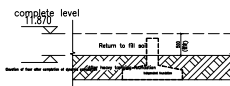


Schematic diagram of ground treatment area

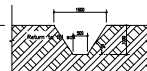
The area of dynamic compaction is about 1000 square meters



1. Deviation: strong remaining click energy is about 1000J/m², using 10 tons of rammer (round) distance 8m, 12000. The use of the energy full remaining batic, rammer hammer print overlapped 1/3 hammer.

2. Composition coefficient of cushion soil after dynamic compaction should be greater than 0.90.

3. Complete construction and position of dynamic compaction reference 86, Technical specification for dynamic compaction foundation treatment 8 10, (GB50202-2002)

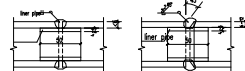


Schematic diagram of vibration table data

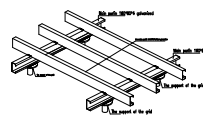
General description of the network frame design

- Design basis
 - Technical conditions provided by the construction, technology, equipment and other related majors of the project.
 - The structural design service life of the project is 50 years, and the safety grade of the building structure is Grade II.
 - The building fire resistance rating is Grade II. Grid member is 1.5h, and roof load-bearing member is 1h.
 - The seismic fortification intensity is 6 degrees, the designed basic seismic acceleration is 0.15g, and the maximum horizontal seismic impact coefficient is 0.04. The design seismic group is the first group. The site category is Class II.
 - The basic wind pressure value with a design reference period of 50 years is 0.40 / m². The ground roughness is Class B.
 - Load standard value
 - (1) Constant roof load: upper string (excluding dead weight of network frame) 0.50kN / m². Lower string is 1.00kN / m²
 - (2) Roof live load: upper string is 0.50kN / m². The lower string is 1.50kN / m²
 - (3) Snow load: basic snow pressure of 0.45 kN/m²
 - (4) Temperature change: ± 30°
 - (5) The body weight of the network frame rod parts is automatically calculated by the software.
- Structural design specifications and regulations
 - Design Standard for Steel Structure (GB50017—2017)
 - Technical Specification for Structure of Cold-formed Steel (GB50018—2002)
 - Code for Acceptance of Construction Quality of Steel Structure Engineering (GB 50205—2001)
 - Code for Load of Building Structure (GB50009—2012)
 - Code for Seismic Design of Buildings (GB50011—2010) (2016) annual edition
 - High Strength Bolts for Bolt Noodles of Steel Rods (GB / T 16939—2016)
 - Technical Specification for Space Grid Structure (JGJ 7—2010)
 - Bolt Bolt node (JG / T10—2009)
 - Technical Specification for Welding of Building Steel Structure (JGJ81—2011)
 - Technical Specification for High-Strength Bolting Connecting of Steel Structure (JGJ82—2011)
- Project Overview
 - The project adopts the steel mesh frame structure, the support form is the lower string support, the bolt ball node, for the double-layer forward-pull, four-angle cone plane mesh frame. The network frame is supported on the concrete columns on both sides, and the support is hinged with the concrete column head. The design shall specify the use of the structure, and the use and use environment of the structure shall not be changed within the design service life without technical identification or design permission.
 - The network frame structure is calculated and designed using MST2020 software.
 - Four material
 - Steel pipe shall be of Q235B, with welded steel pipe (GB / T 3092) or seamless steel pipe (GB / T 8162).
 - Steel balls adopts steel No.45 forging meeting GB 699 for High Quality Carbon Structural Steel with a yield strength of 360 N/mm²
 - High strength bolts for the network frame use 40Cr with GB / T 16939 of Technical Conditions for High Quality Carbon Structural Steel, the performance of <M36 is 10.9, and the performance of M36 is 9.8.
 - Tube head sealing plate adopts Q235B steel, and cone head adopts forging. Tube inner diameter <M33 is Q235B steel and sleeve diameter > M33 is Q355B
 - Q235B steel forging. For high strength bolts, steel forging 45 for diameter > M30.
 - The fastening screws are 40Cr.
 - The loss, embedded plate, support and its connections are made of Q235B steel.
 - Purfin is of cold bent thin wall steel made of Q235B steel.
 - Ordinary bolts are Class C bolts made of Q235 steel meeting the current national standard, with a performance grade of Class 4.8.
 - The above steel number shall have the quality certificate and reinspection report of the materials, which shall meet the requirements of the current national standards.
 - The welding rod and wire for welding shall meet the requirements of the current national standards. Welding between Q235B steel shall be of E43 series electrodes.
 - The ratio of the measured yield strength of steel and that of tensile strength shall not be greater than 0.85.
 - Steel shall have obvious yield steps and elongation shall not be less than 20%.
 - Steel shall have good welding and qualified impact toughness. The quality standard of Q235B steel shall comply with Carbon Structural Steel (GB700—88), and when Q355B shall comply with GB / T14901 of Low Alloy and High Strength Structural Steel. All steel shall have tensile strength, elongation rate, yield strength, cold bending test and qualified guarantee of carbon, sulfur and phosphorus content. The welded structure shall still have a qualified guarantee of carbon content.
- Production and installation requirements
 - Welding
 - Steel pipe and cone head (sealing plate) are welded with E43 welding strip, with full weld requirements, with no defects such as slag clamp, air hole, no welding penetration. When steel plate and ball, ball shall be preheated 150°~200° before welding.
 - All butt welds shall be inspected according to the secondary welds in GB50205.
 - Welding shall be operated by the professional personnel. The welding person shall pass the examination and obtain the qualification certificate, and hold the certificate within the validity period.

- High strength bolts shall be inspected for hardness and appearance inspection root by root, with no cracks or damage.
- Measures shall be taken during the construction of the embedded parts of the network frame support base to ensure the location, elevation and fitness of the embedded parts.
- Installation method: it is recommended to adopt the overall assembly and overall lifting method (no matter what installation method is adopted, the rod force in the installation process can not appear the internal force value of the situation).
- Installation sequence is: support ball — lower string ball, rod — abdominal bar — upper string ball, rod.
- To ensure the smooth installation of the grid frame, a detailed construction organization design shall be required.
- Grid installation must ensure the stability of the structure without permanent additional deformation.
- See the building drawing for roof drainage slope for details. The network frame adopts structure for slope. The feeding size of grid support and small column shall be determined by the processing unit. Direct welding on the mesh steel balls and rods is not allowed.
- When water, heating, electricity and other professional pipelines and Bridges pass through the network frame, the bolt holes shall be reserved on the steel ball of the network frame node according to the professional direction, as the connection holes of the fixed pipeline, and shall not be fixed on the network frame rod parts. Remove the network frame after the installation.
- Anti-corrosion, fire prevention and maintenance requirements
 - Both ends of all steel pipes shall be closed, and sealing plates shall be set to prevent corrosion in the pipe.
 - The finished components shall be subject to power rust removal to expose the metal color on the steel surface. The rust removal level shall not be less than Sa2.5, and the rust removal quality shall meet the relevant requirements of GB8923.
 - After the steel is rust removal, point two epoxy zinc-rich primer, 60 m epoxy cloud iron intermediate point 70 m, and fire-proof coating. The project fire resistance grade 2, using non-expansion fire prevention coating of 25mm, fire resistance time limit of 1.5h.
 - Fire prevention coating shall have the test report and production license approved by the national testing agency for its fire resistance performance. The quality and construction of the fire protection coatings used shall comply with the requirements of the Technical Code for Fire Protection of Building Steel Structures (GB50205:2008) and the Fire Protection Coatings for Steel Structure (GB14907—2002).
- The structural components shall be maintained regularly. During the design service life of the main structure, the maintenance period of the technically identified and approved steel structure components shall not be greater than the nominal service life of the products used; and the point firm damage of the steel structure components shall be coated in time.
- When maintained around the network frame, it should be connected with the original structure to balance the horizontal force separation.
- seven other
 - Installation of the structure shall conform to the calculation and assumption of the network frame.
 - Maximum calculated deflection of L / 250.
 - Members not covered shall be constructed in accordance with the Technical Regulations for Space Grid Structure (JGJ 7—2010) and relevant national specifications and regulations.
 - The Steel Structure Contractor shall avoid construction at extreme temperatures, with an ideal frame closing temperature of (10 ° to 16 °). It should be constructed by the enterprises with the steel structure special Class A construction qualification.



Bar butt drawing



Schematic diagram of primary and secondary joints