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**Minnesota State University, Mankato  
Department of Mechanical and Civil Engineering**

**Using an Interactive Approach to Teach Connections in a Steel Design Class  
*User's Guide***

by

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The intent of the Interactive Steel Connection Sculpture is to enhance the students' learning in steel connection design as well as to show the field applications of these connections. This software is intended to be dynamics. We will continue to add field examples to the presentation. Any contribution to the data base is greatly appreciated. Following is the guideline for exploring the sculpture:

1. A typical elevation view of the sculpture is shown in Figure 1.

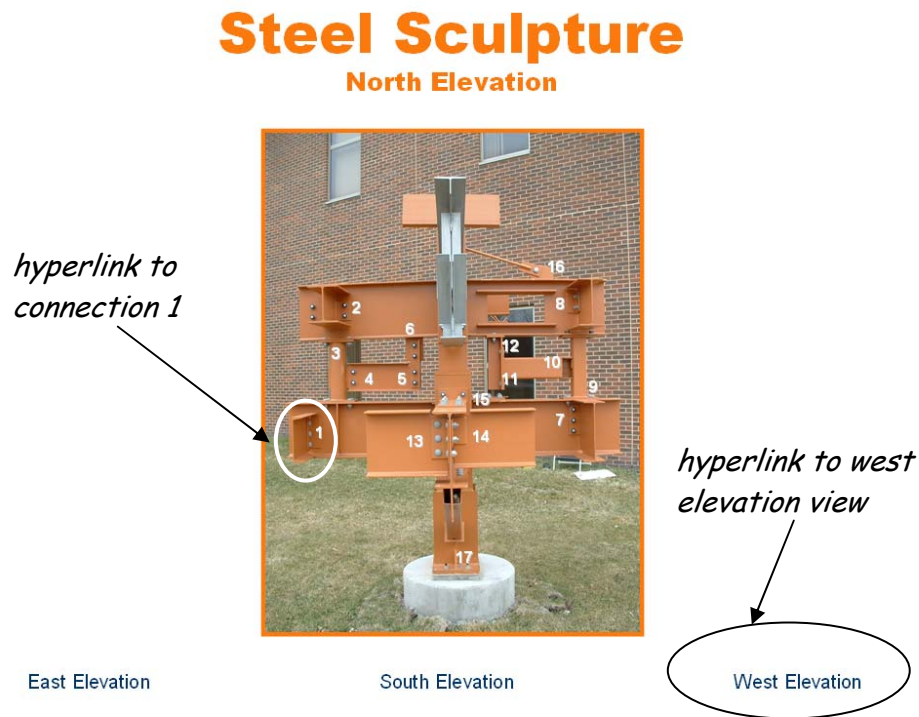


Figure 1 North elevation view

- a. The other elevation views are hyperlinked by the button at the bottom of the slide. In Figure 1, they are "East Elevation", "South Elevation", and "West Elevation" since the North Elevation is shown.

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- b. The numbers on the sculpture image represent the connection number. Each of the connection is hyperlink by clicking at the number shown.
  - c. As an example, click on "1", you will see the close-up view of connection 1 as shown in Figure 2.
2. Figure 2 shown the close-up view of connection 1 and the limit states of this connection.
- a. You can hyperlink back to the elevation view, to a set of sample calculations in pdf, or to field examples by clicking on the appropriate phrase at the bottom of the slide.
  - b. To return to the connection slide, use the "back" button from the web tool bar.

## Girder B4 / Beam B4A



Connection 1

- Single - Angle Connection:
  - Web: Plate welded to Girder B4 and bolted to Beam B4A.

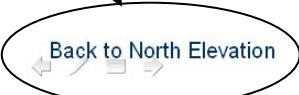
Limit States

- Bolt Shear Rupture
- Bolt Bearing
- Block Shear Rupture
- Shear Yielding
- Shear Rupture
- Weld Strength

*Click here to go back to elevation*



*Click here to go back to elevation*



*Click here to go back to elevation*



Figure 2 Close-up view of connection 1

3. Figure 3 shows a field example of connection 1. You can click on the "more" to see additional field examples, if there is more than one field example available for the connection.

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## Madelia Hospital, Madelia, MN

### Girder B4 / Beam B4A - Connection 1



*Click here for  
more field*

[Back to North Elevation](#)

[Back to Connection](#) [more](#)

Figure 3 A field example of connection 1

We hope you will enjoy this interactive sculpture. Please send comments, suggestions, and field examples to Dr. Karen Chou via e-mail at [karen.chou@mnsu.edu](mailto:karen.chou@mnsu.edu). Thank you very much for your time.