

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-011462**Date Inspected:** 09-Jan-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Li Yang and Wu Zhi Cheng	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	OBG Trail Assembly	

**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector, S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) Trial Assembly Areas

Segment 6AE (Side Panel T-Ribs)

This Quality Assurance (QA) Inspector witnessed final tension verification for Side Panel T-Ribs (Total 19 Nos.) Cross Beam side between Panel Point (PP) 38 and PP 38.5 for Segment 6AE. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00230 Dated January 09, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220033 and final torque required was 470 N-m.

Manual Torque wrench was used with Sr. No. XQ2-761.

Note: The offset measurement were performed from 1st T-Rib (Longitudinal Diaphragm) towards 19th T-Ribs Side Panel side and recorded offset as

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1st T-Rib: 3mm; 2nd T-Rib: 2.5mm; 3rd T-Rib: 2mm; 4th T-Rib: 2.9mm; 5th T-Rib: 5.8mm; 6th T-Rib: 6.1mm; 7th T-Rib: 5.7 mm; 8th T-Rib:5.7 mm; 9th T-Rib: 4mm; 10th T-Rib:4 mm; 11th T-Rib: 5.5mm; 12th T-Rib: 4mm; 13th T-Rib:6 mm; 14th T-Rib:6.4 mm; 15th T-Rib: 6.7mm; 16th T-Rib: 5.2mm; 17th T-Rib: 5.3mm; 18th T-Rib: 5mm; 19th T-Rib: 7mm.

Segment 6AE (Side Panel T-Ribs)

This Quality Assurance (QA) Inspector witnessed final tension verification for Side Panel T-Ribs (Total 18 Nos.) Cross Beam side between Panel Point (PP) 39 and PP 39.5 for Segment 6AE. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00230 Dated January 09, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220033 and final torque required was 470 N-m.

Manual Torque wrench was been used with Sr. No. XQ2-761.

Note: The offset measurement were performed from 1st T-Rib (Longitudinal Diaphragm) towards 18th T-Ribs Side Panel side and recorded offset as

1st T-Rib: 3mm; 2nd T-Rib: 4.7mm; 3rd T-Rib: 5.8mm; 4th T-Rib: 4mm; 5th T-Rib: 3.7mm; 6th T-Rib: 3.8mm; 7th T-Rib: 4mm; 8th T-Rib: 3mm; 9th T-Rib: 1.5mm; 10th T-Rib: 2mm; 11th T-Rib: 3mm; 12th T-Rib: 5mm; 13th T-Rib: 3.6mm; 14th T-Rib:5.1 mm; 15th T-Rib: 3mm; 16th T-Rib:3.6 mm; 17th T-Rib: 3.5mm; 18th T-Rib: 3.7mm.

Segment 6AE (Side Panel T-Ribs)

This Quality Assurance (QA) Inspector witnessed final tension verification for Side Panel T-Ribs (Total 19 Nos.) Cross Beam side between Panel Point (PP) 39.5 and PP 40 for Segment 6AE. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00230 Dated January 09, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220033 and final torque required was 470 N-m.

Manual Torque wrench was been used with Sr. No. XQ2-761.

Note: The offset measurement were performed from 1st T-Rib (Longitudinal Diaphragm) towards 19th T-Ribs Side Panel side and recorded offset as

1st T-Rib: 2.5mm; 2nd T-Rib: 1mm; 3rd T-Rib: 1mm; 4th T-Rib: 2.5mm; 5th T-Rib: 2.5mm; 6th T-Rib: 3mm; 7th T-Rib: 4mm; 8th T-Rib: 2.5mm; 9th T-Rib: 4mm; 10th T-Rib: 5mm; 11th T-Rib: 4.7mm; 12th T-Rib:4mm; 13th T-Rib: 2.5mm; 14th T-Rib: 3mm; 15th T-Rib: 3.7mm; 16th T-Rib: 3.7mm; 17th T-Rib: 3.8mm; 18th T-Rib: 3mm; 19th T-Rib: 4mm.

Segment 6BW to 6CW

This QA Inspector observed ZPMC welding personnel performing Flux Cored Arc Welding (FCAW) for Side

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Panel T-Ribs for Segment 6BW to 6CW. Weld identified as SP095-001 29/30; 31/32;33. The welder is identified as 051246. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2132. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6BW to 6CW

This QA Inspector observed ZPMC welding personnel performing Shielded Metal Arc Welding (SMAW) for Deck Panel "T" Stiffener Counter Weight Side for Segment 6BW to 6CW. Weld identified as DP 624-001-23, DP 624-001-24 and DP 624-001-25. The welder was identified as 066481. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-3213-B-U3b. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6BW to 6CW

This QA Inspector observed ZPMC welding personnel performing Shielded Metal Arc Welding (SMAW) for Longitudinal Diaphragm Counter Weight Side for Segment 6AW to 6BW. Weld identified as Seg029B-006 and Seg029B-032. The welder was identified as 068764. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-3213-B-U3b and WPS-B-P-2212-Tc-U4b-FCM-1. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6BW to 6CW

This QA Inspector observed ZPMC welding personnel performing Flux Cored Arc Welding (FCAW) for Weld connecting Side Panel to Bottom Panel Cross Beam side for Segment 6AW to 6BW. Weld identified as Seg029A-007. The welder was identified as 220067. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2231T-2. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE

This QA Inspector observed ZPMC repair welding personnel performing Flux Cored Arc Welding (FCAW) for Side Panel to Bottom Panel at E3 Location for Segment 6CE to 7AE Bike Path side. Repair was been performed against the Welding Repair Report (WRR) No. B-WR 9674 Rev.0. The welder was identified as 220066. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-345-FCAW-1G (1F)-Repair-1. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6AE to 6BE

This QA Inspector observed ZPMC personnel performing Heat Straightening for the Longitudinal Diaphragm for Segment 6AE to 6BE between PP 40 and PP41 at Bike Path side. Heat straightening been performed as they were misaligned. Heat Straightening been performed against the Heat Straightening Report (HSR) HSR1 (B)-7928 Rev.

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0 Dated Nov 23, 2009.

Segment 6AE to 6CE

This QA Inspector observed ZPMC personnel performing Mis-drilled holes repair welding at Deck Panel I-Ribs which are identified as RS30A and RS32B at Corner Assembly of Segment 6AE to 6CE. Noticed were 4 holes are to be drilled it has 8 holes. Repair welding for Mis-drilled holes is in progress against the B-WR9667 Rev.0 Dated Jan 02, 2010. Welder was identified as 048077. In process Shielded Metal Arc Welding (SMAW) appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-485-SMAW-3G (3F)-Repair Mis drilled holes. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

**Summary of Conversations:**

No relevant conversations.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Math,Manjunath	Quality Assurance Inspector
<b>Reviewed By:</b>	Miller,Mark	QA Reviewer

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