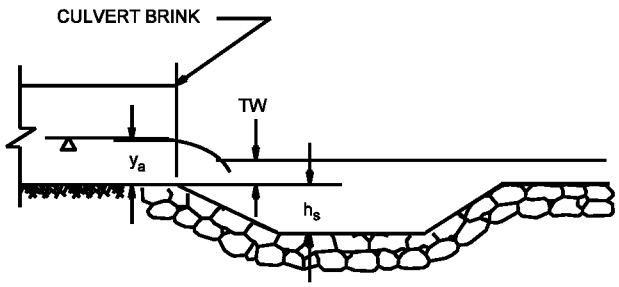
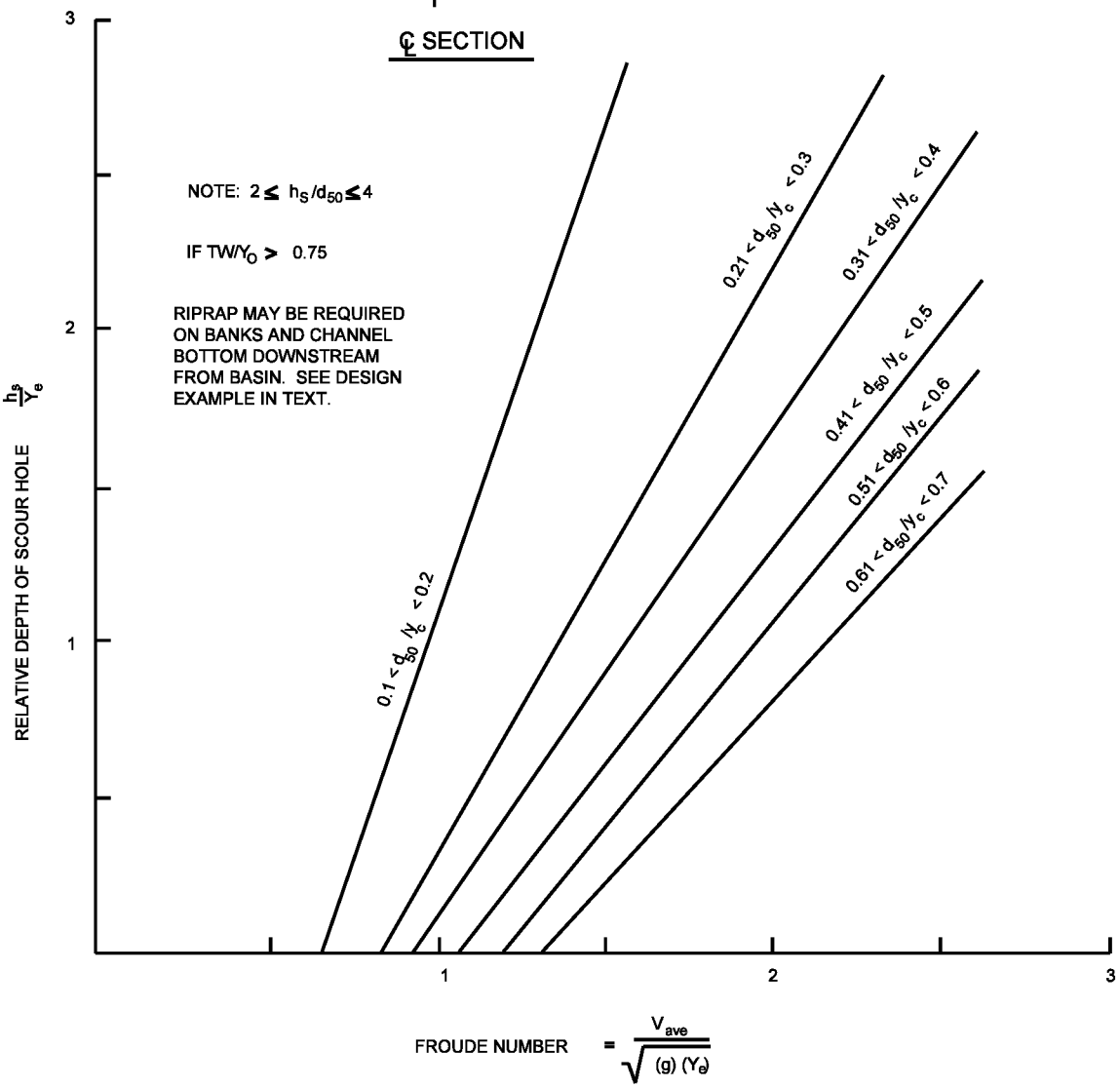
$$V_{ave} = \frac{\text{DESIGN DISCHARGE (Q)}}{\text{WETTED AREA AT BRINK OF CULVERT}}$$



d_{50} = THE MEDIAN SIZE OF ROCK BY WEIGHT. ROUNDED ROCK OR ANGULAR ROCK.

y_a = EQUIVALENT BRINK DEPTH
= BRINK DEPTH FOR BOX CULVERT
= $(A/2)^{0.5}$ FOR NON-RECTANGULAR SECTIONS

℄ SECTION



RIPRAP BASIN DEPTH OF SCOUR
Figure 34-8B