-world case are performed in this paper. A sensitivity analysis of the wave

	parameters and seawall geometries is conducted, and the relation of the safety factor for overtopping with the seawall elevation and the seaside slope angle is drawn via the R platform. The results by using the two methods are compared. The slope stability analysis is done by the Rocscience Slide package through varying different input conditions of the slope. **Key words：** seawall stability; calculation of wave overtopping volume; slope analysis; safety factor

No	**毕设论文题目**	**学号**	**姓名**	**备注**
2	软土地层中盾构衬砌内力计算与设计	20161603130	杨毅	A02

最近几年我国在隧道基础建设上取得了许多成果，这取决于隧道项目不断发展，其技术也在不断的完善。当前在隧道工程中应用最广泛的是盾构法，盾构法的优点也十分明显，以其施工速度快、安全、效率高、地表变形小、对周围土体的影响较小等特点在隧道工程中占有越来越大的比重。

在盾构法中，管片的计算方法和计算模型因为土层环境的差异导致其亦有很大的不同。由于相关技术水平的不断提高，盾构工程技术也在不断的发展、完善。

文分析了隧道工程的研究现状，对隧道管片内力的计算模型及其方法进行了描述。主要介绍并采用地下圆形隧道自由变形均质模型，运用模型对佛山实例进行了内力计算，绘制了当改变隧道埋深、直径的情况下的管片弯矩图、轴力图、剪力图，并通过对内力图的分析得出了相应的结论。

关键词：盾构隧道；黏性土层；内力分析

In recent years, many achievements in tunnel infrastructure construction has been made in China, which depends on the continuous development of tunnel projects and the continuous improvement of its technology. At present, the most widely used in tunnel engineering is the shield tunneling method. The advantages of the tunneling method are obvious, such as fast construction, safety, high efficiency, small surface deformation, and small impact on the surrounding soil. It has been experienced an increasing proportion in engineering.

In the shield tunneling method, the calculation model of the segment can be different owing to the difference of the soil layer environment. Due to the continuous improvement of the relevant technical level, shield engineering technology is constantly developing and improving.

This paper analyzes the current research situation of tunnel engineering, and describes the calculation model of tunnel segment internal force. It mainly

	introduces and adopts the free deformation homogeneous model of the underground circular tunnel, and uses the model to calculate the internal force for the case of the Foshan tunnel. Through the analysis of the internal force diagram, the corresponding conclusions are drawn. **Key words**：shield tunnel；cohesive soil layer；internal force analysis

No	**毕设论文题目**	**学号**	**姓名**	**备注**
3	浅埋式钢筋混凝土框架结构设计	20161603231	丘植元	A03

浅埋构造是指其上覆土层较薄的一种地下建筑结构，且不足以满足压力拱成拱的条件或软土层中覆盖层的厚度小于结构尺寸，垂直和水平土压力随深度增加而增加，其主要包括附建式的地下室结构（防空地下室）、隧道的引道结构和一般浅埋结构，浅埋式结构分为直墙拱、梁板结构和矩形闭合框架。这里是按照单跨矩形闭合框架——浅埋式地下通道的设计，无地下水，按照用途、埋深和岩土性质确定框架最不利荷载组合。此次设计依照规范计算了其各方向弹性地基梁的受力，确定了框架钢筋的布置，并估算了工程量与工程造价。

关键词：浅埋式矩形框架结构设计；框架内力；框架配置钢筋

Shallow buried structure is a kind of underground structure with thin overburden structure, and insufficient to meet the condition of pressure arch or soft soil layer in the layer thickness is less than the structure size, vertical and horizontal earth pressure increases with the increase of depth, mainly including enclosure built basement structure (air defense basement), the channels of the tunnel structure and general structure of shallow buried, shallow buried structure can be divided into straight wall arch, and closed rectangular frame beam slab structure.This is based on the design of a single span rectangular closed frame -- shallow buried underground passage. There is no groundwater, and the most unfavorable load combination of the frame is determined according to its use, buried depth and geotechnical properties.According to the design specification, the stress of the beam on the elastic foundation in all directions was calculated, the arrangement of the frame reinforcement was determined, and the engineering quantity and engineering cost were estimate.

Key words: shallow buried rectangular frame structure design；frame internal force；frame configuration steel bar

No	**毕设论文题目**	**学号**	**姓名**	**备注**
4	拉锚式轻型支护结构内力计算及设计	20161603099	韩世星	A04

	本文通过对板桩码头和桩锚支护的分析来进行拉锚支护的设计和内力计算。本文研究了桩锚支护的设计计算和承载机理，同时也探讨和分析了锚杆的抗拉特性和桩的受力特点。本文的板桩码头设计采用的是单锚式板桩墙结构，然后通过经验公式的计算来进行拉杆设计和板桩设计，最后进行抗倾覆稳定性验算、整体稳定性验算、抗隆起验算来进行可行性分析。桩锚式结构采用的是理正深基坑软件来计算，将相关的基本参数输入软件中，选择合适的方案。 **关键词：**锚杆；板桩码头；桩锚式支护 This paper analyzes the design of sheet-pile wharf and pile-anchor support to carry out the design and internal force calculation of tension-anchor support. This paper studies the design calculation and bearing mechanism of pile-anchor support, and also discusses and analyzes the tensile properties of the anchor rod and the stress characteristics of the pile. The design of sheet pile wharf in this paper adopts a single-anchored sheet pile wall structure, and then the design of tie rods and sheet piles is designed through the calculation of empirical formulas, and finally the anti-overturning stability check, overall stability check and anti-uplift check Feasibility Analysis. The pile-anchor structure is calculated by using the rational deep foundation pit software, and the relevant basic parameters are input into the software to select the appropriate scheme. **Key words:** Anchor；Slab pile Wharf；Pile anchor support

No	毕设论文题目	学号	姓名	备注
5	廊坊市天下城小高层住宅楼的灰土桩与 CFG 桩复合地基设计	20161603040	周锐	A05
	在实际基础工程中，经常会用到 CFG 桩和灰土挤密桩的技术，当有一些特殊地质或者特殊要求，例如需要防止土层液化时，可以联合两种技术进行基础工程设计，若单独使用其中一种地基处理技术，很难完美高效的解决问题。本文针对廊坊市天下城小高层住宅楼的地基基础进行设计，为防止液化，使用灰土挤密桩进行地基处理，在达到设计要求后，使用 CFG 桩进一步处理。计算中需要确定桩型、桩长、桩间距等问题，计算单桩承载力特征值，最后进行地基沉降验算，使地基设计符合要求。 **关键词：**灰土挤密桩；CFG 桩；土层液化；地基沉降 In a foundation, the technology of CFG pile and lime-soil compaction pile is often used. When there are some special geology or special requirements, such as the need to prevent soil liquefaction, two technologies should be combined for the foundation design. Especially, only one of the treatment techniques is			

	difficult to solve problems perfectly and efficiently. In this paper, the foundation of the small high-rise residential building in Tianxiacheng society of Langfang City is designed. To prevent liquefaction, lime-soil compaction piles are used for the foundation treatment. After meeting the design requirements, CFG piles are used for further treatment. In the calculation, it is necessary to determine the pile type, pile length, pile spacing and other issues, the characteristic value of the bearing capacity of the single pile. In addition, the settlement analysis of the foundation should be performed. **Key words**：Lime-soil compaction pile；CFG pile；soil liquefaction；foundation settlement

No	**毕设论文题目**	**学号**	**姓名**	**备注**
6	淀区护岸稳定性评价与设计	20161603076	闫海润	A06

由于风浪侵蚀或流水冲刷而产生的崩岸现象是淀区的护岸工程中最为危险的，给淀区附近人们的生产和生活带来较大影响，造成严重的财产损失。因此护岸工程的稳定性评价与设计是很有必要的，且它应与城市的建设规划相统一，与周边的自然生态环境相符合，与当地居民日常的生产和生活需要相协调。本文简要阐明了崩岸的基本定义、产生的主要原因以及护岸工程方案的选择和与之相对应的设计计算。淀区护岸工程在本次设计中最为重要且核心的部分就是在水上要把带有锚桩的钢筋混凝土的框架梁的护坡工程和在水下通过运用软体排抛石压重的护脚工程，使用锚定沟将其二者相连接，形成统一的整体来进行抵抗岸坡的整体滑动失稳。

本次淀区护岸工程设计主要包括软体排、抛石压重和锚固结构。

关键词：护岸工程；软体排；抛石压重；稳定性

Bank collapse caused by flowing water erosion or wind and wave erosion is the most dangerous in the bank protection project of the Lake District, which has brought huge disasters to people near the Lake District and caused serious property damage. Therefore, the stability evaluation and design of the revetment project is very necessary, and it should be consistent with the urban planning and construction, coordinate with the surrounding ecological environment, and meet the production and living needs of the residents. This thesis briefly explains the definition of bank collapse, major reasons, the choice of bank protection scheme and the corresponding design. The most important part in the design of the bank protection is to connect the slope protection component (above water level) of the reinforced concrete frame beam with anchor piles with the soft foot rafting

	and the foot protection component (below water level) through the anchor trench to form an entire system for anti-sliding. The design of the bank protection project in the Lake area mainly includes the design of soft platoons, the design of riprapping throwing weight and the design of anchoring structures. **Key words**：Revetment；soft mattress；riprap；stability

No	**毕设论文题目**	**学号**	**姓名**	**备注**
7	加筋土挡土墙设计	20161603233	杨天伟	A07

目前，我国对道路交通设施的需求很大，但是由于传统的施工方法的技术限制，锚杆之类的传统挡土墙在道路交通设施上使用效果并不理想，为了打破技术壁垒，节约成本并提高道路交通设施的质量，这就需要我们有更新更好的施工方法，加筋土挡土墙技术就是在这一背景下形成的一种新的技术。本文基于公路加筋土挡土墙规范和工程特点设计一座路堤式加筋土挡土墙，分析了挡土墙的内部与外部稳定性。先通过应力分析法求出拉筋的受力，然后根据计算结果验算拉筋的抗拉，抗拔稳定性；用库伦土压力理论算出主动土压力，利用算出的主动土压力对加筋土挡土墙进行抗滑、抗倾覆验算。

关键词：加筋土挡土墙；稳定性分析；设计施工方法

At present, a great demand for road traffic facilities is experienced in China. However, due to the technical limitations of traditional construction methods, the traditional retaining walls such as anchors are not ideal for road traffic facilities. In order to improve the quality of road traffic facilities, a series of newer and better construction methods are required. Reinforced earth retaining wall is a new technology emerged under this background. In this paper, an embankment-type reinforced earth retaining wall based on the specifications and engineering characteristics of highway reinforced earth retaining wall is described. The internal and external stability of the retaining wall is discussed. In this analysis, the stress of the reinforcement is obtained by a stress analysis method. The tensile strength and the pull-out stability of the reinforcement are analyzed. The active earth pressure is calculated by using the Coulomb earth pressure theory. The sliding and overturning of the reinforced earth retaining are proved by calculation of the active earth pressure of soils.

Key words：Reinforced earth retaining wall；Stability；Design and construction methods

No	**毕设论文题目**	**学号**	**姓名**	**备注**
8	廊坊市万达广场基坑支护设计	20161603165	徐东明	A08

	本工程位于廊坊市新华路西侧，金光道北侧，建有地下 2 层，基础埋深 8m。开挖基坑东西约 116.2m，南北约 80.3m，基坑开挖深度 10m～11.5m，周边为已有建筑物和城市主要道路。 结合本工程地层性质、周围环境、挖深等诸多因素，本着“安全可靠、经济合理、技术可行、施工方便”原则，基坑采用放坡与土钉墙结合的基坑支护方案。基坑坑底标高略高于最高地下水位标高，无需专门进行降水设计。 设计的主要内容包括支护方案的比较和选择、土钉墙支护方案设计、土钉外部稳定性和整体稳定性验算、施工要求及监测方案。 **关键词：**基坑支护；土钉墙；稳定性；施工要求；监测方案 This project is located on the west side of Xinhua Road in Langfang City and on the north side of Jinguang Road. The building has 2 underground floors and a depth of 8m. The excavation of the foundation pit is about 116.2m from east to west and about 80.3m from north to south. The excavation depth of the foundation pit is 10m to 11.5m, and the surrounding buildings are the existing buildings and the main urban roads. Combined with many factors such as the stratum characteristics, surrounding environment, excavation depth and others of this project, and in accordance with the principles of "safe and reliable, economically reasonable, technically feasible, and convenient construction", the entire foundation pit adopts the foundation pit supporting scheme combining grading and soil nailing. The elevation of the bottom of the foundation pit is slightly higher than the elevation of the highest groundwater level, and no special precipitation design is required. The main contents of the design include the comparison and selection of support schemes, the design of soil nailing support schemes, the calculation of local and overall stability of soil nails, construction requirements and monitoring schemes. **Keywords:** foundation pit support; soil nail wall; stability; construction requirements; monitoring program

No	**毕设论文题目**	**学号**	**姓名**	**备注**
9	北京市积水潭医院的 CFG 桩与挤密砂桩复合地基的设计	20161603021	张俊杰	A09
	复合地基具有高强度的优点，还可以解决沉降问题，比天然地基应用范围广，比桩基经济。本文是对北京市积水潭医院门诊楼地基基础进行设计。建筑场地上部有含水较高土层，可能发生地基液化。根据《岩土工程勘察报			

	告》提出联合采用 CFG 桩和挤密砂桩复合地基的设计方案。挤密砂桩用于处理液化，保证上部结构的稳定，CFG 桩用于提高地基承载力,减小变形。因此，联合使用挤密砂桩和 CFG 桩，可以发挥各自优势，达到设计要求。 关键字： 复合地基设计；液化处理；CFG 桩；挤密砂桩 The composite foundation has high strength, which can effectively solve uneven settlement. Moreover, this foundation has a wider application range than the traditional one, and it is more economical than pile foundation. In this thesis, a foundation of the outpatient building of Beijing Jishuitan Hospital is designed. There is a soil layer with high water content in the upper part of the construction site, and the foundation liquefaction can occur potentially. According to the "Geotechnical Engineering Investigation Report", the design scheme of conjunctive use of the CFG pile and compacted sand pile is proposed. Compacted sand piles are used to treat liquefaction and ensure the stability of the superstructure. The CFG piles are used to increase the bearing capacity of the foundation and reduce deformation. Therefore, the use of these piles can pave a way to their respective advantages and meet the design requirements. **Key words:** Composite foundation design; Liquefaction; CFG pile; Compacted sand pile

No	**毕设论文题目**	**学号**	**姓名**	**备注**
10	北京市水碾屯住宅区高层建筑的复合桩基设计	20161603137	陈钰	A10
	本文是对北京市水碾屯高层住宅的地基基础进行设计，采用钢筋混凝土灌注桩完成承载力核算设置挤密砂桩进行地层抗液化处理。基于该小区的地质勘探报告，土层上部大部分为含水量较多的粉质黏土和细砂，容易发生地基液化现象。为了使其能够达到抗液化设计要求，需要用挤密砂桩对其进行处理，首先需要通过规范对土层进行初步的判别，然后再通过标准贯入度实验进行液化判别。进而用混凝土灌注桩作为上部结构的基础，进行桩基础承载力的验算。最后进行承台的设计与配筋的结论。并给出相应的符合设计要求的结论。 **关键字：**挤密砂桩；混凝土灌注桩；承台设计计算 In this thesis, a foundation design for a high-rise residential building in Shuiniantun society of Beijing is discussed. In this composite foundation, reinforced concrete cast-in-situ piles are used to improve the bearing capacity, and compacted sand piles are used to protect a potential liquefaction. Based on the geological exploration report of this site, most of the upper parts of the soil			

	layer are silty clay and fine sand with high water content, and the liquefaction can occur. Moreover, the soil layer is firstly checked and treated with compacted sand piles in order to meet the design requirements of anti-liquefaction. Thus, the concrete driven cast-in-place pile acted as the foundation of the superstructure is adopted to provide an enough bearing capacity of the pile foundation. Finally, the design of the pile cushion cap and the layout of the steel are given. A satisfied conclusion is drawn, which demonstrates the design requirements can be met. **Key words:** Compacted sand pile；Driven cast-in-place pile；Design of pile cushion cap

No	**毕设论文题目**	**学号**	**姓名**	**备注**
11	北京市大榆树小高层住宅楼的渣土桩与 CFG 桩复合地基设计	20161603141	高奇	A11
	本文是对北京市大榆树小高层住宅楼地基基础进行设计。拟建建筑物地库天然地基持力层不能满足承载力和沉降要求需进行地基处理(主楼部分采用桩基)本设计采用 CFG 桩结合渣土桩复合地基处理方案。然后选定桩型、桩长以及桩身构造，确定单桩承载力特征值，通过一系列计算后，得出符合设计要求的结论。 **关键词：**渣土桩；CFG 桩复合地基；沉降计算 A composite foundation for a small high-rise residential building in Beijing is described in this thesis. The bearing layer in the natural foundation of cannot be found for the proposed building, because its bearing is low. Thus, a foundation treatment is required, and the pile foundation is chosen to provide a support for the main building. The CFG pile is combined with the cinder pile, which is acted as a composite foundation. Therefore, the pile type, pile length, and pile body materials are selected to determine the characteristic value of the bearing capacity of a single pile. After a series of calculations, a conclusion is drawn that a satisfied design can be reached where all requirements are met. **Key words:** cinder pile; CFG pile; composite foundation; settlement			