

结构施工图设计总说明(一)

GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (1)

1 概况 GENERAL

1.1 工程名称 中锦(杭州)供应链有限公司3000t/d气态萘浮焙烧炉,子项名称: 3000t/d焙烧炉
PROJECT NAME: ZHONGJIN (HANGZHOU) SUPPLY CHAIN CO., LTD. 3000T/D GAS SUSPENSION ROASTER; SUB-ITEM NAME: 3000T/D BAKING FURNACE
1.2 建设地点: 拟建工程位于印尼西加里曼丹省, 吉达邦县南50公里处印尼-中国综合产业园(锦江园区) 。
CONSTRUCTION LOCATION: THE PROPOSED PROJECT IS LOCATED IN THE INDONESIA-CHINA. INTEGRATED INDUSTRIAL PARK (JINJIANG PARK), 50 KILOMETERS SOUTH OF KETABANG COUNTY, WEST KALIMANTAN PROVINCE, INDONESIA.
1.3 图中±0.000为室内地面相对标高, 其相应的绝对标高见总图。
THE ±0.000 IN THE DRAWING IS THE RELATIVE ELEVATION OF THE INDOOR FLOOR. REFER TO THE GENERAL LAYOUT FOR CORRESPONDING ABSOLUTE ELEVATION.

1.4 未注尺寸单位均为mm, 标高为m。
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN THE DRAWING ARE IN MILLIMETERS (mm), ELEVATIONS IN METERS (m).

2 主要设计依据 MAIN DESIGN BASIS

2.1 主体结构设计使用年限为50年, 结构的安全等级为二级。
THE DESIGN SERVICE LIFE OF MAIN STRUCTURES IS 50 YEARS, AND SAFETY CLASS OF STRUCTURE IS GRADE II .

2.2 自然条件

NATURAL CONDITIONS

2.2.1 基本风压: 0.35kN/m²

REFERENCE WIND LOAD : 0.35kN/m².

2.2.2 地震作用 SEISMIC EFFECT

抗震设防烈度6度, 设计地震分组第三组, 设计地震基本加速度 0.05g。

THE SEISMIC FORTIFICATION INTENSITY IS 6 DEGREES, THE DESIGN EARTHQUAKE GROUP IS THE THIRD GROUP, THE DESIGN EARTHQUAKE BASIC ACCELERATION IS 0.05G.

2.2.3 建筑场地类别Ⅲ类, 场地特征周期 0.65s。

BUILDING SITE CATEGORY III, SITE CHARACTERISTIC PERIOD 0.65S

2.2.4 气象条件:

年平均气温: 25~27℃; 最高温度: 32℃; 最低温度: 23℃;
年均降水量: 3228mm; 平均相对湿度: 83%; 最大风速: V=11m/s ;

METEOROLOGICAL CONDITIONS:

ANNUAL AVERAGE TEMPERATURE: 25~27℃; MAX. TEMPERATURE: 32℃;
MIN. TEMPERATURE: 23℃; AVERAGE ANNUAL RAINFALL: 3228mm;
AVERAGE ANNUAL RELATIVE HUMIDITY: 83%; MAX. WIND SPEED: V=11m/s;

2.3 主要荷载取值

MAIN LOAD DATA

2.3.1 楼、屋面主要房间的恒荷载标准值如表2.3.1所示

CHARACTERISTIC VALUES OF MAIN FLOOR AND ROOF DEAD LOADS ARE SHOWN IN TABLE 2.3.1.

2.3.2 楼、屋面活荷载标准值如表2.3.2所示

CHARACTERISTIC VALUES OF FLOOR AND ROOF LIVE LOADS ARE SHOWN IN TABLE 2.3.2.

表2.3.1 TABLE 2.3.1

序号 NO.	房间及功能 ROOMS AND FUNCTION	标准值 (kN/m²) CHARACTERISTIC VALUE (kN/m²)
1	不上人屋面 UNMANNED ROOF	1.0
注: 1) 标准值含楼面自重; 2) 结构构件自重由程序自动加载。 NOTE: 1) STANDARD VALUE INCLUDES FLOOR WEIGHT; 2) THE SELF-WEIGHT OF STRUCTURAL COMPONENTS IS AUTOMATICALLY LOADED BY THE PROGRAM.		

表2.3.2 TABLE 2.3.2

序号 NO.	房间及功能 ROOMS AND FUNCTION	标准值 (kN/m ²) CHARACTERISTIC VALUE (kN/m ²)
1	不上人屋面 UNMANNED ROOF	0.5
2	楼面 FLOOR	12.500m, 20.100m, 45.300m, 56.000m 6kN/m ²
		29.300m 10kN/m ²
		其他楼层 OTHER FLOORS 5kN/m ²
注 1) 楼梯、阳台和上人屋面等栏杆顶部水平荷载1.0kN/m NOTES: 1) HORIZONTAL LOADS AT THE TOP OF RAILINGS FOR STAIRCASE,BALCONY,MANNED ROOF, ETC.: 1.0 kN/m		

2.3.3 填充墙荷载标准值如表2.3.3所示

CHARACTERISTIC VALUES OF FILLER WALL LOADS ARE SHOWN IN TABLE 2.3.3.

表2.3.3 TABLE 2.3.3

序号 NO.	砌体类别 MASONRY CATEGORY	砌体材料 MASONRY MATERIAL	砌体强度等级 STRENGTH GRADE OF BLOCKS	砂浆材料 MORTAR MATERIAL	砂浆强度等级 STRENGTH GRADE OF MORTAR	砌块允许容重 BLOCK WEIGHT ALLOWED
1	标高0.000以上的墙体 THE WALL ABOVE EL. ±0.000	200厚加气混凝土砌块 200 THK. AUTOCLAVED AERATED CONCRETE BLOCKS	≥A5.0	配套砌筑砂浆 MASONRY MORTAR	Mb5.0	≤8.0kN /m³
2	标高0.000以下的墙体 THE WALL BELOW EL. ±0.000	200厚烧结普通砖 200 THK. FIRED COMMON BRICK	MU 15	水泥砂浆 CEMENT MORTAR	M7.5	≤19kN/m³

2.4 工程地质及水文地质条件

ENGINEERING GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS

2.4.1 核工业金华勘测设计院有限公司2021年10月提供的《印尼-中国综合产业园区(锦江园区) 一期项目年产150万吨氧化铝工程(厂区) 岩土工程勘察报告(详细勘察) 》(工程编号: 2021YN08002)
NUCLEAR INDUSTRY JINHUA SURVEY AND DESIGN INSTITUTE CO., LTD. PROVIDED IN OCTOBER 2021, "INDONESIA-CHINA INTEGRATED INDUSTRIAL PARK (JINJIANG PARK) PHASE I PROJECT ANNUAL OUTPUT OF 1.5 MILLION TONS OF ALUMINA PROJECT (PLANT) GEOTECHNICAL ENGINEERING INVESTIGATION REPORT (DETAILED INVESTIGATION)" (PROJECT NUMBER: 2021YN08002)

2.4.2 场地内地下水稳定水位埋深为0.5~1.5m, 抗浮设防水位建议按 0.5M 考虑。

THE STABLE GROUNDWATER LEVEL ON THE SITE IS 0.5~1.5m BELOW GROUND,THE ANTI-FLOATING FORTIFICATION WATER LEVEL IS SUGGESTED TO BE CONSIDERED AS 0.5M

2.4.3 土的腐蚀性评价: 场地土对混凝土结构具弱腐蚀性; 场地土对混凝土结构中的钢筋具微腐蚀性。
CORROSION EVALUATION OF SOIL: SITE SOIL HAS WEAK CORROSION TO CONCRETE STRUCTURE; THE SITE SOIL IS SLIGHTLY CORROSIVE TO THE REINFORCEMENT IN THE CONCRETE STRUCTURE.

2.4.4 水的腐蚀性评价: 场区内地下水对混凝土结构具弱腐蚀性, 对混凝土结构中的钢筋具微腐蚀性
CORROSION EVALUATION OF WATER: THE WATER IN THE INTERIOR OF THE SITE HAS A WEAK CORROSION TO THE CONCRETE STRUCTURE AND A SLIGHT CORROSION TO THE REINFORCEMENT IN THE CONCRETE STRUCTURE

2.5 政府有关主管部门对初步设计的审查批复文件

THE APPROVAL DOCUMENTS FOR THE PRELIMINARY DESIGN FROM RELEVANT GOVERNMENT AUTHORITIES.

2.6 设计参考标准, 规范如表2.6所示

THE STANDARDS OR CODES FOR THE DESIGN ARE SHOWN IN TABLE 2.6.

表2.6 TABLE 2.6

序号NO.	名称 NAME	CODE NAME	标准号 CODE NO.
1	建筑工程抗震设防分类标准 "STANDARD FOR CLASSIFICATION OF SEISMIC PROTECTION OF BUILDING CONSTRUCTION"		GB 50223-2008
2	建筑结构可靠度设计统一标准 "UNIFIED STANDARD FOR RELIABILITY DESIGN OF BUILDING STRUCTURES"		GB 50068-2001
3	建筑结构荷载规范 "LOAD CODE FOR THE DESIGN OF BUILDING STRUCTURES"		GB 50009-2012
4	混凝土结构设计规范(2015年版) "CODE FOR DESIGN OF CONCRETE STRUCTURES" (THE 2015 EDITION)		GB 50010-2010
5	《钢结构设计标准》"STANDARD FOR DESIGN OF STEEL STRUCTURES"		GB50017-2017
6	建筑地基基础设计规范 "CODE FOR DESIGN OF BUILDING FOUNDATION"		GB 50007-2011
7	砌体结构设计规范 "CODE FOR DESIGN OF MASONRY STRUCTURES"		GB 50003-2011
8	建筑抗震设计规范(2016年版) "CODE FOR SEISMIC DESIGN OF BUILDINGS" (THE 2016 EDITION)		GB 50011-2010
9	构筑物抗震设计规范 "DESIGN CODE FOR ANTISEISMIC OF SPECIAL STRUCTURES"		GB50191-2012
10	地下工程防水技术规范 "TECHNICAL CODE FOR WATERPROOFING OF UNDERGROUND WORKS"		GB 50108-2008
11	建筑地基处理技术规范 "TECHNICAL CODE FOR GROUND TREATMENT OF BUILDINGS"		JGJ 79-2012
12	建筑设计防火规范(2018年版) "CODE OF DESIGN ON BUILDING FIRE PROTECTION AND PREVENTION" (THE 2018 EDITION)		GB 50016-2014
13	建筑钢结构防火技术规范 "CODE FOR FIRE SAFETY OF STEEL STRUCTURES IN BUILDINGS"		GB 51249-2017
14	建筑钢结构焊接规范 "CODE FOR WELDING OF STEEL STRUCTURES"		GB50661-2011
15	岩土工程勘察设计规范(2009年版) "CODE FOR INVESTIGATION OF GEOTECHNICAL ENGINEERING" (THE 2009 EDITION)		GB 50021-2001
16	工业建筑防腐蚀设计规范 "CODE FOR ANTICORROSION DESIGN OF INDUSTRIAL CONSTRUCTION"		GB 50046-2008
17	工程结构通用规范 GENERAL CODE FOR ENGINEERING STRUCTURES		GB55001-2021

18	建筑与市政工程抗震通用规范 GENERAL CODE FOR SEISMIC RESISTANCE IN BUILDINGS AND MUNICIPAL ENGINEERING	GB55002-2021
19	建筑与市政地基基础通用规范 GENERAL CODE FOR BUILDING AND MUNICIPAL FOUNDATIONS	GB55003-2021
20	组合结构通用规范 GENERAL CODE FOR COMPOSITE STRUCTURES	GB55004-2021
21	钢结构通用规范 GENERAL CODE FOR STEEL STRUCTURES	GB55006-2021
22	砌体结构通用规范 GENERAL CODE FOR MASONRY STRUCTURES	GB55007-2021
23	混凝土结构通用规范 GENERAL CODE FOR CONCRETE STRUCTURES	GB55008-2021

3 建筑结构分类等级

CLASSIFICATION OF BUILDING STRUCTURES

3.1 建筑分类等级如表3.1所示

THE CLASSIFICATION OF BUILDINGS IS SHOWN IN TABLE 3.1.

表3.1 TABLE 3.1

序号 NO.	名称 NAME	等级 GRADE	执行的国家标准规范 CODES AND STANDARDS
1	建筑结构安全等级 SAFETY GRADE OF BUILDING STRUCTURE	二级 GRADE II	《建筑结构可靠度设计统一标准》GB 50068 "UNIFIED STANDARD FOR RELIABILITY DESIGN OF BUILDING STRUCTURES"
2	地基基础设计等级 DESIGN GRADE OF BUILDING FOUNDATION	乙级 GRADE B	《建筑地基基础设计规范》GB 50007 "CODE FOR DESIGN OF BUILDING FOUNDATION" (GB 50007)
3	混凝土构件的环境类别 ENVIRONMENTAL CATEGORY OF CONCRETE MEMBERS	地上敞开结构: Ⅱa类 OVERGROUND OPEN STRUCTURE: CATEGORY Ⅱa	《混凝土结构设计规范》 GB 50010—2010 "CODE FOR DESIGN OF CONCRETE STRUCTURES"
		地下环境: Ⅱb类 UNDERGROUND ENVIRONMENT: CATEGORY Ⅱb	

4 设计计算软件 DESIGN AND CALCULATION SOFTWARE

4.1 结构计算: 《多层及高层建筑框结构空间有限元分析与设计软件》SATWE (PKPM2021 VER. 1.4) ;
STRUCTURAL CALCULATION: MULTI-STOREY AND HIGH-RISE BUILDING STRUCTURE SPACE FINITE ELEMENT ANALYSIS AND DESIGN SOFTWARE SATWE (PKPM2021 VER. 1.4)

4.2 基础计算: 《独基、条基、钢筋混凝土地基梁、桩基础和筏板基础设计软件》JCCAD PKPM2021 V1.4版。
FOUNDATION CALCULATION: INDEPENDENT FOUNDATION, STRIP FOUNDATION, CONCRETE FOUNDATION BEAM, PILE FOUNDATION AND RAFT FOUNDATION DESIGN SOFTWARE JCCAD (PKPM2021 V1.4 VERSION)

5 主要结构材料选型及技术要求

SELECTION OF MAIN STRUCTURAL MATERIALS AND TECHNICAL SPECIFICATIONS

5.1 混凝土强度等级基本要求如表5.1所示

BASIC REQUIREMENTS ON CONCRETE STRENGTH GRADE ARE SHOWN IN TABLE 5.1.

表5.1 TABLE 5.1

序号 NO.	结构部位 STRUCTURAL MEMBER	混凝土强度等级 STRENGTH GRADE OF CONCRETE	备注 REMARK
1	预应力高强混凝土管桩 PRESTRESSED HIGH STRENGTH CONCRETE PIPE PILE	C80	抗渗等级: P≥12 IMPERMEABILITY GRADE: P>12
2	基础底板垫层 FOUNDATION BOTTOM LEAN CONCRETE LAYER	C20	
3	基础、地基梁、地面以下柱、设备基础 FOUNDATION,FOUNDATION BEAM,COLUMN UNDER THE GROUND,EQUIPMENT FOUNDATION	C30	

5.2 混凝土耐久性 CONCRETE DURABILITY

5.2.1 结构混凝土耐久性的基本要求如表5.2.1所示

THE BASIC REQUIREMENTS FOR STRUCTURE CONCRETE DURABILITY ARE SHOWN IN TABLE 5.2.1

表5.2.1 TABLE 5.2.1

序号 NO.	环境类别 ENVIRONMENTAL CATEGORY	最大水胶比 MAX. W/CM RATIO	最大氯离子含量 MAX. CHLORION CONTENT (%)	最大含碱量 MAX. ALKALI CONTENT (kg/m³)
1	一(I)	0.60	0.30	--
2	二a(IIa)	0.55	0.20	3.0
3	二b(IIb)	0.50	0.15	3.0
4	五(V)	0.50	0.10	3.0

注: NOTES:

1) 氯离子含量指其占胶凝材料总量的百分比;
CHLORINE ION CONTENT REFERS TO ITS PERCENTAGE IN TOTAL CEMENTING AMOUNT;

2) 当使用非碱活性骨料时, 对混凝土中的碱含量可不作限制。
WHEN NON-ALKALI REACTIVE AGGREGATES ARE APPLIED, THERE CAN BE NO LIMITATION FOR THE ALKALI CONTENT IN THE CONCRETE.

5.2.2 基础、垫层、基础梁表面防腐蚀做法: 环氧沥青或聚氨酯沥青贴玻璃布, 厚度>300μm。

FOUNDATION, CUSHION, FOUNDATION BEAM SURFACE CORROSION PREVENTION: EPOXY ASPHALT OR POLYURETHANE ASPHALT COATED GLASS CLOTH, THICKNESS >300μm.

5.3 砌体结构施工质量控制等级为B级。

CONSTRUCTION QUALITY CONTROL GRADE OF MASONRY STRUCTURES IS CLASS B.

5.4 钢筋 REINFORCEMENT

5.4.1 所有钢筋混凝土用钢筋应符合《钢筋混凝土用钢》GB1499的要求, 其主要性能指标如表5.4.1所示。

ALL STEEL USED FOR REINFORCED CONCRETE SHALL MEET THE REQUIREMENTS OF GB1499 FOR REINFORCED CONCRETE STEEL, AND ITS MAIN PERFORMANCE INDICATORS ARE SHOWN IN TABLE 5.4.1.

表5.4.1 TABLE 5.4.1

序号 NO.	牌号 GRADE	符号 SYMBOL	f _{yk}	f _y	f' _y
1	HRB400	Φ	400	360	360
注: NOTES: 1)f _{yk} ——普通钢筋屈服强度标准值 CHARACTERISTIC VALUE OF YIELD STRENGTH OF ORDINARY REINFORCEMENT 2)f _y ——普通钢筋抗拉强度设计值 DESIGN VALUES OF TENSILE STRENGTH OF ORDINARY REINFORCEMENT 3)f' _y ——普通钢筋抗压强度设计值 DESIGN VALUES OF COMPRESSIVE STRENGTH OF ORDINARY REINFORCEMENT					

5.4.2 钢筋代换原则: 本图纸钢筋标准为中国国标, 受印尼采购影响, 可根据采购情况用马斯特标准《MASTER STEEL SNI PLUS 07-2052-2014》, 钢筋等级BJTS 40+, 钢筋代换详见表5.4.2。

PRINCIPLE OF REINFORCEMENT REPLACEMENT: THE REINFORCEMENT IN THIS DRAWING IS BASED ON CHINESE STANDARD, CONSIDERING THE PROCUREMENT IN INDONESIA, MASTER STEEL SNI PLUS 07-2052-2014 CAN BE USED.REINFORCEMENT GRADE BJTS 40+. REBAR SUBSTITUTION CORRESPONDING ARE SHOWN IN TABLE 5.4.2.

表5.4.2 TABLE 5.4.2

序号 NO.	中国钢筋标准 CHINESE STANDARD (HRB400)	印尼钢筋标准 INDONESIA STANDARD (BJTS 40+)	备注 REMARK
1	6	6	
2	8	8	
3	10	10	
4	12	13	
5	14、16	16	
6	18	19	
7	20、22	22	REBAR SPACING UNCHANGED
8	25	25	

5.4.3 框架梁、柱中纵向受力钢筋的抗拉强度实测值与屈服强度实测值的比值>1.25; 钢筋的屈服强度实 测值与强度标准值的比值≤1.30; 且钢筋在最大拉力下的总伸长率实测值≥9%。

FOR LONGITUDINAL STRESSED REINFORCEMENT IN FRAME BEAMS AND COLUMNS THE RATIO OF MEASURED TENSILE STRENGTH VALUE TO MEASURED YIELD STRENGTH VALUE SHALL NOT BE LESS THAN 1.25; THE RATIO OF MEASURED YIELD STRENGTH VALUE TO STRENGTH CHARACTERISTIC VALUE SHALL NOT BE GREATER THAN 1.30; AND THE MEASURED VALUE OF TOTAL ELONGATION OF REINFORCEMENT UNDER THE MAXIMUM TENSILE FORCE SHALL NOT BE LESS THAN 9%.

5.4.4 吊钩、吊环采用HPB300级钢筋, 不得采用冷加工钢筋。

HOOKS AND RINGS SHALL BE MADE OF HPB300 REINFORCING BARS, AND SHALL NOT BE MADE OF COLD WORKING REINFORCING BARS.

5.4.5 钢筋的强度标准值保证率≥95%。

THE GUARANTEE RATE FOR THE CHARACTERISTIC VALUE OF REINFORCEMENT STRENGTH SHALL NOT BE LESS THAN 95%.

5.5 钢结构 STEEL STRUCTURES

5.5.1 本工程承重钢构件主要采用焊接组合截面, 部分钢柱钢梁采用热轧H型钢。

LOAD-BEARING STEEL MEMBERS USED IN THIS PROJECT WILL BE MAINLY OF HOT-ROLLED H-BEAM STEEL, AND THE WELDING COMPOSITE SECTION WILL BE ADOPTED FOR SOME STEEL COLUMNS AND BEAMS.

5.5.2 除特殊注明外, 所有型钢及焊接组合截面构件及钢板均采用Q355B钢材, 其性能应符合《碳素结构钢》(GB/T700)的规定, 同时需要有抗拉强度、伸长率、屈服强度、冷弯试验和碳、硫、磷极限含量的合格保证。

UNLESS OTHERWISE SPECIFIED, ALL PROFILE STEELS, WELDING COMPOSITE SECTION MEMBERS AND STEEL PLATES SHALL BE OF GRADE Q355-B, AND THEIR PERFORMANCES MUST MEET

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审核/审定 Approved				工程编号 Proj. No.	19-CTZ-04	详细设计 DETAIL DESIGN 专业 Structure 结构 Scale 比例 1:100 图签/审核 Sign A1	
				设计阶段 Phase			
				结构施工图设计总说明 (一) GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (I)			
校 对 Checkd				图 号 Dwg. No.	KD19CTZ04-01ST1-0101		
图 章 Drawn							

结构施工图设计总说明(二)

GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (2)

THE SPECIFICATION OF CARBON STRUCTURAL STEELS (GB/T700). AT THE SAME TIME, STEEL FOR LOAD-CARRYING STRUCTURES SHALL BE GUARANTEED FOR MEETING THE REQUIREMENTS OF TENSILE STRENGTH, PERCENTAGE OF ELONGATION, YIELD STRENGTH, COLD BENDING TEST AND ALSO OF PROPER CARBON, SULFUR AND PHOSPHORUS CONTENTS.

5.5.3 有抗震要求的结构钢材尚应符合以下规定：

FOLLOWING SPECIFICATION SHALL BE MET FOR STRUCTURE STEEL WITH ANTISEISMIC REQUIREMENTS:

1). 钢材的屈服强度实测值与抗拉强度实测值的比值不应大于0.85。

THE RATIO OF THE ACTUAL VALUE OF YIELD STRENGTH TO ACTUAL TENSILE STRENGTH SHALL BE NOT MORE THAN 0.85.

2). 钢材应有明显的屈服台阶，且伸长率不应小于20%。

THE STEEL SHALL HAVE VISIBLE YIELDING STEP AND THE RATE OF ELONGATION SHALL BE NOT LESS THAN 20%.

3). 钢材应有良好的焊接性和合格的冲击韧性。

THE STEEL SHALL OWN GOOD WELDABILITY AND QUALIFIED NOTCH TOUGHNESS.

5.5.4 焊接材料：ELECTRODE MATERIAL

焊条：Q235钢材手工焊采用E43XX系列焊条，Q355B钢材手工焊采用E50XX系列焊条。其性能须符合《碳钢焊条》(GB/T5117)的规定。埋弧自动电焊或半自动电焊采用的焊丝和焊剂应与主体金属力学性能相适应。焊丝性能须符合GB/T14957的规定，焊剂应符合GB/T5293的规定。当不同强度的钢材连接时，可采用与低强度钢材相适应的焊接材料。气体保护焊使用的二氧化碳气体应符合国家现行标准《焊接用二氧化碳》(HG/T2357)的规定。

ELECTRODE: E43XX AND E50XX SERIES ELECTRODES SHALL BE USED FOR MANUAL WELDING OF Q235B AND Q355B STEEL, RESPECTIVELY, AND THEIR PERFORMANCES SHALL MEET THE SPECIFICATION OF CARBON STEEL COVERED ELECTRODES (GB/T5117). WELDING WIRES AND FLUX USED FOR AUTOMATIC SUBMERGED ARC ELECTRIC WELDING AND SEMI-AUTOMATIC WELDING SHALL BE SELECTED TO MATCH THE MECHANICAL PROPERTIES OF MAIN METAL. PROPERTIES OF WELDING WIRES SHALL BE IN COMPLIANCE WITH THE SPECIFICATION OF GB/T14957, AND THE FLUX SHALL MEET THE REQUIREMENTS IN THE SPECIFICATION OF GB/T5293. THE WELDING MATERIAL SUITED TO LOW STRENGTH STEEL SHALL BE ADOPTED IN CONNECTION BETWEEN STEEL MATERIALS OF DIFFERENT STRENGTH. THE CARBON DIOXIDE FOR GAS SHIELDED WELDING SHALL MEET THE REQUIREMENTS IN CURRENT NATIONAL STANDARD CARBON DIOXIDE FOR WELDING (HG/T2357).

5.5.5 普通螺栓：C级螺栓，其性能等级为4.6级。螺栓、螺母和垫圈的尺寸及技术条件须符合GB/T5780、GB/T414和GB/T95的规定。ORDINARY BOLTS: THE ORDINARY BOLTS OF GRADE C SHALL BE USED, AND THE PROPERTY GRADE OF BOLT IS 4.6. SIZE AND TECHNICAL CONDITIONS OF BOLT, NUT AND WASHER SHOULD CONFORM TO THE REGULATIONS IN GB/T5780, GB/T414AND GB/T95.

5.5.6 高强度螺栓：采用10.9级摩擦型高强度螺栓，采用剪扭型高强度螺栓及连接副，高强度螺栓、螺母、垫圈及连接副应符合国家标准 GB/T1228、GB/T1229、GB/T1230、GB/T1231及GB/T3632的规定。HIGH STRENGTH BOLT: FRICTION-TYPE HIGH STRENGTH BOLT WITH PROPERTY GRADE OF 10.9 AND TORSIONAL SHEAR—TYPE HIGH STRENGTH BOLT, AS WELL AS SET OF BOLT CONNECTION SHALL BE USED. THE HIGH STRENGTH BOLT, NUT AND WASHER, AS WELL AS SET OF BOLT CONNECTION SHOULD MEET THE REQUIREMENTS IN THE NATIONAL CODE OF GB/T1228, GB/T1229, GB/T1230, GB/T1231 AND GB/T3632.

5.5.7 锚栓：采用Q355B，其材质应保证抗拉强度、伸长率、屈服点及冷弯四项要求。

ANCHOR BOLTS: ANCHOR BOLT SHALL BE MADE OF Q355-B STEEL, WHICH CAN GUARANTEE THE REQUIREMENTS OF TENSILE STRENGTH, PERCENTAGE OF ELONGATION, YIELD POINT AND COLD BENDING.

5.5.8 焊接方法及材料：

E43XX：用于HPB300级钢筋之间或HPB300级HRB400级之间的焊接以及Q235 钢板之间或Q235 钢板和Q355 钢板之间的焊接；

E50XX：用于HRB400级和HRB400级之间的帮条焊、搭接缝；以及Q355 钢板和Q355 钢板之间的焊接；

E55XX：用于HRB400级和HRB400级之间的坡口焊、熔槽帮条焊、预埋件穿孔塞焊。

WELDING METHODS AND MATERIALS:

E43XX: FOR WELDING BETWEEN HPB300 REINFORCING, OR BETWEEN HPB300 AND HRB400 REINFORCING BARS; AND BETWEEN GRADE Q235 STEEL PLATES, OR BETWEEN GRADES Q235 AND Q355 STEEL PLATES;

E50XX: FOR WALL ROD WELDING, OVERLAP WELDING BETWEEN HRB400;AND FOR WELDING BETWEEN GRADE Q355 STEEL PLATES;

E55XX: FOR GROOVE WELDING, FUSION CHANNEL WALL ROD WELDING,AND PENETRATION PLUG WELDING OF EMBEDDED PARTS BETWEEN HRB400.

5.5.9 钢梯、钢栏杆、预埋件。次要钢构件的焊缝质量等级为二级，焊接质量检查应符合《钢结构焊接规范》(GB 50661—2011)、《钢筋焊接及验收规程》(JGJ 18—2012)要求。

THE QUALITY GRADE OF WELDS IS GRADE II FOR STEEL STAIRS, STEEL HANDRAILS, EMBEDDED PARTS,SECONDARY STEEL MEMBERS, WELDING QUALITY INSPECTION SHALL SHALL CONFORM TO " CODE FOR WELDING OF STEEL STRUCTURES" (GB 50661—2011) AND "SPECIFICATION FOR WELDING AND ACCEPTANCE OF REINFORCING STEEL BARS" (JGJ18—2012)

5.5.10 涂装要求：钢梯、钢栏杆、预埋件。次要钢构件采用手工及动力工具除锈方法，除锈等级为St2.0，防腐涂层：

环氧富锌底漆2遍，涂层厚度60μm；聚氨酯面漆3遍，涂层厚度100μm，干膜总厚度不小于160μm；主钢构件

表面均应进行喷硬质石英砂除锈处理，不得用手工除锈代替，除锈等级为Sta2.5，防腐涂层：环氧富锌底漆2遍，涂层厚度70μm；环氧云铁中间漆1遍，涂层厚度70μm；聚氨酯面漆3遍，涂层厚度100μm，干膜总厚度不小于240μm；

面漆颜色由甲方确定为天蓝色RAL 5015，涂装后的漆膜外观应均匀，平整，丰满而有光泽，不允许有咬底、

裂纹、剥落、针孔等缺陷。涂层厚度用磁性测厚仪测定，总厚度应达到设计要求。

COATING REQUIREMENTS: STEEL LADDER, STEEL RAILING, EMBEDDED PARTS AND SECONDARY STEEL COMPONENTS SHALL BE DERUSTED BY HAND AND POWER TOOLS. THE DERUSTING GRADE SHALL BE ST2.0. ANTI-CORROSION COATING: EPOXY ZINC-RICH PRIMER TWICE, COATING THICKNESS 60μm; THE COATING THICKNESS IS 100μm, AND THE TOTAL THICKNESS OF THE DRY FILM IS NOT LESS THAN 160μm. THE SURFACE OF THE MAIN STEEL STRUCTURE MEMBERS SHALL BE SPRAYED WITH HARD QUARTZ SAND FOR RUST REMOVAL, AND SHALL NOT BE REPLACED BY MANUAL RUST REMOVAL. THE RUST REMOVAL GRADE SHALL BE STA2.5. THE ANTI-CORROSION COATING SHALL BE EPOXY ZN-RICH PRIMER TWICE, AND THE COATING THICKNESS SHALL BE 70μm. EPOXY CLOUD IRON INTERMEDIATE PAINT ONCE, COATING THICKNESS 70μm; THE COATING THICKNESS IS 100μm, AND THE TOTAL THICKNESS OF THE DRY FILM IS NOT LESS THAN 240μm. THE COLOR OF THE TOP PAINT SHALL BE CERULEAN RAL 5015 AS DETERMINED BY PARTY A. THE APPEARANCE OF THE PAINT FILM AFTER PAINTING SHALL BE UNIFORM, SMOOTH, FULL AND SHINY, WITHOUT ANY DEFECTS SUCH AS BOTTOM BITING, CRACKS, PEELING OR PINHOLES. THE COATING THICKNESS IS MEASURED BY MAGNETIC THICKNESS GAUGE, AND THE TOTAL THICKNESS SHOULD MEET THE DESIGN REQUIREMENTS.

5.5.11 下列情况免涂油漆： NO PAINTING IN THE FOLLOWING CASES:

A、埋于混凝土中；B、与混凝土接触面；C、将焊接的位置；D、螺栓连接范围内、构件接触面

A: BURIED IN CONCRETE; B: CONTACT SURFACE WITH CONCRETE; C: THE POSITION TO BE WELDED; D: BOLTED CONNECTION RANGE, COMPONENT CONTACT SURFACE

6 基础和地下室工程 FOUNDATION AND BASEMENT ENGINEERING

6.1 开挖基槽时，不应扰动土的原状结构，如扰动，应挖除扰动部分，换填砂石材料(比例6: 4)，并分层夯实，压实系数≥0.97。

WHEN EXCAVATING THE FOUNDATION GROOVE, THE ORIGINAL STRUCTURE OF THE SOIL SHOULD NOT BE DISTURBED. IF DISTURBED, THE DISTURBED PART SHOULD BE EXCAVATED, THE SAND AND STONE MATERIAL SHOULD BE REPLACED (THE RATIO IS 6: 4), AND THE COMPACTION COEFFICIENT SHOULD BE ≥0.97

6.2 机械挖土时应按有关规范要求进行，坑底应保留200MM厚的土层人工开挖。

MECHANIZED EXCAVATION SHALL BE IN COMPLIANCE WITH RELEVANT CODES AND THE 200MM-THICK SOIL AT THE PIT BOTTOM SHALL BE MANUALLY EXCAVATED.

6.3 开挖基坑时应注意边坡稳定，定期观测其对周围道路市政设施和建筑物的不利影响，非自然放坡开挖时，基坑护壁应做专门设计，基坑土方开挖应严格按照设计要求进行，不得超挖，基坑周边堆载不得超过基坑支护设计规定，土方开挖完成后应立即施工垫层，对基坑进行封闭，防止水浸和暴露，并应及时进行地下结构施工。

DURING EXCAVATION OF THE FOUNDATION PIT, ATTENTION SHALL BE PAID TO SIDE SLOPE STABILITY AND REGULAR OBSERVATION SHALL BE PERFORMED SO AS TO CHECK THE ADVERSE EFFECT ON SURROUNDING MUNICIPAL FACILITIES AND EXISTING BUILDINGS. SPECIAL DESIGN SHALL BE PROVIDED FOR PROTECTION WALL OF FOUNDATION PIT IF UNNATURAL SLOPE IS EXCAVATED. THE EARTH EXCAVATION OF FOUNDATION PIT SHOULD BE CARRIED OUT IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF DESIGN. OVER- EXCAVATION IS PROHIBITED. THE SURCHARGE LOAD AROUND THE FOUNDATION PIT SHALL NOT EXCEED THE REQUIREMENT OF THE FOUNDATION PIT SUPPORT. WHEN THE EARTH EXCAVATION IS COMPLETED, LEAN CONCRETE SHALL BE LAID IMMEDIATELY AND THE FOUNDATION PIT SHALL BE ENCLOSED TO PREVENT FROM WATER LOGGING AND EXPOSURE. MEANWHILE, THE CONSTRUCTION OF UNDERGROUND STRUCTURES SHALL BE CARRIED OUT WITHOUT DELAY.

6.4 基础施工完成后，应进行回填。基坑回填土及底面、散水、踏步等基础之下的回填土，须进行分层夯实，每层厚度≤300mm，压实系数>0.94。

WHEN THE FOUNDATION CONSTRUCTION IS COMPLETED, BACKFILLING WORK SHALL BE PERFORMED. THE FOUNDATION PIT BACKFILL AND OTHER BACKFILL UNDER THE FOUNDATION OF BOTTOM SURFACE, APRON, STEP, ETC. SHALL BE COMPACTED IN LAYERS, WITH THE THICKNESS OF EACH LAYER NOT GREATER THAN 300mm, AND WITH THE COMPACTION FACTOR NOT LESS THAN 0.94.

6.5 基础大体积混凝土施工应合理选择混凝土配合比，选择水化热低的水泥。掺入适当的粉煤灰和外加剂，控制水泥用量，并做好养护和测温工作。混凝土中心与外表温度的差值≤25℃，表面与大气温度的差值≤20℃，温度陡降(升)不应超过10℃，养护时间≥14天。

DURING MASS FOUNDATION CONCRETE CONSTRUCTION, CONCRETE MIX PROPORTION SHOULD BE REASONABLY CHOSEN. LOW HYDRATION HEAT CEMENT SHALL BE USED, MIXED WITH PROPER AMOUNT OF FLY ASH AND ADMIXTURE, WITH CEMENT AMOUNT REASONABLY CONTROLLED AND CURING AND TEMPERATURE MEASUREMENT PROVIDED. THE TEMPERATURE DIFFERENCE BETWEEN THE CENTER AND EXTERIOR SURFACE OF THE CONCRETE SHALL NOT BE GREATER THAN 25℃. THE TEMPERATURE DIFFERENCE BETWEEN THE EXTERIOR SURFACE OF THE CONCRETE AND THE ATMOSPHERE SHALL NOT BE GREATER THAN 20℃. BESIDES, ABRUPT TEMPERATURE DROP

(RISE) SHALL NOT EXCEED 10℃; CURING TIME SHALL BE NOT LESS THAN 14 DAYS.

7 构造要求 STRUCTURAL REQUIREMENT

7.1 混凝土构件的环境类别和最外层钢筋的保护层最小厚度(mm)如表7.1所示

THE ENVIRONMENTAL CATEGORIES AND MINIMUM THICKNESS OF REINFORCEMENT COVER (mm) OF CONCRETE MEMBERS ARE SHOWN IN TABLE 7.1.

表7.1 TABLE 7.1

位置	构件名称及范围		环境类别	保护层厚度
LOCATION	LOCATION		ENVIRONMENTAL CATEGORY	THICKNESS OF THE PROTECTIVE LAYER
地下部分混凝土	板、墙 SLAB,WALL	内侧 INNER FACE	Ib	25
		外侧 OUTER FACE		50
	梁、柱 BEAM,COLUMN	内侧 INNER FACE	Ib	35
		外侧 OUTER FACE		50
	独基 FOUNDATION	底面 BOTTOM FACE	Ib	50
	桩基承台 PILE CAP	其它面 OTHER FACE		50
	管桩 PIPE PILE		Ib	35

注 NOTE: 1).表中“内侧”、“外侧”指构件背水面、构件迎水面;“INNER FACE” & “OUTER FACE” DESCRIBED HEREINABOVE REFER TO THE UPSTREAM FACE AND DOWNSTREAM FACE OF CONCRETE MEMBER

7.2 钢筋的锚固和搭接规定 ANCHORAGE AND LAPPING OF REINFORCEMENT

7.2.1 受拉钢筋基本锚固长度lab、LabE,纵向受拉钢筋的最小锚固长度a、LaE,及受拉钢筋锚固长度修正系数系数ζa,见图集22G101-1第2-2和2-3页。

THE BASIC ANCHORAGE LENGTHS Lab AND LabE OF THE TENSION REINFORCEMENT, THE MINIMUM ANCHORAGE LENGTHS La AND LaE OF THE LONGITUDINAL TENSION REINFORCEMENT, AND THE CORRECTION COEFFICIENT ζa OF THE ANCHORAGE LENGTH OF THE TENSION REINFORCEMENT ARE SHOWN ON PAGES 2-2 AND 2-3 OF ATLAS 22G101-1

7.2.2 纵向受拉钢筋的搭接长度lIE、lI见图集22G101-1第2-5和2-6页。

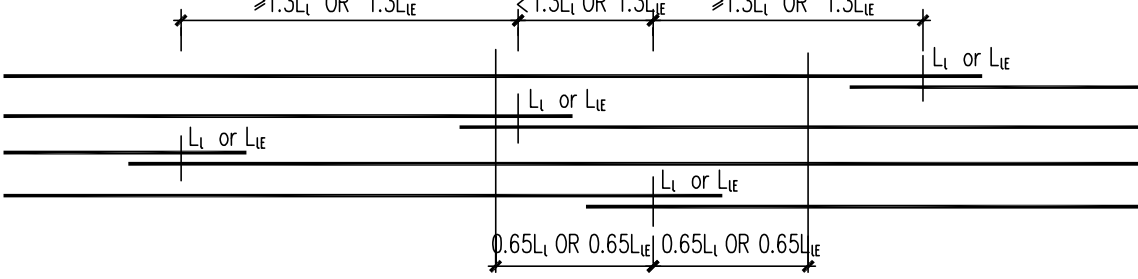
THE lIE AND lI OF THE LONGITUDINALLY STRETCHED BARS ARE SHOWN IN ATLAS 22G101-1, PAGES 2-5 AND 2-6

7.2.3 纵向受力钢筋连接方式及要求

LONGITUDINAL TENSILE REINFORCEMENT CONNECTION AND REQUIREMENTS

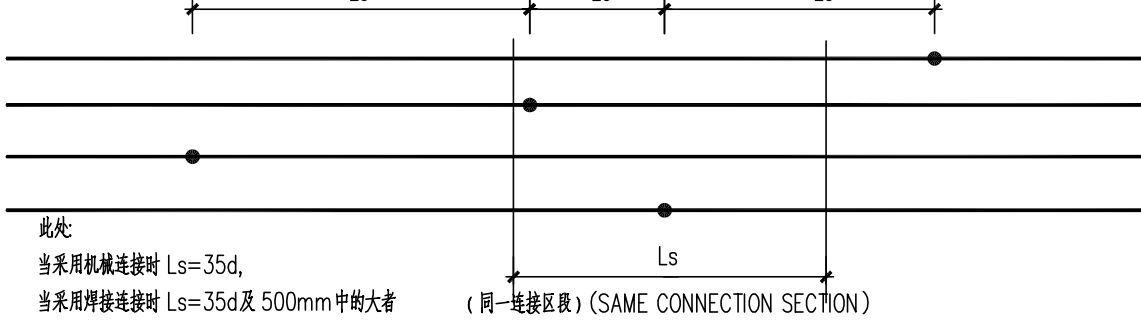
1) 钢筋绑扎搭接位于同一连接区长度(1.3lI或1.3lIE)内的受拉钢筋绑扎搭接接头面积百分率：梁、板及墙<25%，柱≤50%。见图7.2.4-1同一连接区段内纵向受拉钢筋绑扎搭接接头

THE PERCENTAGE OF THE BINDING LAP JOINT CROSS-SECTIONAL AREA OF TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION LENGTH (1.3lI OR 1.3lIE): BEAM, SLAB AND WALL ≤ 25%; COLUMN≤50%. SEE FIGURE 7.2.4-1: BINDING LAP JOINT OF LONGITUDINAL TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION.



7.2.4-1 同一连接区段内纵向受拉钢筋绑扎搭接接头
BINDING LAP JOINT OF LONGITUDINAL TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION

2) 钢筋机械连接位于同一连接区段长度(35D，D为纵向受力钢筋的较大直径)内的受拉钢筋搭接接头 面积百分率宜≤50%，要求必须进行必要的检验见图7.2.4-2同一连接区段内纵向受拉钢筋机械连接、焊接接头；THE PERCENTAGE OF THE BINDING LAP JOINT CROSS-SECTIONAL AREA OF TENSILE REINFORCEMENT WITH MECHANICAL CONNECTION IN THE SAME CONNECTION SECTION (35D, D IS THE GREATER DIAMETER OF LONGITUDINAL STRESSED REINFORCEMENT) SHOULD BETTER BE<50%.NECESSARY TESTING MUST BE PERFORMED. SEE FIGURE:MECHANICAL CONNECTION AND WELDING JOINT OF LONGITUDINAL TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION.



注：当采用机械连接时 ls=35d，
当采用焊接连接时 ls=35d及 500mm 中的大者

HERE: WHEN MECHANICAL JOINT: ls=35d;
WHEN WELD JOINT: ls=35d OR 500mm ,WHICH IS GREATER.

d = 钢筋直径, DIAMETER OF REBAR

7.2.4-2 同一连接区段内纵向受拉钢筋机械连接、焊接接头
MECHANICAL CONNECTION AND WELDING JOINT OF LONGITUDINAL TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION

3) 钢筋焊接连接位于同一连接区段长度(35D且≥500MM，D为纵向受力钢筋的较大直径)内的受拉 钢筋搭接接头面积百分率宜≤50%，要求现场检验及时发现和纠正虚焊、夹焊气 泡、内裂纹等缺陷，以及由于环境温度变化引起的内应力等见图同一连接区段内纵向受拉钢筋机械连接、焊接接头；

THE PERCENTAGE OF THE LAP JOINT CROSS-SECTIONAL AREA OF THE TENSILE REINFORCEMENT

WITH THE WELDING CONNECTION IN THE SAME CONNECTION SECTION (35D,≥500MM; D IS THE GREATER DIAMETER OF LONGITUDINAL STRESSED REINFORCEMENT) SHOULD BETTER BE <50%.

NECESSARY FIELD INSPECTION SHALL BE CONDUCTED TO FIND AND CORRECT SUCH WELD DEFECTS AS EMPTY SOLDER, SLAG INCLUSIONS, BLOWHOLES, CLEFT, ETC. AND INTERNAL STRESS CAUSED BY AMBIENT TEMPERATURE CHANGE. SEE FIGURE:MECHANICAL CONNECTION AND WELDING JOINT OF LONGITUDINAL TENSILE REINFORCEMENT IN THE SAME CONNECTION SECTION.

4) 在纵向受力钢筋搭接长度范围内应配置箍筋，其直径不应小于搭接钢筋较大直径的0.25倍。当钢筋受拉时， 箍筋间距不应大于搭接钢筋较小直径的5倍，且不应大于100mm;当钢筋受压时， 箍筋间距不应大于搭接钢筋较小直径的10倍,且不应大于200mm;当受压钢筋直径>25mm时,尚应在搭接接头 两个端面外100mm范围内各设置两个箍筋见图纵向受力钢筋搭接区箍筋构造。

STIRRUPS SHALL BE PROVIDED WITHIN THE LAP LENGTH OF LONGITUDINAL TENSILE REINFORCEMENT, WITH THE DIAMETER NOT LESS THAN 0.25 TIMES THE RELATIVELY LARGER DIAMETER OF LAP REINFORCEMENT. WHEN THE STEEL REINFORCEMENT IS IN TENSION, THE SPACING OF STIRRUPS SHALL NOT BE GREATER THAN 5 TIMES THE RELATIVELY SMALLER DIAMETER OF LAP STEEL REINFORCEMENT, AND SHALL NOT BE GREATER THAN 100MM. WHEN THE REINFORCEMENT IS IN COMPRESSION, THE SPACING OF STIRRUPS SHALL NOT BE GREATER THAN 10 TIMES THE RELATIVELY SMALLER DIAMETER OF LAP REINFORCEMENT AND SHALL NOT BE GREATER THAN 200MM. WHEN THE DIAMETER OF COMPRESSION REINFORCEMENT D IS > 25MM, TWO PIECES OF STIRRUPS SHALL STILL BE PROVIDED WITHIN THE RANGE OF 100MM BEYOND THE TWO END FACES OF THE LAP JOINT. SEE FIGURE: CONSTRUCTIONAL DETAIL OF STIRRUPS IN LAP AREA OF LONGITUDINAL TENSILE REINFORCEMENT.

7.3 钢筋混凝土板构造: CONSTRUCTION OF REINFORCED CONCRETE SLABS:

现浇钢筋混凝土板的施工应符合以下要求:

THE CONSTRUCTION OF CAST-IN-SITU REINFORCED CONCRETE SLABS SHALL MEET THE FOLLOWING REQUIREMENTS:

7.3.1板的底部钢筋伸入支座长度应≥5D (冷轧带肋钢筋伸入支座长度应≥10D,且≥100MM),且应伸入到支座中心线。THE LENGTH OF BOTTOM REINFORCEMENT OF SLAB EXTENDING INTO THE SUPPORT SHOULD BE ≥ 5D (AS FOR COLD-ROLLED RIBBED REINFORCING BARS, THE LENGTH EXTENDING INTO THE SUPPORT SHOULD BE ≥10D, AND ALSO ≥100MM), AND THE BOTTOM REINFORCEMENT SHALL EXTEND INTO THE CENTERLINE OF THE SUPPORT. ,

7.3.2板的边支座和中间支座板顶标高不同时负筋在梁或墙内的锚固应满足受拉钢筋最小锚固长度La。WHEN THE SLAB'S EDGE SUPPORT ELEVATION AND INTERMEDIATE SUPPORT TOP ELEVATION ARE DIFFERENT, THE ANCHORAGE LENGTH OF NEGATIVE REINFORCEMENT IN THE BEAM OR WALL SHOULD MEET THE MINIMUM ANCHORAGE LENGTH LA OF TENSILE REINFORCEMENT.

7.3.3 双向板的底部钢筋,短跨钢筋置于下排,长跨钢筋置于上排,板面钢筋在角部相交时,短跨钢筋 放在上排,长跨钢筋放在下排。FOR THE BOTTOM REINFORCEMENT OF TWO-WAY SLAB, THE SHORT SPAN REINFORCEMENT IS PLACED AT THE BOTTOM WHILE THE LONG SPAN REINFORCEMENT PLACED AT THE TOP. WHEN THE FLOOR REINFORCING BARS MEET IN THE CORNER, SHORT SPAN REINFORCEMENT IS PLACED AT THE TOP, AND LONG SPAN REINFORCEMENT PLACED AT THE BOTTOM.

7.3.4 当板底与梁底平时,板的下部钢筋伸入梁内须弯折后置于梁的下部纵向钢筋之上。WHEN THE BOTTOM OF SLAB IS IN PARALLEL AND ON THE SAME LEVEL WITH THE BOTTOM OF BEAM, THE SLAB'S BOTTOM REINFORCEMENT MUST BE BENT AND THEN EXTENDED ABOVE THE BOTTOM LONGITUDINAL REINFORCEMENT OF THE BEAM.

7.3.5 板上孔洞应预留,一般结构平面图中只表示出洞口尺寸>300MM的孔洞,施工时各种必须根据各专业图纸配合土建预留全部孔洞,不得后凿,当孔洞尺寸<300MM时,洞边不再另加钢筋, 板内外钢筋由洞边 绕过不得截断。当洞口尺寸>300MM时,应按图7.3.5设置加强筋。

HOLES SHOULD BE RESERVED IN THE SLABS. GENERALLY, THE STRUCTURE LAYOUT PLAN WILL ONLY SHOW HOLES WITH THE DIMENSION OVER 300MM. DURING WHATEVER TYPES OF WORK, ALL NECESSARY HOLES SHALL BE RESERVED AS PER CORRESPONDING DRAWINGS FOR CIVIL ENGINEERING. NO HOLES ARE ALLOWED TO BE MADE LATER. WHEN THE HOLE DIMENSION IS ≤ 300MM, THE EDGE OF THE HOLE NO LONGER NEEDS REINFORCEMENT. THE REINFORCEMENT INSIDE AND OUTSIDE THE SLAB SHOULD GO AROUND THE HOLE EDGE WITHOUT BEING CUT. WHEN THE HOLE DIMENSION IS >300MM, CORRESPONDING ADDITIONAL REINFORCEMENT SHALL BE SET AS SHOWN IN FIGURE 7.3.5.

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审核/审定 Approved	设计阶段 Phase	3000t/d熔烧炉 3000t/d CALCINER		工程编号 Proj. No.	19-CTZ-04	详细设计 DETAIL DESIGN	
		结构施工图设计总说明 (二) GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (2)		专业 Specialty	结 构 STRUCTURE		
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结构施工图设计总说明(三)

GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (3)

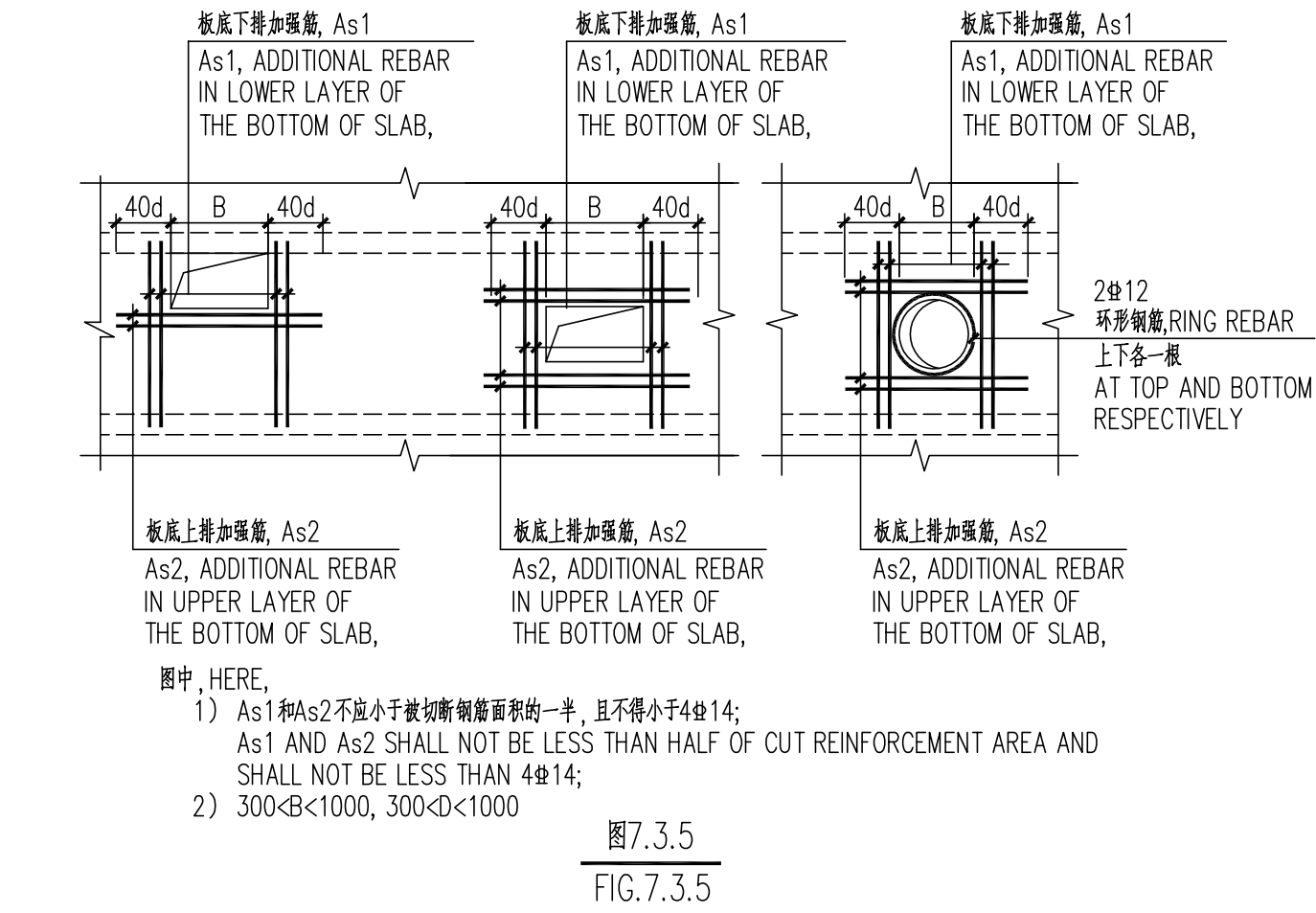


图7.3.5
FIG.7.3.5

7.3.6 管道井(通风井除外)待设备安装完后封板,板厚及配筋见平图(未注明的板厚100MM,上部筋Φ8@200,下部筋Φ8@200),施工时应预留板钢筋。

PIPE SHAFTS (EXCL. VENT SHAFTS) SHALL BE ENCLOSED WITH SEALING SLABS AFTER INSTALLATION OFEQUIPMENT. THE SLAB THICKNESS AND REINFORCEMENT ARE SHOWN IN THE PLAN (100MM FOR THICKNESS OF UNSPECIFIED SLABS, Φ8@200 FOR TOP REINFORCEMENT, Φ8@200 FOR BOTTOM REINFORCEMENT). THE REINFORCEMENT , SHALL BE RESERVED INSIDE THE SLAB DURING CONSTRUCTION.

7.3.7 板内分布钢筋包括楼梯板如表7.3.7所示

THE DISTRIBUTION REINFORCEMENT IN SLABS INCLUDING STAIR SLABS IS SHOWN IN TABLE 7.3.7.

表7.3.7TABLE7.3.7

序号 NO.	板厚(mm) SLAB THICKNESS (mm)	分布钢筋直径及间距 DIAMETER AND SPACING OF DISTRIBUTION REINFORCEMENT	板厚(mm) SLAB THICKNESS (mm)	分布钢筋直径及间距 DIAMETER AND SPACING OF DISTRIBUTION REINFORCEMENT
1	80	Φ6@200	120	Φ6@150
2	100	Φ6@200	130	Φ8@250
3	110	Φ6@180	140~150	Φ8@220

注: NOTES:
1) 双向板(板长边与短边之比<3) 负钢筋架立筋为Φ6@500
THE ERECTION REINFORCING BAR OF NEGATIVE REINFORCEMENT IN THE TWO-WAY SLAB (RATIO OF SLAB LONG SIDE TO SHORT SIDE < 3) IS Φ6@500.

7.3.8 当内隔墙下未设小梁时,墙下板内应另加钢筋,当板跨度>3.6M时为3Φ16,板跨<3.6M为2Φ16,钢筋两端锚入板边的梁内12D. 楼板上后砌隔墙的位置应严格遵守建筑施工图,不可随意砌筑。

WHEN JOISTS ARE NOT SET BELOW THE INTERNAL PARTITION WALL, REINFORCEMENT SHOULD BE ADDED IN THE SLAB BELOW THE WALL. WHEN THE SPAN OF SLAB EXCEEDS 3.6M, THE REINFORCEMENT IS 3Φ16; OTHERWISE THE REINFORCEMENT IS 2Φ16. BOTH ENDS OF REINFORCEMENT ARE ANCHORED INTO THE BEAM BESIDE THE SLAB BY 12D. THE POSITION OF THE PARTITION WALL BUILT AFTERWARDS ON THE SLAB SHOULD STRICTLY FOLLOW THE REQUIREMENTS OF ARCHITECTURAL CONSTRUCTION DRAWINGS, RATHER THAN BUILDING AT RANDOM.

7.3.9 洗楼梯、屋面砼时,应采取必要措施以保证板厚及板面钢筋的准确位置,严禁踩踏负钢筋。

WHEN THE FLOOR SLAB CONCRETE AND ROOF SLAB CONCRETE ARE CAST AND TAMPED, NECESSARY MEASURES SHOULD BE TAKEN TO ENSURE THE SLAB THICKNESS AND ACCURATE POSITION OF SLAB REINFORCEMENT. TREADING ON THE NEGATIVE REINFORCEMENT IS PROHIBITED.

7.3.10 为控制温度应力,跨度≥3.3M楼面板及屋面板在无负筋范围内,纵横增设Φ6@200的钢筋网,增设钢筋两端与板内负筋搭接,如图7.3.10所示

TO CONTROL TEMPERATURE STRESS, Φ6@200 REINFORCEMENT MESH SHALL BE ADDED IN BOTH LONGITUDINAL AND TRANSVERSE DIRECTIONS WITHIN THE FLOOR SLAB AND ROOF SLAB WITH SPAN ≥3.3M, WHERE NO NEGATIVE REINFORCEMENT EXISTS. BOTH ENDS OF THE ADDED REINFORCING BARS SHALL BE OVERLAPPED WITH THE NEGATIVE REINFORCEMENT IN THE SLAB, AS SHOWN IN FIGURE 7.3.10.

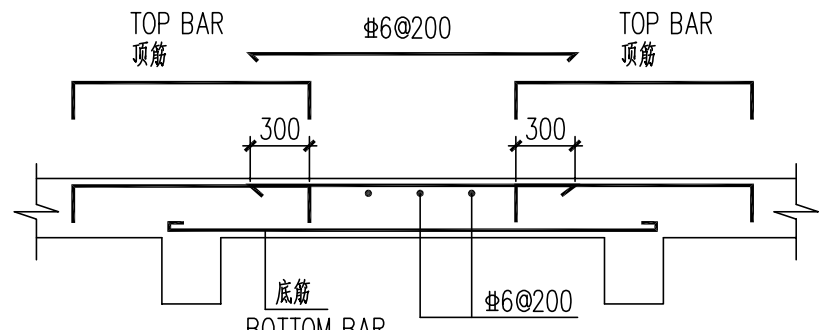


图7.3.10
FIG 7.3.10

7.3.11 对于外露的现浇钢筋混凝土女儿墙、挂板、栏板、檐口等构件,当其水平直线长度≥12M 时,应按图 7.3.11设置伸缩缝,伸缩缝间距≤12M。

FOR EXPOSED BUILDING MEMBERS SUCH AS CAST-IN-SITU REINFORCED CONCRETE PARAPETS, HANGING SLABS, FENCES, EAVES, ETC., WHEN THEIR HORIZONTAL STRAIGHT LENGTH IS ≥ 12M, EXPANSION JOINTS SHALL BE SET AS SHOWN IN FIGURE 7.3.11, WITH WITH THE JOINT SPACING ≤12M.

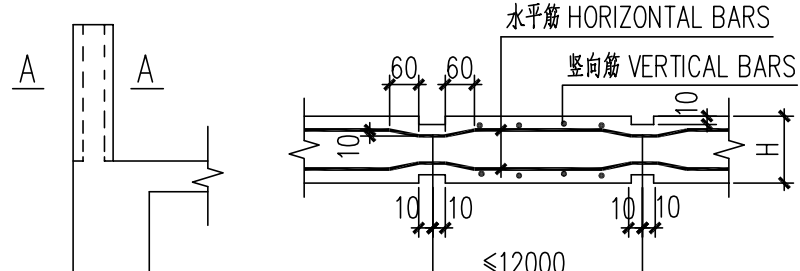


图7.3.11
FIG.7.3.11

7.3.12 臂板转角位于阳角时应按图7.3.12-1设加强钢筋,当L<500MM时设3板;当500MM≤L<800MM时设5板;当800MM≤L<1000MM时设7板;当1000MM≤L<1200MM时设9板;悬臂板转角位于阴角时 应按图7.3.12-2设加强钢筋。

WHEN THE CANTILEVER SLAB CORNER IS LOCATED AT THE EXTERNAL CORNER,RIBBED REINFORCING BARS SHALL BE SET AS SHOWN IN FIGURE 7.3.12-1; WHEN L<500MM, 3 PIECES OF RIBBED REINFORCING BARS SHALL BE SET; WHEN 500MM≤L<800MM, 5 PIECE SHALL BE SET; WHEN 800MM≤L<1000MM, 7 PIECES SHALL BE SET; WHEN 1000MM≤L<1200MM, 9 PIECES SHALL BE SET; WHEN THE CANTILEVER SLAB CORNER IS AT THE INSIDE CORNER, RIBBED REINFORCING BARS SHALL BE SET AS SHOWN IN FIGURE 7.3.12-2.

THE DIAMETER IS THE SAME WITH THAT OF THE STRESSED REINFORCEMENT OF CANTILEVER SLAB, PLACED AT TOP OF THE SLAB AND ANCHORED INTO BEAM BY L_a.
直径同悬臂板受力钢筋,锚于板上部

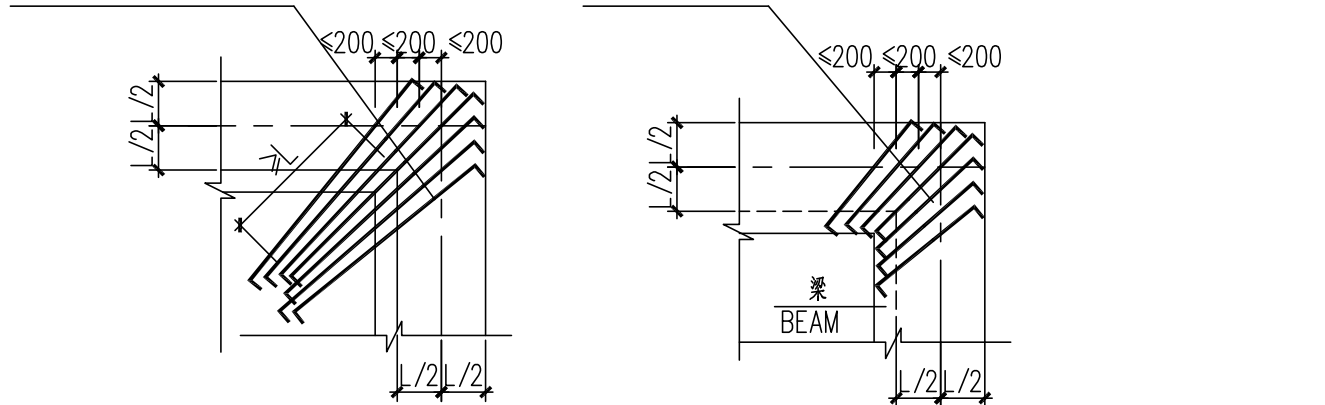


图7.3.12-1
FIG.7.3.12-1

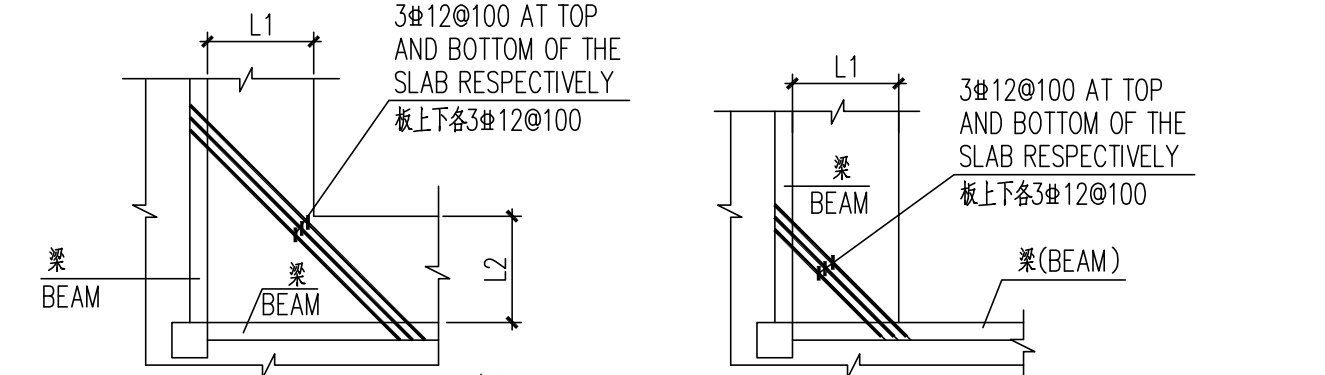


图7.3.12-2
FIG.7.3.12-2

7.3.13 短向板跨≥4M时,模板应起拱,起拱高度为跨度时1/1000~3/1000(且≥10MM)。IF SHORT SPAN OF SLAB IS ≥ 4M, FORMWORK SHALL BE ARCHED WITH THE ARCHING HEIGHT EQUAL TO 1/1000 ~ 3/1000 (AND ≥ 10MM) OF THE SPAN.

7.4 钢筋混凝土梁构造: CONSTRUCTIONAL DETAIL OF REINFORCED CONCRETE BEAM:

7.4.1 屋面框架梁WKL纵向钢筋构造见22G101-1第2-34页,框架梁KL纵向钢筋构造见第2-33页。LONGITUDINAL REINFORCEMENT IN ROOF FRAME BEAM (WKL) REFER TO 22G101-1 ON PAGE 2-34. LONGITUDINAL REINFORCEMENT IN FRAME BEAM (KL) REFER TOPAGE 2-33.

7.4.2 非框架梁配筋构造见22G101-1第2-40页。CONSTRUCTIONAL DETAIL OF REINFORCEMENT FOR NON-FRAME BEAM REFER TO 22G101-1 PAGE 2-40.

7.4.3 梁附加箍筋与附加吊筋构造见22G101-1第2-39页。CONSTRUCTIONAL DETAIL OF ADDITIONAL STIRRUPS AND ADDITIONAL HANGING REINFORCEMENT OF BEAM REFER TO 22G101-1 PAGE 2-39.

7.4.4 主次梁高度相同时,次梁的下部纵向钢筋应经弯折后置于主梁下部纵向钢筋之上。WHEN THE MAIN BEAM AND SECONDARY BEAM HAVE THE SAME HEIGHT, THE AFTER-BENDING BOTTOM LONGITUDINAL REINFORCEMENT OF THE SECONDARY BEAM SHALL BE PLACED ABOVE THE BOTTOM REINFORCEMENT OF THE MAIN BEAM.

7.4.5 普通梁跨度大于4.0M时应按3L/1000起拱(L为跨度);悬臂梁长度大于2.0米时,应按接5L/1000起拱(≥20MM, L为悬臂梁长度),并保证底模不发生下沉,起拱不得削弱梁截面高度。WHEN THE SPAN OF ORDINARY BEAM IS MORE THAN 4M, MAKE ARCHING IN 3L/1000 (L = THE BEAM SPAN); WHEN THE LENGTH OF CANTILEVER BEAM IS MORE THAN 2M, MAKE ARCHING BASED ON 0.5%(≥20MM, L = THE LENGTH OF CANTILEVER BEAM),AND IT SHOULD BE ENSURED THAT THE BOTTOM FORMWORK DOES NOT SINK AND THE HEIGHT OF BEAM SECTION IS NOT REDUCED.

7.5 柱和节点构造 CONSTRUCTIONAL DETAIL OF COLUMNS AND JOINTS

7.5.1 框架柱纵向钢筋构造, 箍筋弯钩构造

CONSTRUCTIONAL DETAILS OF LONGITUDINAL REINFORCEMENT FOR FRAME COLUMNS AND STIRRUP HOOKS

1) 柱纵筋绑扎搭接长度及绑扎搭接、机械连接、焊接连接要求见22G101-1第2-9页; THE BINDING LAP LENGTH FOR LONGITUDINAL REINFORCEMENT OF BEAM, AS WELL AS THE REQUIREMENTS FOR BINDING LAP JOINT, MECHANICAL JOINT AND WELDING JOINT, ARE SHOWN IN 22G101-1 PAGE 2-9.

7.5.2 柱锚筋在基础中的锚固构造见22G101-3第2-10页。

CONSTRUCTIONAL DETAIL OF STARTER REINFORCEMENT FOR COLUMNS ANCHORED IN THE FOUNDATION IS SHOWN IN 22G101-3 PAGE 2-10.

7.5.3 柱上不允许预留孔洞,预埋件需与安装单位配合施工。

NO HOLES ARE ALLOWED TO BE RESERVED ON THE COLUMN. THE CONSTRUCTION OF EMBEDDED PARTS NEED TO DONE IN COOPERATION WITH THE CONSTRUCTION COMPANY.

7.6 基础构件

FOUNDATION MEMBERS

7.6.1 当钢筋长度不足时,基础底板、基础梁下部通长钢筋应在跨中L_a/3 (L_a为跨度)范围连接,基础底板、基础梁上部通长钢筋在支座L_a/4范围连接。

WHEN THE LENGTH OF REINFORCEMENT IS NOT ENOUGH, THE CONNECTION POSITION FOR BOTTOM FULL-LENGTH REINFORCEMENT IN THE FOUNDATION BOTTOM SLABS AND GRADE BEAMS SHALL BE WITHIN L_a/3 SPAN RANGE (L_a IS SPAN), AND THE CONNECTION POSITION FOR TOP FULL-LENGTH REINFORCEMENT IN FOUNDATION BOTTOM SLABS AND GRADE BEAMS SHALL BE WITH IN L_a/4 SPAN RANGE OF THE SUPPORT.

7.6.2 基础梁与柱结合部侧梁构造

SIDE HAUNCH STRUCTURE FOR JOINT PART OF GRADE BEAMS AND COLUMNS

1) 除基础梁比柱宽,且完全形成梁包柱的情况外,所有基础梁与柱的结合部位均应按照22G101-3第2-28页加腋; EXCEPT FOR THE CASE THAT THE FOUNDATION BEAM IS WIDER THAN COLUMN AND THE COLUMN IS COMPLETELY WRAPPED WITHIN THE BEAM, ALL JOINT PARTS OF FOUNDATION BEAM AND COLUMN SHALL BE HAUNCHED AS SHOWN IN 22G101-3 PAGE 2-28.

2) 当基础梁与柱同宽,或柱与梁在某一侧面相平行存在梁、柱纵筋在同一平面内导致直通,交叉避让情况,此时应调整基础梁宽度使拉纵筋直通锚固;

WHEN THE WIDTHS OF FOUNDATION BEAMS AND COLUMNS ARE THE SAME, OR WHEN ONE SIDE OF THE COLUMN AND ONE SIDE OF THE BEAM ARE IN THE SAME PLANE, IN WHICH CASE THE LONGITUDINAL REINFORCEMENT OF THE BEAM AND THE COLUMN IS IN A SAME PLANE, WHICH LEADS TO CROSSING AND BLOCKING OF PASS-THROUGH REINFORCEMENT, THEN THE FOUNDATION BEAM WIDTH SHALL BE ADJUSTED TO ENABLE THE LONGITUDINAL REINFORCEMENT OF COLUMN TO REALIZE PASS-THROUGH ANCHORAGE.

3) 当柱与基础梁结合部位的梁顶面标高不一样时,梁包柱侧梁顶面应与较高基础梁顶面平,侧梁顶面至较低梁顶面高差内的侧梁,可参照角柱或丁字交叉基础梁包柱侧梁构造进行施工。

WHEN BEAM TOP ELEVATIONS OF THE JOINT PART OF COLUMN AND FOUNDATION BEAM ARE DIFFERENT, THE TOP ELEVATION OF SIDE HAUNCH OF BEAM WRAPPED COLUMN SHALL BE THE SAME AS THE TOP ELEVATION OF HIGHER FOUNDATION BEAM. THE SIDE HAUNCH BETWEEN TOP OF SIDE HAUNCH AND TOP OF LOWER BEAM MAY BE CONSTRUCTED REFERING TO THE STRUCTURE FOR SIDE HAUNCH OF CORNER COLUMN OR T CROSS FOUNDATION BEAM WRAPPED COLUMN.

7.6.3 后浇带构造

STRUCTURE OF POST-CAST STRIPS

1) 后浇带采用无收缩混凝土,强度应提高一个等级,浇筑时应滞后28天以上,低温入模。

THE POST-CAST STRIP IS OF NON-SHRINKAGE CONCRETE; THE STRENGTH SHALL BE INCREASED BY ONE GRADE; CASTING TIME SHALL HAVE A DELAY OF MORE THAN 28 DAYS, CAST WITH LOW TEMPERATURE.

2) 后浇带两侧采用钢筋支架单层钢丝网隔断,当后浇混凝土时应剔除其表面浮浆。

BOTH SIDES OF POST-CAST STRIP ARE SEPARATED BY REINFORCEMENT SUPPORTED SINGLE-LAYERSTEELWIREMESH;LAITANCEONTHE SURFACE OF THE CONCRETE SHALL BE CLEARED BEFORE CONCRETE POST-CASTING.

3) 后浇带(梁或板)主受力筋宜贯通留筋,若不能贯通留筋,应满足100%搭接留筋要求,详见图22G101-3第2-50页,后浇带区域配筋保持不变。

THE MAIN REINFORCEMENT OF POST-CAST STRIP (BEAM OR SLAB) SHOULD BE CONTINUAL IN LAYOUT, OTHERWISE IT SHALL MEET THE REQUIREMENT OF 100% LAPPED REINFORCEMENT. SEE 22G101-3 PAGE 2-50 FOR DETAILS. REINFORCEMENT OF POST-CAST STRIP SECTION SHOULD BE KEPT UNCHANGED.

4) 基础梁或基础底板需要采取止水措施,见22G101-3第2-51页。

WATERSTOP MEASURES SHALL BE TAKEN FOR FOUNDATION BEAMS OR FOUNDATION BOTTOM SLABS, SEE 22G101-3 PAGE 2-51.

5) 施工期间后浇带两侧构件应设置竖向支撑,以确保构件和结构整体在施工阶段的承载能力和稳定性。

DURING THE PERIOD OF CONSTRUCTION, VERTICAL SUPPORTS SHALL BE SET FOR MEMBERS ON BOTH SIDES OF POST-CAST STRIPS TO ENSURE THE BEARING CAPACITY AND STABILITY OF THE MEMBER AND THE ENTIRE STRUCTURE DURING CONSTRUCTION PHASE.

7.6.4 地下室外墙外侧竖向钢筋位于外层,水平钢筋位于内层。外侧竖向钢筋连接位置在层高中部H/3范围,内侧竖向钢筋

连接位置在中间楼层H/4范围;外侧水平钢筋连接位置在跨中L_a/3范围,内侧水平钢筋连接位置在支座L_a范围。

FOR THE BASEMENT EXTERIOR WALL, THE OUTSIDE VERTICAL REINFORCEMENT IS LOCATED IN THE OUTER LAYER, AND THE HORIZONTAL REINFORCEMENT IS LOCATED IN THE INNER LAYER. THE CONNECTION OF OUTER VERTICAL REINFORCEMENT SHOULD BE WITHIN H/3 RANGE IN THE MIDDLE OF THE FLOOR HEIGHT; THE CONNECTION OF THE INNER VERTICAL

REINFORCEMENT SHOULD BE WITHIN H/4 RANGE IN THE MIDDLE OF FLOOR HEIGHT; THE CONNECTION OF OUTER HORIZONTAL REINFORCEMENT SHOULD BE WITHIN L_a/3 SPAN RANGE IN THE MIDSPAN; THE CONNECTION OF INNER HORIZONTAL REINFORCEMENT SHOULD BE WITHIN L_a SPAN RANGE OF THE SUPPORT.

7.7 填充墙构造要求:

STRUCTURAL REQUIREMENTS ON FILLER WALL

7.7.1 砌体填充墙与框架梁、柱、剪力墙的连接要求:

REQUIREMENTS ON CONNECTIONS BETWEEN MASONRY FILLER WALL AND FRAME BEAM, COLUMN, SHEAR WALL:

1) 与砌体填充墙连接的钢筋混凝土墙、柱,应配合建筑施工图在墙体位置,沿混凝土墙、柱高每隔500MM预埋2Φ6拉筋,锚入混凝土墙、柱内≥250MM,沿墙全长贯通;

FOR REINFORCED CONCRETE WALLS AND COLUMNS CONNECTED WITH MASONRY FILLER WALLS, 2Φ6 REINFORCEMENT SHOULD BE PLACED IN FULL LENGTH IN THE CONCRETE WALL OR COLUMN AT AN INTERVAL OF 500MM, AND THE LENGTH OF ANCHORING INTO THE CONCRETE WALL SHOULD NOT BE LESS THAN 250MM AND SHOULD BE FULL-LENGTH THROUGH ALONG THE WALL.

2) 与现浇过梁、水平系梁连接的混凝土墙、柱,应事先预埋插筋,单侧锚入混凝土墙、柱内≥L_a,双侧则连通,构造见图

7.7.1-2;

FOR CONCRETE WALLS AND COLUMNS CONNECTED WITH CAST-IN-SITU LINTELS AND HORIZONTAL TIE BEAMS, STARTER BARS SHALL BE EMBEDDED IN ADVANCE, WITH SINGLE SIDE OF REINFORCEMENT ANCHORED INTO THE CONCRETE WALL OR COLUMN WITH THE ANCHORAGE LENGTH NO LESS THAN L_A. WHEN BOTH SIDES OF REINFORCEMENT ARE ANCHORED INTO THE CONCRETE WALL OR COLUMN, FULL-LENGTH REINFORCEMENT SHOULD BE PLACED. REFER TO FIGURE 7.7.1-2 FOR THE STRUCTURE.

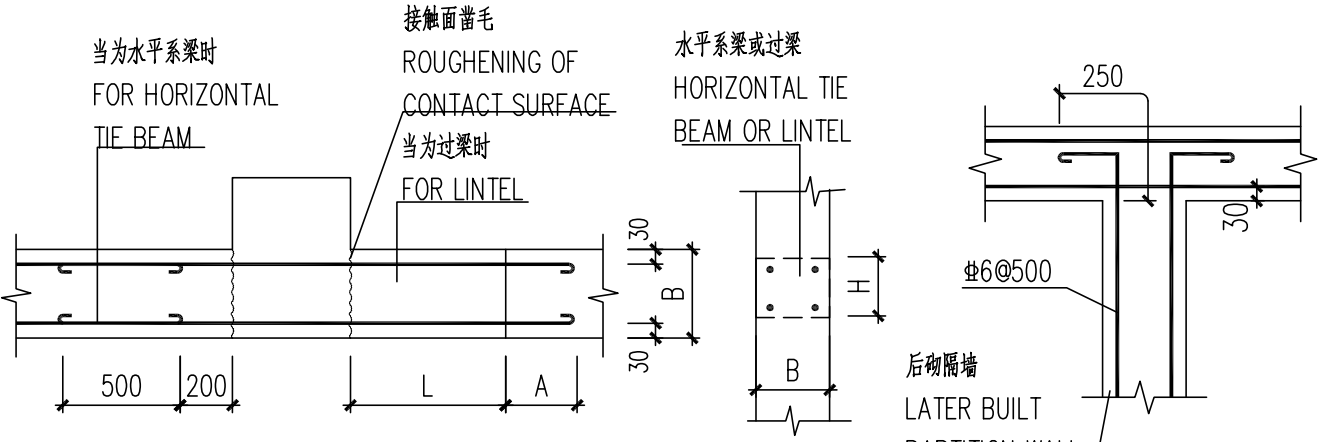


图 7.7.1-2
FIGURE 7.7.1-2

图 7.7.1-3
FIGURE 7.7.1-3

3) 填充墙交界处的拉结做法见图7.7.1-3;

REFER TO FIGURE 7.7.1-3 FOR THE METHOD FOR INTERSECTION JOINT OF FILLER WALL.

4) 墙长≥5M时,墙顶与梁拉结做法见图7.7.1-4。

WHEN THE LENGTH OF WALLS IS NOT LESS THAN 5 METERS, REFER TO FIGURE 7.7.1-4 FOR THE TIE APPROACH FOR WALL TOP AND BEAMS.

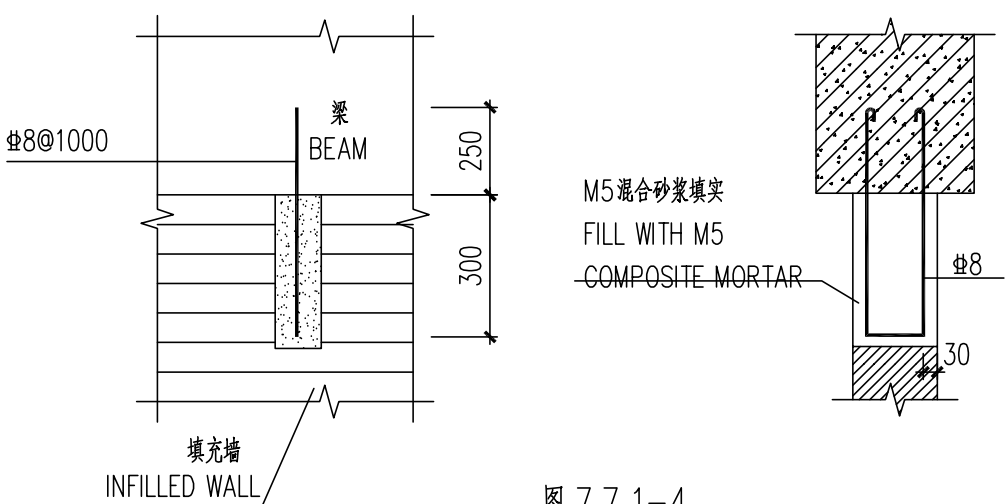


图 7.7.1-4
FIGURE 7.7.1-4

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				图纸比例 Scale		1:100	
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				图 例 Key		填充墙 A1	

结构施工图设计总说明(四)

GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (4)

7.7.2 构造柱、水平系梁的设置要求：

SETTING REQUIREMENTS OF STRUCTURAL COLUMNS AND HORIZONTAL TIE BEAMS:

1)当墙高超过4M时，应在门窗顶或墙体中嵌设水平系梁一道，截面宽度同墙厚，高度为 200MM，纵筋4Φ10，箍筋Φ6@250;

WHEN THE WALL IS MORE THAN 4 METERS HIGH, A HORIZONTAL TIE BEAM SHALL BE PROVIDED ON THE TOP OF WINDOW OR IN THE MIDDLE OF WALL; THE SECTION WIDTH OF THE BEAM IS THE SAME AS THE WALL THICKNESS; THE HEIGHT IS 200MM; LONGITUDINAL REINFORCEMENT IS 44Φ10; THE STIRRUPS ARE Φ6@250.

2)与构造柱连接的钢筋混凝土梁、板，应配合建筑施工图在构造柱位置，事先预埋插筋，上下端锚入梁、板内>LA，楼层同一位置应连通。

FOR REINFORCED CONCRETE BEAMS AND SLABS CONNECTED WITH STRUCTURAL COLUMNS, STARTER BARS SHALL BE EMBEDDED IN ADVANCE ACCORDING TO ARCHITECTURAL DETAIL DESIGN DRAWINGS. THE ANCHORAGE LENGTH IN BEAM OR SLAB SHALL NOT BE LESS THAN LA . IN THE SAME POSITION OF A FLOOR, STARTER BARS SHALL BE CONTINUAL.

3)当水平系梁为门洞切断时，应在洞顶设置一道附加水平系梁，其断面和配筋除满足水平系梁要求外还应满足过梁的要求，其搭接长度应≥1000MM。当两水平系梁高差≤500MM时，水平系梁也可沿洞口垂直折弯与过梁连成框架，见图7.7.2-3;

WHEN HORIZONTAL TIE BEAMS ARE CUT OFF BY DOOR OPENINGS, AN ADDITIONAL HORIZONTAL TIE BEAM SHALL BE SET ON THE TOP OF THE OPENING, WITH ITS SECTION AND REINFORCEMENT MEETING THE REQUIREMENTS OF BOTH HORIZONTAL TIE BEAMS AND LINTELS. THE LAP LENGTH SHALL NOT BE LESS THAN 1000MM. WHEN THE HEIGHT DIFFERENCE OF TWO HORIZONTAL TIE BEAMS IS NOT MORE THAN 500 MM, HORIZONTAL TIE BEAM MAY ALSO BE VERTICALLY BENT ALONG THE OPENING AND CONNECTED WITH LINTELS. SEE FIGURE 7.7.2-3.

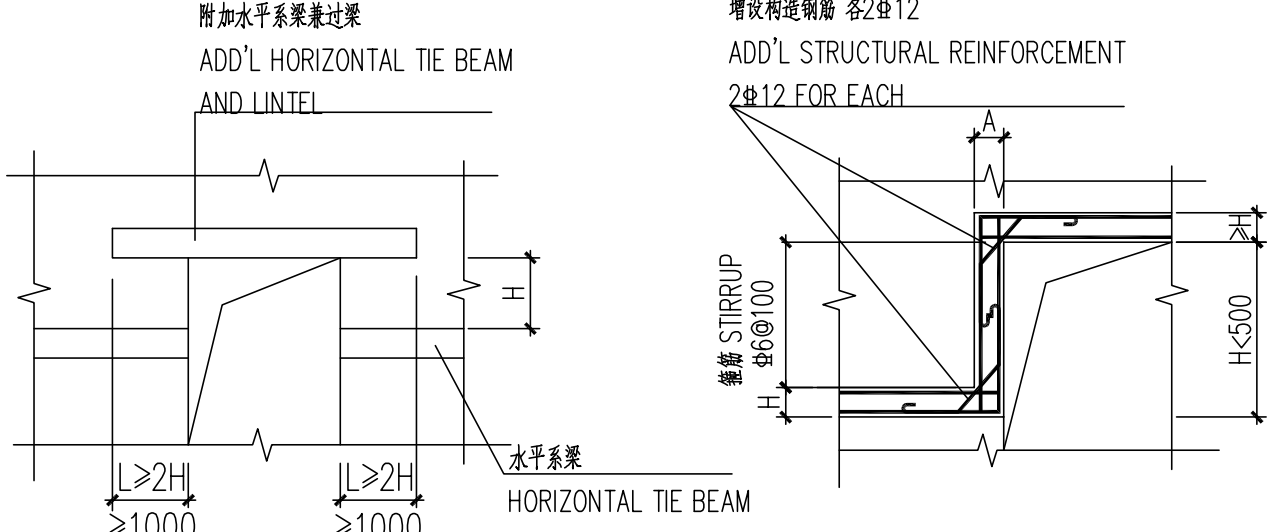


图 7.7.2-3 洞口附加水平系梁构造

FIG.7.7.2-3 DETAIL OF ADD'L HORIZONTAL TIE BEAM OF OPENING

4)墙长超过8M或层高的2倍时，设置钢筋混凝土构造柱，截面宽、高均同墙厚，纵筋4Φ12，箍筋Φ6@200，纵筋连接范围箍筋Φ6@100。

WHEN THE LENGTH OF WALL IS MORE THAN 8 METERS OR TWO TIMES THE STOREY HEIGHT, THE REINFORCED CONCRETE STRUCTURAL COLUMN SHALL BE SET, WITH THE WIDTH AND HEIGHT OF THE STRUCTURAL COLUMN THE SAME AS THE THICKNESS OF WALLS. LONGITUDINAL REINFORCEMENT IS 4Φ12; STIRRUPS ARE 6@200; THE STIRRUPS IN THE CONNECTING RANGE OF LONGITUDINAL REINFORCEMENTS ARE Φ6@100.

7.7.3 楼梯间和人流通道的填充墙，应采用钢丝网砂浆面层加强：Φ4@150的细密点焊钢筋 网片外抹M10水泥石灰面层20厚加强，双面钢筋网应采用Φ6的S形穿墙筋连接,S形穿墙筋的间距宜为600mm,梅花形布置。

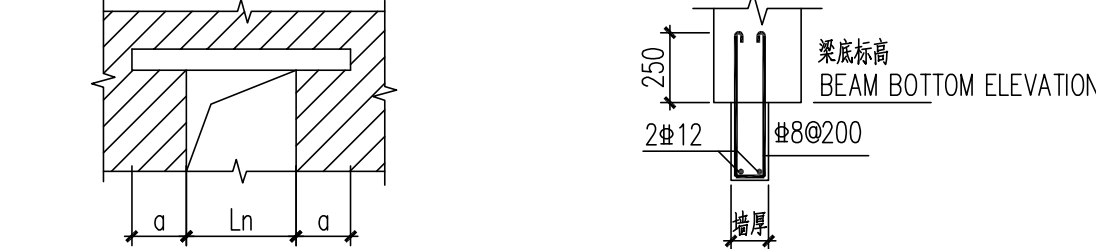
INFILLED WALLS OF STAIR CASES AND PEDESTRIAN WALKWAYS SHOULD BE REINFORCED BY STEEL WIRE MESH MORTAR SURFACE: Φ4@150 FINE SPOT WELDING STEEL MESH REINFORCED BY PLASTERING 20 THICK M10 CEMENT MORTAR SURFACE. DOUBLE-SIDE STEEL WIRE MESH SHOULD BE PROVIDED WITH Φ6 S-SHAPE THROUGH-WALL REINFORCEMENT FOR CONNECTION. THE SPACING OF S-SHAPE THROUGH-WALL REINFORCEMENT SHOULD BE 600mm, ARRANGED IN QUINCUNX.

7.7.4 砌体墙上门窗洞口过梁要求：

REQUIREMENTS ON LINTELS ABOVE THE WINDOW AND DOOR HOLES ON MASONRY WALL:

1)砌体墙上门窗洞口应设置钢筋混凝土过梁如表7.7.4所示；当洞口上方有承重梁平行通过，且该梁底标高与门窗顶很近，放不下过梁时，可直接在梁下挂板见图7.7.4；

REINFORCED CONCRETE LINTELS SHALL BE SET FOR THE WINDOW AND DOOR HOLES ABOVE THE MASONRY WALL. SEE TABLE 7.7.4. WHEN LOAD-BEARING BEAMS PASS IN PARALLEL ABOVE THE HOLES AND RELATIVE ELEVATION OF BEAM BOTTOM IS CLOSE TO THAT OF THE TOP OF WINDOW AND DOOR HOLES, WHICH LEADS TO UNSUFFICIENT SPACE FOR THE LINTEL, A SLAB CAN DIRECTLY EXTEND FROM THE BOTTOM OF THE BEAM, AS SHOWN IN FIGURE 7.7.4-1.



现浇钢筋混凝土过梁
CAST-IN-SITU REINFORCED CONCRETE LINTEL

图 7.7.4-1
FIG.7.7.4-1

表7.7.4: 钢筋混凝土过梁表

TAB.7.7.4: REINFORCED CONCRETE LINTEL

NO.	洞口宽 Ln WIDTH OF HOLE	截面形式 SECTION TYPE	H	搁置长度 a LENGTH	①	②	③
1	≤1000	A	120	240	3Φ10		Φ8@150
2	1000<L≤1500	A	120	240	3Φ10		Φ8@150
3	1500<L≤1800	B	150	240	2Φ12	2Φ8	Φ8@150
4	1800<L≤2400	B	180	240	3Φ12	2Φ8	Φ8@150
5	2400<L≤3000	B	240	350	3Φ14	2Φ10	Φ8@150

截面A型 (TYPE A) 截面B型 (TYPE B)

WALL THICKNESS 截面A型 (TYPE A) WALL THICKNESS 截面B型 (TYPE B)

备注(NOTES): 1 当过梁上有设备支架等其他荷载时，应通知设计人员做复核。
WHEN THERE ARE EQUIPMENT SUPPORTS OR OTHER LOADS ON THE LINTELS, DESIGNERS SHOULD BE INFORMED OF RECHECKED.

2)当门洞宽≥2100mm时，要求设钢筋混凝土抱框，抱框柱根部预留插筋。抱框混凝土强度等级为C20，施工图已注明外，按图7.7.4-2施工。

WHEN WIDTH OF DOOR HOLES IS ≥2100mm, REINFORCED CONCRETE JAMBS ARE REQUIRED TO BE SET, WITH STARTER BARS RESERVED AT THE ROOT OF THE JAMB. THE JAMB SHALL HAVE A CONCRETE GRADE OF C20. UNLESS OTHERWISE SPECIFIED ON DETAIL DESIGN DRAWINGS, REFER TO FIGURE 7.7.4.2 FOR THE CONSTRUCTION OF JAMBS.

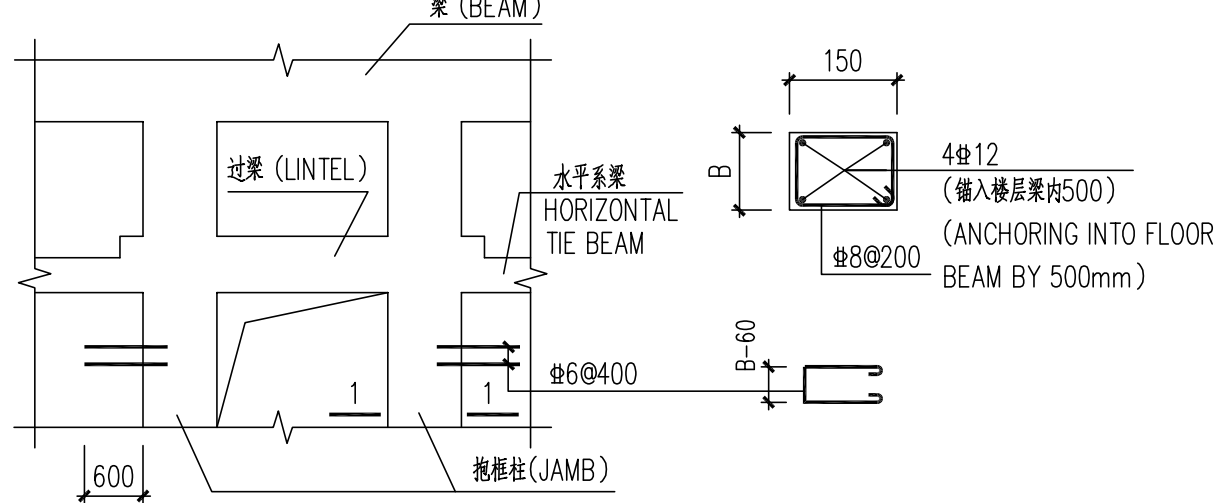


图 7.7.4-2 钢筋混凝土抱框构造
FIG.7.7.4-2 CONSTRUCTIONAL DETAIL OF REINFORCED CONCRETE JAMB
(B为墙厚 B IS THICKNESS OF WALL)

7.8 预留孔洞、预埋件: RESERVED HOLES AND EMBEDDED PARTS :

7.8.1 混凝土结构施工前应对预留孔、预埋件、楼梯栏杆和阳台栏杆的位置与各专业图纸进行校对，并与设备及各种密切配合施工。

THE CONSTRUCTION OF CONCRETE STRUCTURES CAN NOT BE STARTED UNTIL THE POSITIONS OF RESERVED HOLES, EMBEDDED PARTS, STAIR RAILS AND BALCONY RAILS ARE CHECKED WITH DRAWINGS OF OTHER DISCIPLINES. THE CONSTRUCTION SHALL BE CARRIED OUT IN CLOSE COORDINATION WITH EQUIPMENT DISCIPLINE AND OTHER CRAFTS.

7.8.2 对于电气专业(详见电气相关图纸)有避雷或接地要求的混凝土柱内应有两根钢筋做为避雷引下线，做为避雷引下线的纵向钢筋，必须从上到下焊成通路，焊接长度不小于100mm，且其下端须就近与基础内底部钢筋焊接，焊接长度不小于100mm，其上端须露出柱顶或混凝土墙顶150mm，与屋顶避雷带连接。基础钢筋应与楼板、梁、柱、墙钢筋连成通路，做为避雷使用，做法需配合电气图纸施工。

FOR CONCRETE COLUMNS WHERE ELECTRICAL DISCIPLINE REQUIRES LIGHTNING PROTECTION OR GROUNDING (REFER TO THE DETAIL DESIGN DRAWINGS OF THE ELECTRICAL DISCIPLINE FOR DETAILS), THERE SHOULD BE TWO PIECES OF REINFORCEMENT INSIDE THE COLUMN TO BE USED AS THE DOWNLEADS FOR LIGHTNING PROTECTION. THE LONGITUDINAL REINFORCEMENT WHICH IS USED AS THE LIGHTNING PROTECTION DOWNLEAD MUST BE WELDED THROUGH FROM THE TOP TO THE BOTTOM, AND THE WELDING LENGTH SHALL NOT BE LESS THAN 100mm. THE LOWER END OF THE REINFORCEMENT SHALL BE WELDED WITH THE REINFORCEMENT ON THE BOTTOM OF FOUNDATION NEARBY, WITH THE WELDING LENGTH NOT LESS THAN 100mm, AND THE UPPER END OF REINFORCEMENT SHALL EXPOSE OUT OF THE TOP OF THE COLUMN OR CONCRETE WALL BY 150mm, CONNECTED WITH ROOF LIGHTNING STRIP. THE FOUNDATION REINFORCEMENT SHOULD BE CONNECTED WITH REINFORCEMENT OF SLABS, BEAMS, COLUMNS FOR LIGHTNING PROTECTION. THE CONSTRUCTION METHODS SHALL REFER TO DETAIL DESIGN DRAWINGS OF ELECTRICAL DISCIPLINE.

8. 钢结构制作安装及构件连接

FABRICATION, ERECTION AND MEMBER CONNECTION OF STEEL STRUCTURE.

8.1 制作: FABRICATION:

8.1.1 焊接钢柱及钢梁等钢构件均应在工厂采用埋弧自动焊接成型。施焊前应进行工艺评定证明施焊工艺符合国家标准《埋弧焊接坡口的基本形式及尺寸》(GB986-88)的有关规定。

STEEL MEMBERS SUCH AS WELDING STEEL COLUMN AND BEAM, ETC. SHALL BE WELDED BY AUTOMATIC SUBMERGED ARC WELDING IN THE FACTORY. BEFORE WELDING, EVALUATION AND TESTIFICATION ON PROCESS SHALL BE CARRIED OUT TO TESTIFY ITS CONFORMITY TO

RELEVANT REQUIREMENTS IN THE NATIONAL CODE OF BASIC FORMS AND SIZES OF WELD GROOVES(GB986-88).

8.1.2 板材气割或机械剪切下料后，应进行边缘加工，其割削量不应小于2MM。

THE GAS CUT OR CROPPED STEEL PLATES SHALL BE EDGE PROCESSED WITH TRIMMING VOLUME OF NO LESS THAN 2 MM.

8.1.3 所有钢构件制作前需足尺放样，不允许在施工现场临时加焊板件，不允许用气焊扩孔。

BEFORE A STEEL MEMBER IS FABRICATED, IT MUST BE FULL SIZE LOFTED. EITHER TEMPORARY ADDING OF WELDING PLATES OR ENLARGING HOLE BY GAS WELDING AT SITE IS PROHIBITED.

8.1.4 所有钢柱均应铣两端，并与柱、梁轴线成标准角度。BOTH ENDS OF ALL STEEL COLUMNS WILL BE MILLED, AND THE COLUMNS SHALL BE KEPT IN STANDARD ANGLE TO AXIAL LINE OF COLUMN AND BEAM.

8.1.5 所有主钢构件，除设计注明接头外，一律不得用短料拼接。UNLESS OTHERWISE SPECIFIED ON THE JUNCTION, SHORT MATERIAL SPLICING PROCESS CANNOT BE USED FOR THE CONNECTION OF ALL MAIN STEEL MEMBERS.

8.2 焊接: WELDING:

8.2.1 钢柱工地拼装时，翼缘采用全熔透的坡口对接焊缝连接，腹板采用拼接板连接，组合截面和柱拼接见施工详图。WHEN ASSEMBLING STEEL COLUMNS ON SITE, FLANGES SHALL BE WELDED BY COMPLETE PENETRATION GROOVE BUTT WELDING PROCESS, AND WEB PLATES WILL BE WELDED BY CONNECTING PLATE.CONNECTIONS BETWEEN COMPOSITE SECTION AND COLUMN ARE SHOWN IN WORKING DRAWINGS.

8.2.2 钢框架梁与框架柱之间的连接采用刚接(特殊处除外)。

STEEL FRAME BEAM AND FRAME COLUMN SHALL BE RIGID CONNECTED (EXCEPT SPECIAL REQUIREMENTS).

8.2.3 次梁与主梁连接采用铰接(特殊处除外)，采用10.9级高强螺栓连接。

UNLESS OTHERWISE SPECIFIED, 10.9 GRADE HIGH STRENGTH BOLT SHALL BE USED FOR THE CONNECTION BETWEEN SECONDARY BEAM AND MAIN BEAM ON SITE.

8.2.4 H型钢截面板的横向加劲肋与柱翼缘及腹板应采用全熔透对接焊缝连接。TRANSVERSE STIFFENERS FOR H-BEAM STEEL CROSS-SECTION COLUMN SHALL BE WELDED TO COLUMN FLANGE AND WEB PLATE BY COMPLETE PENETRATION BUTT WELDING PROCESS.

8.2.5 柱脚处柱翼、腹板和加劲肋、梁支座支承板下端要求刨平顶紧后施焊。

COLUMN FLANGE, WEB PLAT AND STIFFENER AT BASE OF COLUMN, AS WELL AS THE BOTTOMS OF SUPPORTING PLATE OF BEAM BASE SHALL BE WELDED AFTER BEING PLANNED AND PRESSED TIGHT.

8.2.6 焊缝质量等级：除图中特殊注明外，板件拼接和熔透焊缝不低于二级焊缝，角焊缝及不要求熔透的T形接头焊缝均为三级，但外观质量应符合二级。

QUALITY GRADE OF WELD: UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS, QUALITY GRADE OF BUTT WELDING AND PENETRATION WELDING OF STEEL MEMBERS SHALL BE NOT LOWER THAN GRADE II, AND THE T-SHAPED BUTT WELDING WITHOUT PENETRATION REQUIREMENT AND FILLET WELDING SHALL BE OF GRADE III. THE APPEARANCE QUALITY SHOULD BE OF GRADE II.

8.2.7 未注明的构件连接，采用直角角焊缝，焊缝高度不小于6MM，长度为满焊。

ORTHOGONAL FILLET WELD SHALL BE USED FOR UNSPECIFIED MEMBERS, AND THE THICKNESS OF WELD SEAM SHALL BE NOT LESS THAN 6MM. THESE WELDS SHALL ALL BE OF FULL WELDING.

8.2.8 梁与柱刚性连接时，柱在梁翼缘上下各500MM构范围内，柱翼缘与柱腹板间或箱形柱壁板间的连接焊缝应采用全熔透坡口焊缝。

FOR THE RIGID CONNECTION OF BEAM AND COLUMN, WITHIN THE RANGE OF 500MM ABOVE THE BEAM TOP FLANGE AND BELOW THE BEAM BOTTOM FLANGE, THE CONNECTION WELDS BETWEEN COLUMN FLANGE AND WEB PLATE OR BETWEEN WALL PLATES OF BOX COLUMN SHALL BE WELDED BY COMPLETE PENETRATION GROOVE WELDING PROCESS.

8.3 安装: INSTALLATION:

8.3.1 对于多构件交叉复杂节点，重要安装接头和工地拼装接头，宜在工厂中进行拼装。

AT THE MULTIMEMBER JOINT, THE IMPORTANT ERECTION JOINT AND FIELD ASSEMBLING JOINT SHOULD BE PRE-ASSEMBLED IN THE FACTORY.

8.3.2 柱子安装时，第二节柱子的定位轴线不应使用下根柱子的定位轴线，应将地面控制轴线引到高空，以保证每节柱子安装正确无误。

IN ORDER TO ENSURE THAT EACH SECTION OF THE COLUMN IS CORRECTLY ERECTED, GROUND CONTROL AXIS SHALL BE LED TO HIGH-ALTITUDE AS THE POSITIONING AXIS DURING COLUMN INSTALLATION, AND THE POSITIONING AXIS OF THE SECOND SECTION OF COLUMN SHALL NOT BE TAKEN AS THE POSITIONING AXIS FOR THE NEXT.

8.3.3 钢框架梁及次梁详图中，指定部位所设抗剪钉(见平面中组合楼板剖面图)，必须在浇筑混凝土前施焊，并需认真进行质量检查，不合格者补焊。

IN THE DETAIL DRAWING OF STEEL FRAME BEAM AND SECONDARY BEAM, SHEARNAIL LOCATED IN SPECIAL POSITION (SEE COMPOSITE FLOOR SECTION) SHALL BE WELDED BEFORE CONCRETE CASTING, AND AFTER THE QUALITY INSPECTION, UNQUALIFIED SHEARNAIL SHOULD BE REPAIRED WELD.

8.3.4 在安装钢柱前应检查柱脚螺栓之间的尺寸，露出基础顶面的尺寸和基础顶标高是否符合设计要求，同时注意柱脚螺栓的螺线是否有损伤。

8.3.4 BEFORE STEEL COLUMN INSTALLATION, THE DIMENSIONS AMONG ANCHOR BOLTS FOR COLUMN BASE, SIZE OF ANCHOR BOLT OVER TOP SURFACE OF FOUNDATION, TOP ELEVATION OF FOUNDATION AND SCREW THREAD OF ANCHOR BOLT FOR COLUMN BASE SHALL BE CHECKED BASED ON THE DESIGN REQUIREMENT.

8.3.5 钢柱柱脚螺栓埋设误差要求：每一柱脚螺栓之埋设误差小于2MM。

REQUIREMENTS ON EMBEDDING ERRORS OF STEEL COLUMN BOLTS: THE EMBEDDING ERROR OF BOLTS FOR EACH COLUMN SHALL BE LESS THAN 2MM.

8.3.6 钢结构施工时，宜设置可靠的支护体系，保证结构在各种荷载作用之下结构的稳定性和安全性。

DURING CONSTRUCTION, STEEL STRUCTURES SHALL BE PROVIDED WITH RELIABLE SUPPORTING SYSTEMS TO GUARANTEE THEIR STABILITY AND SAFETY UNDER VARIOUS LOADS.

8.3.7 钢构件在运输吊装过程中应采取措施以防止过大变形和失稳。

DURING TRANSPORTATION AND HOISTING OF STEEL MEMBERS, EFFECTIVE METHODS SHALL BE TAKEN TO PREVENT MEMBERS FROM EXCESSIVE DEFORMATION AND INSTABILITY.

8.3.8 钢结构主体与围护结构的连接方式为螺栓连接，檩条与钢板托的连接和檩条与拉条的连接应采用螺栓连接，不应采用焊接连接。压型钢板、夹芯板等于檩条、墙梁及钢支架的连接主要采用自攻螺钉连接，板与板的连接主要用干拉铆钉连接，具体要求见《压型钢板、夹芯板屋面及墙体建筑构造》(01J925-1)。

MAIN BODY OF STEEL STRUCTURE AND BUILDING ENCLOSURE, PURLINS AND SUPPORT OF STEEL PLATE, AS WELL AS PURLINS AND BRACE SHALL BE CONNECTED BY BOLTS INSTEAD OF WELDING. PROFILED STEEL PLATE, SANDWICH PANEL, ETC. SHALL BE MAINLY BOLTED WITH PURLINS, GIRL AND STEEL SUPPORT BY SELF-TAPPING SCREWS, AND RIVETS SHALL BE USED FOR THE CONNECTION BETWEEN PLATES. MORE DETAILS ARE SHOWN IN THE SPECIFICATION OF PROFILED STEEL SHEET, SANDWICH PANEL ROOF AND WALL BUILDING CONSTRUCTION (01J925-1).

9. 钢构件防火要求 FIRE-PROTECTION REQUIREMENT ON STEEL MEMBERS

钢构件防火要求见建筑设计施工图。

SEE WORKING DRAWING OF BUILDING SPECIALTY FOR FIRE-PROTECTION REQUIREMENTS.

10. 钢构件涂装 PAINTING OF STEEL MEMBERS

10.1 所有构件涂漆前均应严格进行金属表面除锈处理，除锈等级要求达到国家标准《涂装前钢材表面锈蚀等级和除锈等级》(GB8923)中的Sa2.5等级，涂漆后的漆膜外观应均匀、平整、丰满而有光泽，不允许有咬底、裂纹、剥落、针孔等缺陷。涂层厚度用磁性测厚仪测定，总厚度应达到设计要求。手工除锈等级要求达到国家标准《涂装前钢材表面锈蚀等级和除锈等级》(GB8923)中的ST3等级。

ALL CONSTRUCTIONAL ELEMENTS SHALL BE SUBJECTED TO DERUSTING TREATMENT ON METAL SURFACE BEFORE PAINTING, WITH DERUSTING GRADE MEETING GRADE Sa2 REQUIREMENTS UNDER THE NATIONAL STANDARD OF RUST GRADES AND PREPARATION GRADES OF STEEL SURFACES BEFORE APPLICATION OF PAINTS AND RELATED PRODUCTS (GB8923). AFTER PAINTING, THE PAINT FILM SHOULD BE UNIFORM, SMOOTH, FULL AND GLOSSY WITHOUT SUCH DEFECTS AS LIFTING, CRACK, EXFOLIATION AND PINHOLE, ETC. IN ORDER TO MEET DESIGN REQUIREMENT ON TOTAL THICKNESS, THICKNESS OF COATING LAYER SHALL BE MEASURED BY MAGNETIC THICKNESS TESTER. FOR MANUAL DERUSTING, REQUIREMENTS OF DERUSTING GRADE ST3 SPECIFIED IN NATIONAL STANDARD OF RUST GRADES AND PREPARATION GRADES OF STEEL SURFACES BEFORE APPLICATION OF PAINTS AND RELATED PRODUCTS (GB8923) SHOULD BE MET.

10.2 钢构件出厂前不需要涂漆部位：

THE FOLLOWING PARTS DON'T NEED TO BE PAINTED BEFORE STEEL MEMBERS ARE DELIVERED OUT OF THE FACTORY:

高强度螺栓节点摩擦面；地脚螺栓和底板；工地焊接部位及两侧100MM以内，且要满足超声波探伤要求的范围，但工地焊接部位及两侧应进行不影响焊接的防锈处理。

THE FRICTION SURFACES OF HIGH-STRENGTH BOLTED CONNECTION; ANCHOR BOLT AND BASE PLATE; SITE WELDING PART AND 100MM WITHIN ITS BOTH SIDES WHICH SHOULD MEET THE SCOPE REQUIREMENT OF ULTRASONIC INSPECTION, BUT SITE WELDED PARTS AND THEIR BOTH SIDES SHOULD BE PROVIDED WITH ANTI-RUST TREATMENT WHICH WILL NOT AFFECT WELDING.

10.3 构件安装后须补涂漆部位：

PARTS TO BE PAINTED AFTER INSTALLATION OF STRUCTURAL PARTS:

高强度螺栓未涂漆部分、工地焊接区和经碰撞脱落的工厂油漆部分均补涂防锈漆二道。

THE UNPAINTED PART OF THE HIGH-STRENGTH BOLT, SITE WELDING PART, AND PAINT FALLING-OFF PART DUE TO COLLISION SHALL BE COATED WITH TWO LAYERS OF ANTI-RUST PRIMER.

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中钢(杭州)供应有限公司30000t/d气态高炉渣炉 PT. BORNEO ALUMINDO PRIMA 30000t/d CALCINER				工程编号 Proj. No. 19-CITZ-04			
审核/审定 Approved	30000t/d焙烧炉 30000t/d CALCINER			设计阶段 Phase	详细设计 DETAIL DESIGN		
	结构施工图设计总说明(四) GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (4)			专业 Specialty	结构 STRUCTURE		
校 对 Checked				制图比例 Scale	1:100		
图 号 Dwg. No.	KD19CTZ04-01ST1-0104			图 号 Dwg. No.		图 号 Dwg. No.	

结构施工图设计总说明(五)
GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (5)

10.4 构件制作完后涂装 COATING AFTER FABRICATION

10.4.1 涂装要求: 钢梯、钢栏杆、预埋件、次要钢构件采用手工及动力工具除锈方法, 除锈等级为St2.0, 防腐涂层: 环氧富锌底漆2遍, 涂层厚度 $60\mu\text{m}$; 聚氨酯面漆3遍, 涂层厚度 $100\mu\text{m}$, 干膜总厚度不小于 $160\mu\text{m}$; 主钢构件表面均应进行喷覆石英砂除锈处理, 不得用手工除锈代替, 除锈等级为Sa2.5, 防腐涂层: 环氧富锌底漆2遍, 涂层厚度 $70\mu\text{m}$; 环氧云铁中间漆1遍, 涂层厚度 $70\mu\text{m}$; 聚氨酯面漆3遍, 涂层厚度 $100\mu\text{m}$, 干膜总厚度不小于 $240\mu\text{m}$; 面漆颜色由甲方确定为天蓝色RAL 5015, 涂装后的漆膜外观应均匀, 平整, 丰满而有光泽, 不允许有咬底、裂纹、剥落、针孔等缺陷。涂层厚度用磁性测厚仪测定, 总厚度应达到设计要求。
COATING REQUIREMENTS: STEEL LADDER, STEEL RAILING, EMBEDDED PARTS AND SECONDARY STEEL COMPONENTS SHALL BE DERUSTED BY HAND AND POWER TOOLS. THE DERUSTING GRADE SHALL BE ST2.0. ANTI-CORROSION COATING: EPOXY ZINC-RICH PRIMER TWICE, COATING THICKNESS $60\mu\text{m}$; THE COATING THICKNESS IS $100\mu\text{m}$, AND THE TOTAL THICKNESS OF THE DRY FILM IS NOT LESS THAN $160\mu\text{m}$. THE SURFACE OF THE MAIN STEEL STRUCTURE MEMBERS SHALL BE SPRAYED WITH HARD QUARTZ SAND FOR RUST REMOVAL, AND SHALL NOT BE REPLACED BY MANUAL RUST REMOVAL. THE RUST REMOVAL GRADE SHALL BE STA2.5. THE ANTI-CORROSION COATING SHALL BE EPOXY ZN-RICH PRIMER TWICE, AND THE COATING THICKNESS SHALL BE $70\mu\text{m}$. EPOXY CLOUD IRON INTERMEDIATE PAINT ONCE, COATING THICKNESS $70\mu\text{m}$; THE COATING THICKNESS IS $100\mu\text{m}$, AND THE TOTAL THICKNESS OF THE DRY FILM IS NOT LESS THAN $240\mu\text{m}$. THE COLOR OF THE TOP PAINT SHALL BE CERULEAN RAL 5015 AS DETERMINED BY PARTY A. THE APPEARANCE OF THE PAINT FILM AFTER PAINTING SHALL BE UNIFORM, SMOOTH, FULL AND SHINY, WITHOUT ANY DEFECTS SUCH AS BOTTOM BITING, CRACKS, PEELING OR PINHOLES. THE COATING THICKNESS IS MEASURED BY MAGNETIC THICKNESS GAUGE, AND THE TOTAL THICKNESS SHOULD MEET THE DESIGN REQUIREMENTS.

11 其他事项(OTHERS)

11.1 框架柱施工缝位置宜设置在框架梁顶面, 当施工缝必须设置在框架梁底时, 应采取可靠措施, 保证框架节点施工质量满足设计要求。
THE POSITION OF THE FRAME COLUMN CONSTRUCTION JOINT SHALL BE SET AT THE TOP OF THE FRAME BEAM. WHEN THE CONSTRUCTION JOINT MUST BE SET AT THE BOTTOM OF FRAME BEAM, RELIABLE MEASURES MUST BE TAKEN TO GUARANTEE THE CONSTRUCTION QUALITY OF FRAME JOINT IN COMPLIANCE REQUIREMENTS.
11.2 基坑开挖前, 应由有相应资质的单位进行基坑支护设计, 确保支护结构安全和相邻原有建筑的安全。
BEFORE FOUNDATION PIT EXCAVATION, FOUNDATION PIT RETAINING AND PROTECTION DESIGN SHOULD BE COMPLETED BY THE INSTITUTE THAT HAS CORRESPONDING QUALIFICATIONS TO ENSURE THE SAFETY OF RETAINING AND PROTECTION STRUCTURES AND EXISTING ADJACENT BUILDINGS.
11.3 地下室施工期间, 应对地下水水位变化和降水对周边环境的影响进行监测, 确保地下室不发生上浮质量问题。
DURING THE CONSTRUCTION OF BASEMENT, THE EFFECT OF GROUNDWATER LEVEL CHANGE AND RAINFALL ON SURROUNDING ENVIRONMENT SHALL BE MONITORED TO ENSURE THAT THE PROBLEM OF FLOATING DOES NOT OCCUR TO THE BASEMENT.
11.4 本设计为钢结构设计施工图, 施工前应根据本设计图纸编制钢结构制作详图。采用标准图或通用图时, 均应按所用图集要求进行施工。

THE DESIGN IS THE WORKING DRAWING DESIGN FOR STEEL STRUCTURE, AS PER WHICH DETAIL DRAWINGS FOR MANUFACTURING OF THE STEEL STRUCTURES SHALL BE PREPARED. SHOULD STANDARD OR TYPICAL DRAWINGS ARE IN USE, CONSTRUCTION SHOULD BE PROCEEDED ACCORDING TO CORRESPONDING ATLAS.

11.5 在施工安装过程中, 应采取有效措施保证结构的稳定性, 确保施工安全。
EFFECTIVE MEASURES SHOULD BE TAKEN DURING CONSTRUCTION AND ERECTION TO ENSURE A STABLE STRUCTURE AND A SAFE CONSTRUCTION.

12 施工及施工安全 CONSTRUCTION AND CONSTRUCTION SAFETY

12.1 电梯订货应符合图纸的要求, 预留孔洞及预埋件应符合样本的要求且事先预留。预埋, 电梯井道四壁墙应保持垂直, 井道净尺寸误差按铅垂线所示尺寸在 $\pm 25\text{MM}$ 以内, 前墙按铅锤 1MM 以内, 其余尺寸误差均须在 $\pm 25\text{MM}$ 以内。
THE ELEVATOR ORDERED SHOULD MEET THE REQUIREMENTS OF THE DRAWINGS. RESERVED HOLES AND EMBEDDED PARTS SHOULD MEET THE REQUIREMENTS OF THE MANUALS AND BE RESERVED AND EMBEDDED IN ADVANCE. THE FOUR WALLS OF THE ELEVATOR HOISTWAY SHOULD BE KEPT VERTICAL. THE CLEAR DIMENSION TOLERANCE OF THE HOISTWAY SHOULD BE CONTROLLED WITHIN $\pm 25\text{MM}$ ACCORDING TO THE DIMENSION SHOWN BY THE PLUMB LINE. THE CLEAR DIMENSION OF FRONT WALLS SHOULD BE CONTROLLED WITHIN 13MM ACCORDING TO THE DIMENSION SHOWN BY THE PLUMB LINE. OTHER TOLERANCES SHOULD BE CONTROLLED WITHIN $\pm 25\text{MM}$.

12.2 设备基础必须待设备到货后, 经校对尺寸无误后方可施工, 大型设备吊装就位应与结构施工密切配合。
THE CONSTRUCTION OF EQUIPMENT FOUNDATION SHALL NOT BE STARTED UNTIL THE EQUIPMENT HAS ARRIVED THE SITE AND THE DIMENSIONS HAVE BEEN CHECKED TO BE CORRECT. THE LIFTING AND POSITIONING OF HEAVY DUTY EQUIPMENT SHALL BE IN CLOSE COORDINATION WITH THE STRUCTURE CONSTRUCTION.

12.3 悬挑构件须混凝土设计强度达到100%方可拆除底模。
THE BOTTOM FORMWORK SHALL NOT BE REMOVED UNTIL CANTILEVER MEMBERS REACH 100% OF THE DESIGN STRENGTH.
12.6.4 施工期间不得超负荷堆放建材和施工垃圾, 特别注意梁板上集中荷载时对结构受力和变形的不利影响。
BUILDING MATERIALS AND CONSTRUCTION WASTES SHALL NOT BE STACKED EXCESSIVELY DURING CONSTRUCTION. SPECIAL ATTENTIONS SHALL BE PAID TO THE ADVERSE EFFECT OF STRUCTURE STRESS AND DEFORMATION CAUSED BY CONCENTRATED LOAD ON THE BEAM AND SLAB.
12.5 施工中采用附着塔、爬塔等对结构受力有影响的起重机械或其他施工设备时, 应根据具体情况核算施工荷载对结构的影响。
AND OTHER CONSTRUCTION EQUIPMENT THAT MAY HAVE INFLUENCE ON STRUCTURE STRESS ARE SELECTED DURING THE CONSTRUCTION, THE INFLUENCE FROM THE CONSTRUCTION LOADS ON THE STRUCTURE SHALL BE CHECKED AS PER THE SPECIFIC CONDITIONS.
12.6 结构总说明与单项设计不一致时以单项设计规定为准。
WHEN THE GENERAL NOTES OF STRUCTURAL DESIGN IS INCONSISTENT FROM THE DESIGN OF INDIVIDUAL ITEM, THE DESIGN SHALL BE BASED ON DESIGN SPECIFICATION OF INDIVIDUAL ITEMS.

12.7 在设计使用年限内未经技术鉴定或设计许可, 不得改变结构的用途和使用环境。
WITHIN DESIGNED SERVICE LIFE, THE USE AND WORKING ENVIRONMENT OF STRUCTURE SHOULD NOT BE CHANGED WITHOUT TECHNICAL APPRAISAL OR DESIGN APPROVAL.
12.8 施工验收规范和规程如表12.8所示
THE CONSTRUCTION ACCEPTANCE REGULATION AND SPECIFICATION ARE SHOWN IN TABLE 12.8.

序号NO.	名称 CODE NAME	标准号 CODE NO.
1	《混凝土结构工程施工质量验收规范》"CODE FOR ACCEPTANCE OF CONSTRUCTIONAL QUALITY OF CONCRETE STRUCTURES"	GB 50204-2015
2	《建筑地基工程施工质量验收标准》"STANDARD FOR ACCEPTANCE OF CONSTRUCTIONAL QUALITY OF BUILDING FOUNDATION"	GB 50202-2018
3	《砌体工程施工质量验收规范》"CODE FOR ACCEPTANCE OF CONSTRUCTIONAL QUALITY OF MASONRY STRUCTURES"	GB 50203-2011
4	《建筑防腐工程施工质量验收规范》"CODE FOR ACCEPTANCE OF CONSTRUCTIONAL QUALITY OF ANTICORROSIVE ENGINEERING OF BUILDINGS"	GB 50224-2018
5	《钢筋焊接及验收规程》"SPECIFICATION FOR WELDING AND ACCEPTANCE OF REINFORCING STEEL BARS"	JGJ18-2012
6	《钢筋机械连接技术规程》"TECHNICAL SPECIFICATION FOR MECHANICAL SPLICING OF STEEL REINFORCING BARS"	JGJ 107-2010

12.9 标准图集如表12.9所示 STANDARD ATLAS AS SHOWN IN TABLE 12.9
表12.9 (TAB.12.9):

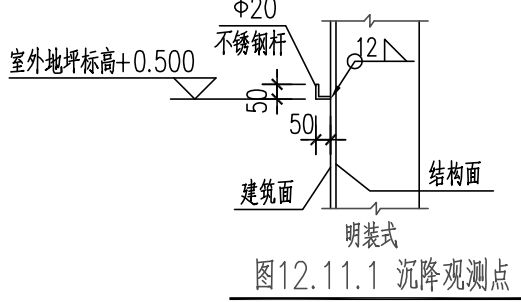
序号NO.	名称 STANDARD ATLAS NAME	图集号ATLAS NO.
1	混凝土结构施工图平面整体表示图平面整体表示方法制图规则和构造详图 "RULES FOR PLANAR OVERALL REPRESENTATION OF WORKING DRAWINGS OF RC STRUCTURE"	22G101-1
2	现浇混凝土板式楼梯 CAST-IN-SITU RC SLAB STAIR	22G101-2
3	独立基础、条形基础、筏形基础及桩基承台 INDEPENDENT FOUNDATION STRIP FOUNDATION RAFT FOUNDATION, PILE CAP	22G101-3
4	混凝土结构施工钢筋排布规则与构造详图 "REINFORCEMENT CONFIGURATION RULES OF RC STRUCTURE"	18G901-1
5	现浇混凝土板式楼梯 CAST-IN-SITU RC SLAB STAIR	18G901-2
6	独立基础、条形基础、筏形基础、桩基承台 INDEPENDENT FOUNDATION STRIP FOUNDATION, PILE CAP	18G901-3

12.10 施工单位的“加工详图”及“施工组织设计”应在施工前报设计单位批准或审批。
"DETAIL FABRICATION DRAWING" AND "CONSTRUCTION ORGANIZATION PLAN" OF THE CONSTRUCTION COMPANY SHALL BE CHECKED OR APPROVED BY THE DESIGN INSTITUTE BEFORE CONSTRUCTION.

12.11 建筑物运行与维护要求
REQUIREMENTS OF BUILDING OPERATION AND MAINTENANCE
12.11.1 定期沉降观测
REGULAR SETTLEMENT OBSERVATION

1) 应进行沉降观测, 沉降观测应按相应的规范标准执行。沉降观测应由有相应资质的单位承担, 施工阶段应专人定期观测, 每施

工一层做一次沉降观测, 施工完后一年内每隔三至六个月观测一次, 以后每隔六至十二个月观测一次, 直至沉降稳定为止, 沉降观测点的埋设如图12.11.1所示;
SETTLEMENT OBSERVATION SHOULD BE CARRIED OUT ACCORDING TO CORRESPONDING CODES AND STANDARDS. SETTLEMENT OBSERVATION SHALL BE COMPLETED BY THE ORGANIZATION WITH CORRESPONDING QUALIFICATIONS. SPECIALLY-ASSIGNED PERSON SHALL BE ARRANGED TO OBSERVE REGULARLY DURING CONSTRUCTION. UPON THE COMPLETION OF EACH FLOOR ONE SETTLEMENT OBSERVATION SHALL BE ONE SETTLEMENT OBSERVATION SHALL BE CARRIED OUT. WITHIN ONE YEAR AFTER THE COMPLETION OF CONSTRUCTION, THE OBSERVATION SHALL BE CARRIED OUT ONCE EVERY 3 TO 6 MONTHS. AFTER THAT, THE OBSERVATION SHALL BE CARRIED OUT ONCE EVERY 6 TO 12 MONTHS TILL THE SETTLING BECOMES STABLE. THE OBSERVATION POINTS ARE SET AS SHOWN IN FIGURE 12.7.1-1;



12.11.2 主体结构运行要求 OPERATION REQUIREMENTS OF MAIN STRUCTURES
1) 不得利用主体结构搭建附属建筑物, 不得在建筑物周围挖取土和其他影响建筑物寿命安全的行为;
MAIN STRUCTURES ARE NOT ALLOWED TO BE USED TO CONSTRUCT AUXILIARY BUILDINGS. SOIL EXCAVATION AROUND THE BUILDING OR ANY OTHER ACTIONS THAT MAY AFFECT THE BUILDING'S SERVICE LIFE AND SAFETY ARE NOT ALLOWED.
2) 未经设计单位同意, 不得擅自凿墙、开洞及改变既有建筑使用功能;
WITHOUT APPROVAL OF THE DESIGN INSTITUTE, CHISELING ON WALLS AND HOLE MAKING OR ANY OTHER ACTION THAT MAY CHANGE THE USAGE FUNCTION OF EXISTING BUILDINGS ARE PROHIBITED.
3) 严禁利用厂房建筑物的屋架梁柱、支撑等构件悬挂沉重物品、安装动力设备, 不得在顶棚内或屋面上堆放杂物。
IT IS STRICTLY FORBIDDEN TO USE ROOF TRUSS BEAMS, COLUMNS, BRACES AND OTHER MEMBERS OF THE WORKSHOP BUILDING FOR HANGING HEAVY OBJECTS AND INSTALLING POWER EQUIPMENT. ANY STACKING IN THE CEILING OR ON THE ROOF IS PROHIBITED.

12.11.3 钢结构部分后期维护要求 LATER MAINTENANCE REQUIREMENT OF STEEL STRUCTURES
1) 每年常规巡检次数 ≥ 1 次, 及时处理隐患;
REGULAR PATROL INSPECTION PER YEAR SHALL NOT BE LESS THAN ONCE TO ELIMINATE ANY HIDDEN DANGER.
2) 钢结构部分每年清洁保养次数 ≥ 2 次, 每3年油漆保养次数 ≥ 1 次。
FOR STEEL STRUCTURES, CLEANING AND MAINTENANCE SHALL NOT BE LESS THAN TWICE PER YEAR, AND PAINTING MAINTENANCE SHALL NOT BE LESS THAN ONCE EVERY 3 YEARS.

12.11.4 墙体维护 WALL MAINTENANCE
1) 墙体及部件使用年限少于主体结构, 应制定更换、维护方案及实施细则;
WHEN SERVICE LIFE OF WALLS AND MEMBERS IS LESS THAN THE SERVICE LIFE OF THE MAIN STRUCTURE, REPLACEMENT PLAN, MAINTENANCE PLAN AND IMPLEMENTATION RULES SHALL BE MADE.
2) 应定期检查建筑物周边及室内的排水设施。
WATER DRAINAGE FACILITIES AROUND BUILDINGS AND INSIDE THE ROOMS SHALL BE INSPECTED PERIODICALLY.

表一 TABLE I

常用型钢的表示方法 EXPRESSION OF GENERAL PROFILED STEELS			螺栓的表示方法 BOLTS EXPRESSION
H型钢 H PROFILED STEEL	HWxx 为热轧宽翼缘H型钢 HWXX MEANS HOT ROLLED H STEEL WITH WIDE FLANGE	普通焊接工字钢 H STEEL FOR GENERAL WELDING H hxbxwt	高强度螺栓 HIGH STRENGTH BOLT
	HMxx 为热轧中翼缘H型钢 HMXX MEANS HOT ROLLED H STEEL WITH MEDIUM FLANGE		永久螺栓 PERMANENT BOLT
	HNxx 为热轧窄翼缘H型钢 HNXX MEANS HOT ROLLED H STEEL WITH NARROW FLANGE		安装螺栓 BOLT FOR ERECTION

表二 焊接标准图 FIGURE 2 STANDARD WELDING DRAWING

角焊缝连接 FILLET WELD CONNECTION	角焊缝连接 FILLET WELD CONNECTION	双边斜角全熔透坡口焊 DOUBLE-BEVEL COMPLETE PENETRATION GROOVE WELD
单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	双边斜角全熔透坡口焊 DOUBLE-BEVEL COMPLETE PENETRATION GROOVE WELD
单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD
单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD	单边斜角全熔透坡口焊 SINGLE-BEVEL COMPLETE PENETRATION GROOVE WELD

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审核/审定 Approved 校对 Checked 制图 Drawn				工程编号 Proj. No.		19-CTZ-04
				设计阶段 Phase		详细设计 DETAIL DESIGN
				专业 Specialty		结构 STRUCTURE
				图纸比例 Scale		1:100
				图例 Legend		3000/d 气态悬浮焙烧炉 PT. BORNEO ALUMINDO PRIMA 3000kg CALCINER
图号 Dwg. No.				KD19CTZ04-01ST1-0105		
图名 Title				结构施工图设计总说明 (五) GENERAL NOTES OF STRUCTURAL CONSTRUCTION DRAWING (5)		