2013 Purdue Road School

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TEMPORARY PIERS
Temporary Piers

Temporary Pier

SLIDING GIRDER
UPPER CAP
LOWER CAP
Barge Impact
Temporary Piers –
Barge Impact Protection Frames
Barge Impact Protection Frames
Barge Impact Protection Frames
Barge Impact Protection Frames
Barge Impact Protection Frames
Towers
Towers
Stability Frames
Sliding Girders
Sliding Girders
Sliding Girders
Sliding Girders
Lifting Frames
Temporary Pier at Lifting
Temporary Pier Complete
TRUSS DESIGN
Truss Design

Existing Bridge

New Bridge
Truss Design

Plan View – Before Sliding – Old & New Bridge

Elevation of Completed New Bridge
Truss Design

- Permanent Bridge Design Features
- Design-Build Challenges for Steel Truss Bridge
- Bridge Design Adapted for Construction Techniques
Truss Design
Truss Design
Truss Design
Truss Design
Truss Design
TRUSS ERECTION
Construction Sequence

Float in Span 2

Lift Span 2

Cantilever Span 1
Span Lifting

Preassembly of Steel Trusses on Barges

Photo by Deborah Crawford. Courtesy of Robinson Aerobatics.
Construction Sequence

Float in & Lift Span 3

Cantilever Span 4

Slide Completed Bridge Laterally
Construction Sequence

Completed New Spans Slid into Final Position

Truss Span Set Down on Sliding Girder
New Truss Span Lifted by Strand Jacks

Sliding Girder Inserted

New Truss Span Floated in on Barges

Temporary Pier

Existing Bridge

New Pier Cap
Lifting Trusses
Span Lifting
Span Lifting
Span Lifting
Span Lifting
Span Lifting
Span Lifting
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Sliding Girder Installation
Span 3 Lifting
Span 3 Lifting
Erection Bents
Erection Bents
SLIDING SUPERSTRUCTURE
Sliding Completed Bridge

Plan View

Elevation View
Milton Madison Bridge:

- 2430 Feet Long, 4 Spans
- 15,260 Tons
Sliding Girders
Sliding Bearings
Strand Jacks for Sliding
Questions?

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