



# CERTIFICATION PROGRAMS

## Mock Exercise Instructions for Fabricators of Steel Buildings

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### 1. Scope

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

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

### 2. Document Requirements

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

- a. Valid Welding Procedure Specifications (WPS) for all processes and positions to be used in the exercise, with supporting Procedure Qualification Record (PQR) if required, in compliance with AWS D1.1.
- b. Current Welder Performance Qualification Records for all processes and positions to be used in the exercise in compliance with AWS D1.1.
- 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 shall be in compliance with the latest edition of AWS D1.1. SMAW may be used for tack welding, however, FCAW or GMAW shall be used for fabrication. If GMAW-S is used, the PQR shall be in conformance with AWS D1.1 Clause 4.

### 4. Bolting

All bolted connections shall be snug tight unless otherwise noted.



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## 5. Fabrication

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

- Column 1C1
- Column 2C1
- Beams 4B1 and 4B2
- Diagonal 11D1

Do not assemble the fabricated members. Refer to Table 1 for Fabrication, Inspection and Audit Activities.

## 6. Inspection

Qualifications of the Quality Control Inspector (QCI) shall be verifiable in compliance with AISC 360 Chapter N and AWS D1.1, Clause 6. Refer to Table 1 for visual inspection requirements.

## 7. General Requirements

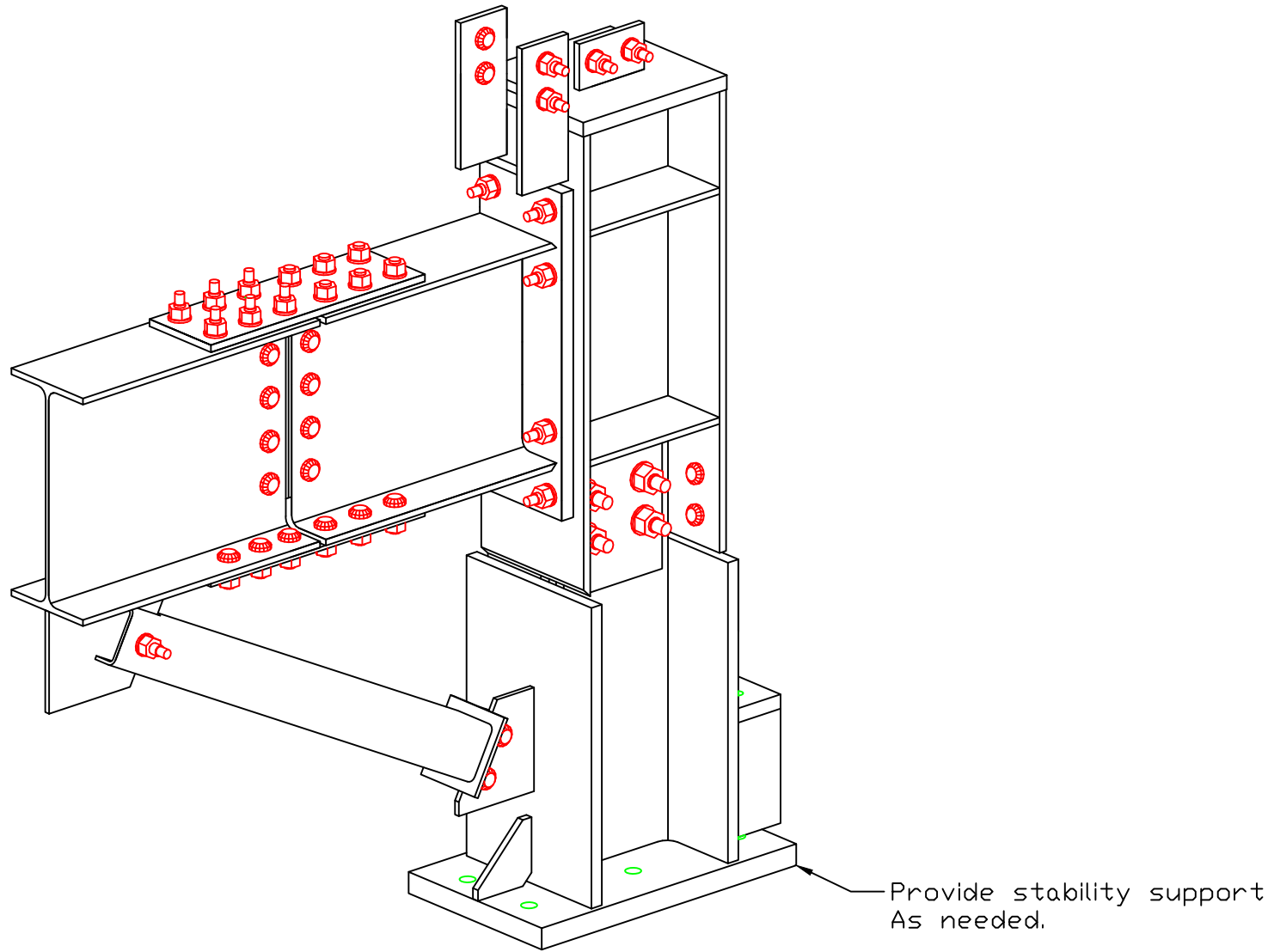
- a. During the site audit, the personnel responsible for and performing the work shall demonstrate understanding necessary for effective implementation of the requirements of the latest editions of the applicable codes and standards.
- b. The auditor shall not perform any inspections, direct any work, 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

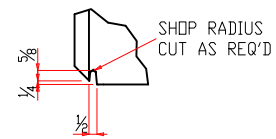
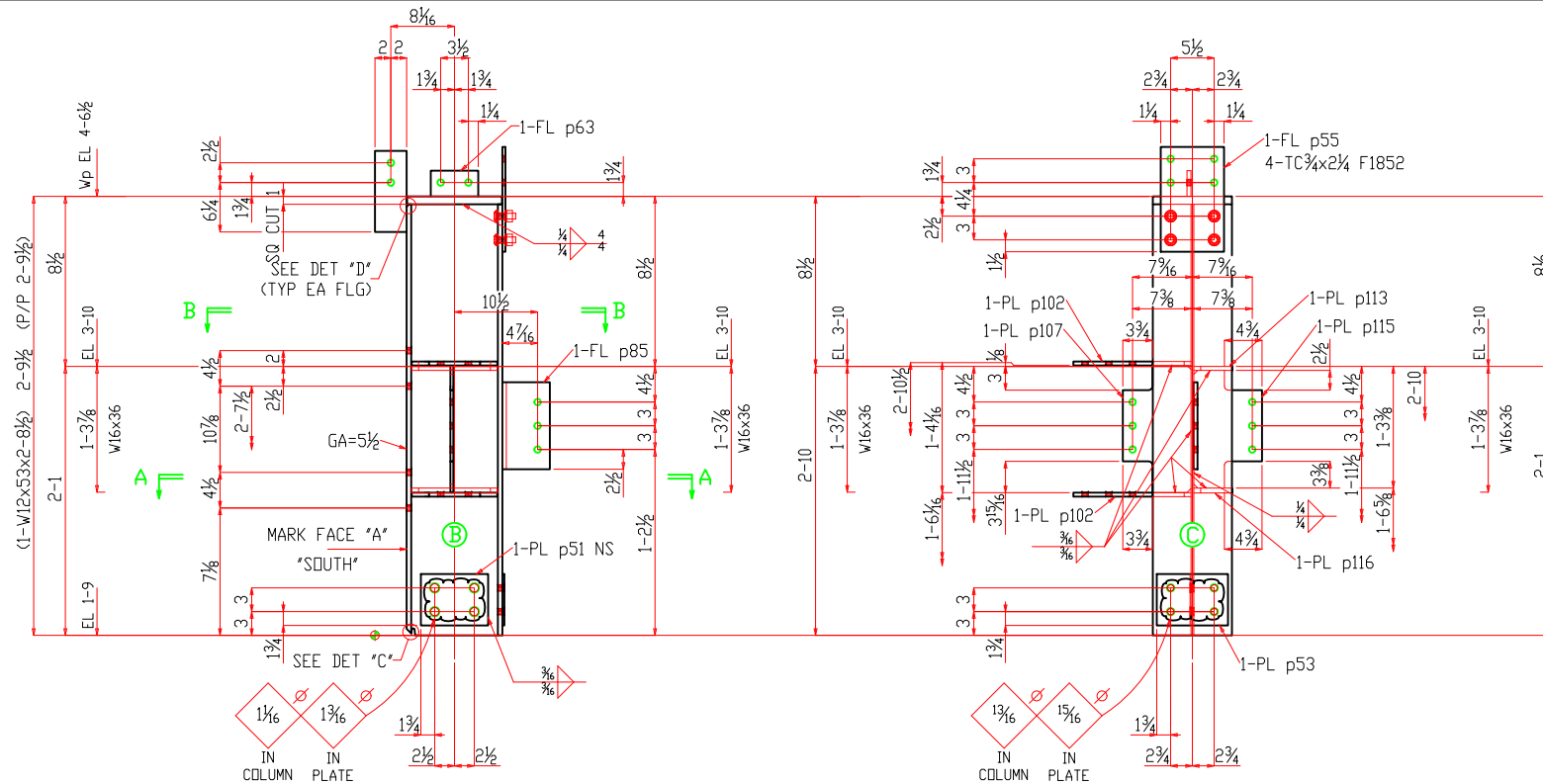
**TABLE 1 - Sequencing of Fabrication, Inspection, and Audit activities**

#	Fabrication Activity	Inspections Required	Audit Activities
1	Fabricate Columns 1C1, 2C1, Beams 4B1, 4B2, and Diagonal 11D1.	In-process inspection shall be performed in compliance with the fabricator's documented procedures.	<p>The on-site auditor shall observe the completed fabrication. Witness of NDT is not required.</p> <p>Visual inspection reports shall be presented at the time of the audit.</p>
2	Pre-installation verification (PIV) demonstration	PIV demonstration shall be performed in compliance with RCSC and the fabricator's documented procedure.	<p>The pre-installation verification demonstration shall be observed.</p> <p>The bolt installation method used in the demonstration is at the fabricator's option.</p>
3	Assembly	None	<p>The on-site auditor shall observe the assembly of columns, beams and diagonal bracing.</p> <p>NOTE: The end plate connection (Beam 4B1 to Column 2C1) shall be considered slip critical. Bolting at this connection shall conform to the installation method demonstrated in Step 2.</p>
4	Final QC inspection	Final Inspection and documentation shall be in compliance with the fabricator's documented procedures.	Final inspection reports shall be available for review prior to the conclusion of the audit.

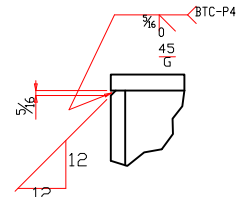


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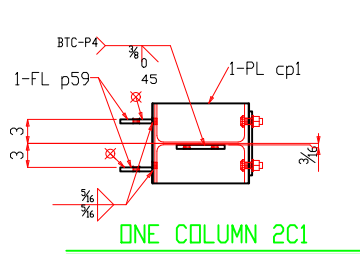


**DETAIL 'C'**  
2C1



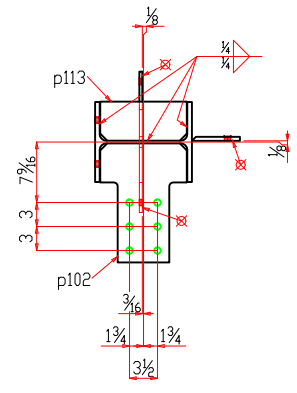
**DETAIL 'D'**  
2C1

OPEN HOLES	1 3/16	Ø	U/N
ALL MAT'L	A36	U/N	
WELD	E70XX	ELECTRODE	

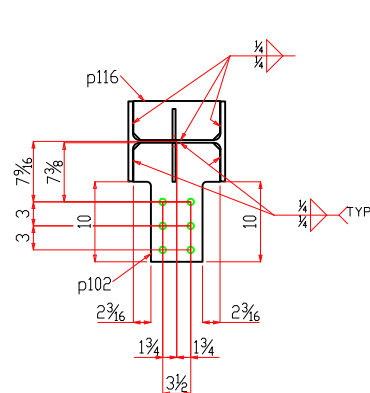


**ONE COLUMN 2C1**

- W 12 1/2 x 3 3/8
- F 10 x 3/8
- K 1 3/8 x 1



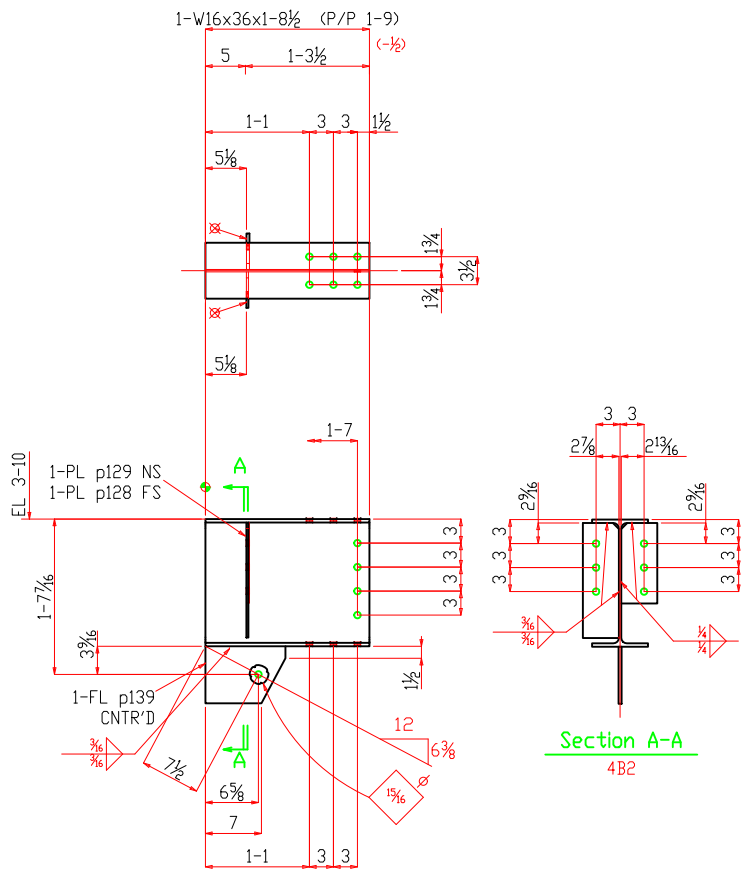
**Section B-B**  
2C1



**Section A-A**  
2C1

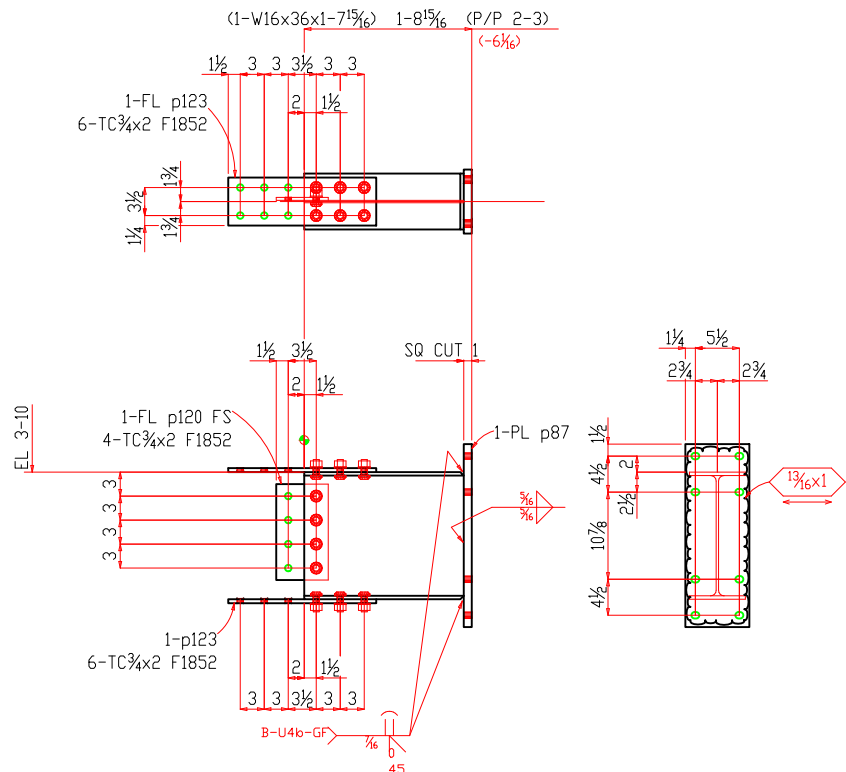
SHOP BILL OF MATERIAL										Total weight : 309
SEQ NO	SEQ QUAN	MARK	QUAN	ITEM	LENGTH	WEIGHT	GRADE	REMARKS	PR	
1	1	2C1	ONE	COLUMN		309				
		2C1	1	W12x53	2	8 1/2	141	A992	S2E	
		cp1	1	PL1x10	1	0	34	A36		
		p55	1	FL 3/8x8	1	1 1/4	11	A36		
		p53	1	PL 3/4x6 1/2	0	9	4	A36		
		p51	1	PL 1/2x6 1/2	0	8 1/2	2	A36		
		p113	1	PL 1/2x4 7/8	0	10 3/8	7	A36		
		p102	2	PL 3/8x10 3/8	1	2 1/2	46	A36		
		p115	1	PL 3/8x8 3/8	1	2 7/8	14	A36		
		p107	1	PL 3/8x8 3/8	1	4 1/4	15	A36		
		p85	1	FL 1/2x6	0	11	9	A36		
		p59	2	FL 1/2x4	0	10 1/4	12	A36		
		p116	1	PL 3/8x4 7/8	0	10 3/8	9	A36		
		p63	1	FL 1/2x6	0	3 1/4	3	A36		
			4	TC 3/4 Dia F1852	0	2 1/2	3		IHD,2 WASH	
				FIELD BOLTS						
			4	TC 1 Dia F1852	0	2 1/2			IHD WASH	
			4	TC 3/4 Dia F1852	0	2 1/2			IHD WASH	

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Sheet No.2



**ONE BEAM 4B2**

- W 15 7/8 x 5 1/8
- F 7 x 7/16
- K 1 1/8 x 1 3/16



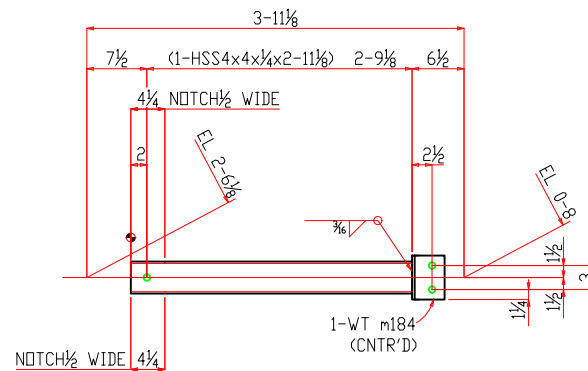
**ONE BEAM 4B1**

- W 15 7/8 x 5 1/8
- F 7 x 7/16
- K 1 1/8 x 1 3/16

OPEN HOLES	1 3/16 Ø	U/N
ALL MAT'L	A36	U/N
WELD	E70XX	ELECTRODE

**SHOP BILL OF MATERIAL** Total weight : 372

SEQ NO	QUAN	MARK	QUAN	ITEM	LENGTH	WEIGHT	GRADE	REMARKS	PR
1	1	4B1	ONE	BEAM		158			
		4B1	1	W16x36	1	71 5/8	60	A992	SIE
		p87	1	PL1x8	1	10 1/2	50	A36	
		p123	2	FL 1 1/2 x 6	1	6 1/2	30	A36	
		p120	1	FL 3/8 x 12	0	6 1/2	8	A36	
		16	TC 3/4 Dia	F1852	0	2	10		IHD WASH
				FIELD BOLTS					
		8	TC 3/4 Dia	F1852SC	0	2 3/4			IHD WASH
1	1	4B2	ONE	BEAM		77			
		4B2	1	W16x36	1	8 1/2	62	A992	
		p139	1	FL 3/8 x 10	0	7 1/2	7	A36	
		p128	1	FL 3/8 x 4 1/2	0	10 1/4	5	A36	
		p129	1	FL 1 1/2 x 4 1/2	1	2 3/4	4	A36	
				FIELD BOLTS					
		16	TC 3/4 Dia	F1852	0	2			IHD WASH



ONE DIAGONAL 11D1

OPEN HOLES	13 <sup>16</sup> / <sub>16</sub> ∅	U/N
ALL MAT'L	A36	U/N
WELD = E70XX ELECTRODE		

SHOP BILL OF MATERIAL **Total weight : 115**

SEQ NO	SEQ QUAN	MARK	QUAN	ITEM	LENGTH	WEIGHT	GRADE	REMARKS	PR
1	1	11D1	ONE	DIAGONAL		40			
		11D1	1	HSS4x4x <sup>1</sup> / <sub>4</sub>	2	11 <sup>16</sup> / <sub>16</sub>	A500B		
		m184	1	WT4x9	0	5 <sup>16</sup> / <sub>16</sub>	A992		
				FIELD BOLTS					
			1	TC <sup>3</sup> / <sub>4</sub> Dia F1852	0	5 <sup>16</sup> / <sub>16</sub>		IHD WASH	
			2	TC <sup>3</sup> / <sub>4</sub> Dia F1852	0	2		IHD WASH	

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