

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-018869**Date Inspected:** 28-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 Lift 4 East

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 East. 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. 00582 Dated December 28, 2010.

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. XO2-666.

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Please reference the pictures attached for more comprehensive details.

Tower Lift 4 East

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. 00582 Dated December 28, 2010.

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. XO2-666.

Tower Lift 4 South

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 South. 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. 00582 Dated December 28, 2010.

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. XO2-666.

Please reference the pictures attached for more comprehensive details.

Tower Lift 4 South

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 South. 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. 00582 Dated December 28, 2010.

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.

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

Please reference the pictures attached for more comprehensive details.

Segment 11DE (Truss Post and Road Barrier Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Corner Assembly connecting the Road Barrier Brackets, Inclined Truss Post and Vertical Truss Post at Cross Beam and Bike Path side between Panel Points (PP) 103.5 to PP 104; PP 104 to PP 105 and PP 105 to PP 106 for Segment 11DE. 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. 00583 dated December 28, 2010.

The bolt sizes used were M22 x 55 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

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

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

The bolt sizes used were M24 x 60 RC Lot # DHGM240014 and the final torque value established was 567 N-m.

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

The bolt sizes used were M24 x 80 RC Lot # DHGM240011 and the final torque value established was 533 N-m.

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

Segment 11EE (Truss Post and Road Barrier Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Corner Assembly connecting the Road Barrier Brackets, Inclined Truss Post and Vertical Truss Post at Cross Beam and Bike Path side between Panel Points (PP) 106 to PP 107; PP 107 to PP 108 and PP 108 to PP 108.75 for Segment 11EE. 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. 00583 dated December 28, 2010.

The bolt sizes used were M22 x 55 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

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

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

The bolt sizes used were M24 x 60 RC Lot # DHGM240014 and the final torque value established was 567 N-m.

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

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The bolt sizes used were M24 x 80 RC Lot # DHGM240011 and the final torque value established was 533 N-m.

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

Please reference the pictures attached for more comprehensive details.

Segment 11BE (FL3 to Bottom Plate)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Bottom Plate to FL3 Flange and Bottom Panel to Bottom Plate at Panel Points (PP) 98, PP 99 and PP 100 for Segment 11BE. 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. 00582 dated December 28, 2010.

The bolt sizes used were M24 x 60 RC Lot # DHGM240014 and the final torque value established was 567 N-m.

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

The bolt sizes used were M24 x 65 RC Lot # DHGM240013 and the final torque value established was 967 N-m.

The bolt sizes used were M24 x 70 RC Lot # DHGM240010 and the final torque value established was 1200 N-m.

The Manual Torque wrench used was Serial No. XO2-747 and XO2-666.

Please reference the pictures attached for more comprehensive details.

Segment 12BW (Full Height Diaphragm)

This QA Inspector observed the Fillet welding by Shielded Metal Arc Welding (SMAW) process. The Weld joint was designated as Seg3054-001-009. The welder identification was 046709 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-T-2114-FCM-1. The piece mark was identified as full height Longitudinal Diaphragm web to Deck hold back weld at work point W4.

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.

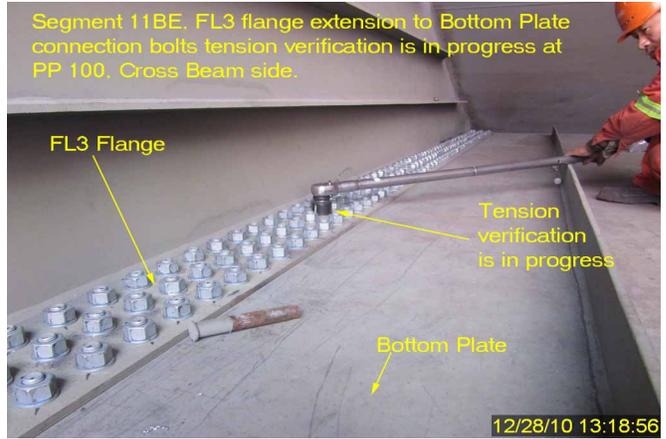
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Segment 12AW, full height Longitudinal Diaphragm hold back welding is in progress at work point W4.



Segment 11BE, FL3 flange extension to Bottom Plate connection bolts tension verification is in progress at PP 100, Cross Beam side.



Tower Lift 4 (East). Galvanized Ladder installed between Double Diaphragm at elevation 131 meter tension verification is in progress



Tower Lift 4 (South). Galvanized Ladder installed at Double Diaphragm at elevation 119 meter.



Segment 11BE, FL3 Floor Beam Flange to Bottom Plate connection bolts tension verification is in progress

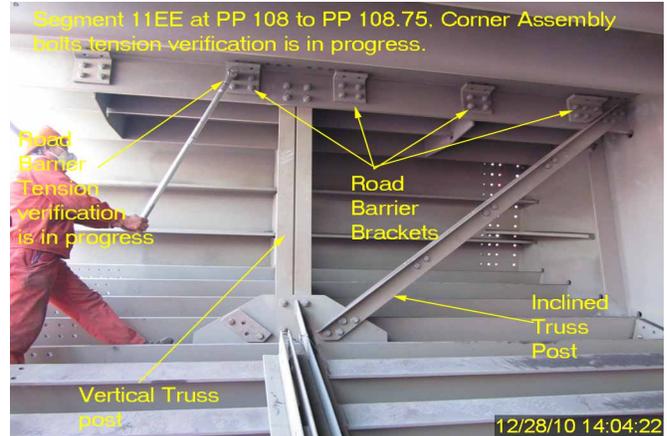


Segment 12AW, full height Longitudinal Diaphragm hold back welding is in progress at work point W4.



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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.

Inspected By: Math,Manjunath

Quality Assurance Inspector

Reviewed By: Dsouza,Christopher

QA Reviewer