

GANTRY GIRDER

Gantry girders and crane runway girders are provided in almost all industrial buildings for lifting and transportation of heavy loads. The wheel of crane girder move on rail mounted on gantry girder. The rail should provided a fairly constant span for the movement of crane girder. Its variation should not be more than 10mm on either side.

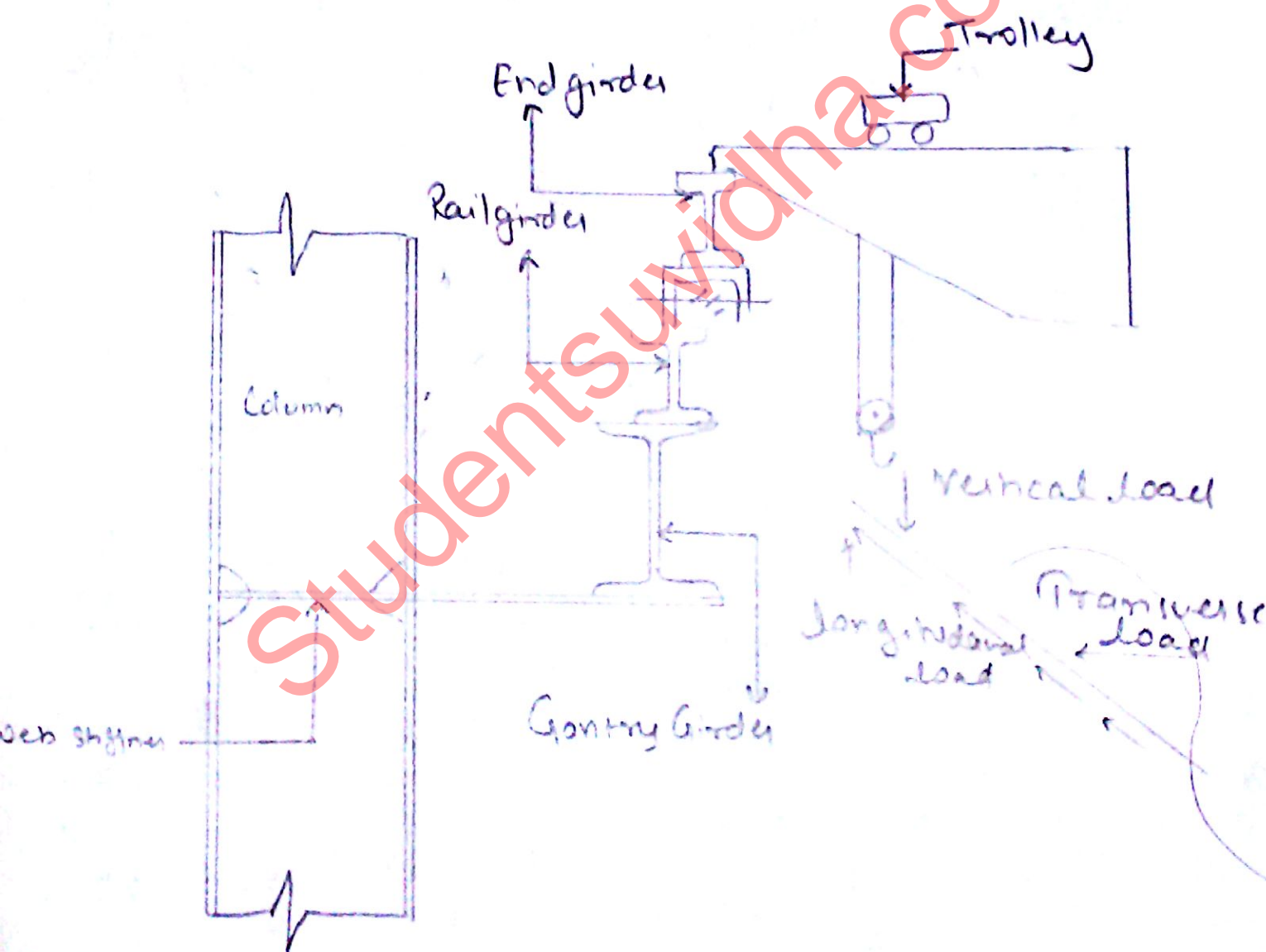


Fig: Arrangement of gantry Girder.

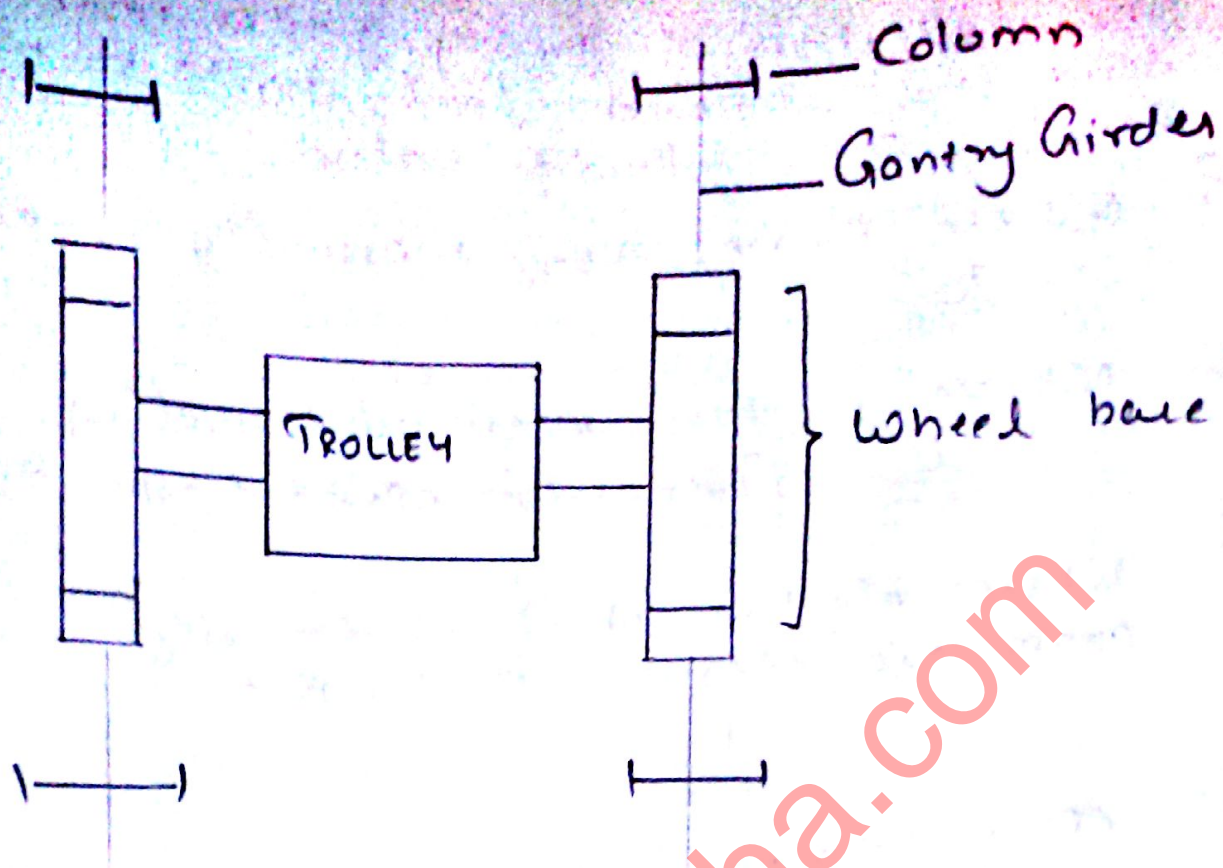


Fig: LINE PLAN

DESIGN CRITERIA

Design criteria of Gantry Girder as follows:

- ① The gantry girder are laterally unsupported except at the column
- ② The gantry girder are subjected to impact and longitudinal loads due to movement and stoppage of cranes
- ③ The gantry girder are subjected to unsymmetrical bending due to lateral thrust.

① The deflection of gantry girder under dead and imposed load should not exceed the following values.

① Where cranes are manually operated
 $\frac{L}{500}$

② Where electric overhead travelling
 $\frac{L}{750}$ [Cranes are operated upto 50t]

③ Where electric overhead travelling
Cranes are operated over 50t
 $\frac{L}{1000}$

④ Other moving loads such as charging Cars
 $\frac{L}{600}$

where L = Span of Crane.

Types of load

① Vertical load

- ① For electric overhead cranes - 25% of max static wheel load
- ② For hand operated cranes - 10% of max static wheel load