

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-018601**Date Inspected:** 16-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

Segment 11DW (Side Panel T-Ribs at FL3 location)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the T-Rib to T-Rib at Side Panel Cross Beam side at Panel Points (PP) 104, PP 105 and PP 106 for Segment 11DW. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00572 dated December 16, 2010. The QA inspector observed reinforced splice plates are installed at following locations.

At PP 104: 5th T-Rib.

At PP 105: 9th T-Rib, 10th T-Rib and 14th T-Rib.

At PP 106: 16th T-Rib.

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Note: T-Ribs numbering reference taken from Work Point W4 towards W6.

The bolt sizes used were M22 x 80 RC Lot # DHGM220091 and the final torque value established was 460 N-m.

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

Please reference the pictures attached for more comprehensive details.

Segment 11CW to Segment 11DW (Longitudinal Diaphragm to Longitudinal Diaphragm)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Longitudinal Diaphragm to Longitudinal Diaphragm between Panel Points (PP) 103 and PP 104 for Segment 11CW to Segment 11DW at work point W3, Counter Weight side and work point W4 Cross Beam side. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00572 dated December 16, 2010.

The bolt sizes used were M24 x 70 RC Lot # DHGM240010 and the final torque value established was 560 N-m.

The bolt sizes used were M24 x 95 RC Lot # DHGM240021 and the final torque value established was 540 N-m.

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

Please reference the pictures attached for more comprehensive details.

Segment 11CW to Segment 11DW (Transverse Splice T-Ribs)

This QA Inspector witnessed final bolt tension verification on bolts connecting T-Rib to T-Rib for Transverse Splice at Side Panel Cross Beam Side (from work point W6 towards W4), Bottom Panel (from work point W4 towards W3) and Counter Weight side (from work point W3 to W1) between Panel Point (PP) 103 to PP 104 for Segment 11CW to 11DW. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00572 Dated December 16, 2010.

The bolt sizes used were M22 x 65 RC Lot # DHGM220115 and the final torque value established was 327 N-m.

The bolt sizes used were M22 x 70 RC Lot # DHGM220041 and the final torque value established was 460 N-m.

The bolt sizes used were M22 x 80 RC Lot # DHGM220094 and the final torque value established was 470 N-m.

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

Please reference the pictures attached for more comprehensive details.

Segment 11CW to Segment 11DW (Transverse Splice T-Ribs)

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This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs after bolting for the Segment 11CW to Segment 11DW between Panel Point (PP) 103 to PP 104 at the following locations:

Work Point W6 towards Work Point W4 (Side Panel Cross Beam Side) total 19 T-Ribs.

Work Point W4 towards Work Point W3 (Bottom Panel) total 18 T-Ribs.

Work Point W3 towards Work Point W1 (Side Panel Counter Weight Side) total 19 T-Ribs.

The QA Inspector measured the Vertical Offset using 1(One) Meter Straight Edge.

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.

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 053486 and observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-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 12BW (Bottom Panel to Side Panel 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 Seg3005A-004. The welder identification was 040611 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 weld connecting Bottom Panel to Side Panel hold back weld at work point W3.

Please reference the pictures attached for more comprehensive details.

Segment 12AW (Bottom Panel to Side Panel 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 Seg3004A-004. The welder identification was 046709 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 weld connecting Bottom Panel to Side Panel hold back weld at work point W4.

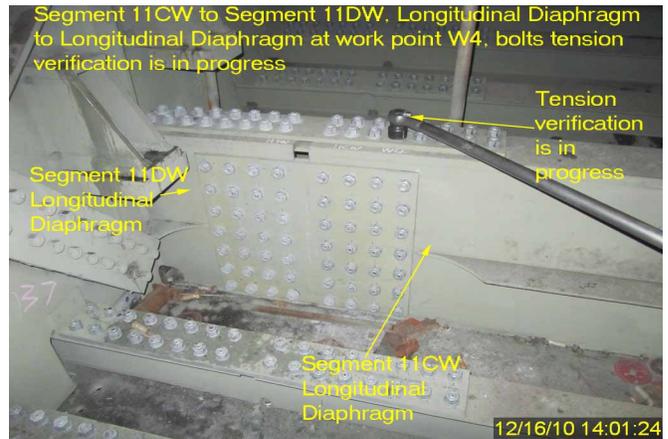
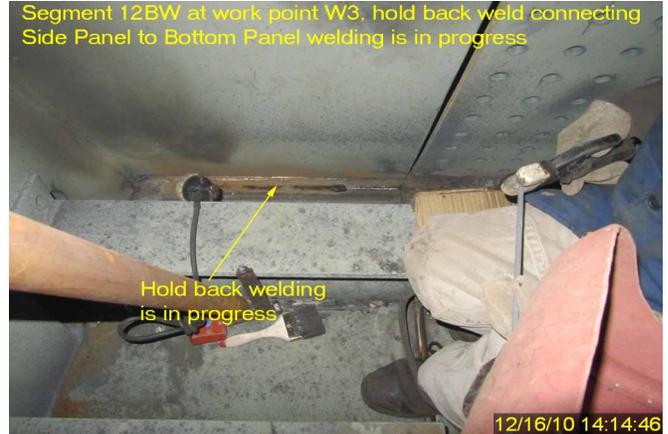
Segment 12AE (Full Height Longitudinal Diaphragm, Stiffener hold back weld)

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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 LD3008-048/049. The welder identification was 040320 and was observed welding in the 4F (Overhead) position using approved Welding Procedure Specification WPS-B-P-2114-FCM-1. The piece mark was identified as hold back weld connecting Stiffener to full height Longitudinal Diaphragm at Elevation 1900mm at work point E3.

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



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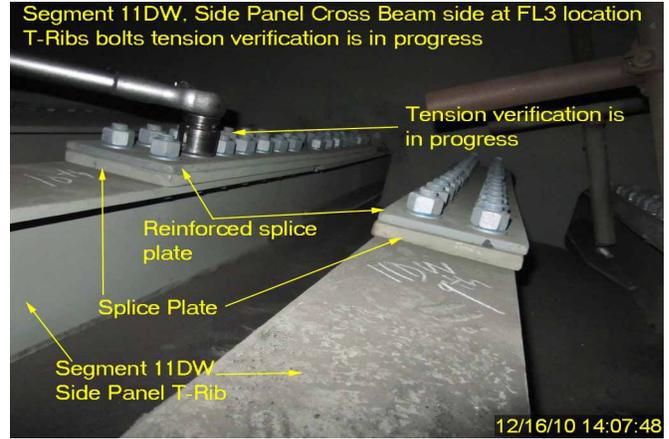
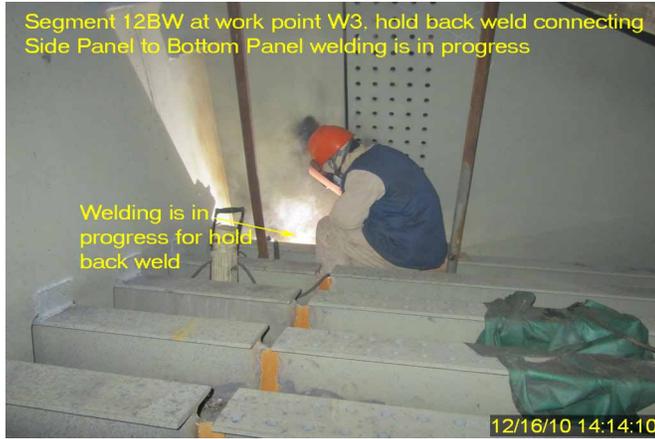
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## Summary of Conversations:

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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**Inspected By:** Math,Manjunath

Quality Assurance Inspector

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**Reviewed By:** Dsouza,Christopher

QA Reviewer