

Title of Invention: ONE COLUMN-ONE PILE FOUNDATION
STRUCTURE

Abstract

The present invention provides a one column-one pile foundation structure capable of maintaining its functions without a significant reduction in the resistance force of concrete even if an excessive pull-out force acts. The one column-one pile foundation structure includes, a pile 11, a joining unit 12 provided with a cavity C adapted to contain infilled concrete 14, a column base 13 whose joining area including a base plate 131 is joined to the pile 11 via the infilled concrete 14, and a shear connector 122 installed at a predetermined position in a height direction of the joining unit 12, protruding inward. The shear connector 122 is installed above a position T at which a virtual straight line L extending at an elevation angle of 45° from an end of a base plate 131 in a horizontal direction intersects an inner wall of a unit body 121. Also, if concrete bearing strength of the shear connector 122 is denoted by P_n and fracture strength of the entire infilled concrete 14 against a conical fracture is denoted by P_s , area A_n of the shear connector 122 is formed so as to satisfy $P_n > P_s$.

FIGURE 1