

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-017707**Date Inspected:** 03-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: Zhu Zhong Hai
Inspected CWI report: Yes No N/A
Electrode to specification: Yes No N/A
Qualified Welders: Yes No N/A
Approved Drawings: Yes No N/A

CWI Present: Yes No
Rod Oven in Use: Yes No N/A
Weld Procedures Followed: Yes No N/A
Verified Joint Fit-up: 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 10DW (Catwalk at FL3)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Catwalk structure which is connected to Bottom Plate I-Ribs at FL3 area between Panel Points (PP) 92 and PP 93 for Segment 10DW.

Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00536 Dated November 03, 2010.

Bolt sizes used were M16 x 45 RC Set# DHGM160021 and final torque required was 180 N-m.

Bolt sizes used were M16 x 50 RC Set# DHGM160011 and final torque required was 200 N-m.

The Manual Torque wrench used was Serial No. XO2-114.

Segment 11CW (Lower Chevron)

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This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Lower Chevron, Upper Chevron, X3D Bracket connected to floor beam flange and to the splice plate and H-Beam connecting the floor beam and splice plate at Panel Point (PP) 101, PP 102 and PP 103 for Segment 11CW at Counter Weight and Cross Beam side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00536 Dated November 03, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220105 and final torque required was 690 N-m.

Bolt sizes used were M22 x 70 RC Set# DHGM220038 and final torque required was 480 N-m.

Bolt sizes used were M22 x 75 RC Set# DHGM220034 and final torque required was 453 N-m.

Bolt sizes used were M22 x 80 RC Set# DHGM220094 and final torque required was 470 N-m.

The Manual Torque wrench used was Serial No. XO2-114. Please reference the pictures attached for more comprehensive details.

Segment 11EW (Connection Plates)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the T-Rib connections plates at Side Panel (Counter Weight and Cross Beam side) and at Bottom Panel at the Panel Points (PP) 107 and PP 108 for Segment 11EW. 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. 00536 dated November 03, 2010.

The bolt sizes used were M16 x 45 RC Lot # DHGM160021 and the final torque value established was 180 N-m.

The bolt sizes used were M16 x 65 RC Lot # DHGM160006 and the final torque value established was 180 N-m.

The Manual Torque wrench used was Serial No. XO2-114. Please reference the pictures attached for more comprehensive details.

Tower Lift 3 East (Grating Support Angle)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 3 East for grating support angle. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00537 Dated November 03, 2010. Grating support angles are installed at 85 meter, 92 meter, 95 meter, 102 meter, 105 meter and 111 meter.

Bolt sizes used were M22 x 55 RC Set# DHGM220011 and final torque required was 457 N-m.

Bolt sizes used were M22 x 110 RC Set# DHGM220067 and final torque required was 500 N-m.

The Manual Torque wrench used was Serial No. XO2-74.

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Tower Lift 3 East (Grating Support Channel)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 3 East for grating support Channel. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00533 Dated November 01, 2010. Grating support channel are installed at 85 meter, 92 meter, 95 meter, 102 meter, 105 meter and 111 meter.

Bolt sizes used were M20 x 50 RC Set# DHGM200009 and final torque required was 367 N-m.

The Manual Torque wrench used was Serial No. XO2-74.

Segment 11AE to Segment 11BE (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 11AE to Segment 11BE between Panel Point (PP) 97 to PP 98 at the following locations:

Work Point E1 towards Work Point E3 (Side Panel Bike Path Side) total 19 T-Ribs.

Work Point E3 towards Work Point E4 (Bottom Panel) total 18 T-Ribs.

Work Point E4 towards Work Point E6 (Side Panel Cross Beam 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.

Segment 11BE to Segment 11CE (U-Rib to U-Rib)

This QA Inspector performed Dimension Control Inspection for measuring offset along with Caltrans QA Inspector Mr. Murugan Manikandan on the U-Rib to U-Rib from Cross Beam side towards Bike Path side at a total of 39 locations on Segment 11BE to Segment 11CE between Panel Points (PP) 100 to PP 101 at the following locations:

The offset was measured within 50mm from the Deck Panel on U-Rib on the South and North side. The QA Inspector measured the 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 12AE (Longitudinal Diaphragm to Longitudinal Diaphragm)

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This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan on the Longitudinal Diaphragm to Longitudinal Diaphragm at Work Point E3 (Bike Path side) and at Work Point E4 (Cross Beam side) for the Segment 12AE between Panel Point (PP) 111 to PP 112 at the following locations after correction of sweep:

The offset was measured at 5 (five) different locations in which 2 (Two) locations were at Flange area and 3 (Three) locations were at Web area. The QA Inspector measured the Offset using 1(One) Meter Straight Edge.

The Sweep was measured at 100 mm from both sides of the Floor Beam and 800mm from both sides of floor Beam and at Center (Total 5 Locations) using string line.

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 12BE (Plumbness and Flatness after Heat Straightening)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan for measuring plumbness and flatness on the deck panel to deck panel diaphragm between U-Rib at following locations (reference of numbering taken from cross beam side towards bike path side) on Segment 12BE.

At 12th, 22nd, 28th and 29th locations at Panel Point (PP) 113 after heat straightening and observed reading are out of tolerance.

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.

Note: The inspection was performed against the e-mail notification by Mr. Li Man Kit of ABF.

Segment 11DE to Segment 11EE (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan on Nov 03 for measuring root gap and offset on at the Transverse Splice for the Segment 11DE to Segment 11EE between Panel Point (PP) 106 to PP 107 at the following locations:

Work Point E2 towards Work Point E1 (Edge Panel Bike Path Side).

Work Point E1 towards Work Point E3 (Side Panel Bike Path Side).

Work Point E3 towards Work Point E4 (Bottom Panel).

Work Point E4 towards Work Point E6 (Side Panel Cross Beam Side).

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Work Point E6 towards Work Point E5 (Edge Panel Cross Beam Side).

Work Point E5 towards Work Point E2 (Deck Panel).

The QA Inspector measured the root gap using 1(One) taper gauge and measured the offset 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.

Segment 11DW to Segment 11EW (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection Caltrans QA Inspector Mr. Murugan Manikandan on Nov 03, 2010 for measuring root gap and offset at the Transverse Splice for the Segment 11DW to Segment 11EW between Panel Point (PP) 106 to PP 107 at the following locations:

Work Point W5 towards Work Point W6 (Edge Panel Cross Beam Side).

Work Point W6 towards Work Point W4 (Side Panel Cross Beam Side).

Work Point W4 towards Work Point W3 (Bottom Panel).

Work Point W3 towards Work Point W1 (Side Panel Counter Weight Side).

Work Point W1 towards Work Point W2 (Edge Panel Counter Weight Side).

Work Point W2 towards Work Point W5 (Deck Panel).

The QA Inspector measured the root gap using 1(One) taper gauge and measured the offset 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.

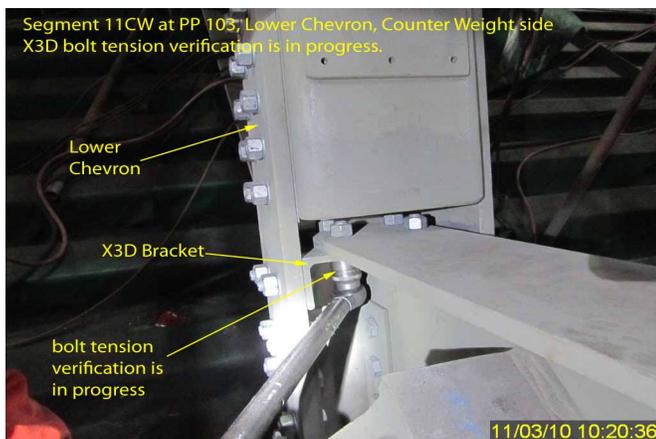
Segment 11CW to Segment 11DW (Transverse Splice at Bottom Panel)

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 OBW11C-003. The welder identification was 044551 and 046709 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-B-U2-FCM-1. The piece mark was identified as the Bottom Panel, transverse splice weld.

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

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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