

**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-017763**Date Inspected:** 05-Nov-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 10AW (Traveler Rail Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Traveler Rail Bracket to the Side Panel, Counter Weight side at Panel Points (PP) 86, PP 87 and PP 88 for Segment 10AW. 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. 00540 dated November 05, 2010.

The bolt sizes used were M20 x 110 RC Lot # DHGM200005 and the final torque value established was 333 N-m.

The bolt sizes used were M20 x 160 RC Lot # DHGM200006 and the final torque value established was 340 N-m.

The bolt sizes used were M22 x 90 RC Lot # DHGM220048 and the final torque value established was 500 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220053 and the final torque value established was 440 N-m.

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The bolt sizes used were M22 x 120 RC Lot # DHGM220054 and the final torque value established was 497 N-m.

The Manual Torque wrench used was Serial No. XO2-776.

### Segment 10BW (Traveler Rail Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Traveler Rail Bracket to the Side Panel, Counter Weight side at Panel Points (PP) 89, PP 90 and PP 91 for Segment 10BW. 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. 00540 dated November 05, 2010.

The bolt sizes used were M20 x 110 RC Lot # DHGM200005 and the final torque value established was 333 N-m.

The bolt sizes used were M20 x 160 RC Lot # DHGM200006 and the final torque value established was 340 N-m.

The bolt sizes used were M22 x 90 RC Lot # DHGM220048 and the final torque value established was 500 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220053 and the final torque value established was 440 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220054 and the final torque value established was 497 N-m.

The Manual Torque wrench used was Serial No. XO2-776. Please reference the pictures attached for more comprehensive details.

### Segment 10CW (Traveler Rail Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Traveler Rail Bracket to the Side Panel, Counter Weight side at Panel Points (PP) 92, PP 93 and PP 94 for Segment 10CW. 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. 00540 dated November 05, 2010.

The bolt sizes used were M20 x 110 RC Lot # DHGM200005 and the final torque value established was 333 N-m.

The bolt sizes used were M20 x 160 RC Lot # DHGM200006 and the final torque value established was 340 N-m.

The bolt sizes used were M22 x 90 RC Lot # DHGM220048 and the final torque value established was 500 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220053 and the final torque value established was 440 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220054 and the final torque value established was 497 N-m.

The Manual Torque wrench used was Serial No. XO2-776.

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### Segment 11BW to Segment 11CW (Transverse Splice T-Ribs)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan on the Transverse Splice T-Ribs to T-Ribs for the Segment 11BW to Segment 11CW between Panel Point (PP) 100 to PP 101 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 and measured the Horizontal Offset on the web using a Bridge Cam gauge.

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.

### Bike Path at Bay # 19

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom panel for flatness check and bike path identified as BK004-007.

The QA Inspector measured the flatness using 1500mm long straight edge and observed flatness dimensions within the allowable tolerance.

The results of the inspection were informed to Caltrans Lead Inspector Mr. Hiranch Patel and ABF Mr. Peter Shaw.

### Segment 12BE (Cope Holes)

This QA Inspector performed Dimension Control Inspection for the Segment 12BE at the following locations:

The Cope hole dimensions located at the Floor Beam to Bottom Panel, Floor Beam to Side Panel at work point E3 and work point E4 (except at PP 114.5) were verified and measured at the Panel Points (PP) 113, PP 113.5, PP 114 and PP 114. The QA Inspector measured the cope holes dimension using a 150mm steel ruler.

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 11BW to Segment 11CW (Transverse Splice at Bottom Panel)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW11B-008. The welder identification

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was 046709 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-345-SMAW-4G(4F)-FCM-Repair-1. The piece mark was identified as the Bottom Panel, transverse splice weld. The repair work was in progress against the welding repair report B-WR16518.

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.



## 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
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<b>Reviewed By:</b>	Dsouza,Christopher	QA Reviewer
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