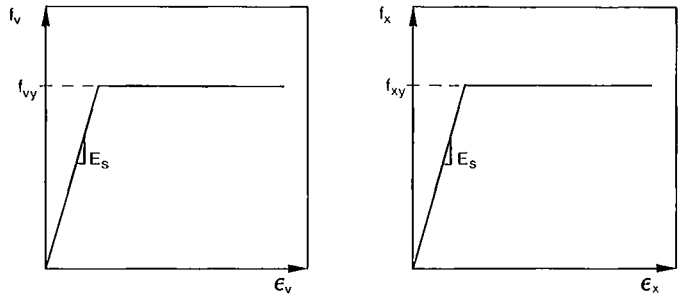
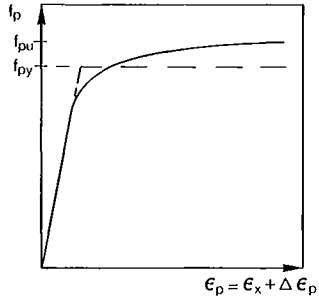


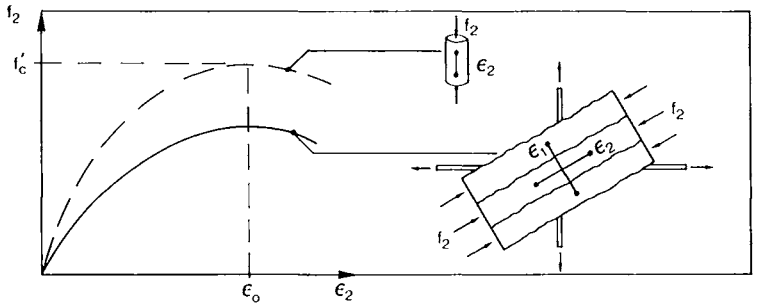
(a) Web Reinforcement

(b) Longitudinal Reinforcing Bars

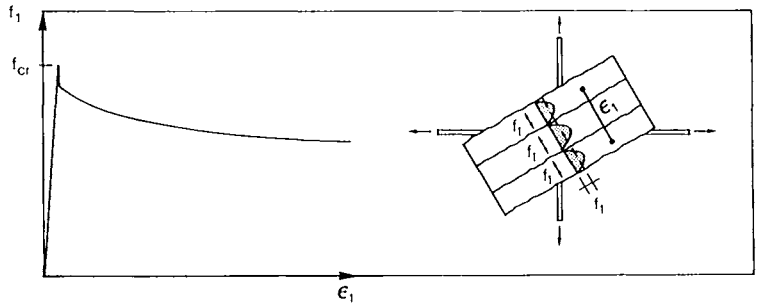


(c) Longitudinal Prestressing Tendons

Fig. 5--Stress-strain relationships for the reinforcement

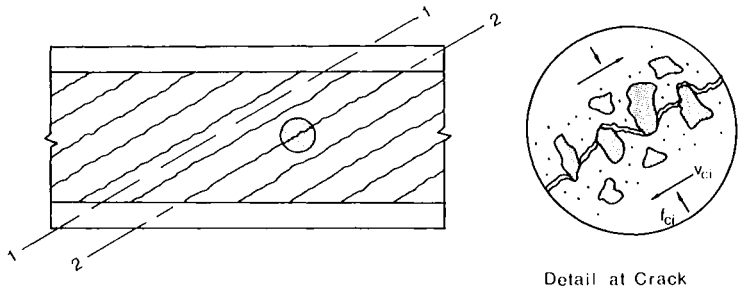


(a) Stress Strain Relationship for Cracked Concrete in Compression



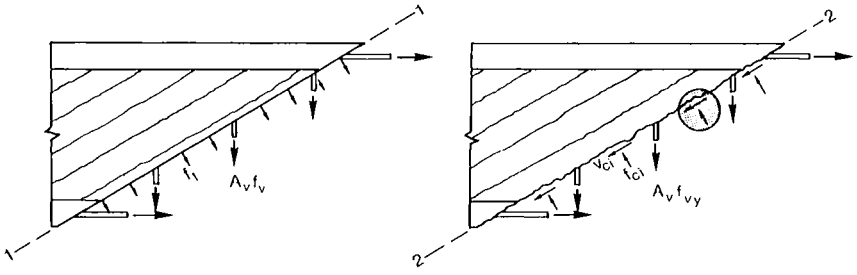
(b) Average Stress Strain Relationship for Cracked Concrete in Tension

Fig. 6--Stress-strain relationships for cracked concrete



Detail at Crack

(a) Beam Loaded in Shear



(b) Calculated Average Stresses

(c) Local Stresses at a Crack

Fig. 7--Transmitting forces across cracks

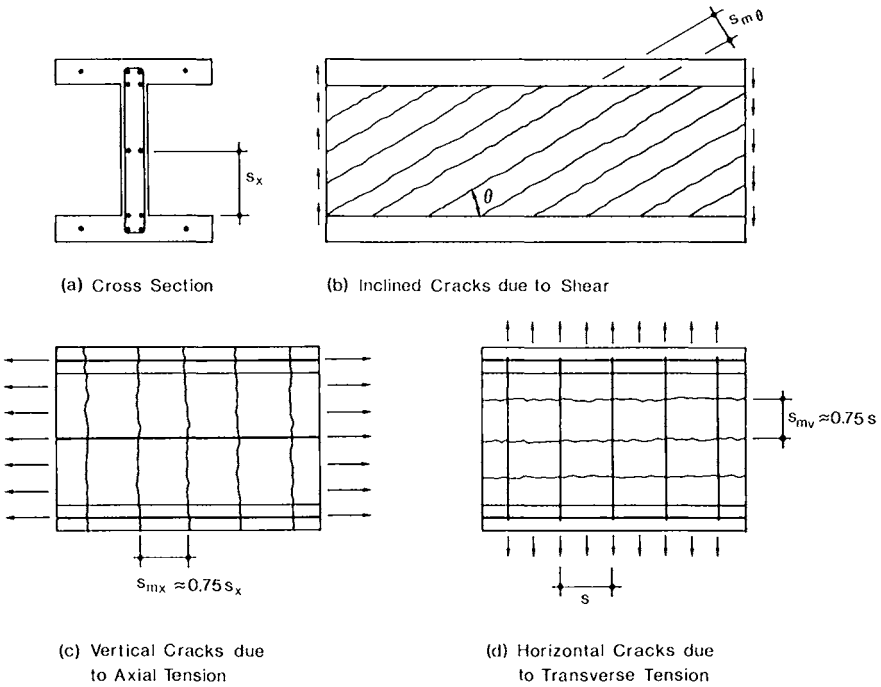


Fig. 8--Spacing of inclined cracks

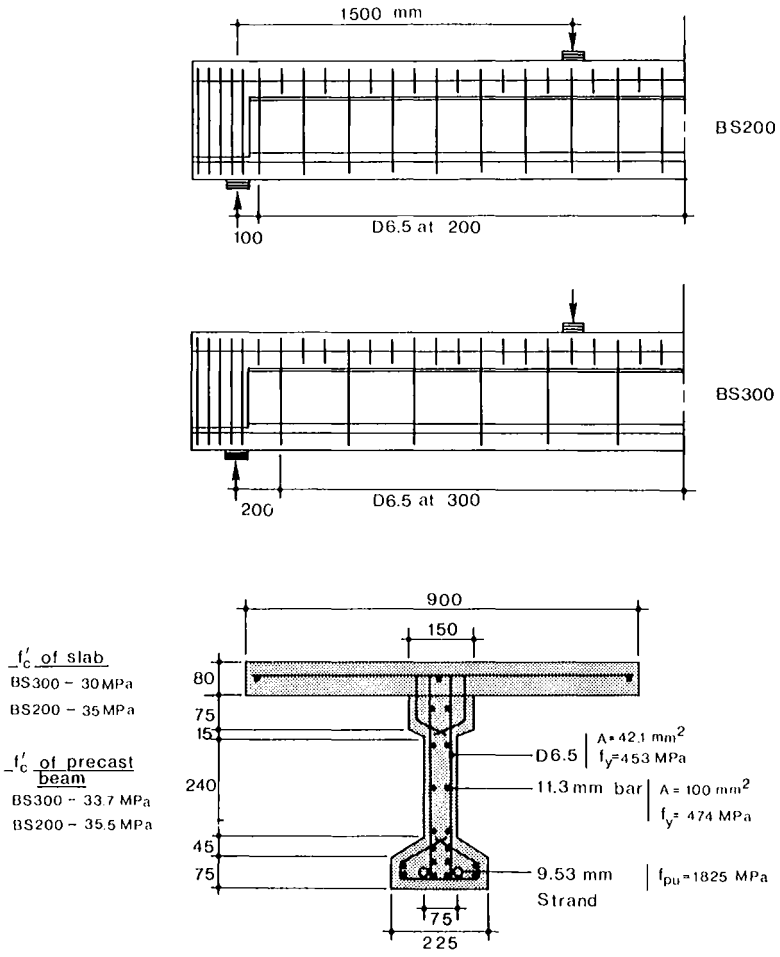


Fig. 9--Details of bridge girders tested

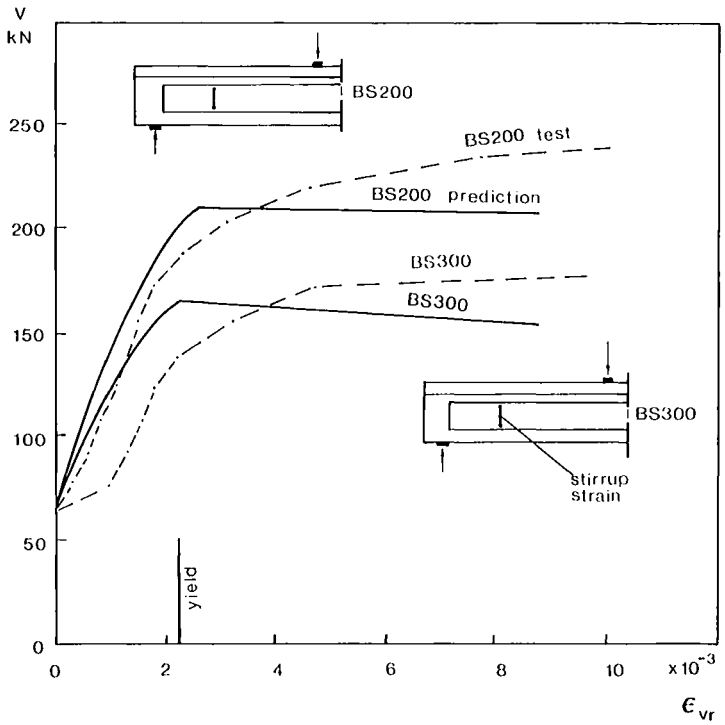


Fig. 10--Comparisons of predicted and measured stirrup strains

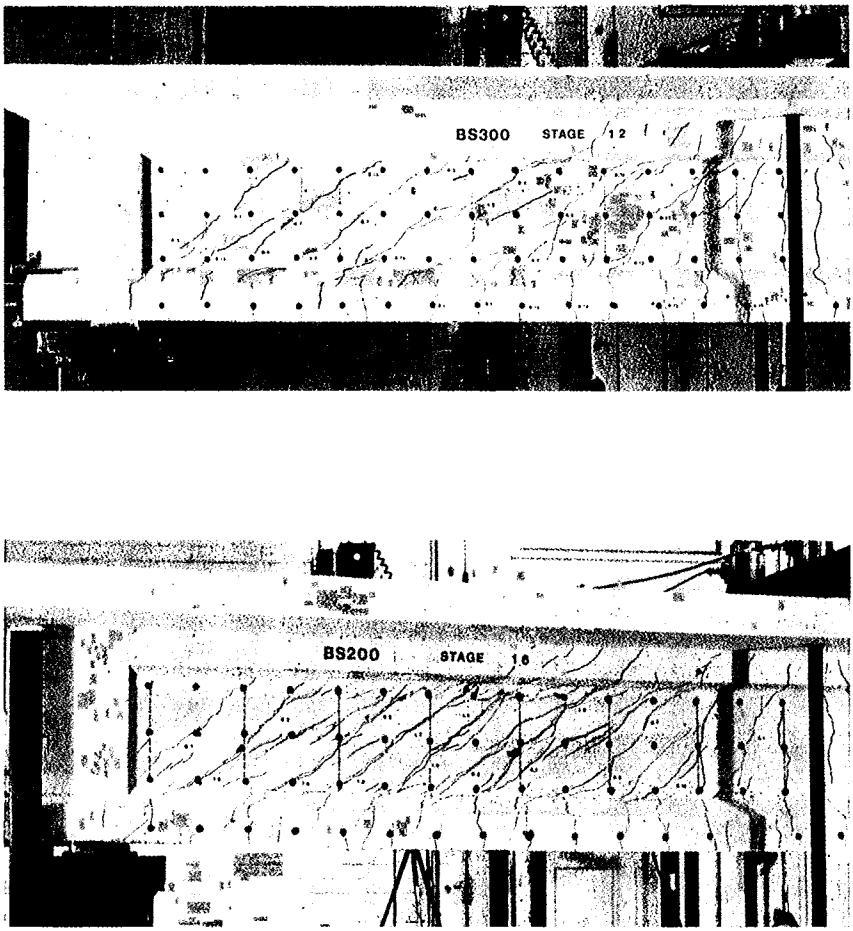


Fig. 11--Girders BS300 and BS200 at failure

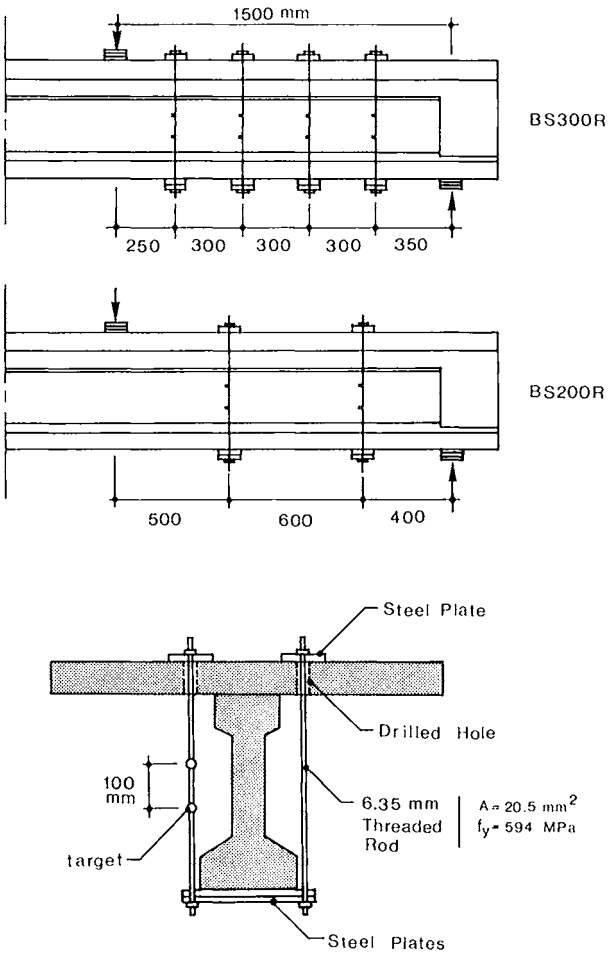


Fig. 12--Details and locations of external stirrups

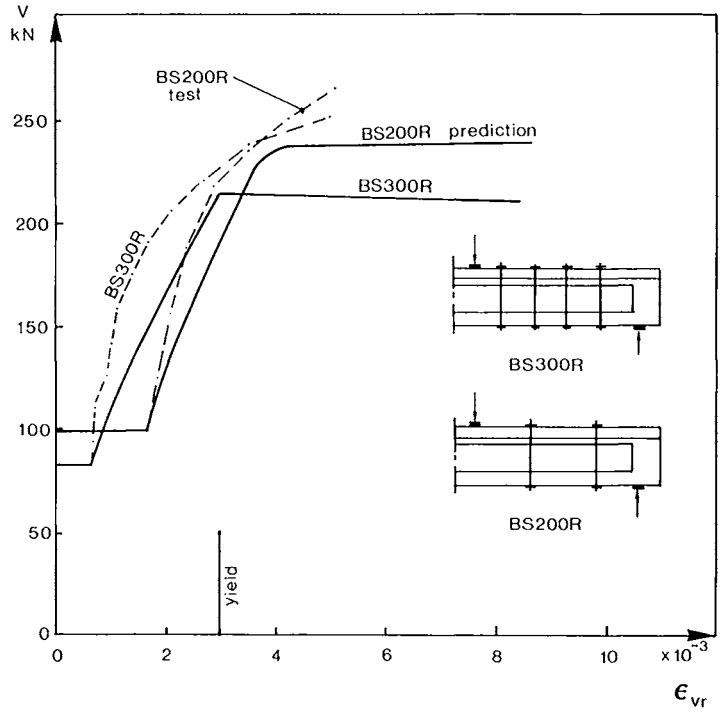


Fig. 13--Comparisons of predicted and average measured strains in external stirrups

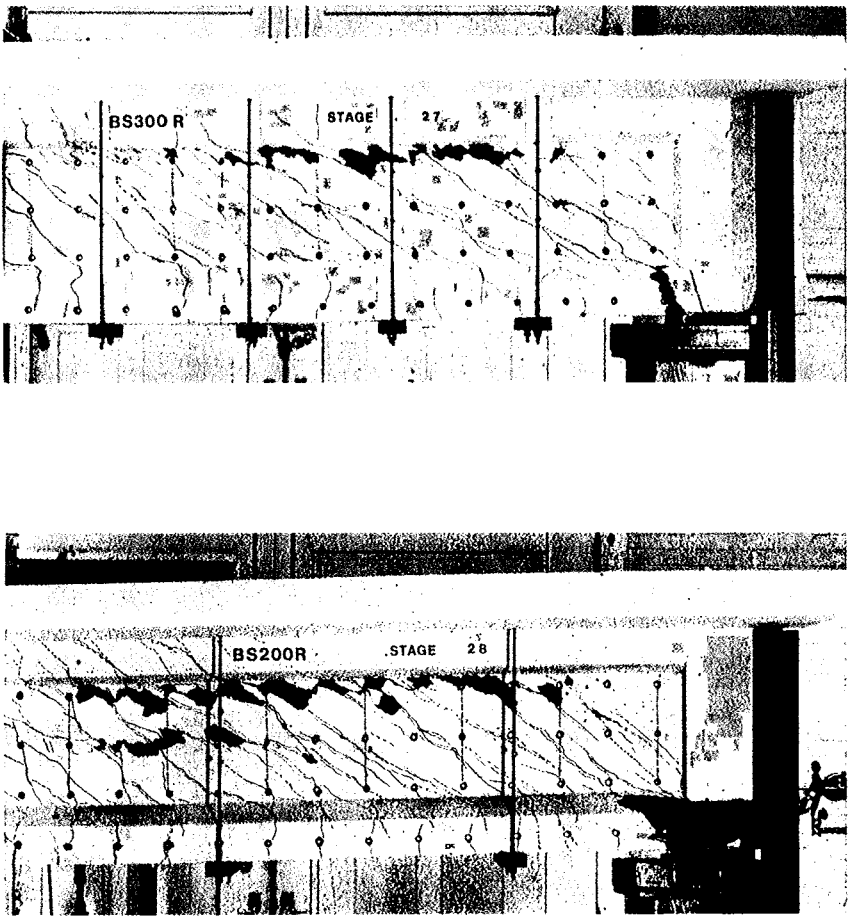


Fig. 14--Girders BS300R and BS200R at failure