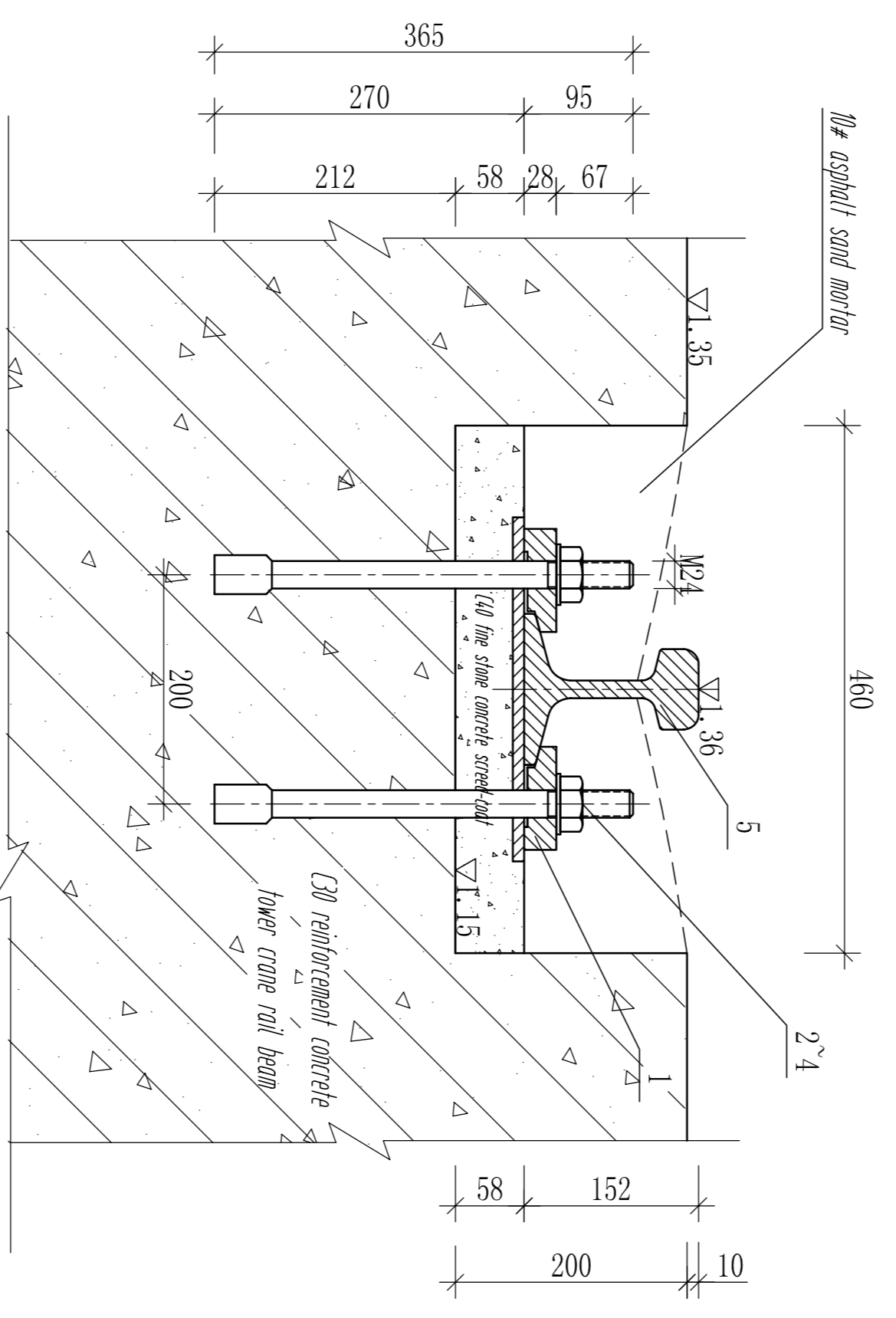
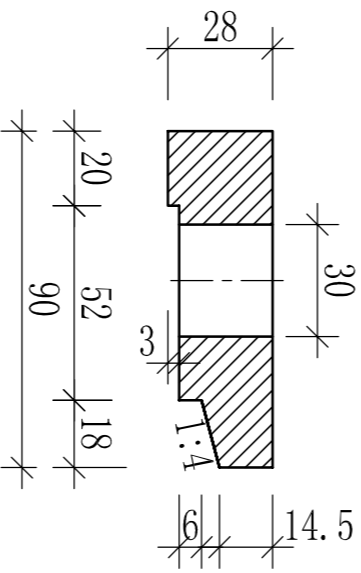
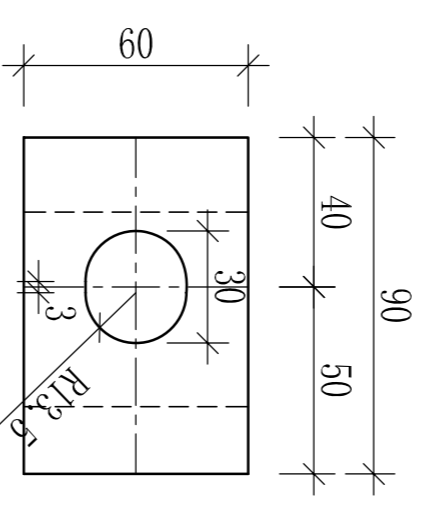


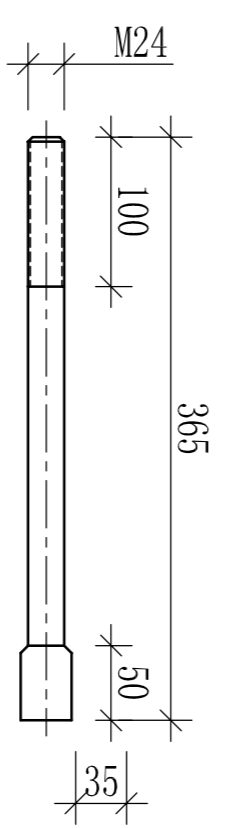
Rail Fastener Lay-out Drawing 1:5



Elevation of Rail Installation 1:5



Fastener 1:2



Screw Bolt Fabrication Diagram 1:5

Material List (Steel rail is measured by 12.5m)

Screw No.	Name	Specification	Material	Quantity	Unit	Unit Weight	Total Weight	Remark
1	fastener	90×60×28	Q235-A	52	fastener	0.8	41.6	12 per the drawing
2	screw bolt	M24 1=365	Q235-A	52	fastener	1.2	62.4	12 per the drawing
3	screw nut	M24		52	fastener	0.1	5.2	outsourcing
4	washer	M24		52	fastener	0.02	1.04	outsourcing
5	steel rail	RS0		12.5	meter	51.314t	641.925	outsourcing
6	steel plate	300×230×10	Q235-A	1	fastener	5.4	5.4	12 per the drawing
7	steel plate	300×90×10	Q235-A	24	fastener	1.9	45.6	12 per the drawing

Note: There are four vehicle bumpers which are fixed up at the end of slipway steel rail.

- Note:**
- Dimensions in drawings are in millimeters unless in drawings are in meters, levels are based on local seal level.
 - The longitudinal spacing of screw bolt is 50mm.
 - The rail installation shall be as per installation Technical Specification of Port Crane Rail JY2022-86.
 - There are two lower crane rails with each 230m long and total length of 460m.
 - After the installation of the rail and frame crane running for a period of time, fastener should be re-tightened heavily, then put in the asphalt sand mortar in rail groove.
 - Location deviation of rail center line shall be equal or lesser than 5mm.
 - Elevation deviation of rail top shall be equal or lesser than 5mm.
 - Spacing deviation of central line between two rails shall be equal or lesser than 5mm.
 - Longitudinal elevation deviation of two rail top shall be equal or lesser than 1000μm gauge.
 - Allowable deviation of joint right-left displacement shall be equal or lesser than 0.5mm, up-down allowable deviation is equal or lesser than 0.5mm, joint spacing 5mm.
 - Allowable deviation of rail joint bending shall be equal or lesser than 1/2000 gauge.
 - Material consumption quantity in the list is measured by steel rail of 12.5m.
 - Exposed steel components anti-rust requirement is to see design description.
 - The rail length shall be adjusted if the rail joint and rail beam section joint overlaps. Rail joint and rail beam section shall be staggered by 50mm. The spacing between fastener central line and rail beam section shall be equal or greater than 20mm. Also, the joint position of two rails shall be staggered with spacing no less than 50mm. Fastener shall be made of rail joint.

Tianjin Port Engineering Design and Consulting Ltd of China Communication Construction Company

Project No.	Project Name	Scale
CPN-06-110	Yan Shui He Terminal Container Crane Relocation Relocation and Repair	1:5
Design No.	Design Name	Design Date
ITC-29	Lower Crane Rail Installation Drawing	2023-09