

**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 #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018620**Date Inspected:** 18-Dec-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)**Location:** Shanghai, China**CWI Name:** Li Yang and Zhu Zhong Hai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Trial Assembly**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. 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) at Trial Assembly Areas

Tower Cross Bracing

This QA Inspector witnessed Bolts Installation, Snug Tightening of bolts, Turn-of-Nut and Final bolt tensioning verification of ASTM A325 bolts connecting Cross Bracing pin. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00576 Dated December 18, 2010. The inspection was performed in Paint Shop # 2.

The bolt sizes used were M ¾" x 3 ¾" RC Lot # DHG60625 and the final torque value established was 487 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Please reference the pictures attached for more comprehensive details.

Bike Path at Bay # 10

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This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as:

BK004A-030.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Cross Beam (CB) # 16

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector for measuring gap between the stiffeners at floor beam (FL3) extension at Segment 11DE and Cross Beam # 16 stiffeners at bottom panel, vertical web plate and deck plate at following locations:

At Panel Point (PP) 104, Segment 11DE gap measurement performed between floor beam stiffeners to west side Vertical Web Plate stiffeners of cross beam # 16 total 13 stiffeners.

At Panel Point (PP) 105, Segment 11DE gap measurement performed between floor beam stiffeners to centre Vertical Web Plate stiffeners of cross beam # 16, total 13 stiffeners.

At Panel Point (PP) 106, Segment 11DE gap measurement performed between floor beam stiffeners to east side Vertical Web Plate stiffeners of cross beam # 16, total 13 stiffeners.

Between Panel Points (PP) 104 to PP 105, Segment 11DE gap measurement performed between deck panel stiffeners to deck panel stiffeners of cross beam # 16, total 11 stiffeners.

Between Panel Points (PP) 105 to PP 106, Segment 11DE gap measurement performed between deck panel stiffeners to deck panel stiffener of cross beam # 16, total 11 stiffeners.

Between Panel Points (PP) 104 to PP 105, Segment 11DE gap measurement performed between bottom panel stiffeners to bottom panel stiffeners of cross beam # 16, total 5 stiffeners.

Between Panel Points (PP) 105 to PP 106, Segment 11DE gap measurement performed between bottom panel stiffeners to bottom panel stiffener of cross beam # 16, total 5 stiffeners.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

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### Segment 12AW to Segment 12BW (Transverse Splice weld)

This QA Inspector observed the in-process welding by Flux Cored Arc Welding (FCAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW12B-001. The welder identification was 049220 and 053486 and observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-T-2231T-ESAB. The piece mark was identified as the Bottom Panel, at transverse splice.

Please reference the pictures attached for more comprehensive details.

### Segment 12AW to Segment 12BW (Transverse Splice weld)

This QA Inspector observed the in-process welding by Flux Cored Arc Welding (FCAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW12D-001. The welder identification was 040609 and 040759 and observed welding in the 3G (Vertical) position using approved Welding Procedure Specification WPS-B-T-2231T-ESAB. The piece mark was identified as the Side Panel, Counter Weight side at transverse splice.

### Segment 12AW to Segment 12BW (Edge Panel I-Rib Stiffener Splice weld)

This QA Inspector observed the in process welding operation by the Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The weld joint was designated as EP3007-001-066. The welder identification was 040656 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-P-2211-B-U2-FCM-1. The piece mark was identified as the Edge Panel, I-Rib Stiffener Splice weld at Cross Beam.

### Segment 12AW to Segment 12BW (Deck Panel Transverse Splice)

This QA Inspector observed the in-process welding by Submerged Arc Welding (SAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW12-001. The welder identification was 044560 and 042195 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-T-223(2)1T-ESAB. The piece mark was identified as the Deck Panel, transverse splice weld.

### Segment 12AE (Corner Assembly hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as Seg3001AA-021. The welder identification was 050289 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Edge Panel to Deck Panel hold back weld at work point E5.

Please reference the pictures attached for more comprehensive details.

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## Segment 12BE (Corner Assembly hold back weld)

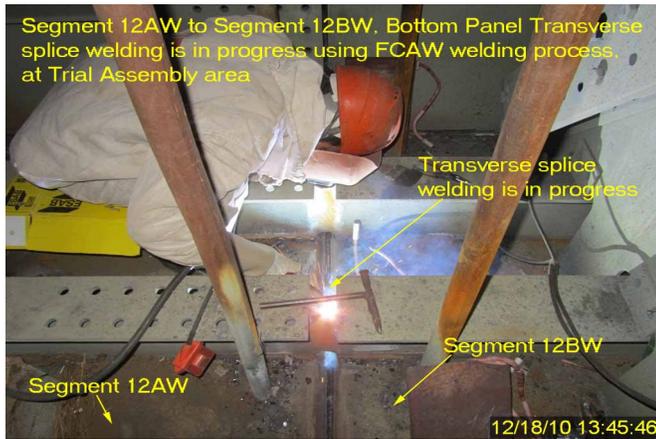
This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA3002-002. The welder identification was 050289 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Edge Panel to Deck Panel hold back weld at work point E5.

## Segment 12AW (Corner Assembly hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as Seg3001AA-021. The welder identification was 046709 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Bottom Panel to Side Panel hold back weld at work point W3.

Please reference the pictures attached for more comprehensive details.

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

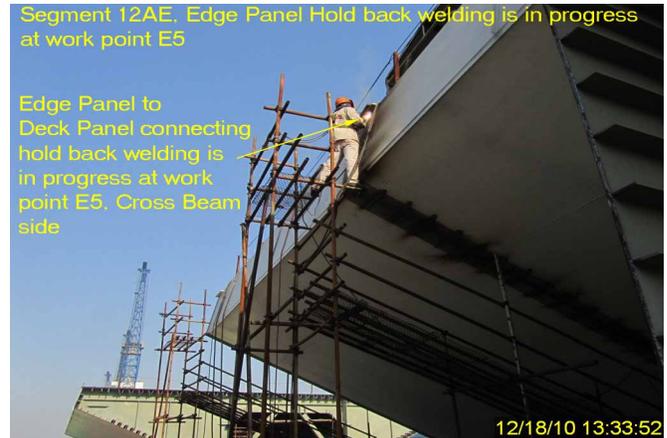


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## Summary of Conversations:

No relevant conversations were reported on this date.

## 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 Eric Tsang 150000422372, 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>	Dsouza,Christopher	QA Reviewer

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