

**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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022862**Date Inspected:** 19-Apr-2011**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>	N/A	<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>
<b>Inspected CWI report:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
		<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Bridge No:</b>	34-0006	<b>Component:</b>	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 12AW (U-Rib to U-Rib)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the U-Rib to U-Rib at the transverse splice between Panel Points (PP) 112 and PP 112.5 for Segment 12AW. 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. 00656 dated April 19, 2011.

The bolt sizes used were M22 x 65 RC Lot # DHGM220131 and the final torque value established was 380 N-m.

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

The bolt sizes used were M22 x 85 RC Lot # DHGM220121 and the final torque value established was 393 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

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Note: Retro-fit splice plates were installed at U-Rib 15th (between work point W2 towards W4); 22nd, 24th and 25th (located between work point W4 towards W3).

Segment 12BW to Segment 12CW (U-Rib to U-Rib)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the U-Rib to U-Rib at the transverse splice between Panel Points (PP) 114.5 and PP 115 for Segment 12BW to Segment 12CW. 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. 00656 dated April 19, 2011.

The bolt sizes used were M22 x 65 RC Lot # DHGM220131 and the final torque value established was 380 N-m.

The bolt sizes used were M22 x 65 RC Lot # DHGM220116 and the final torque value established was 333 N-m.

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

The bolt sizes used were M22 x 85 RC Lot # DHGM220121 and the final torque value established was 393 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

Note: Retro-fit splice plates were installed at U-Rib 28nd, 29th, 30th, 31st, 32nd, 37th, 38th and 39th (located between work point W4 towards W5).

Please reference the pictures attached for more comprehensive details.

Segment 12AW (Splice Plates)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Splice Plates to Deck Panel Diaphragm and full height Longitudinal Diaphragm at elevation 4750mm (from Bottom Panel) for Segment 12AW. 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. 00656 dated April 19, 2011.

The Splice plates are installed between the following Panel Points.

Segment 12AW between PP 112 to PP 112.5, at work point W4 (Cross Beam side) and W3 (Counter Weight side).

The bolt sizes used were M24 x 75 RC Lot # DHGM240020 and the final torque value established was 600 N-m.

The bolt sizes used were M24 x 90 RC Lot # DHGM240028 and the final torque value established was 540 N-m.

The bolt sizes used were M22 x 100 RC Lot # DHGM220022 and the final torque value established was 527 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220024 and the final torque value established was 553 N-m.

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The Manual Torque wrench used was Serial No. XO2-777.

Please reference the pictures attached for more comprehensive details.

### Segment 12BW (Splice Plates)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Splice Plates to Deck Panel Diaphragm and full height Longitudinal Diaphragm at elevation 4750mm (from Bottom Panel) for Segment 12BW. 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. 00656 dated April 19, 2011.

The Splice plates are installed between the following Panel Points.

Segment 12BW between PP 113 to PP 113.5; PP 113.5 to PP 114; PP 114 to PP 114.5 at work point W4 (Cross Beam side) and W3 (Counter Weight side).

The bolt sizes used were M24 x 75 RC Lot # DHGM240020 and the final torque value established was 600 N-m.

The bolt sizes used were M24 x 90 RC Lot # DHGM240028 and the final torque value established was 540 N-m.

The bolt sizes used were M22 x 100 RC Lot # DHGM220022 and the final torque value established was 527 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220024 and the final torque value established was 553 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

### Segment 12CW (Splice Plates)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Splice Plates to Deck Panel Diaphragm and full height Longitudinal Diaphragm at elevation 4750mm (from Bottom Panel) for Segment 12CW. 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. 00656 dated April 19, 2011.

The Splice plates are installed between the following Panel Points.

Segment 12CW between PP 115 to PP 115.2; PP 115.2 to PP 115.5; PP 115.5 to PP 116; PP 116 to PP 116.5 and PP 116.5 to PP 117 at work point W4 (Cross Beam side) and W3 (Counter Weight side).

The bolt sizes used were M24 x 75 RC Lot # DHGM240020 and the final torque value established was 600 N-m.

The bolt sizes used were M24 x 90 RC Lot # DHGM240028 and the final torque value established was 540 N-m.

The bolt sizes used were M22 x 100 RC Lot # DHGM220022 and the final torque value established was 527 N-m.

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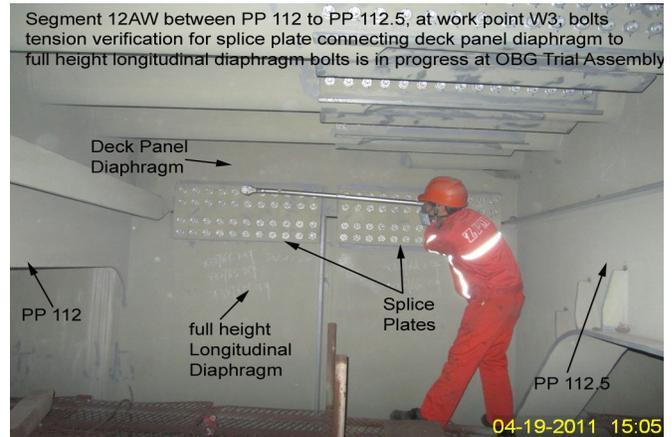
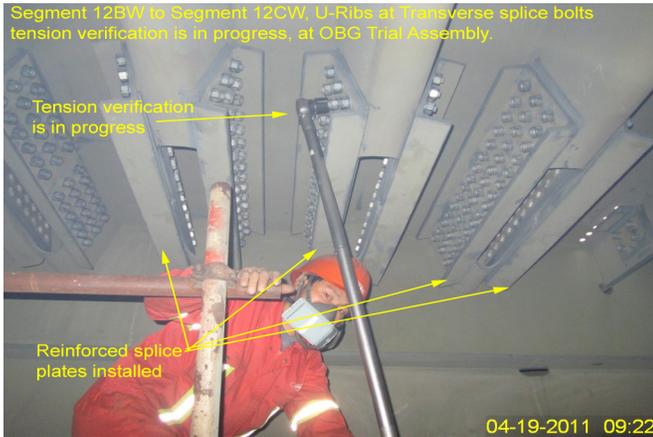
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The bolt sizes used were M22 x 120 RC Lot # DHGM220024 and the final torque value established was 553 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

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 15000422372, who represents the Office of Structural Materials for your project.

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**Inspected By:** Math,Manjunath

Quality Assurance Inspector

**Reviewed By:** Miller,Mark

QA Reviewer