

# **2010 AISC Code of Standard Practice Upcoming Changes**

**Delaware Valley Association of Structural Engineers  
16 December 2009**

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**President**

**The Harman Group  
Structural Engineers**



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# Introduction

- Background on The Code of Standard Practice
- Summary of changes
- Specifics on each change
  - Still in draft form
- Discussion of Connection Delegation
- Questions/Discussions



# Committee on the Code of Standard Practice

- Fabricators
- Erectors
- Structural Engineers
- Construction Manager
- AIA Representative
- Master Spec Representative
- AISC Staff
- AISC General Counsel



# Code of Standard Practice

- Safety net for construction procedures
- **Scope**
  - In the absence of specific instructions to the contrary in the Contract Documents, the trade practices that are defined in this Code shall govern the fabrication and erection of Structural Steel.



# Can be modified

- SER can specify otherwise
- Contract Documents supersede COSP
  - Cannot state changes to the COSP
  - Simply specify otherwise
  - Common areas of change
    - Connection design
    - Responsibilities
    - Tolerances



# Changes in this cycle

1. Section 2.1: changes to the listed structural steel items covering base plates and bearing plates to clarify that bearing and base plates that do not receive structural steel (such as those that receive loose lintels in a masonry wall) are not structural steel.
2. Section 3.1, 5.2, 6.1.1, and 8.2: change to use of term “material test report” instead of “mill test report” or “certified mill test report to be consistent with current ASTM terminology.



# Changes in this cycle

3. Section 3.1: addition of “deflection information for transfer girders and trusses supporting columns and hangers” as a listed item to be included in design drawings and specifications, to address needed information when transfer girders and trusses are used.
4. Section 3.1: addition of Commentary to encourage the use of post-award/pre-detailing conferences.



# Changes in this cycle

5. Section 3.1.2, 4.4, and 4.4.1: revision to include provisions addressing the **delegation of connection design work** while maintaining the approvals process for delegated connection design work, to add explicit provisions addressing the common practice of delegating connection design work, while ensuring that the manner in which it is done is acceptable.



# Changes in this cycle

6. Section 3.2: addition of sentence addressing detailer/fabricator responsibility for coordination of drawings to explicitly state that coordination is not the responsibility of the steel detailer, nor the fabricator.
7. Section 4.7: addition of section 4.7 to explicitly address that erection drawings must be provided to the erector in a timely manner.



# Changes in this cycle

8. Section 6.4.3: revisions to clarify intent of provisions regarding incidental camber in beams and trusses to eliminate a conflict with Section 6.4.5. (The old language required positive camber in this section but allowed a negative camber with the minus 1:800 tolerance in Section 6.4.5).
9. Section 7.10.1: addition of paragraph regarding special erection conditions or other considerations to clarify the communication that is needed when special erection conditions exist.



# Changes in this cycle

10. Section 7.13: addition of paragraph in Commentary regarding deflection of transfer girders and trusses to emphasize considerations that are needed when transfer girders and trusses are used.
11. Section 7.13.1.2(d): revision to clarify intent of tolerance and that the 1/500 tolerance is applicable in both the horizontal and vertical directions.



# Changes in this cycle

12. Section 10.2.5: revision to clarify that intent is for visible cases of groove welds to clarify that this provision applies to butt and outside corner joints, not tee and inside corner joints.
13. All other Sections: editorial revisions to make current
  - Dates
  - Addresses
  - Copyrights
  - Disclaimers
  - Preface statements
  - Table of Contents
  - Section 1.2: Change the dates of all referenced documents to reflect the most current version.



# Changes in this cycle

14. Sections 1.1 and 1.4: to clarify the scope of the Code of Standard Practice in Sections 1.1 and 1.4 for consistency with the scope of the AISC *Specification for Structural Steel Buildings*.



# Specific Changes



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# CHANGE ITEM #1 – SECTION 2

## BALLOT 1 (APPROVED)

### 2.1. Definition of Structural Steel

Structural Steel shall consist of the elements of the structural frame that are shown and sized in the structural Design Drawings, essential to support the design loads and described as:

Anchor Rods that will receive Structural Steel.

Base plates, if part of the Structural Steel frame.

Beams, including built-up beams, if made from Standard Structural Shapes and/or plates.

Bearing plates, if part of the Structural Steel frame.

Bearings of steel for girders, trusses or bridges.

Bracing, if permanent.

Canopy framing, if made from Standard Structural Shapes and/or plates.

**Comment [aa7]:** These changes were approved for ballot at our 12/5/2006 meeting to clarify that bearing and base plates not receiving structural steel (such as loose lintels in a masonry wall) are not structural steel.



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# CHANGE ITEM #1 – SECTION 2

## BALLOT 2 (APPROVED)

### 2.1. **Definition of Structural Steel**

Structural Steel shall consist of the elements of the structural frame that are shown and sized in the structural Design Drawings, essential to support the design loads and described as:

Anchor Rods that will receive Structural Steel.

Base plates, if part of the Structural Steel frame.

Beams, including built-up beams, if made from Standard Structural Shapes and/or plates.

Bearing plates, if part of the Structural Steel frame.

### 2.2. **Other Steel, Iron or Metal Items**

Structural Steel shall not include other steel, iron or metal items that are not generally described in Section 2.1, even where such items are shown in the structural Design Drawings or are attached to the Structural Steel frame. Other steel, iron or metal items include but are not limited to:

Base plates, if not part of the structural steel frame.

Bearing plates, if not part of the structural steel frame.

Bearings, if non-steel.



# CHANGE ITEM #2 – SECTION 3

## BALLOT 1 (APPROVED)

### 3.1. Structural Design Drawings and Specifications

In some cases, the Owner can benefit when reasonable latitude is allowed in the Contract Documents for alternatives that can reduce cost without compromising quality. However, critical requirements that are necessary to protect the Owner's interest, that affect the integrity of the structure or that are necessary for the Fabricator and the Erector to proceed with their work must be included in the Contract Documents. Some examples of critical information include:

Standard specifications and codes that govern Structural Steel design and construction, including bolting and welding.

Material specifications.

Special material requirements to be reported on the material test reports.

Welded-joint configuration.

**Comment [aa8]:** This change was approved for ballot at our 12/5/2006 meeting because ASTM now calls them "material test reports". There are many other instances in this document where the same change has been made as well.

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# CHANGE ITEM #2 – SECTION 5

## BALLOT 1 (APPROVED)

### 5.2. Stock Materials

5.2.1. If used for structural purposes, materials that are taken from stock by the Fabricator shall be of a quality that is at least equal to that required in the ASTM specifications indicated in the Contract Documents.

5.2.2. Material test reports shall be accepted as sufficient record of the quality of materials taken from stock by the Fabricator. The Fabricator shall review and retain the material test reports that cover such stock materials. However, the Fabricator need not maintain records that identify individual pieces of stock material against individual material test reports, provided the Fabricator purchases stock materials that meet the requirements for material grade and quality in the applicable ASTM specifications.

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5.2.3. Stock materials that are purchased under no particular specification, under a specification that is less rigorous than the applicable ASTM specifications or without material test reports or other recognized test reports shall not be used without the approval of the Owner's Designated Representative for Design.

**Deleted:** certified mill test reports



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# CHANGE ITEM #2 – SECTION 6

## BALLOT 1 (APPROVED)

### 6.1. Identification of Material

6.1.1. The Fabricator shall be able to demonstrate by written procedure and actual practice a method of material identification, visible up to the point of assembling members as follows:

(a) For shop-standard material, identification capability shall include shape designation. Representative ~~material test reports shall be furnished by the Fabricator if requested to do so by the Owner's Designated Representative for Design, either in the Contract Documents or in separate written instructions given to the Fabricator prior to ordering Mill Materials.~~

**Deleted:** mill test reports

(b) For material of grade other than shop-standard material, identification capability shall include shape designation and material grade. Representative ~~material test reports shall be furnished by the Fabricator if requested to do so by the Owner's Designated Representative for Design, either in the Contract Documents or in separate written instructions given to the Fabricator prior to ordering Mill Materials.~~

**Deleted:** mill test reports

(c) For material ordered in accordance with an ASTM supplement or other special material requirements in the Contract Documents, identification capability shall include shape designation, material grade, and heat number. The corresponding ~~material test reports shall be furnished by the Fabricator if requested to do so by the Owner's Designated Representative for Design, either in the Contract Documents or in separate written instructions given to the Fabricator prior to ordering Mill Materials.~~

**Deleted:** mill test reports



# CHANGE ITEM #2 – SECTION 8

## BALLOT 1 (APPROVED)

### 8.2. **Inspection of Mill Material**

Material test reports shall constitute sufficient evidence that the mill product satisfies material order requirements. The Fabricator shall make a visual inspection of material that is received from the mill, but need not perform any material tests unless the Owner's Designated Representative for Design specifies in the Contract Documents that additional testing is to be performed at the Owner's expense.

**Deleted:** Certified mill test reports



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# CHANGE ITEM #3 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 1 (APPROVED)

Structural Steel frame (see Section 3.1.4).  
Column differential shortening information.  
Deflection information for transfer girders and trusses supporting columns and hangers.  
Special fabrication and erection tolerances for AESS.  
Special pay-weight provisions.

**Comment [AG9]:** This commentary addition was approved for ballot at our 12/4/2005 meeting.

### BALLOT 2 (APPROVED)

Structural Steel frame (see Section 3.1.4).  
Column differential shortening information.  
Anticipated deflection information and the associated loading conditions for major structural elements, such as transfer girders and trusses, supporting columns and hangers.  
Special fabrication and erection tolerances for AESS.  
Special pay-weight provisions.

### BALLOT 3 (APPROVED)

Structural Steel frame to provide for the lateral stability of the Structural Steel frame (see Section 3.1.4).  
Column differential shortening information (see Commentary to Section 7.13).  
Anticipated deflections and the associated loading conditions for major structural elements, such as transfer girders and trusses, supporting columns and hangers (see Commentary to Section 7.13).  
Special fabrication and erection tolerances for AESS.  
Special pay-weight provisions.

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# CHANGE ITEM #4 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 1 (REJECTED)

A post-award/pre-detailing conference should be held after the structural steel fabrication contract is awarded. Topics of the meeting should relate to the specifics of the project, and might include:

- Contract document review and general project overview, including clarifications of scope of work, tolerances, layouts and sequences, and special considerations.
- Detailing and coordination needs, such as bolting, welding, and connection considerations, constructability considerations, OSHA requirements, coordination with other trades, and the advanced bill of materials.
- The project communication system, including distribution of contact information for relevant parties to the contract, identification of the primary and alternate contacts in the general contractor's office, and the RFI system to be used on the project.
- The submittal schedule, including how many copies of documents are required, connection submittals, and identification of schedule-critical areas of the project, if any.
- Quality and inspection requirements, including the approvals process for corrective work, if required.

Minutes of the meeting should be written and distributed to all parties. Subsequent meetings to discuss progress and issues that arise during construction also can be helpful, particularly when they are held on a regular schedule.

**Comment [aa10]:** This commentary addition was approved for ballot at our 12/5/2006 meeting. The name change from "pre-construction conference" was approved for ballot at our 9/5/2007 meeting.



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# CHANGE ITEM #4 – SECTION 4\*

## 4.1. Owner Responsibility (FORMERLY SECTION 3.1)

### BALLOT 2 (APPROVED)

A pre-detailing conference, held after the structural steel fabrication contract is awarded, can benefit the project. Typical attendees may include the Owner's Designated Representative for Construction, the Owner's Designated Representative for Design, the Fabricator, the Steel Detailer, and the Erector. Topics of the meeting should relate to the specifics of the project, and might include:

- Contract document review and general project overview, including clarifications of scope of work, tolerances, layouts and sequences, and special considerations.
- Detailing and coordination needs, such as bolting, welding, and connection considerations, constructability considerations, OSHA requirements, coordination with other trades, and the advanced bill of materials.
- The project communication system, including distribution of contact information for relevant parties to the contract, identification of the primary and alternate contacts in the general contractor's office, and the RFI system to be used on the project.
- The submittal schedule, including how many copies of documents are required, connection submittals, and identification of schedule-critical areas of the project, if any.
- Quality and inspection requirements, including the approvals process for corrective work, if required.

Record of the meeting should be written and distributed to all parties. Subsequent meetings to discuss progress and issues that arise during construction also can be helpful, particularly when they are held on a regular schedule.



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# CHANGE ITEM #4 – SECTION 4\*

## 4.1. Owner Responsibility (FORMERLY SECTION 3.1)

### BALLOT 3 (APPROVED)

- The submittal schedule, including how many copies of documents are required, connection submittals, and identification of schedule-critical areas of the project, if any.
- Review of quality and inspection requirements, including the approvals process for corrective work.

Record of the meeting should be written and distributed to all parties. Subsequent meetings to discuss progress and issues that arise during construction also can be helpful, particularly when they are held on a regular schedule.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 1 (REJECTED)**

3.1.2. The Owner's Designated Representative for Design shall indicate one of the following options for each Connection:

- (1) The complete Connection design shall be shown in the structural Design Drawings;
- (2) In the structural Design Drawings or Specifications, the Connection shall be designated to be selected or completed by an experienced Steel Detailer while preparing the Shop and Erection Drawings, by referring to:
  - (a) Tables or schematic information in the structural Design Drawings;
  - (b) Tables in the AISC *Steel Construction Manual*; or,
  - (c) Other reference information as approved by the Owner's Designated Representative for Design; and/or,
- (3) In the structural Design Drawings or Specifications, the Connection shall be designated to be designed by a licensed Professional Engineer.

In all of the above options, the approvals process in Section 4.4 shall be followed.

When option (2) or (3) above is specified, the Owner's Designated Representative for Design shall provide the following information in the structural Design Drawings and Specifications:

- (a) Any restrictions on the types of Connections that are permitted;
- (b) Data concerning the loads, including shears, moments, axial forces and transfer forces, that are to be resisted by the individual members and their Connections, sufficient to allow the selection, completion, or design of the Connection details while preparing the Shop and Erection Drawings;
- (c) Whether the data required in (b) is given at the service-load level or the factored-load level; and,

**Comment [aa11]:** Revisions in this Section were approved for ballot at our 3/11/2008 meeting, based upon the work of the CASE/AISC task group. There also are changes proposed in Sections 4.4 and 4.4.1 that are made for consistency with these proposed changes.

**Deleted:** either show the complete design of the Connections in the structural Design Drawings or allow the Fabricator to select or complete the Connection details while preparing the Shop and Erection Drawings.

**Deleted:** When the Fabricator is allowed to select or complete the Connection details,

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 1 (REJECTED)**

(d) Whether LRFD or ASD is to be used in the selection, ~~completion, or design~~ of Connection details; and, **Deleted:** or

Additionally, when option (3) above is specified, the Owner's Designated Representative for Design shall indicate in the structural Design Drawings and Specifications what substantiating Connection information, if any, is to be provided with the Shop and Erection Drawings to the Owner's Designated Representative for Design. The licensed Professional Engineer working for the Fabricator shall review the incorporation of the connection designs into the Shop and Erection Drawings. However, this review does not replace the approval process as outlined in Section 4.4.

#### **Commentary:**

There are three cases covered in Section 3.1.2:

(1) When the Owner's Designated Representative for Design shows the complete design of the Connections in the structural Design Drawings, the following information is included:

- (a) All weld types, sizes, and lengths;
- (b) All bolt sizes, locations, quantities, and grades;
- (c) All plate and angle sizes, thicknesses and dimensions; and,
- (d) All work point locations and related information.

**Deleted:** When the Fabricator selects or completes the Connection details, the Fabricator shall utilize the requirements in the AISC Specification and the Contract Documents and submit the Connection details to the Owner's Designated Representative for Design for approval.¶



# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 1 (REJECTED)

The intent of this approach is that complete information necessary for Connection detailing, fabrication and erection is shown in the structural Design Drawings. Typical details are shown for each connection type, set of geometric parameters and adjacent framing conditions. The Steel Detailer will then be able to transfer this information to the Shop and Erection Drawings, applying it to the individual pieces being detailed.

(2) When the Owner's Designated Representative for Design allows an experienced Steel Detailer to select or complete the Connections, this is commonly done by referring to tables or schematic information in the structural Design Drawings, tables in the AISC Steel Construction Manual, or other reference information approved by the Owner's Designated Representative for Design, such as journal papers and recognized software output. Tables and schematic information in the structural Design Drawings should provide such information as weld types and sizes, plate thicknesses and quantities of bolts. However, there may be some geometry and dimensional information that the Steel Detailer must develop. The Steel Detailer will then configure the Connections based upon the design loads and other information given in the structural Design Drawings and Specifications.

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**Deleted:** in the Contract Documents or in the AISC Manual of Steel Construction, or by schematically showing the types of Connections required in the structural Design Drawings.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 1 (REJECTED)

The intent of this method is that the Steel Detailer will select the Connection materials and configuration from the referenced tables or complete the specific Connection configuration (e.g., dimensions, edge distances and bolt spacing) based upon the Connection details that are shown in the structural Design Drawings.

The Steel Detailer must be experienced and familiar with the AISC requirements for Connection configurations, the use of the Connection tables in the AISC Steel Construction Manual, the calculation of dimensions and adaptation of typical Connection details to similar situations. Notations of loadings in the structural Design Drawings are only to facilitate selection of the Connections from the referenced tables. It is not the intent that this method be used when the practice of engineering is required.

(3) The revisions in this Section and Section 4.4 have been made to reflect that it is a common practice in several areas of the U.S. to have a licensed Professional Engineer working for the Fabricator design the Connections, and to recognize the information that the Fabricator needs to do the work necessary to complete the Shop and Erection Drawings for approval when Connection design is delegated. To maintain the safety of the public, the Owner's Designated Representative for Design, who has the knowledge of the structure as a whole, must review and approve the Shop and Erection Drawings, and take such action on substantiating Connection information as they deem appropriate.

When, under Section 3.1.2, the Owner's Designated Representative for Design requires that Connections be designed by a licensed Professional Engineer employed or retained by the Fabricator, this work is incidental to, and part of, the overall means and methods of fabricating and constructing the steel frame. The licensed Professional Engineer performing the Connection design is not providing a peer-review of the Contract Documents.

**Deleted:** If the desired Connection is not covered in those tables, a detail of the "special" Connection should be contained in the structural Design Drawings. This detail should provide such information as weld sizes, plate thicknesses and quantities of bolts. However, there may be some geometry and dimensional information that the Steel Detailer must develop.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 1 (REJECTED)**

The Owner's Designated Representative for Design conducts sufficient review during the approvals process of the Shop and Erection Drawings as specified in Section 4.4 to ensure compliance with the specified criteria and compatibility with the design of the primary structure. The licensed Professional Engineer who performs the design of the Connections for the Fabricator also reviews the incorporation of their work into the Shop and Erection Drawings.

One of these cases should be indicated for each connection in a project. It is acceptable to utilize a combination of these cases for the various connection types involved in a project. Option (3) is not normally specified for connections that can be selected or completed as noted in Option (2) without practicing engineering.

If there are any restrictions as to the types of Connections to be used, it is required that these limitations be set forth in the structural Design Drawings and Specifications. There are a variety of Connections available in the AISC *Steel Construction Manual* for a given situation. Preference for a particular type will vary between Fabricators and Erectors. Stating these limitations, if any, in the structural Design Drawings and Specifications will help to avoid repeated changes to the Shop and Erection Drawings due to the selection of a Connection that is not acceptable to the Owner's Designated Representative for Design, thereby avoiding additional cost and/or delay for the redrawing of the Shop and Erection Drawings.

The structural Design Drawings must indicate the method of design used as LRFD or ASD. In order to conform to the spirit of the AISC Specification, the Connections must be selected using the same method and the corresponding references.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 1 (REJECTED)**

In some cases when the complete Connection design is not shown in the structural Design Drawings, Shop and Erection Drawings may suffice with no additional substantiating Connection information required. In other cases, the substantiating Connection information may take the form of hand calculations or software output. When substantiating Connection information is required, it is recommended that representative samples of that information be agreed upon prior to preparation of Shop and Erection Drawings, in order to avoid additional cost and/or delay for the redrawing that might otherwise result.

The Owner's Designated Representative for Design may require that the substantiating Connection information be signed and sealed. Depending upon jurisdictional requirements, the signing and sealing of the cover letter transmitting the substantiating Connection information may suffice. This signing and sealing indicates that a Professional Engineer performed the work but does not replace the approval process provided in Section 4.4. For these requirements, the Owner's Designated Representative for Design is bound by the applicable building code and/or licensing laws of the jurisdiction in which the project is located.

Requirements to sign and seal Shop and Erection Drawings are discouraged. Doing so may violate the licensing laws of the jurisdiction because the member designs and configurations are not the work of the licensed Professional Engineer performing the connection design.



# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 2 (REJECTED)

stiffeners in beams and girders, web reinforcement, openings for other trades and other special details, where required, shall be shown in sufficient detail in the structural Design Drawings so that the quantity, detailing and fabrication requirements for these items can be readily understood.

3.1.2. The Owner's Designated Representative for Design shall indicate one of the following options for each Connection:

- (1) The complete Connection design shall be shown in the structural Design Drawings;
- (2) In the structural Design Drawings or Specifications, the Connection shall be designated to be selected or completed by an experienced Steel Detailer; or
- (3) In the structural Design Drawings or Specifications, the Connection shall be designated to be designed by a licensed Professional Engineer **working for the Fabricator.**

In all of the above options, the approvals process in Section 4.4 shall be followed.

When option (2) above is specified, the experienced Steel Detailer shall utilize tables or schematic information provided in the structural Design Drawings in the selection or completion of the Connections. When such information is not provided, tables in the AISC Steel Construction Manual, or other reference information as approved by the Owner's Designated Representative for Design, shall be used.

When option (2) or (3) above is specified, the Owner's Designated Representative for Design shall provide the following information in the structural Design Drawings and Specifications:

**Deleted:** either show the complete design of the Connections in the structural Design Drawings or allow the Fabricator to select or complete the Connection details while preparing the Shop and Erection Drawings.

**Deleted:** while preparing the Shop and Erection Drawings, by referring to:

- (a) Tables or schematic information in the structural Design Drawings;
- (b) Tables in the AISC *Steel Construction Manual*; or,
- (c) Other reference information as approved by the Owner's Designated Representative for Design; and/or,¶

**Deleted:** When the Fabricator is allowed to select or complete the Connection details,

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 2 (REJECTED)**

- (a) Any restrictions on the types of Connections that are permitted;
- (b) Data concerning the loads, including shears, moments, axial forces and transfer forces, that are to be resisted by the individual members and their Connections, sufficient to allow the selection, completion, or design of the Connection details while preparing the Shop and Erection Drawings;
- (c) Whether the data required in (b) is given at the service-load level or the factored-load level;
- (d) Whether LRFD or ASD is to be used in the selection, completion, or design of Connection details; and;
- (e) What Substantiating Connection Information, if any, is to be provided with the Shop and Erection Drawings to the Owner's Designated Representative for Design.

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When option (3) above is specified, the Fabricator shall submit representative samples of the required Substantiating Connection Information, if any, to the Owner's Designated Representatives for Design and Construction. The Owner's Designated Representative for Design shall confirm in writing that these representative samples are consistent with the requirements in the Contract Documents, or shall advise what modifications are required. Additionally, the licensed Professional Engineer in responsible charge of the Connection design shall review and confirm in writing the incorporation of the connection designs into the Shop and Erection Drawings. However, this review does not replace the approval process as outlined in Section 4.4.

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#### **Commentary:**

There are three options covered in Section 3.1.2:

(1) When the Owner's Designated Representative for Design shows the complete design of the Connections in the structural Design Drawings, the following information is included:

- (a) All weld types, sizes, and lengths;

# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 2 (REJECTED)**

- (b) All bolt sizes, locations, quantities and grades;
- (c) All plate and angle sizes, thicknesses and dimensions; and,
- (d) All work point locations and related information.

The intent of this approach is that complete design information necessary for detailing the Connection is shown in the structural Design Drawings. Typical details are shown for each connection type, set of geometric parameters and adjacent framing conditions. The Steel Detailer will then be able to transfer this information to the Shop and Erection Drawings, applying it to the individual pieces being detailed.

(2) When the Owner's Designated Representative for Design allows an experienced Steel Detailer to select or complete the Connections, this is commonly done by referring to tables or schematic information in the structural Design Drawings, tables in the *AISC Steel Construction Manual*, or other reference information approved by the Owner's Designated Representative for Design, such as journal papers and recognized software output. Tables and schematic information in the structural Design Drawings should provide such information as weld types and sizes, plate thicknesses and quantities of bolts. However, there may be some geometry and dimensional information that the Steel Detailer must develop. The Steel Detailer will then configure the Connections based upon the design loads and other information given in the structural Design Drawings and Specifications.

The intent of this method is that the Steel Detailer will select the Connection materials and configuration from the referenced tables or complete the specific Connection configuration (e.g., dimensions, edge distances and bolt spacing) based upon the Connection details that are shown in the structural Design Drawings.

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**Deleted:** in the Contract Documents or in the AISC Manual of Steel Construction, or by schematically showing the types of Connections required in the structural Design Drawings.

**Deleted:** If the desired Connection is not covered in those tables, a detail of the "special" Connection should be contained in the structural Design Drawings. This detail should provide such information as weld sizes, plate thicknesses and quantities of bolts. However, there may be some geometry and dimensional information that the Steel Detailer must develop.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 2 (REJECTED)**

shown in the structural Design Drawings.

The Steel Detailer must be experienced and familiar with the AISC requirements for Connection configurations, the use of the Connection tables in the AISC *Steel Construction Manual*, the calculation of dimensions and adaptation of typical Connection details to similar situations. Notations of loadings in the structural Design Drawings are only to facilitate selection of the Connections from the referenced tables. It is not the intent that this method be used when the practice of engineering is required.

(3) Option 3 reflects a practice in some areas of the U.S. to have a licensed Professional Engineer working for the Fabricator design the Connections, and recognizes the information that the Fabricator needs to do this work. The Owner's Designated Representative for Design, who has the knowledge of the structure as a whole, must review and approve the Shop and Erection Drawings, and take such action on substantiating Connection information as the Owner's Designated Representative for Design deems appropriate.

When, under Section 3.1.2, the Owner's Designated Representative for Design designates that Connections be designed by a licensed Professional Engineer employed or retained by the Fabricator, this work is incidental to, and part of, the overall means and methods of fabricating and constructing the steel frame. The licensed Professional Engineer performing the Connection design is not providing a peer-review of the Contract Documents.

The Owner's Designated Representative for Design reviews the Shop and Erection Drawings during the approvals process as specified in Section 4.4 for conformance with the specified criteria and compatibility with the design of the primary structure. The licensed Professional Engineer who performs the design of the Connections for the Fabricator also reviews and confirms in writing the incorporation of their work into the Shop and Erection Drawings.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### BALLOT 2 (REJECTED)

One of these options should be indicated for each connection in a project. It is acceptable to group connection types and utilize a combination of these options for the various connection types involved in a project. Option (3) is not normally specified for connections that can be selected or completed as noted in Option (2) without practicing engineering.

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If there are any restrictions as to the types of Connections to be used, it is required that these limitations be set forth in the structural Design Drawings and Specifications. There are a variety of Connections available in the AISC *Steel Construction Manual* for a given situation. Preference for a particular type will vary between Fabricators and Erectors. Stating these limitations, if any, in the structural Design Drawings and Specifications will help to avoid repeated changes to the Shop and Erection Drawings due to the selection of a Connection that is not acceptable to the Owner's Designated Representative for Design, thereby avoiding additional cost and/or delay for the redrawing of the Shop and Erection Drawings.

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The structural Design Drawings must indicate the method of design used as LRFD or ASD. In order to conform to the spirit of the AISC Specification, the Connections must be selected using the same method and the corresponding references.

Substantiating Connection Information, when required, can take many forms. When option (2) is designated, Shop and Erection Drawings may suffice with no additional Substantiating Connection Information required. When option (3) is designated, the Substantiating Connection Information may take the form of hand calculations or software output.

**Deleted:** In some cases when the complete Connection design is not shown in the structural Design Drawings

**Deleted:** In other cases

When substantiating Connection information is required, it is recommended that representative samples of that information be agreed upon prior to preparation of Shop and Erection Drawings, in order to avoid additional cost and/or delay for the redrawing that might otherwise result.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 2 (REJECTED)**

The Owner's Designated Representative for Design may require that the Substantiating Connection Information be signed and sealed for option 3. The signing and sealing of the cover letter transmitting the Shop and Erection Drawings and Substantiating Connection Information may suffice. This signing and sealing indicates that a Professional Engineer performed the work but does not replace the approval process provided in Section 4.4.

~~A requirement to sign and seal each sheet of the Shop and Erection Drawings is discouraged as it may serve to confuse the design responsibility between the Owner's Designated Representative for Design and the licensed Professional Engineer's work in performing the connection design.~~

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**Deleted:** For these requirements, the Owner's Designated Representative for Design is bound by the applicable building code and/or licensing laws of the jurisdiction in which the project is located.

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**Deleted:** Doing so may violate the licensing laws of the jurisdiction because the member designs and configurations are not the work of the licensed Professional Engineer performing the connection design.

3.1.3. When leveling plates are to be furnished as part of the contract requirements, their locations and required thickness and sizes shall be specified in the Contract Documents.

3.1.4. When the Structural Steel frame, in the completely erected and fully connected state, requires interaction with non-Structural Steel elements (see Section 2) for



# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 3 (REJECTED)**

3.1.2. The Owner's Designated Representative for Design shall indicate one of the following options for each Connection:

- (1) The complete Connection design shall be shown in the structural Design Drawings;
- (2) In the structural Design Drawings or Specifications, the Connection shall be designated to be selected or completed by an experienced Steel Detailer; or,
- (3) In the structural Design Drawings or Specifications, the Connection shall be designated to be designed by a licensed Professional Engineer working for the Fabricator.

When option (3) above is specified:

- (a) The Fabricator shall submit in a timely manner representative samples of the required Substantiating Connection Information, to the Owner's Designated Representatives for Design and Construction. The Owner's Designated Representative for Design shall confirm in writing in a timely manner that these representative samples are consistent with the requirements in the Contract Documents, or shall advise what modifications are required. This initial submittal and review is in addition to the requirements in Section 4.4.
- (b) The licensed Professional Engineer in responsible charge of the Connection design shall review and confirm in writing as part of the Substantiating Connection Information, that the Shop and Erection Drawings properly incorporate the connection designs. However, this review by the licensed Professional Engineer in responsible charge of the connection design does not replace the approval process of the Shop and Erection Drawings by the Owner's Designated Representative for Design in Section 4.4.
- (c) The Fabricator shall provide a means by which the Substantiating Connection Information and the Connections on the Shop and Erection Drawings are linked.

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# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 3 (REJECTED)**

(3) Option 3 reflects a practice in some areas of the U.S. to have a licensed Professional Engineer working for the Fabricator design the Connections, and recognizes the information that the Fabricator needs to do this work. The Owner's Designated Representative for Design, who has the knowledge of the structure as a whole, must review and approve the Shop and Erection Drawings, and take such action on substantiating Connection information as the Owner's Designated Representative for Design deems appropriate. See Section 4.4 for the approval process.

When, under Section 3.1.2, the Owner's Designated Representative for Design designates that Connections be designed by a licensed Professional Engineer employed or retained by the Fabricator, this work is incidental to, and part of, the overall means and methods of fabricating and constructing the steel frame. The licensed Professional Engineer performing the Connection design is not providing a peer-review of the Contract Documents.

The Owner's Designated Representative for Design reviews the Shop and Erection Drawings during the approvals process as specified in Section 4.4 for conformance with the specified criteria and compatibility with the design of the primary structure.

One of these options should be indicated for each connection in a project. It is acceptable to group connection types and utilize a combination of these options for the various connection types involved in a project. Option (3) is not normally specified for connections that can be selected or completed as noted in Option (2) without practicing engineering.

**Deleted:** The licensed Professional Engineer also reviews and confirms in writing the incorporation of their work into the Shop and Erection Drawings.



# CHANGE ITEM #5 – SECTION 3\*

## 3.1. Structural Design Drawings and Specifications

### **BALLOT 3 (REJECTED)**

Substantiating Connection Information, when required, can take many forms. When option (2) is designated, Shop and Erection Drawings may suffice with no additional Substantiating Connection Information required. When option (3) is designated, the Substantiating Connection Information may take the form of hand calculations and/or software output.

When Substantiating Connection Information is required, it is recommended that representative samples of that information be agreed upon prior to preparation of Shop and Erection Drawings, in order to avoid additional cost and/or delay for the Connection redesign and/or redrawing that might otherwise result.



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# CHANGE ITEM #5 – SECTION 4\*

## **BALLOT 1 (REJECTED)**

### 4.4. **Approval**

Except as provided in Section 4.5, the Shop and Erection Drawings shall be submitted to the Owner's Designated Representatives for Design and Construction for review and approval, along with substantiating Connection information required in Section 3.1.2, if any. These submittals shall be returned to the Fabricator within 14 calendar days.

**Comment [aa13]:** Changes in this section and section 4.4.1 are made for consistency with the revision proposed in Section 3.1.2 and approved for ballot at our 3/11/2008 meeting.

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Approved Shop and Erection Drawings shall be individually annotated by the Owner's Designated Representatives for Design and Construction as either approved or approved subject to corrections noted. Approved substantiating Connection information is permitted to be grouped for ease of review and approval, and need not be individually annotated on each sheet. When so required, the Fabricator shall subsequently make the corrections noted and furnish corrected submittals to the Owner's Designated Representatives for Design and Construction.

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### **Commentary:**

As used in this Code, the 14-day allotment for the return of submittals is intended to represent the Fabricator's portal-to-portal time. The intent in this Code is that, in the absence of information to the contrary in the Contract Documents, 14 days may be assumed for the purposes of bidding, contracting and scheduling. A submittal schedule is commonly used to facilitate the approval process.

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If a Shop or Erection Drawing is approved subject to corrections noted, the Owner's Designated Representative for Design may or may not require that it be re-submitted for record purposes following correction. If a Shop or Erection Drawing is not approved, revisions must be made and the drawing re-submitted until approval is achieved.

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# CHANGE ITEM #5 – SECTION 4\*

## **BALLOT 1 (REJECTED)**

4.4.1. Approval of the submittals, approval subject to corrections noted and similar approvals shall constitute the following:

**Deleted:** Shop and Erection Drawings

- (a) Confirmation that the Fabricator has correctly interpreted the Contract Documents in the preparation of those submittals;
- (b) Confirmation that the Owner's Designated Representative for Design has reviewed and approved the Connection details shown on the submittals, and submitted in accordance with Section 3.1.2, if applicable; and
- (c) Release by the Owner's Designated Representatives for Design and Construction for the Fabricator to begin fabrication using the approved submittals.

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# CHANGE ITEM #5 – SECTION 4\*

## **BALLOT 2 (REJECTED)**

### **4.4. Approval**

Except as provided in Section 4.5, the Shop and Erection Drawings shall be submitted to the Owner's Designated Representatives for Design and Construction for review and approval. The Shop and Erection Drawings shall be returned to the Fabricator within 14 calendar days. Final Substantiating Connection Information required, if any, shall also be submitted with the Shop and Erection Drawings.

Approved Shop and Erection Drawings shall be individually annotated by the Owner's Designated Representatives for Design and Construction as either approved or approved subject to corrections noted. When so required, the Fabricator shall subsequently make the corrections noted and furnish corrected

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# CHANGE ITEM #5 – SECTION 4\*

## **BALLOT 3 (REJECTED)**

### **4.4. Approval**

Except as provided in Section 4.5, the Shop and Erection Drawings shall be submitted to the Owner's Designated Representatives for Design and Construction for review and approval. The Shop and Erection Drawings shall be returned to the Fabricator within 14 calendar days.

Final Substantiating Connection Information, if any, shall also be submitted with the Shop and Erection Drawings. The Owner's Designated Representative for Design is the final authority in the event of a disagreement between parties regarding connection design.

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#### **Commentary:**

As used in this Code, the 14-day allotment for the return of Shop and Erection Drawings is intended to represent the Fabricator's portal-to-portal time. The intent in this Code is that, in the absence of information to the contrary in the Contract Documents, 14 days may be assumed for the purposes of bidding, contracting and scheduling. When additional time is desired, such as when Substantiating Connection Information is part of the submittals, the modified allotment should be specified in the Contract Documents. A submittal schedule is commonly used to facilitate the approval process.

If a Shop or Erection Drawing is approved subject to corrections noted, the Owner's Designated Representative for Design may or may not require that it be re-submitted for record purposes following correction. If a Shop or Erection Drawing is not approved, revisions must be made and the drawing re-submitted until approval is achieved.



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# CHANGE ITEM #6 – SECTION 3

## **BALLOT 1 (REJECTED)**

### **3.2. Architectural, Electrical and Mechanical Design Drawings and Specifications**

All requirements for the quantities, sizes and locations of Structural Steel shall be shown or noted in the structural Design Drawings. The use of architectural, electrical and/or mechanical Design Drawings as a supplement to the structural Design Drawings is permitted for the purposes of defining detail configurations and construction information. It is not the responsibility of the steel fabricator or steel detailer to coordinate between these drawings and the structural Design Drawings.

**Comment [aa12]:** This statement was approved for ballot at our 12/5/2006 meeting.

## **BALLOT 2 (APPROVED TO WITHDRAW)**



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# CHANGE ITEM #7 – SECTION 4

## BALLOT 1 (APPROVED)

### 4.7 Erection Drawings

Erection Drawings shall be provided to the Erector in a timely manner so as to allow the Erector to properly plan and perform the work.

#### Commentary:

For planning purposes, this may include release of preliminary Erection Drawings, if requested by the Erector.

**Comment [aa14]:** This is a new section that was approved for ballot at our 3/11/2008 meeting.



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# CHANGE ITEM #8 – SECTION 6

## 6.4. Fabrication Tolerances

### **BALLOT 1 (APPROVED)**

6.4.3. For beams that are detailed without specified camber, the member shall be fabricated so that, after erection, any incidental camber due to rolling or shop fabrication is upward. ~~For trusses that are detailed without specified camber, the components shall be fabricated so that, after erection, any incidental camber due to rolling or shop fabrication is upward.~~

**Deleted:** and trusses

6.4.4. For beams that are specified in the Contract Documents with camber, beams received by the Fabricator with 75% of the specified camber shall require no further cambering. Otherwise, the variation in camber shall be as follows:

(a) For beams that are equal to or less than 50 ft [15 000 mm] in length, the

**Comment [aa15]:** This revision was approved for ballot at our 12/5/2006 meeting to eliminate a conflict with Section 6.4.5. The old language required positive camber in this section but then allowed a negative camber with the minus 1:800 tolerance in Section 6.4.5.

### **BALLOT 2 (APPROVED)**



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# CHANGE ITEM #9 – SECTION 7\*

## 7.10. Temporary Support of Structural Steel Frames

7.10.1. The Owner's Designated Representative for Design shall identify the following in the Contract Documents:

### **BALLOT 1 (REJECTED)**

See also Commentary Section 7.10.3.

The Erector is responsible to erect any member (including a cantilevered member) to the specified line and grade shown in the structural Design Drawings or the Erection Drawings within the erection tolerances specified in this Code. The intent of Section 7.10.1(b) is to alert the Owner's Designated Representative for Design to any special erection condition required, stating that it must be identified in the Contract Documents. Such conditions might include designs that require the use of shores or jacks to impart a load or to obtain a specific elevation in the already-erected structure in a subsequent step of the erection process. The requirements might not be apparent to an Erector, and must be identified so the Erector can properly plan and bid the erection.

**Comment [aa16]:** This addition was approved for ballot at our 3/11/2008 meeting.



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# CHANGE ITEM #9 – SECTION 7\*

## 7.10. Temporary Support of Structural Steel Frames

7.10.1. The Owner's Designated Representative for Design shall identify the following in the Contract Documents:

### **BALLOT 2 (APPROVED)**

*building foundation.*

See also Commentary Section 7.10.3.

The Erector is responsible for installation of all members (including cantilevered members) to the specified alignment, line and grade shown in the structural Design Drawings or the approved Erection Drawings within the erection tolerances specified in this Code. The Erector must provide all temporary supports and devices to meet these tolerances. These works are part of the means and methods of the Erector and the Owner's Designated Representative for Design need not specify these methods or related equipment. Section 7.10.1(b) is intended to apply to special requirements inherent in the design concept that could not otherwise be known by the Erector. Such conditions might include designs that require the use of shores or jacks to impart a load or to obtain a specific elevation in a subsequent step of the erection process in a sequentially erected structure or member. These requirements would not be apparent to an Erector, and must be identified so the Erector can properly bid, plan and perform the erection.

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# CHANGE ITEM #9 – SECTION 7\*

## 7.10. Temporary Support of Structural Steel Frames

7.10.1. The Owner's Designated Representative for Design shall identify the following in the Contract Documents:

### **BALLOT 3 (APPROVED)**

See also Commentary Section 7.10.3.

~~Section 7.10.1(b) is intended to apply to special requirements inherent in the design concept that could not otherwise be known by the Erector. Such conditions might include designs that require the use of shores or jacks to impart a load or to obtain a specific elevation or position in a subsequent step of the erection process in a sequentially erected structure or member. These requirements would not be apparent to an Erector, and must be identified so the Erector can properly bid, plan and perform the erection.~~

~~The Erector is responsible for installation of all members (including cantilevered members) to the specified plumbness, elevation, and alignment within the erection tolerances specified in this Code. The Erector must provide all temporary supports and devices to maintain elevation or position within these tolerances. These works are part of the means and methods of the Erector and the Owner's Designated Representative for Design need not specify these methods or related equipment.~~

**Deleted:** The Erector is responsible to erect any member (including a cantilevered member) to the specified line and grade shown in the structural Design Drawings or the Erection Drawings within the erection tolerances specified in this Code.

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# CHANGE ITEM #10 – SECTION 7

## 7.13. Erection Tolerances

### **BALLOT 1 (APPROVED)**

the tops of door frames or ductwork.

The effects of the deflection of transfer girders and trusses on the position of columns and hangers supported from them also may be a consideration in both design and construction. As in the case of differential column shortening, the deflection of these supporting members during and after construction will affect the position and alignment of the framing tributary to these transfer members.

**Comment [AG17]:** This commentary addition was approved for ballot at our 12/4/2005 meeting.

### **BALLOT 2 (APPROVED)**

the tops of door frames or ductwork.

The effects of the deflection of transfer girders and trusses on the position of columns and hangers supported from them may be a consideration in design and construction. As in the case of differential column shortening, the deflection of these supporting members during and after construction will affect the position and alignment of the framing tributary to these transfer members.

Expansion and contraction in a Structural Steel frame may be a consideration in design and construction. Steel will expand or contract approximately 1/8 in. per 100 ft for each change of 15°F [2 mm per 10 000 mm for each change of 15°C] in temperature. This change in length can be assumed

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# CHANGE ITEM #11 – SECTION 7\*

## 7.13. Erection Tolerances

7.13.1.2. For members other than column shipping pieces, the following limitations shall apply:

### **BALLOT 1 (APPROVED)**

within the permissible variations for the fabrication and erection of those members.

- (d) For a member that consists of an individual, straight shipping piece and that is a segment of a field assembled unit containing field splices between points of support, the plumbness, elevation and alignment shall be acceptable if the angular variation of the working line from a straight line between points of support is equal to or less than 1/500 of the distance between working points.

**Comment [aa18]:** This change was approved for ballot at our 6/6/2006 meeting and is intended to clarify that the 1/500 tolerance is applicable to both the horizontal and vertical directions. The previous use of the word “plan” implied it was only applied in the horizontal direction.

**Deleted:** the plan alignment



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# CHANGE ITEM #11 – SECTION 7\*

## 7.13. Erection Tolerances

7.13.1.2. For members other than column shipping pieces, the following limitations shall apply:

### **BALLOT 2 (APPROVED)**

- (d) For a member that consists of an individual, straight shipping piece and that is a segment of a field assembled unit containing field splices between points of support, the plumbness, elevation and alignment shall be acceptable if the angular variation, vertically and horizontally, of the working line from a straight line between points of support is equal to or less than 1/500 of the distance between working points.

**Deleted:** the plan alignment

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### **Commentary:**

The angular misalignment of the working line of all fabricated shipping pieces relative to the line between support points of the member as a whole in erected position must not exceed 1 in 500. Note that the tolerance is not stated in terms of a linear displacement at any point and is not to be taken as the overall length between supports divided by 500. Typical examples are shown in Figure C-7.7. Numerous conditions within tolerance for these and other cases are possible. This condition applies to both plan and elevation tolerances.



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# CHANGE ITEM #11 – SECTION 7\*

## 7.13. Erection Tolerances

7.13.1.2. For members other than column shipping pieces, the following limitations shall apply:

### **BALLOT 3 (APPROVED)**

#### **Commentary:**

The angular misalignment of the working line of all fabricated shipping pieces relative to the line between support points of the member as a whole in erected position must not exceed 1 in 500. Note that the tolerance is not stated in terms of a linear displacement at any point and is not to be taken as the overall length between supports divided by 500. Typical examples are shown in Figure C-7.7. Numerous conditions within tolerance for these and other cases are possible. The condition described in (d) applies to both plan and elevation tolerances.

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# CHANGE ITEM #12 – SECTION 10

## BALLOT 1 (APPROVED)

### 10.2. Fabrication

10.2.5. All welds that are exposed to view shall be visually acceptable if they meet the requirements in AWS D1.1, except all groove welds in butt joints and outside corner joints and plug welds that are exposed to view shall not project more than 1/16 in. [2 mm] above the exposed surface. Finishing or grinding of welds shall not be necessary, unless such treatment is required to provide for clearances or fit of other components.

10.2.6. Erection marks or other painted marks shall not be made on those surfaces of

**Comment [aa19]:** This change was approved for ballot at our 12/5/2006 meeting to clarify that this provision applies to butt and outside corner joints. Not tee and inside corner joints.



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# CHANGE ITEM #14 – SECTION 1\*

## **BALLOT 3 (APPROVED)**

### **1.1. Scope**

This Code sets forth criteria for the trade practices involved in steel buildings, bridges, and other structures, where other structures are defined as those structures designed, fabricated, and erected in a manner similar to buildings, with building-like vertical and lateral load resisting elements. In the absence of specific instructions to the contrary in the Contract Documents, the trade practices that are defined in this Code shall govern the fabrication and erection of Structural Steel.

### **1.4. Design Criteria**

For buildings and other structures, in the absence of other design criteria, the provisions in the AISC Specification shall govern the design of the Structural Steel. For bridges, in the absence of other design criteria, the provisions in the AASHTO Specification and AREMA Specification shall govern the design of the Structural Steel, as applicable.



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# Delegation of Connection Design Work

- Refers to “**Design Work**”
  - Specific reason
  - Fabricator’s insurance
- Process is now outlined in the COSP
- Involves
  - Structural Engineer of Record
  - Connection Design Engineer
  - Fabricator
  - Detailer



# Design Responsibility

- COSP contemplates design **responsibility** remains with the **Structural Engineer of Record**
- Approval process
  - Provides acceptance by the SER
- Specific Process



# Process

- Delegation specified by SER
  - Loads (Specify service or factored)
  - LRFD or ASD
  - Special criteria
  - Substantiating Connection Information required
- Fabricator retains connection engineer
  - Outside engineer
  - In-house engineer



# Process

- Connection engineer submits job standards
  - Typical types of connection details
  - Review and communication with SER
- Connection engineer performs design work
- Detailer incorporates connection design
- Calculations are “linked” to the shop drawings
- Connection engineer reviews shop drawings for connection information



# Process

- Shop drawings submitted for review by SER
- Connection calculations submitted for review by SER
- Final supporting information for connection design is submitted signed and sealed.
- Letter stating that connection engineer has reviewed shop drawings



# Caution!

- The SER is likely to be held responsible for a failure in a connection
- The SER should check the connection “design work” consistent with an in house design review
- If things go wrong – Everyone will be involved
- SER should never think they have no responsibility for connection design!



**Questions?**  
**Thoughts?**

# **2010 AISC Code of Standard Practice Upcoming Changes**

**Delaware Valley Association of Structural Engineers  
16 December 2009**

**D. Kirk Harman, PE, SE, SECB**

**President**

**The Harman Group  
Structural Engineers**



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