Open bottom structures
Why open bottom?
aquatic organism passage
Types of structures

- Bridges
- Arches
- Box culverts
Bridges, abutment designs and deck panels
Abutments blocks – Big Legos
Other block designs
All types of bridges
Concrete bridge decks
Arches

Usually good fit for roads with higher profile and/or need wider surface width
Small Arches
X large arch placed on 2ft channeled footers
with 2 rows of straight blocks
and wing walls
Three sided box bridges

Usually a good fit for lower profile roads and/or where more surface width is needed
Various Sizes
simple or complex
Just playing with big Legos
Replacing culverts with open bottom structures

Beware of scour

• Most round culverts are above the scour line
• Do some elevations upstream and downstream
• Graph your low points for the scour line
• Imbed your footings
Do your homework