

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-018584**Date Inspected:** 09-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 11EW to Segment 12EW (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection Caltrans QA Inspector Mr. Murugan Manikandan for measuring root gap and offset at the Transverse Splice for the Segment 11EW to Segment 12AW 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).

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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.

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 are identified as:

BK004A-026.

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 11EW (Edge Panel I-Rib)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Fillet weld. The Weld joint was designated as EP142-001-009/010. The welder identification was 044551 and observed welding in the 2F (Horizontal) and 4F (Overhead) position using approved Welding Procedure Specification WPS-B-P-2112-FCM-1 and WPS-B-P-2114-FCM-1. The piece mark was identified as Edge Panel I-Rib splice weld, Cross Beam side.

Please reference the pictures attached for more comprehensive details.

Segment 12AW (Edge Panel I-Rib)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Fillet weld. The Weld joint was designated as EP3007-001-005/006. The welder identification was 044551 and observed welding in the 2F (Horizontal) and 4F (Overhead) position using approved Welding Procedure Specification WPS-B-P-2112-FCM-1 and WPS-B-P-2114-FCM-1. The piece mark was identified as Edge Panel I-Rib splice weld, Cross Beam side.

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Segment 12AW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3047-001-017/018 and SP3046-001-021/22. The welder identification was 049220 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Counter Weight side.

Segment 12BW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3051-001-003/004 and SP3050-001-009/010. The welder identification was 049220 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Counter Weight side.

Segment 12AW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3036-001-212/213. The welder identification was 040759 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Cross Beam side.

Segment 12BW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3040-001-005/006. The welder identification was 040759 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Cross Beam side.

Segment 12AW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3037-001-101/102. The welder identification was 053486 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Cross Beam side.

Segment 12BW (Bottom Panel T-Rib hold back weld)

This QA Inspector observed the in process fillet welding operation by the Flux Cored Arc Welding (FCAW) process. The Weld joint was designated as SP3041-001-009/010. The welder identification was 053486 and was observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-B-T-2132-ESAB. The piece mark was identified as the Side Panel, T-Ribs hold back weld, Cross Beam side.

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Segment 11EW to Segment 12AW (T Rib- Heat Straightening)

This QA Inspector observed the ZPMC personnel's performing Heat Straightening at Segment 11EW T-Rib to Segment 12AW T-Rib at Bottom Panel. Heat Straightening was performed to align them within the dimensional tolerance.

QA Inspector observed Heat Straightening was performed against Heat Straightening Report HSR1(B)-9935 dated Dec 07, 2010.

Please reference the pictures attached for more comprehensive details.

Segment 11EE to Segment 12AE (Longitudinal Diaphragm- Heat Straightening)

This QA Inspector observed the ZPMC personnel's performing Heat Straightening at Segment 11EE Longitudinal Diaphragm to Segment 12AE Longitudinal Diaphragm at work point E4, Cross Beam side. Heat Straightening was performed to align them within the dimensional tolerance.

QA Inspector observed Heat Straightening was performed against Heat Straightening Report HSR1(B)-9934 dated Dec 06, 2010.

Please reference the pictures attached for more comprehensive details.

Segment 11EE (Deck Panel I-Rib)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Fillet weld. The Weld joint was designated as DP708-001-013/014. The welder identification was 040320 and observed welding in the 4F (Overhead) position using approved Welding Procedure Specification WPS-B-T-4114-FCM-1. The piece mark was identified as Deck Panel I-Rib hold back weld, Cross Beam side.

Please reference the pictures attached for more comprehensive details.

Segment 12AE to Segment 12BE (Deck Panel)

This QA Inspector at Segment 12AE to Segment 12BE observed longitudinal cracks during welding of Complete Joint Penetration (CJP) groove transverse splice at root run. The welding was performed with the Flux Cored Arc Welding (FCAW) process using ESAB E71T-1M Dual Shield70 Ultra Plus electrode with ceramic backing. Longitudinal Cracks was visually evident at Deck Panel, weld joint identified as OBE12E-003 for Deck Panel. The welding was performed on Qualitative basis to compare the weld metal with Segment 12AW to Segment 12BW, where similar kind of Longitudinal Cracks were observed after performing the root run of weld on Dec 08, 2010 (for further details please refer Daily Report generated by this QA for Dec 08, 2010).

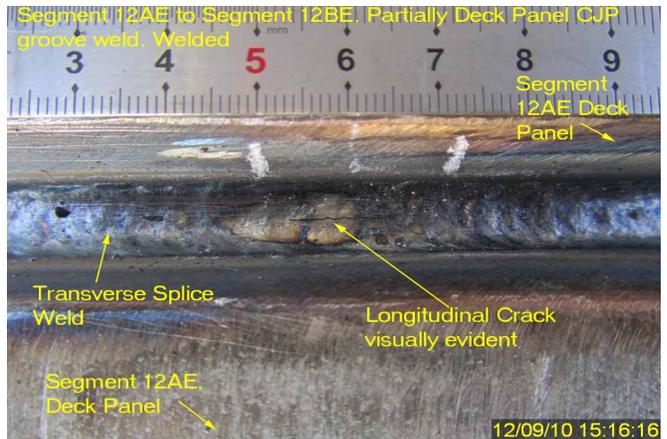
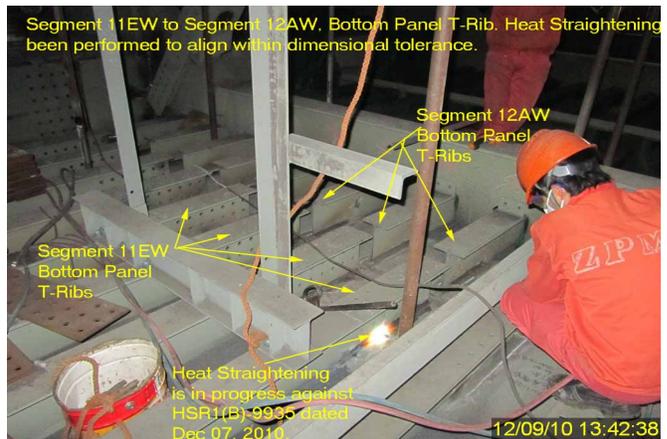
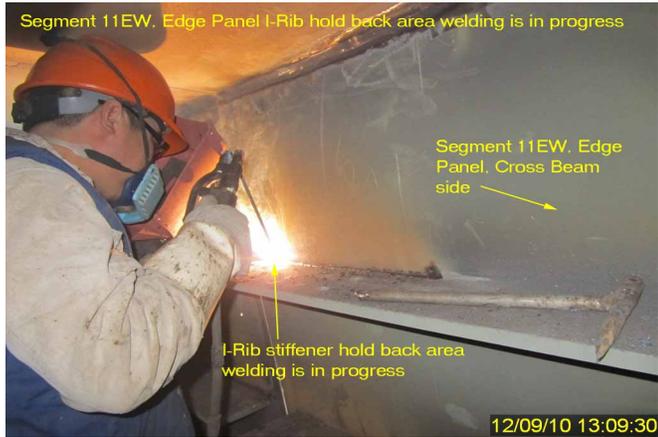
Please reference the pictures attached for more comprehensive details.

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

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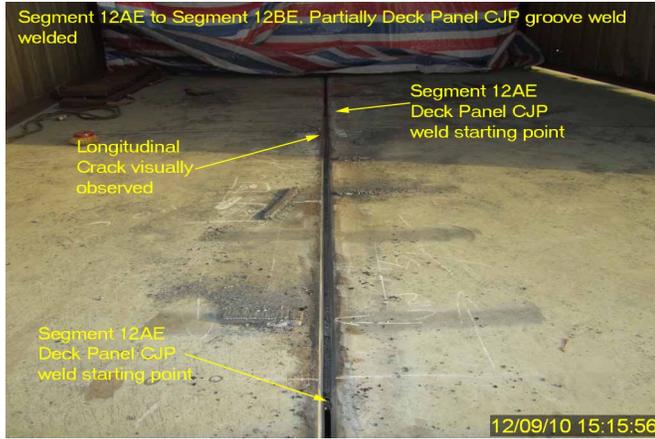
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documents.



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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
