

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-018583**Date Inspected:** 10-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

Segment 11BW to Segment 11CW (Longitudinal Diaphragm to Longitudinal Diaphragm)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Longitudinal Diaphragm to Longitudinal Diaphragm between Panel Points (PP) 100 and PP 101 for Segment 11BW to Segment 11CW at work point W3, Counter Weight side and work point W4 Cross Beam side. 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. 00568 dated December 10, 2010.

The bolt sizes used were M24 x 70 RC Lot # DHGM240010 and the final torque value established was 560 N-m.

The bolt sizes used were M24 x 95 RC Lot # DHGM240021 and the final torque value established was 540 N-m.

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

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Please reference the pictures attached for more comprehensive details.

Segment 11AW to 11BW (Transverse Splice T-Ribs)

This QA Inspector witnessed final bolt tension verification on bolts connecting T-Rib to T-Rib for Transverse Splice at Bottom Panel (from work point W4 towards W3) between Panel Point (PP) 97 to PP 98 for Segment 11AW to 11BW. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00568 Dated December 10, 2010.

The bolt sizes used were M22 x 70 RC Lot # DHGM220028 and the final torque value established was 440 N-m.

The bolt sizes used were M22 x 70 RC Lot # DHGM220041 and the final torque value established was 460 N-m.

The bolt sizes used were M22 x 70 RC Lot # DHGM220038 and the final torque value established was 480 N-m.

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

Please reference the pictures attached for more comprehensive details.

Segment 11AW to 11BW (Transverse Splice T-Ribs)

This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs after bolting for the Segment 11AW to Segment 11BW between Panel Point (PP) 97 to PP 98 at the following locations:

Work Point W4 towards Work Point W3 (Bottom Panel) total 18 T-Ribs.

The QA Inspector measured the Vertical 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 11BW to 11CW (Transverse Splice T-Ribs)

This QA Inspector witnessed final bolt tension verification on bolts connecting T-Rib to T-Rib for Transverse Splice at Bottom Panel (from work point W4 towards W3) between Panel Point (PP) 100 to PP 101 for Segment 11BW to 11CW. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00568 Dated December 10, 2010.

The bolt sizes used were M22 x 70 RC Lot # DHGM220038 and the final torque value established was 480 N-m.

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

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

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This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs after bolting for the Segment 11BW to Segment 11CW between Panel Point (PP) 100 to PP 101 at the following locations:

Work Point W4 towards Work Point W3 (Bottom Panel) total 18 T-Ribs.

The QA Inspector measured the Vertical 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 11EE to Segment 12AE (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan for measuring root gap and offset on at the Transverse Splice for the Segment 11EE to Segment 12AE between Panel Point (PP) 108 to PP 109 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).

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.

Bike Path at Bay # 10

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path is identified as:

BK004A-027.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using

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1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Bike Path at Bay # 11

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path is identified as:

BK004A-034.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Segment 12AW to Segment 12BW (I-Rib Stiffener CJP)

This QA Inspector observed the in-process welding by Flux Cored Arc Welding (FCAW) process on a Complete Joint Penetration (CJP) groove weld. The weld joint was designated as SP3034-001-078 and SP3034-001-078. The welder identification was 040759 and was observed welding in the 3G (Vertical) position using approved Welding Procedure Specification WPS-B-T-2233-ESAB. The piece mark was identified as the Side Panel I-Rib Stiffener splice weld, at Cross Beam side.

Please reference the pictures attached for more comprehensive details.

Segment 12BW (Corner Assembly hold back weld)

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 CA3009-002. The welder identification was 040656 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Edge Panel to Deck Panel hold back weld at work point W5.

Segment 12AW (Corner Assembly hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a

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Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as Seg3004AA-021. The welder identification was 040656 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Edge Panel to Deck Panel hold back weld at work point W5.

Segment 12AW (Longitudinal Diaphragm)

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 Seg3004W-009. The welder identification was 040611 and observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-Tc-U4b-FCM-1. The piece mark was identified as Longitudinal Diaphragm Flange weld connecting floor beam at work point W3.

Please reference the pictures attached for more comprehensive details.

Segment 12AW to Segment 12BW (Transverse Splice at Edge 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 CA3012-007. The welder identification was 044551 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 edge panel splice weld, Counter Weight side.

Please reference the pictures attached for more comprehensive details.

Segment 11EE and Segment 12AE

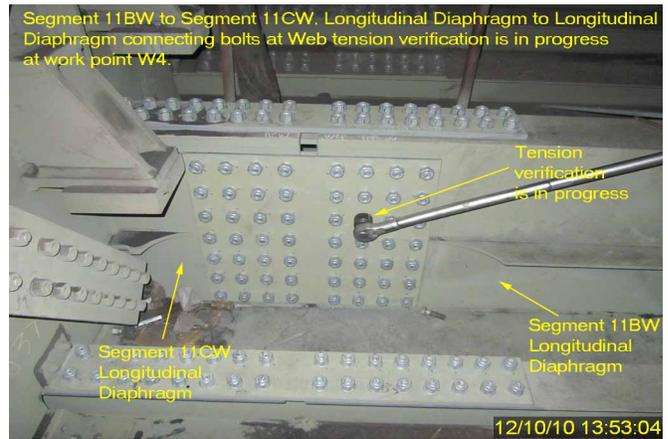
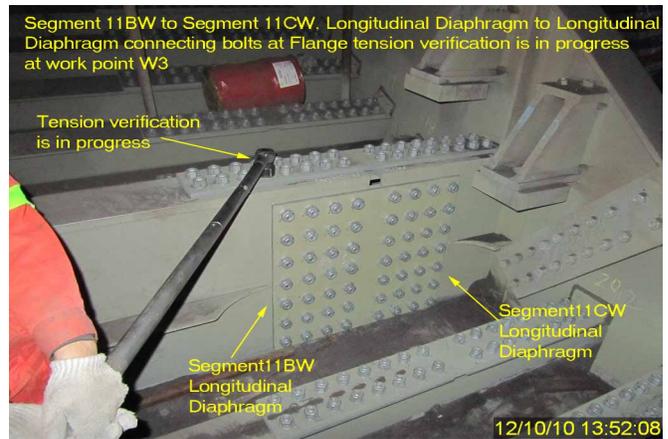
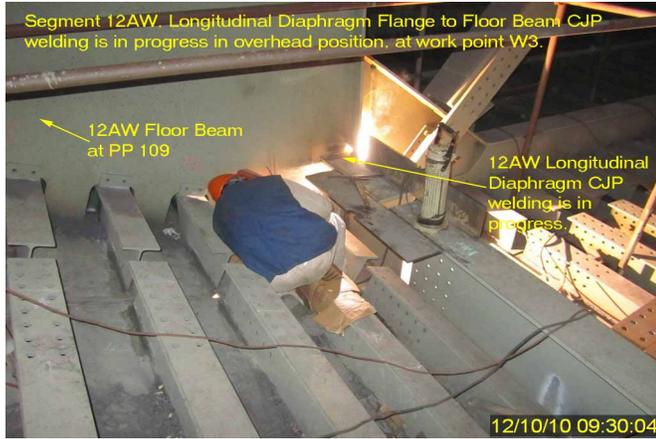
This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Side Panel T-Ribs by Fillet weld was in progress for visual discontinuities. The welder identification was 053871 and 040378 and was observed welding in the 2G (Horizontal) position using approved Welding Procedure Specification WPS-345-SMAW-2G(2F)-FCM-Repair-1. The piece mark was identified as Side Panel T-Ribs.

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.

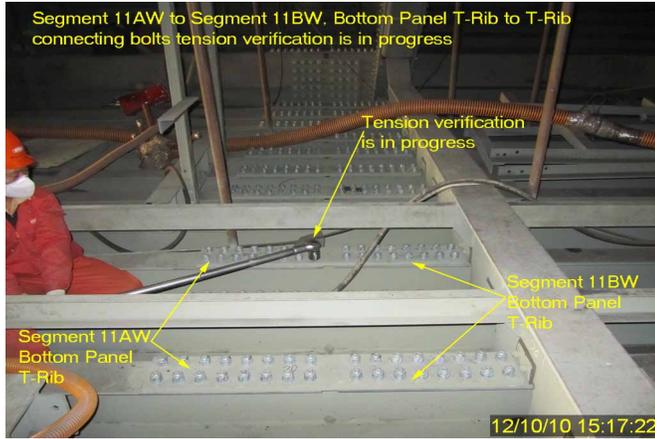
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Summary of Conversations:

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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| Inspected By: | Math,Manjunath | Quality Assurance Inspector |
| Reviewed By: | Dsouza,Christopher | QA Reviewer |
