



## Mock Exercise Instructions for Fabricators of Simple Bridges

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### 1. Scope

For applicability, refer to the *Supplemental Requirements for Fabricators of Steel Bridges*.

This exercise will demonstrate fabrication knowledge, skills, and capability to produce fabricated steel to the quality required for Simple Bridges.

### 2. Document Requirements

In addition to the required documents listed in the Program Requirements, the fabricator shall have the following documents available for review during the site audit:

- a. Valid FCAW or SAW Welding Procedure Specifications (WPS) with supporting Procedure Qualification Record (PQR) in compliance with AASHTO/AWS D1.5.
- b. Current Welder Performance Qualification Records for all processes and positions to be used in the exercise in compliance with AASHTO/AWS D1.5.
- c. Material Test Reports (MTRs) for materials used. (May be an example of an MTR.)
- d. Purchase orders for materials used. (May be an example of a P.O.)

### 3. Welding

All welding, including tack welding, shall be in compliance with the latest edition of AASHTO/AWS D1.5. SMAW or FCAW may be used for tack welding, however, FCAW or SAW shall be used for fabrication. GMAW-S shall not be used without Engineer approval.

### 4. Bolting

The Turn-of-Nut method shall be used for all bolting in this exercise. All bolted connections shall be considered slip critical.

### 5. Dimensional Tolerances

Dimensional tolerances shall be in compliance with AASHTO/AWS D1.5.



# CERTIFICATION PROGRAMS

## 6. Inspection and NDT

The fabricator shall perform in-process inspection prior to the site audit. Final inspection shall be performed at the time of the audit. Visual inspection reports and any required NDT reports shall be presented at the time of the audit. Qualifications of the QC inspector shall be verifiable in compliance with AASHTO/AWS D1.5, Clause 6.

## 7. Fabrication

a. Fabricate the following structural members as shown on the attached drawings:

- Girder G1 (Rolled beam)
- Girder G2 (Rolled beam)
- 1- Diaphragm D2 (MC, W-Shape, or C Channel section)

b. Refer to the attached drawings. Fabrication to include the following considerations:

- Single-span bridge, Girders G1 and G2
- Girder depth: Minimum 18", Maximum 36" rolled beams
- Girder length: 4'-0" minimum (to allow for fit-up of one diaphragm)
- Camber: Natural camber up.
- Girder spacing: 5 feet
- Intermediate diaphragm: Type 1
- Bridge skew: 10°
- Skewed connection stiffeners located at mid-point of beams
- Profile Grade Line (PGL): Centerline of G3
- Bridge slope: -5° from PGL to fascia girder

Do not assemble the fabricated members. The Auditor shall observe the assembly of the fabricated members. Refer to Table 1 for Fabrication, Inspection and Audit Activities.

## 8. General Requirements

- a. During the site audit, the personnel responsible for and performing the work shall demonstrate understanding necessary for effective implementation of the requirements of the latest editions of the applicable codes and standards.
- b. The Auditor shall not perform any inspections, direct any work, or provide instruction. The auditor may request alternate sequences in agreement with the auditee to meet unforeseen on-site conditions.
- c. The Auditor is present to observe the process and the application of the requirements by the auditee.
- d. All fabrication of the mock exercise shall be performed by the fabricator.



# CERTIFICATION PROGRAMS

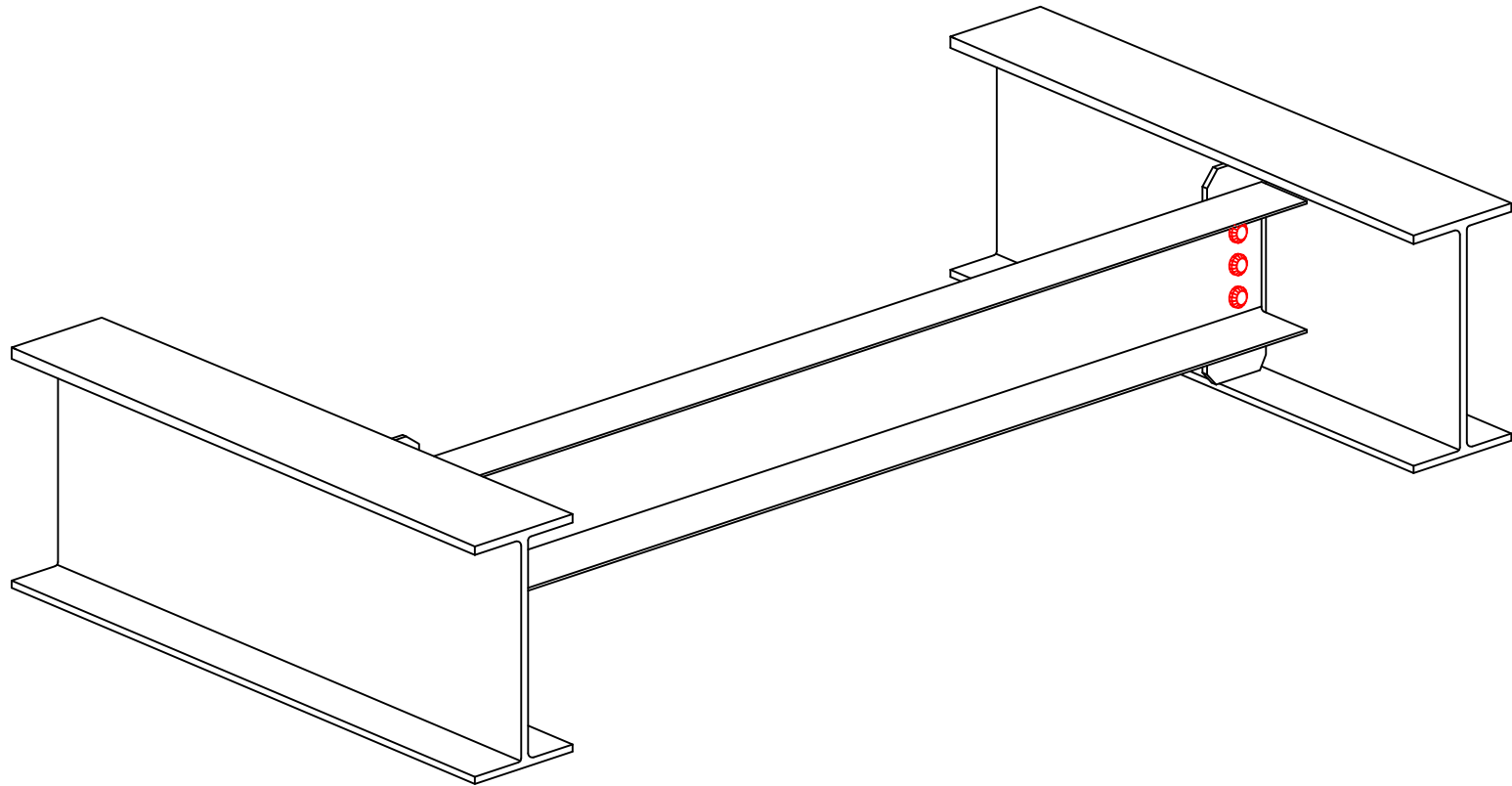
**TABLE 1 - Sequencing of Fabrication, Inspection, and Audit activities**

#	Fabrication Activity	Inspection Instructions	Audit Activities
1	Fabricate Girders G1 and G2 and Diaphragm D2	In-process inspection and NDT shall be performed in compliance with the fabricator's documented procedures and the current AASHTO/AWS D1.5, Bridge Welding Code.	<p>The on-site auditor shall observe the completed fabrication. Witness of NDT is not required.</p> <p>Fabricator's QC and NDT inspection records shall be made available for the on-site auditor to review.</p>
2	Pre-installation verification (PIV)	PIV demonstration shall be performed in compliance with RCSC and the fabricator's documented procedure.	<p>The on-site auditor shall observe the pre-installation verification demonstration. Records shall be made available for the on-site auditor to review.</p>
3	Rotational Capacity (Rocap) Testing	Rocap Testing shall be performed in compliance with ASTM F3125 and the fabricator's documented procedure.	<p>The on-site auditor shall observe Rocap Testing. Records shall be made available for the on-site auditor to review.</p>
4	Assemble Girders and Diaphragm as shown on the attached drawings	In-process inspection shall be performed in compliance with the fabricator's documented procedures.	<p>The on-site auditor shall observe the assembly of girders and diaphragm.</p> <p>NOTE: The bolted connections (diaphragm to connection stiffeners) shall be considered slip critical.</p>

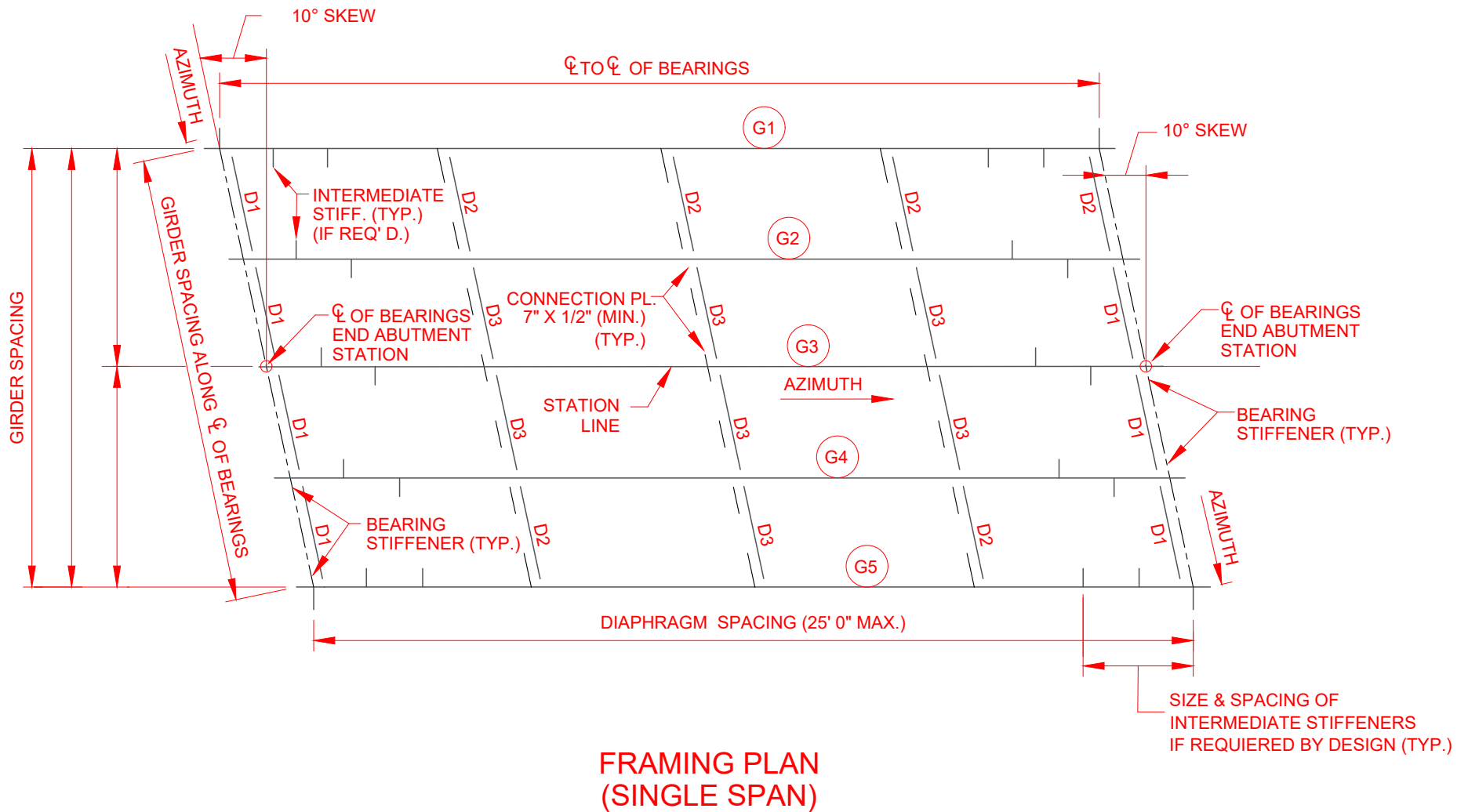


## CERTIFICATION PROGRAMS

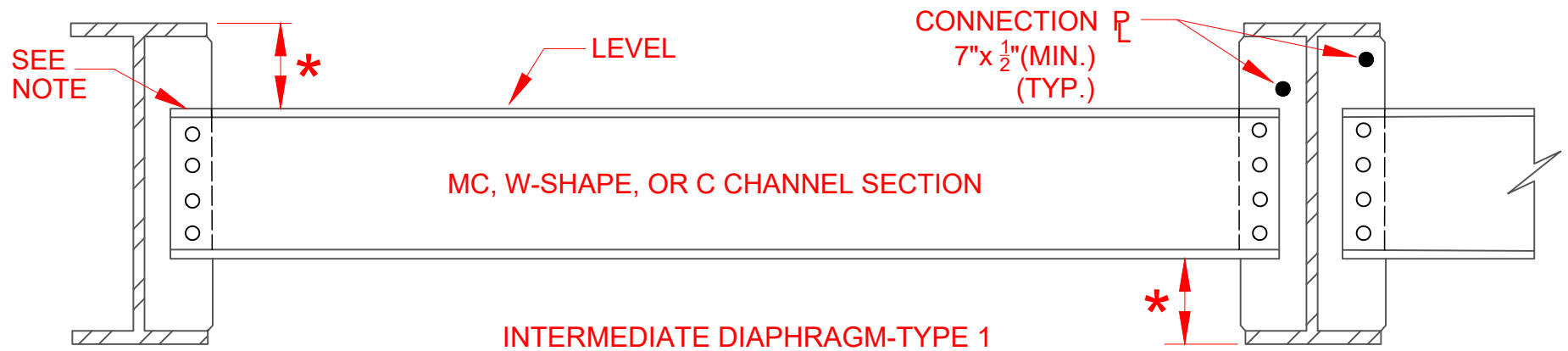
5	Bolt installation	Pretensioned bolt installation using the turn of the nut method in compliance with RCSC shall be done at the time of the audit.	The on-site auditor shall observe bolt installation.  Fabricator's QC and inspection records shall be made available for the on-site auditor to review.
6	Final Inspection	All required inspections shall be performed in compliance with the fabricator's QMS and the current AASHTO/AWS D1.5 Bridge Welding Code.	The Fabricator's QC and inspection records, including NDT reports, shall be made available for the on-site auditor to review.



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FOR SKEWS 20° AND UNDER, THE DIAPHRAGMS AND THE STIFFENERS THEY ARE CONNECTED TO SHALL BE PLACED PARALLEL TO THE SKEW.



NOTES:

1. DIAPHRAGM TO BE AT LEAST ONE-HALF OF THE BEAM DEPTH.
2. BOLTED CONNECTIONS SHALL BE MADE USING  $\frac{7}{8}$ " DIAM. ASTM F3125, GRADE A325 HIGH-STRENGTH BOLTS.
3. \* DIMENSIONS SHALL BE EQUAL.

