The Veterans Memorial Bridge
Reno Nevada
Location: City of Reno and Sparks, NV
Bridge Site Specific Issues:

- Highly Seismic Area, (Zone 4), PGA = 0.58g
- Adjacent to Fault Rupture Line
- Liquefiable Soils and Lateral Spreading
Fault Rupture Evaluation

- Low displacement: 1.5 feet
- Fault rupture Recurrence Interval, RI: greater than 11,000 years
- Slip Rate: less than 0.2 mm/yr
- Low probability faults
Fault Rupture Mitigation
One vs. Two Bridges

- Two bridges advantages:
  - Allow to move independently
  - Allow more relative displacement
  - Increase the overall individual displacement capacity
Soil Liquefaction and Lateral Spreading

**Permanent Displacement:**
- North Abutment: up to 8.2 inches
- Piers 6 thru 9: up to 3 inches

**Seismic Slope Stability Results:**
- Yield acceleration: 0.125g to 0.135g
- Soil Lateral Displacement: 0.7 to 0.8 feet
Five Bridge Alternatives Considered:

- Precast Pre-Stressed Girders
- C.I.P. Post-Tensioned Box Girders
- Prismatic Steel Plate Girders
- Haunch Steel Plate Girders
- Combination of Steel Prismatic Plate Girders on the Viaduct and a Steel Arch across the Truckee River.
Preferred Alternative: Combination of Steel Prismatic and Haunch Girders
Complex Bridge Geometry
SB Bridge – Concentric Girders
NB Bridge – Tapered Girders
NB and SB Bridge – Frame 3
Primary Load Carrying Members

- Plate Girders
- Cross Frames
- Integral Bent Caps
MDX Grid Model
Frame 1
3-D LARSA Model
Frame 3
Integral Steel Bent Cap
Girder Elevation - Frame 1 & 2
Girder Elevation - Frame 3
Bridge Construction Schedule

- Start Date: April, 2013
- Estimated Completion Date: April, 2014
Plate Girder Fabrication Shop

Bed for Plasma Cutter
Plate Girder Fabrication Shop

Heat Curving Girder

Drilling Holes in Web for Field Splice Connection
Bridge Construction
Bridge Construction
Bridge Construction
Bridge Construction