

## **Administration and Inspection Activities for Structural Steel for Bridges**

(As Specified in OPSS 906 and SSP 906F04)

### **906.01 SCOPE**

This CAIS covers the construction administration and inspection requirements for the fabrication, delivery, and erection of structural steel for highway bridges as specified in OPSS 906, July 2025 and SSP 906F04, January 2023.

### **906.02 REFERENCES**

This CAIS refers to the following standards, specifications, or publications:

#### **Ontario Provincial Standard Specifications, Construction:**

OPSS 906     Structural Steel for Bridges  
OPSS 911     Coating Structural Steel

MTO Standard Special Provisions:

SSP 906F04   Amendment to OPSS 906, November 2020 - CISC Bridge Certification  
Requirements

#### **Construction Administration and Inspection Specifications (CAIS):**

CAIS 911     Coating Structural Steel  
CAIS 919     Formwork and Falsework  
CAIS 922     Installation of Bearings  
CAIS 1202    Bearings-Elastomeric Plain and Steel Laminated  
CAIS 1203    Bearings-Rotational and Sliding Surface

#### **MTO Forms:**

PH-CC-701    Request to Proceed  
PH-CC-702    Notice to Proceed  
PH-CC-821    Manufacturer's Certificate of Conformance

#### **Guidelines:**

'Add Guidelines'

### **906.03 DEFINITIONS**

For the purpose of this CAIS, the definitions shall be as specified in OPSS 906.

## **906.04 DESIGN AND SUBMISSION REQUIREMENTS**

### **906.04.02 Submissions**

Administrative Activities:

1	M	Receive and Check that the shop drawings, mill test certificates and welding procedures are in conformance with the Contract prior to commencement of fabrication. Check that the shop drawings and welding procedures are on site and being followed at the fabrication facility during fabrication.	-
2	-	When other authorities are involved in the approval of the design or construction, Check that the submission is made as specified in OPSS 906.	-
3	M	Receive the submission for the erection scheme including erection diagrams, erection procedure, calculations, and bolting procedures at least 7 days prior to the commencement of installation of structural steel. Review, provide comments and Check if they are in conformance with the Contract.	-
4	-	Prior to the use of any material in fabrication, receive mill test certificates and Check that material is according to the Contract.  When mill test certificates originate from a mill outside of Canada or the United States of America, Receive and Check the mill test certificates are certified at a Canadian laboratory in accordance with the Contract.	-
5	M	Receive and Check test reports for fasteners are in accordance with the Contract.	-
6	-	Receive and Check at least 7 Days prior to the commencement of fabrication, the Certification of the Independent Testing Organization and Non-Destructive Testing Technician meet the Contract requirements.	-
7	-	Submit a copy of the Working Drawings, erection diagrams, erection procedure drawings and calculations, welding procedures, and inspection reports to MTO Structural.  Submit a copy of the straightening procedure, heat cambering procedure, heat curving of rolled beams and welded girders procedure, and repair procedures, if any, to MTO Structural.	-

### **906.04.03 Inspection after Fabrication of the Structural Steel**

Administrative Activities:

1	M	Receive from the Contractor a Manufacturer's Certificate of Conformance, upon completion of the fabrication of the structural steel, and prior to shipping from the fabrication facility. Check that the Manufacturer's Certificate of Conformance meets the requirements of the Contract.	-
2	M	Receive and Check a Request to Proceed from the Contractor before the delivery of the structural steel to the site.	-

3	M	Check that the submissions by the Contractor, including the Manufacturer's Certificate of Conformance and Request to Proceed conform to the requirements of the Contract Documents before issuing a Notice to Proceed to the Contractor, in a timely manner, and prior to delivery of structural steel to the site.	-
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## **906.05 MATERIALS**

Inspection Activities:

1	-	Check that materials are in accordance with the Contract Documents, CAIS 1202, and CAIS1203.	-
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Administrative Activities:

1	-	When requests to substitute materials for size and grade are received, Check with the Owner MTO Regional Structural Section prior to issuing approval in writing.	-
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## **906.07 CONSTRUCTION**

### **906.07.01 Fabrication**

#### **906.07.01.01 General**

Inspection Activities:

1	-	Check that components have been abrasive blast-cleaned in accordance with the Contract.	-
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#### **906.07.01.02 Plate Edges**

Administrative Activities:

1	-	When requests to plasma arc cut plates thicker than 25 mm are received, Check with the Owner prior to issuing approval in writing.	-
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#### **906.07.01.03 Straightening Material**

Inspection Activities:

1	WS	Witness the straightening of the element.	100%
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Administrative Activities:

1	M	Receive and Check that the Contractor's straightening procedure, including testing requirements, is in conformance with the Contract.	-
2	-	Check that notice is provided at least 7 Days prior to straightening.	-

#### **906.07.01.04 Cambering**

Administrative Activities:

1	M	Receive and Check the details of the heat cambering procedure are in conformance with the Contract at least 7 Days prior to cambering.	-
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#### **906.07.01.05 Horizontally Curved Girders**

##### **906.07.01.05.01 Heat Curving of Rolled Beams and Welded Girders**

Administrative Activities:

1	M	Receive and Check that the detailed procedure for heat curving of rolled beams and welded girders operation is in conformance with the Contract at least 14 Days prior to heat curving.	-
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#### **906.07.01.06 Identification Marking for Erection**

Inspection Activities:

1	-	Check identification marking is in accordance with the Contract and erection plans.	-
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#### **906.07.01.07 Welded Construction**

Inspection Activities:

1	-	Check that the structural steel is fabricated according to the requirements of the Contract prior to delivery to the site.	-
2	-	Witness the pre-installation verification of bolt assemblies prior to the commencement of assembly of bolted components on site.	-
3	-	Check and verify the grade, type, size and location of bolt assemblies.	
4	-	Check and confirm field welding operation is in conformance with the approved welding procedure.	-
5	-	Carry out visual inspection for field welds.	-

Administrative Activities:

1	M	Check that each tacker, welder or welding operator have proper identification cards in accordance with the Contract Documents. Check Certification of the company meets the Contract requirements.	-
2	-	Receive and Check repair welding procedures are in accordance with the Contract and submitted at least 14 Days prior to commencement of work.	-
3	M	Receive and Check that repair procedures are in conformance with the Contract.	-
4	-	Receive and Check all repair procedures requiring approval are in accordance with the Contract and submitted at least 14 Days prior to commencement of the work.  Receive and Check all non-critical repair procedures are in accordance with the Contract and repairs do not commence until written approval to proceed is issued by the Contract Administrator.	-
5	-	Receive documentation on all visual and non-destructive testing by the fabricator upon completion of the project.	-

**906.07.01.08 Fabrication Outside of Canada and USA**

Inspection Activities:

1	-	Check that shipped structural steel is not galvanized or coated and can be inspected and tested according to the Contract Documents.	-
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Administrative Activities:

1	-	Check that structural steel fabricated outside of Canada and USA is shipped to a facility in Canada according to the Contract Documents.	-
2	-	Check that shipped structural steel includes reports according to the Contract Documents.	-
3	-	Receive a Request to Proceed from the Contractor after completion of the re-inspection and testing and prior to shipping from the Canadian facility.  Check reports, re-inspection reports and testing reports are according to the Contract Documents.	-
4	-	Issue to the Contractor a Notice to Proceed, in a timely manner, after reviewing the inspection and testing reports and prior to shipping from the Canadian facility.	-

**906.07.02 Delivery, Handling and Storage**

Inspection Activities:

1	M	Check delivered structural steel to verify that they conform with the Contract. Verify that any damage caused to the structural steel or coating during delivery have been repaired in accordance with the Contract.	-
2	M	Check that the storage of structural steel is in accordance with the Contract.	

Administrative Activities:

1	M	Receive and Check the submission that safe loading, delivery, unloading and storage of the fabricated structural steel are in conformance with the Contract.	-
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**906.07.03 Erection**

Inspection Activities:

1	-	Prior to erection, Check the appearance of steel is according to the Contract Documents and that components are free of mill scale and other foreign matter.	25%
2	-	Witness the erection of main components.	100%
3	WS	Inspect fit-up, alignment and plumbness of structural components. Identify and locate crevices in uncoated areas of splices.	100%
4	M	Confirm tensioning of bolt assemblies by turn-of-nut method.	100%
5	M	Inspect if the ends of girders and bearing stiffeners are truly vertical under full dead load in conformance with the Contract.	100%

Administrative Activities:

1	-	Check that notice of the starting erection date is provided in writing at least 14 Days prior to the commencement of field operations.	-
2	M	Check and ensure erection of the components is in conformance with approved erection diagrams and erection procedures.	-
3	M	Receive submission for each repair work for each deficiency found during erection. Review, provide comments and Check if they are in conformance with the Contract.	-
4	-	Receive and Check top of flange and top of splice plate elevations are as specified in the Contract Documents.	-
5	-	Submit a copy of the splice plate elevations to MTO Structural.	

6	-	Provide locations of crevices of uncoated areas of structural steel to the Regional Structural Section and Structures Office, Standards group and Check if sealants are required.	-
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#### **906.07.03.06 Coatings**

Inspection Activities:

1	-	Inspect surface preparation and touch-up painting is in conformance with the Contract.	-
2	-	Check that structural steel coating and repair of coating defects is in conformance with OPSS 911 and the Contract Documents.	-

#### **906.07.06 Inspection Reports**

Administrative Activities:

1	M	Receive and Check the inspection reports within 7 Days of inspection; make sure that the fabrication of structural steel conforms to the requirements of the Contract, and that all deficiencies have been repaired accordingly.	-
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#### **906.07.08 Inspection after Installation of the Structural Steel**

Inspection Activities:

1	M	Check that all installed Atmospheric Corrosion Resistant (ACR) steel components are completely free of mill scale, rust, coating, oxides, corrosion products, oil, grease, dust, dirt, wax-based crayon marks and other foreign matter.	100%
2	M	Check that the appearance of ACR components are generally uniform in colour and texture, except for slight streaks or discolourations, when viewed from a distance of 15 m.	100%

Administrative Activities:

1	M	Receive and Check a Request to Proceed from the Contractor after the installation of the structural steel.	-
2	M	Issue to the Contractor a Notice to Proceed, in a timely manner, after installation of the structural steel and prior to the next operation.	-

**906.08****QUALITY ASSURANCE****906.08.01****General**

Inspection Activities:

1	-	<p>Perform visual inspection of in-process fabrication of 25% of girders. Inspection shall be such that each girder line in each bridge structure included in the Contract is represented.</p> <ul style="list-style-type: none"> <li>• Confirm fabricator certification and personnel qualifications.</li> </ul>	-
2	WS	<p>Perform visual inspection of in-process fabrication of 25% of girders. Inspection shall be such that each girder line in each bridge structure included in the Contract is represented.:</p> <ul style="list-style-type: none"> <li>• Identify structural steel and welding material by correlation of heat numbers to mill test certificates;</li> <li>• Inspect dimensions (layout, fit-up, camber, etc.);</li> <li>• Visually inspect welds;</li> <li>• Visually inspect repairs to fracture critical and primary tension members, including a review of contractor's test results for these repairs;</li> <li>• Review contractor's non-destructive test results;</li> <li>• Visually inspect 25% of secondary components (bracing, attachments) of all girders in the Contract.</li> </ul>	-
3	NDT	<p>Conduct non-destructive testing of 25% of girders in each bridge structure included in the Contract as follows: :</p> <ul style="list-style-type: none"> <li>• All groove welds in the tension flange by Ultrasonic Testing (UT) or Radiographic Testing (RT) for their full length.</li> <li>• 1 in 4 of groove welds in compression flanges by UT or RT.</li> <li>• 100% UT or RT of all groove welds in web for a distance of 1/2 web depth from tension flange and 25% UT for the remainder of the web.</li> <li>• 100% magnetic particle inspection of full length of web to flange fillet connections for full length of each joint.</li> </ul>	-
4	SES	<p>After the Contractor submits a Request to Proceed to the CA and prior to the CA issuing a Notice to Proceed and shipping from the fabrication facility, review all QC and QA inspection and testing records and/or reports and perform additional visual inspection as required to verify compliance with the contract documents; ensure all repairs have been completed, and all non-conformance reports have been reviewed and accepted; and provide written acceptance of the release of each girder segment for shipping to the CA.</p>	-



5	-	<p>Visit the site daily during the erection of steel girders and installation of bracing components.</p> <p>Inspection shall be such that each girder line in each bridge structure is represented.</p> <p>All inspection shall be a minimum of 25% of girders.</p> <ul style="list-style-type: none"> <li>• Confirm erector certification and personnel qualifications;</li> <li>• Check that the installation procedures are in conformance with the Contract.</li> </ul>	-
6	SES	<p>Visit the site daily during the erection of steel girders and installation of bracing components of 25% of girders in each bridge structure included in the Contract or equivalent to at least one line of girders.</p> <ul style="list-style-type: none"> <li>• Witness the erection of main components, including installation of all bracing components required to maintain stability of the girders and one line of diaphragms attached to the girders being inspected.</li> </ul>	-
7	WS	<p>Visit the site during the erection of steel girders, bolted connections, and installation of bracing components of 25% of girders. Inspection shall be such that each girder line in each bridge structure is represented.</p> <ul style="list-style-type: none"> <li>• Inspect of fit-up, alignment and plumbness of structural components;</li> <li>• Verify of grade, type, size and location of bolt assemblies;</li> <li>• Confirm tensioning of bolt assemblies by the turn-of-nut method;</li> <li>• Witness pre-installation verification of bolt assemblies to confirm method and pretension are compliant</li> <li>• Confirm compliance of field welding operations with approved welding procedures;</li> <li>• Visually inspect field welds.</li> </ul>	-

Administrative Activities:

1	-	Coordinate the Structural Engineering Specialist inspection, non-destructive testing and sampling.	-
2	-	Receive and Check interim reports for each specialist field visit or installation operation and submit reports to MTO Structural.	-
3	-	Receive and Check final structure specialist services report for each speciality area and submit reports to MTO Structural.	-

**906.10 BASIS OF PAYMENT**

Administrative Activities:

1	-	Basis of payment shall be as specified.	-
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WARRANT: Always with OPSS 906, Construction Specification for Structural Steel for Bridges.