

**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-011578**Date Inspected:** 19-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 6CE (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) 44 and PP 44.5 for Segment 6CE. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00237 Dated January 19, 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. XQ2-762.

Note: The 19th T-Rib to T-Rib not inspected as it exceeds the requirement of RFI 2004Ro. 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: 3.5mm; 2nd T-Rib: 3.6mm; 3rd T-Rib: 2.4mm; 4th T-Rib: 1.8mm; 5th T-Rib: 3mm; 6th T-Rib: 2.5mm; 7th T-Rib: 0.5mm; 8th T-Rib: 2.4mm; 9th T-Rib: 2mm; 10th T-Rib: 3mm; 11th T-Rib: 3.4mm; 12th T-Rib: 2.8mm; 13th T-Rib: 3.1mm; 14th T-Rib: 3.4 mm; 15th T-Rib: 3.9mm; 16th T-Rib: 3.1 mm; 17th T-Rib: 2.5mm; 18th T-Rib: 3.9mm and 19th T-Rib: 4.8mm.

Segment 6CW to 7AW (Joint Survey with Caltrans QA)

This QA Inspector along with Caltrans QA Mr. Manikandan Murugan performed Joint Inspection for the U-Rib to U-Ribs (Total 39 Nos.) Deck Panel Offset and Root Opening for Segment 6CW to 7AW (Field Segment Splice) between Panel Point (PP) 47 and PP 48. The measured readings were fed in spread sheet, generated the report and submitted to the Task Leader and Engineer for review.

Signed Off Green Tag's

This Quality Assurance (QA) Inspector witnessed final tension verification for following depicted locations. Inspected 10% on a random basis and found the tension to be in general compliance and thus signed off the Green Tags.

At Segment 6BW at Panel Point (PP) 41, 42(S), 43 (N&S) for Lower Chevron Brace Bolt Size used was M22 x 70 RC Set# DHGM220020 and final torque required was 520 N-m respectively and Green Tag No. 544.

At Segment 6BW at Panel Point (PP) 41, 42(S), 43 (N&S) for Lower Chevron Brace (I Beam Location) Bolt Size used was M22 x 80 RC Set# DHGM220012 and final torque required was 427 N-m respectively and Green Tag No. 545.

At Segment 6BW at Panel Point (PP) 41, 42(S), 43 (N&S) for Upper Chevron Brace Bolt Size used was M22 x 70 RC Set# DHGM220020 and final torque required was 520 N-m respectively and Green Tag No. 546.

At Segment 5CW at Panel Point (PP) 36.5 for Catwalk Support Bolt Size used was M16 x 40 RC Set# DHGM160009 and M16 x 50 RC Set# DHGM160011 and final torque required was 200 N-m respectively and Green Tag No. 547.

At Segment 5AE at Panel Point (PP) 28.75 for Corner Assembly Cross Brace (North and South) – Barrier Angle Bolt Size used was M22 x 120 RC Set# DHGM220053 and final torque required was 440 N-m respectively and Green Tag No. 548.

At Segment 6BW at Panel Point (PP) 41, PP 42 and PP 43 for Floor Beam to Side Panel (North and South) Bolt Size used was M16 x 45 RC Set# DHGM160001 and final torque required was 210 N-m respectively and Green Tag No. 549.

At Segment 6BW at Panel Point (PP) 41, PP 42 and PP 43 for Floor Beam to Side Panel (North and South) Bolt Size used was M16 x 65 RC Set# DHGM160006 and final torque required was 180 N-m respectively and Green Tag No. 550.

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At Segment 6BW at Panel Point (PP) 41, PP 42 and PP 43 for Floor Beam to Bottom Panel Bolt Size used was M16 x 45 RC Set# DHGM160001 and final torque required was 210 N-m respectively and Green Tag No. 551.

At Segment 6BW at Panel Point (PP) 41, PP 42 and PP 43 for Floor Beam to Bottom Panel Bolt Size used was M16 x 65 RC Set# DHGM160006 and final torque required was 180 N-m respectively and Green Tag No. 552.

### Segment 5BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Shielded Metal Arc Welding (SMAW) for CB4 connecting to Segment 5BE location due to Ultrasonic Test (UT) rejections. The weld joints are identified as SSD27-PP33-117 and Y Datum Line located at 80mm. The welder was identified as 0554467. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-345-SMAW-4G (4F)-Repair. The repair welding was been performed against the B-WR9507 Rev.0 and ZPMC UT report B787-UT-10329. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE to 7BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Flux Cored Arc Welding (FCAW) for Transverse Splice Weld at Side Panel Bike Path side. The weld joints are identified as OBE7B-002. The welder is identified as 220067. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2231-B-U2-F-3. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE to 7BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Flux Cored Arc Welding (FCAW) for Transverse Splice Weld at Side Panel Corner Assembly Bike Path side. The weld joints are identified as OBE7B-001. The welder is identified as 053742. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2231-B-U2-F-3. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE to 7BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Flux Cored Arc Welding (FCAW) for Transverse Splice Hold Back weld. The weld joints are identified as SP 365-001/002 and SP 365 – 003/004. The welder is identified as 053742. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2232. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE to 7BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Flux Cored Arc Welding

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(FCAW) for Transverse Splice Hold Back weld. The weld joints are identified as SP 338-001/002 and SP 338 – 003/004. The welder is identified as 070046. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2232. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 7AE to 7BE

This QA Inspector observed ZPMC welding personnel performing repair welding by Submerged Arc Welding (SAW) for Transverse Splice weld. The weld joints are identified as OBE7-002, OBE7-003 and OBE7-004. The welder is identified as 053148 and 054458. In process SAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-223(2)-T-2. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6BE to 6CE

This QA Inspector observed ZPMC welding personnel performing repair welding by Shielded Metal Arc Welding (SMAW) for Transverse Splice Weld at Deck Panel Corner Assembly. The weld joints are identified as OBE6A-004. The welder is identified as 054467. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-345-SMAW-4G (4F)-FCM-Repair-1. The repair welding was been performed against the B-WR9901 Rev.0 and ZPMC UT report B787-UT-10747. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

### Segment 6CE

This QA Inspector observed ZPMC personnel at Segment 6CE side panel T-Ribs between PP 44 to 44.5 and PP 44.5 to 45 bolts snug tightening is in progress.

### Segment 6CE and 7AE

This QA Inspector observed ZPMC personnel at Segment 6CE and 7AE Bottom Panel, Side Panel (North and South side) T-Ribs to T-Ribs match drilling with splice plate on is in progress subsequently U-Ribs to U-Ribs internal splice plate match drilling was in progress.

### Segment 6CW

This QA Inspector observed ZPMC personnel at Segment 6CW Lower Chevron brace temporary bolts removal cleaning faying surface and installing ASTM A 325 bolts was in progress.

### Segment 6CW

This QA Inspector observed ZPMC personnel at Segment 6CW Corner Assembly Cross back to back angle truss bolts installation is in progress.

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

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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
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<b>Reviewed By:</b>	Miller,Mark	QA Reviewer
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