

**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-019010**Date Inspected:** 01-Jan-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)**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 11BW (Partial Height Diaphragm)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Partial Height Diaphragm flange to the Side Panel at FL3 location at Panel Points (PP) 98, PP 99 and PP 100 for Segment 11BW. 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. 00589.

The bolt sizes used were M24 x 65 RC Lot # DHGM240013 and the final torque value established was 540 N-m.

The Manual Torque wrench used was Serial No. XO2-676.

Please reference the pictures attached for more comprehensive details.

Segment 11DW (Partial Height Diaphragm)

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This QA Inspector witnessed the final bolt tension verification on bolts connecting the Partial Height Diaphragm flange to the Side Panel at FL3 location 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. 00589.

The bolt sizes used were M24 x 65 RC Lot # DHGM240013 and the final torque value established was 540 N-m.

The Manual Torque wrench used was Serial No. XO2-676.

### Tower Lift 4 North

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 North. Bolts are installed between Double Diaphragm Flange to Galvanized Tower Ladder. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00591 Dated January 1, 2011.

Tower Ladder bolts are installed at Double Diaphragm and elevations are identified as 116 meter, 119 meter, 123 meter, 127 meter, 131 meter, 135 meter, 139 meter and 143 meter.

The bolt sizes used were M22 x 65 RC Lot # DHGM220105 and final torque required was 380 N-m.

The Manual Torque wrench used was Serial No. 1003153.

Please reference the pictures attached for more comprehensive details.

### Tower Lift 4 North

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 East. Bolts are installed between connection plates, connecting Tower Ladder. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00591 Dated January 1, 2011.

Tower Ladder connection plates are installed between Double Diaphragm at elevations between 119 meter to 123 meter; 127 meter to 131 meter and 135 meter to 139 meter.

The bolt sizes used were M20 x 55 RC Lot # DHGM220014 and final torque required was 420 N-m.

The Manual Torque wrench used was Serial No. 1003153

### Traveler Rail at Bay # 4

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Traveler Rail at Bay # 4. The QA Inspector verified the bolt tension for bolts connecting the Angle piece to Traveler Rail web on a random

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basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00590.

The bolt sizes used were M16 x 75 RC Lot # DHGM160023 and the final torque value established was 190 N-m.

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

The Traveler Rails for which bolt tension verification performed on random basis are identified as below total 33 pieces.

Traveler Rail # 10TR1-022

Traveler Rail # 10TR3-030

Traveler Rail # 10TR1-017

Traveler Rail # 10TR4-003

Traveler Rail # 10TR2-011

Traveler Rail # 10TR3-032

Traveler Rail # 10TR2-004

Traveler Rail # 10TR3-006

Traveler Rail # 10TR3-027

Traveler Rail # 10TR3-034

Traveler Rail # 10TR3-009

Traveler Rail # 10TR2-006

Traveler Rail # 10TR2-020

Traveler Rail # 10TR1-010

Traveler Rail # 10TR3-025

Traveler Rail # 10TR1-012

Traveler Rail # 10TR3-020

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Traveler Rail # 10TR1-026

Traveler Rail # 10TR3-004

Traveler Rail # 10TR1-025

Traveler Rail # 10TR3-007

Traveler Rail # 10TR4-004

Traveler Rail # 10TR2-010

Traveler Rail # 10TR1-018

Traveler Rail # 10TR3-011

Traveler Rail # 10TR3-022

Traveler Rail # 10TR3-038

Traveler Rail # 10TR2-021

Traveler Rail # 10TR3-037

Traveler Rail # 10TR3-031

Traveler Rail # 10TR2-019

Traveler Rail # 10TR3-024

Traveler Rail # 10TR3-035

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

Segment 12AW to Segment 12BW (Bottom Panel, Transverse Splice weld)

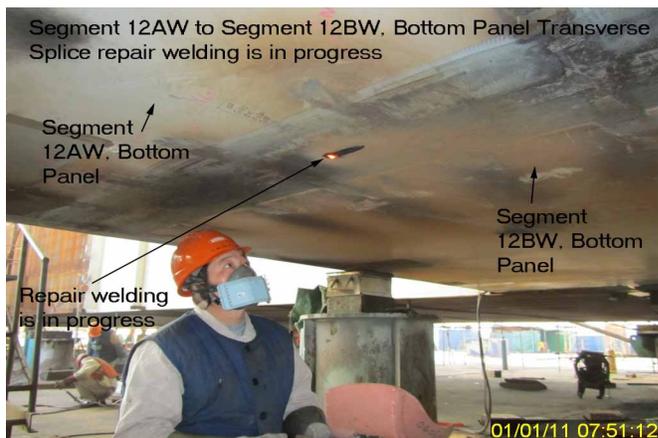
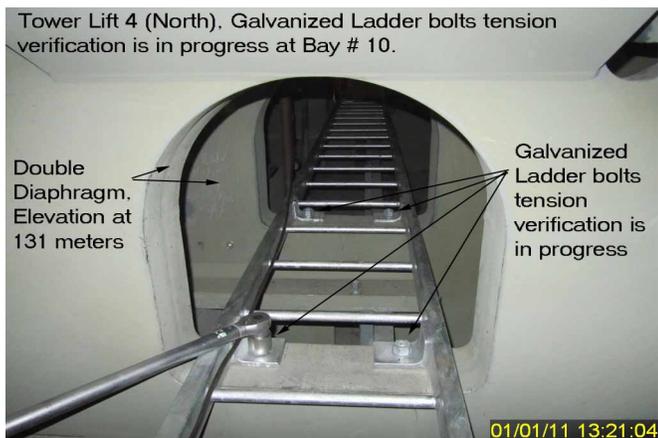
This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW12B-001. The welder identification was 040611 and observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-345-SMAW-4G(4F)-FCM-Repair-1. The piece marks was identified as the Bottom Panel, at transverse splice. ZPMC performed repair welding in accordance with Welding Repair Report B-WR-19714 dated Dec 29, 2010.

Please reference the pictures attached for more comprehensive details.

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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.

**Inspected By:** Math,Manjunath

Quality Assurance Inspector

**Reviewed By:** Dsouza,Christopher

QA Reviewer