Chapter Six

Temporary Works
(Falsework and Forms)
Falsework Definition:

- The temporary construction used to support the permanent structure until it becomes self supporting

- Includes: Beams, Joists, Columns, Piles, etc...
Formwork Definition:

- A temporary structure or mold used to retain the plastic or fluid concrete.

- Basically…. Sheathing or plywood.
Falsework Plans

- Must be designed in accordance with AASHTO Guide Design Spec. for Bridge Temporary Works.
- Must be designed by PE registered in South Dakota.
- Must be submitted to the Office of Bridge Design 30 days prior to starting construction.
- The Contractor shall not be allowed to erect false-work until false-work plans are approved.
- The False-work shall be built as shown in approved false-work plans.
- The Contractor must resubmit false-work plans for any changes.
The different types of structure require different types of false-work

- Slab Bridge (support from ground)
  - False Pile
  - Beams
- Girder Bridge (support from girders)
  - Spanalls
  - Timber Stringers
  - Overhang Brackets
False Piles

- Driven to bearing shown in false-work plans (witnessed by inspector)
- Adequately braced
- Removed 1 foot below finished ground line
Mudsill

- Soil Strength and material must be submitted with false-work plans
- Soil must be leveled and compacted to allow even bearing
Steel Scaffold

- Good to excellent condition
- All components shall be from same manufacturer
- Jacks shall not be over extended (manufacturer recommendation)
Strickland Brackets

- Good to Excellent condition
- Placed so beam is completely on bracket
- Grout holes in column
Bolted Brackets

- Built as shown on false-work plans
- Holes proper size for bolt or use plate washers
- Grout holes in concrete
Beams, Stringers, Joists, Hangers and Overhang Brackets

- Good to excellent condition
- Manufactured Components shall not be field modified and must be same model and manufacturer as shown on plans
- Check grade on lumber
Miscellaneous Forming Items

- Plywood
- Rustication, Chamfer
- Form Ties
- Block-outs
- Form Joints Mortar Tight
- Ensure Quality Forming Material
Supports parallel to face grain
Weak Direction

Figure 6.12
Supports Perpendicular to face grain
Strong Direction
Setting Forms on a Girder Bridge
(See Table of Slab Form Elevations)

- “M” - - Top of Slab Elevation
- “N” - - Elevation On Top Of Girder
- “d” - - Distance From Top of Girder to Top of Slab
- “h” - - Haunch Depth (If “h” is less than 0” or greater than 4” contact the bridge office)
* Varies with crown

Elev. "M" (See Note)

Elev. "N" (See Note)
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- Example page 6-118
Setting Forms on a Concrete Bridge

- Curb and Centerline Elevation Diagram
- Lumber Crush
- Form Camber
Setting Forms on a Concrete Bridge

- Use the top of slab elevation from the Curb and Centerline Elevation Diagram and subtract the thickness of the deck.

- Add the lumber crush to each elevation.

- Add the form camber to each elevation.

- This number should be the form elevations after reinforcing steel is placed.
Removal of Temporary Works

- Section 460.3.P - Standard Specs.
- Strength vs. Time
- Remove supports slowly and uniformly
Questions???