

## Tidal Inlet Problem Statement

You plan to build a bridge across a tidal inlet on the Atlantic coast. The inlet is 50 ft deep. The tidal prism here ranges between  $5.56 \times 10^7$  cy and  $6.92 \times 10^7$  cy. The side slope of the inlet is 2/3.

The ends of the bridge must be at least 100 yd from the edge of the inlet at all times. The soil, which it sits on, can handle 4267 lb/ft of stress 30 ft below the middle of each pile.

You are to design the specifications for the bridge you will build calculating all necessary calculations and recording all calculations and ideas into your design notebook.

You will also build a 1:120 scale model of your bridge out of the materials you are given. This means that your model will be 1/120 of the length of the bridge you designed.

You will present your project and the bridges will be tested for the amount of weight they hold. Judging will be according the judging criteria page.

Please record all calculations, sketches, drawings and ideas in your design notebook.