

**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-018581**Date Inspected:** 12-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 12AW (Skin Flatness)

This QA Inspector performed Joint Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan to check the skin flatness between Segment 11EW to Segment 12AW between Panel Points (PP) 108 and PP 109 at the following locations:

The skin flatness was measured on North side (Counter Weight Side at B1 and B2 locations) and South side (Cross Beam side at B3 and B4 locations) at 100mm from the weld connecting Bottom Panel to Side Panel using 5000mm string line to verify overall flatness. The straight edges of 600mm and 630 mm of length were also used to measure the localized flatness.

The skin flatness was measured on North side (Counter Weight side at T1 location) and South side (Cross Beam side at T2 location) at 100mm from the weld connecting Deck Panel to Edge Panel using 5000mm string line to verify overall flatness. The straight edges of 600mm and 630 mm length were also used to measure the localized

---

---

# WELDING INSPECTION REPORT

( Continued Page 2 of 5 )

---

---

flatness.

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 to Segment 12BE (T-Rib CJP)

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 BP3003-001-022. The welder identification was 044473 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 Bottom Panel T-Ribs web at transverse splice weld.

Please reference the pictures attached for more comprehensive details.

Segment 12AE to Segment 12BE (T-Rib CJP)

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 BP3003-001-022. The welder identification was 040367 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 Bottom Panel T-Ribs web at transverse splice weld.

Segment 12AE to Segment 12BE (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 OBE12B-001. The welder identification was 047353 and 040458, was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-P-2231T-ESAB. The piece mark was identified as the Bottom Panel splice weld.

Please reference the pictures attached for more comprehensive details.

U-Rib Reinforced Plate

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 USPL1-654-001. The welder identification was 040759 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-T-2231-ESAB. The piece mark was identified as the U-Rib Reinforced Plate.

U-Rib Reinforced Plate

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 USPL1-659-001. The welder identification was 053486 and was observed welding in the 1G (Flat) position using approved Welding Procedure

---

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 5 )

---

---

Specification WPS-B-T-2231-ESAB. The piece mark was identified as the U-Rib Reinforced Plate.

### Segment 11EW (Longitudinal Diaphragm- Heat Straightening)

This QA Inspector observed the ZPMC personnel's performing Heat Straightening at Segment 11EW Longitudinal Diaphragm at work point W3, Counter Weight side. Heat Straightening was performed to align them within the dimensional tolerance to Longitudinal Diaphragm of Segment 12AW.

QA Inspector observed Heat Straightening was performed against Heat Straightening Report HSR1(B)-9952 dated Dec 07, 2010.

Please reference the pictures attached for more comprehensive details.

### Segment 12AW (Longitudinal Diaphragm- Heat Straightening)

This QA Inspector observed the ZPMC personnel's performing Heat Straightening at Segment 12AW Longitudinal Diaphragm at work point W3, Cross Beam side. Heat Straightening was performed to align them within the dimensional tolerance to Longitudinal Diaphragm of Segment 11EW.

QA Inspector observed Heat Straightening was performed against Heat Straightening Report HSR1(B)-9948 dated Dec 10, 2010.

Please reference the pictures attached for more comprehensive details.

### Segment 11BE

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The 1 (one) cope holes at Floor Beam of Segment 11BE at PP 98, PP 99 and PP 100, due to cutting error of the cope hole. The cope hole was required to be located on the CJP weld on the Floor Beam rather than it was located at wrong place, thus repair welding was been performed.

The welder identification was 040378 and observed welding in the 3G (Vertical) position using approved Welding Procedure Specification WPS-345-SMAW-3G (3F)-FCM-Repair-1. The piece mark was identified as partial height diaphragm.

Please reference the pictures attached for more comprehensive details.

### Segment 11DE

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The 1 (one) cope holes at Floor Beam of Segment 11DE at PP 104, PP 105 and PP 106, due to cutting error of the cope hole. The cope hole was required to be located on the CJP weld on the Floor Beam rather than it was located at wrong place, thus repair welding was been done.

# WELDING INSPECTION REPORT

( Continued Page 4 of 5 )

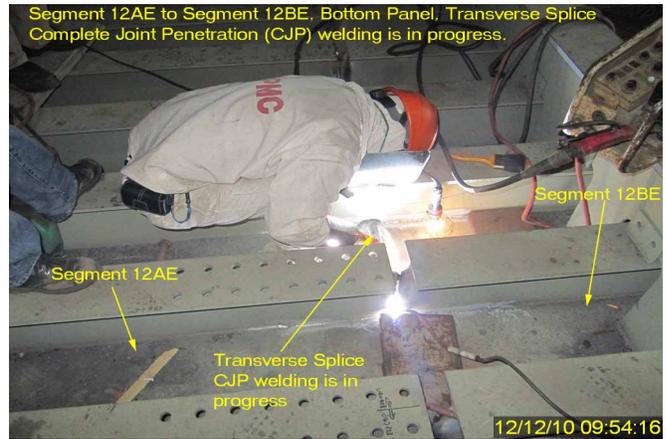
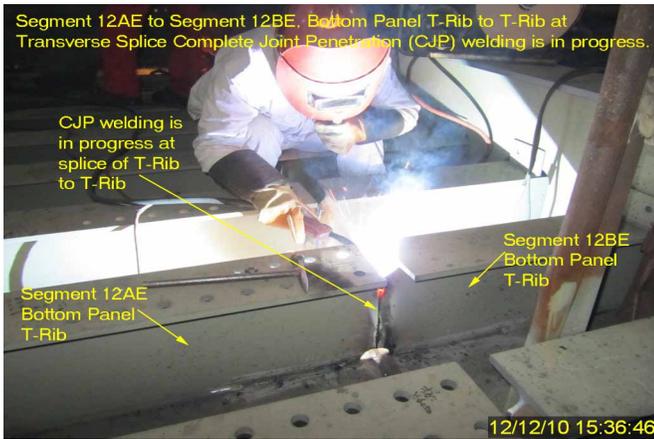
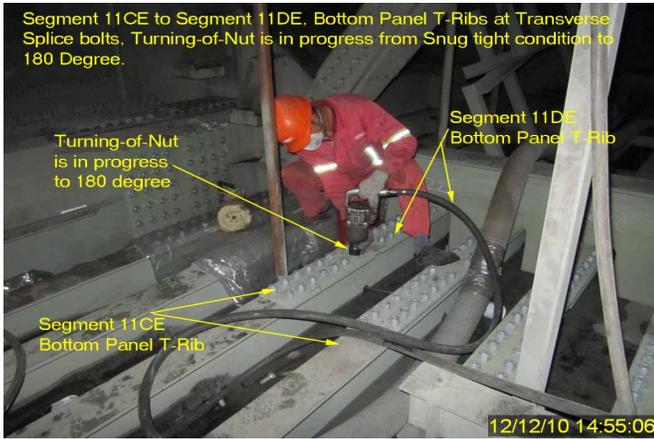
The welder identification was 050289 and observed welding in the 3G (Vertical) position using approved Welding Procedure Specification WPS-345-SMAW-3G (3F)-FCM-Repair-1. The piece mark was identified as partial height diaphragm.

## Segment 11CE to Segment 11DE

This QA Inspector observed rotation-of-nut after snug tightening is in progress for Bottom Panel T-Rib to T-Rib between Segment 11CE to Segment 11DE, Panel Points PP 103 to PP 104 at Transverse Splice.

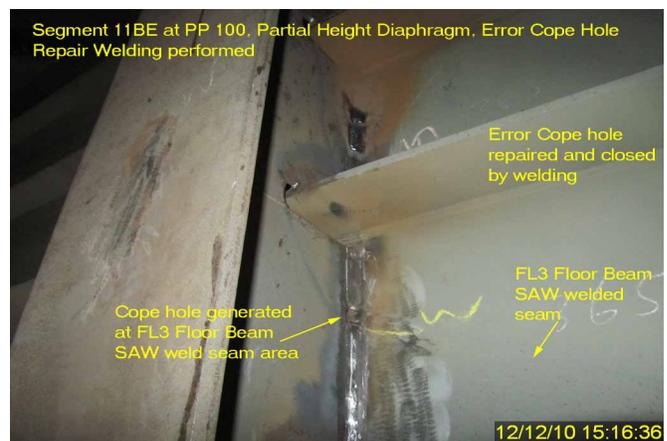
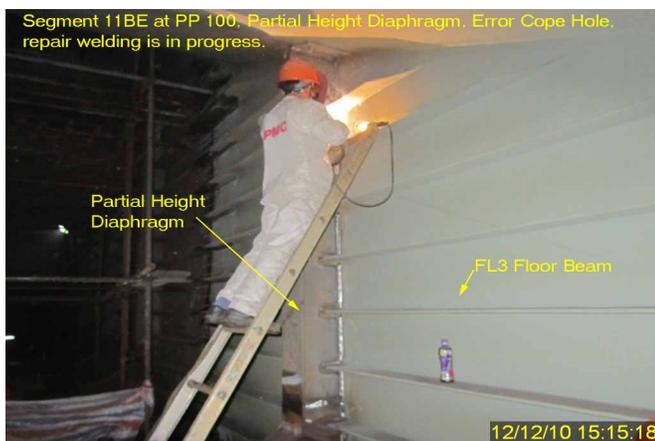
Please reference the pictures attached for more comprehensive details.

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



# WELDING INSPECTION REPORT

( Continued Page 5 of 5 )



## 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