

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001200**Date Inspected:** 27-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 930**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**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**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girders (OBG).

**Bay 3 OBG:**

The QA Inspector randomly observed ZPMC Machine Operators utilizing magnetic drills and bolt hole pattern templates, to drill bolt holes through the flanges of T-Ribs fabricated from W21 X 57 I-Beams. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder He Yumei utilizing the Flux Cored Arc Welding (FCAW) with ZPMC approved Weld Procedure Specification (WPS) WPS-B-T-2132-2 in the 2F position, to tack weld T-Ribs to Side Plate SP013/PL73A at Weld Joint (WJ) Numbers SP013-01-022, 023, 020 and 021. Tack welding had already been completed by Ms. He on WJ's SP013-01-018, 019, 016 and 017. The WJ numbers are out of sequence, but match ZPMC Fabrication Drawings. The QA Inspector randomly observed ZPMC CWI monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

**Bay 7 OBG:**

The QA Inspector randomly observed ZPMC welder Chen Chuanzong ID Number 044824, utilizing the FCAW Process with ZPMC approved WPS WPS-B-T-2132-1 in the 2F position to tack weld Stiffener X2K to Floor Beam Web FB016-04 at WJ's FB016-04-013, 014 on Plates X94E (T=30 F2 SPCM) + X49A (T=12 T2) + X45A

---

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

---

---

(T=12 T2). The QA Inspector randomly observed ZPMC CWI Cui Yi Ru, monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Hong Shuili ID Number 044815, utilizing the FCAW Process with ZPMC approved WPS WPS-B-T-2232-TC-U4b-F-1 in the 2G position and WPS-B-T-2132-1 in the 2F position to tack weld Flange Plate X7J to Floor Beam Web FB001-04 on the outside and inside of Complete Joint Penetration (CJP) WJ FB001-04-043. WPS-B-T-2132-1 was being used to weld the reinforcing fillet weld on the inside of WJ FB001-04-043. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru, monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Yuan Wensong ID Number 055491, utilizing the FCAW Process with ZPMC approved WPS WPS-B-T-2132-2 in the 2F position, to weld Stiffener X2J to Floor Beam Web FB001-04 at WJ's FB001-04-013, 014. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

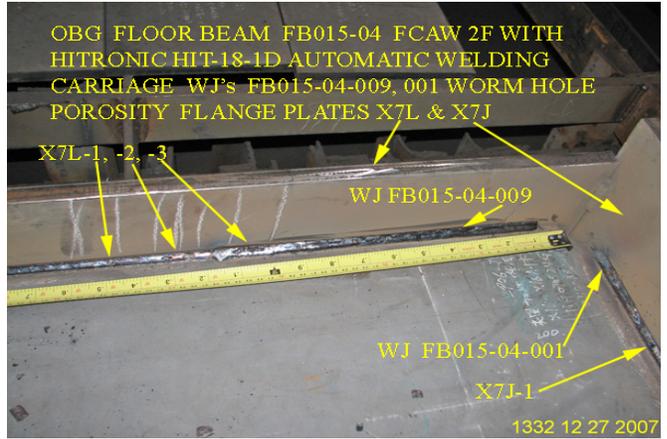
The QA Inspector randomly observed ZPMC welder Yuan Wensong ID Number 055491, utilizing the FCAW Process with ZPMC approved WPS WPS-B-T-2132-2 in the 2F position, to weld Flange Plates X7G to Floor Beam Web FB015-04. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: welding amperage 287 amps, welding voltage 29.2 volts with a travel speed of 547 millimeters (mm) per minute. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed several areas of worm hole porosity in WJ's FB015-04-001 and FB015-04-009 attaching Flange Plates X7L and X7J to Floor Beam Web FB015-04. ZPMC CWI Cui Yi Ru informed the QA Inspector that WJ FB015-04-001 on Flange Plate X7J and WJ FB015-04-009 on Flange Plate X7L, were welded by ZPMC welder Yuan Wensong ID Number 055491, utilizing the FCAW Process with ZPMC approved WPS WPS-B-T-2132-2 in the 2F position utilizing a Hitronic HIT-18-1D Automatic Welding Carriages. The attached photographs provide additional detail.

The QA Inspector randomly observed ZPMC Torch Cutting Operator Ms. Shi Gui Ju, utilizing a Long Wai track mounted torch cutting apparatus to rough cut the bevels on the CJP WJ on the end of Flange Plates X7J, X7K and X7M, prior to fit up on Floor Beam Webs. The attached photographs provide additional detail.

# WELDING INSPECTION REPORT

( Continued Page 3 of 4 )



---

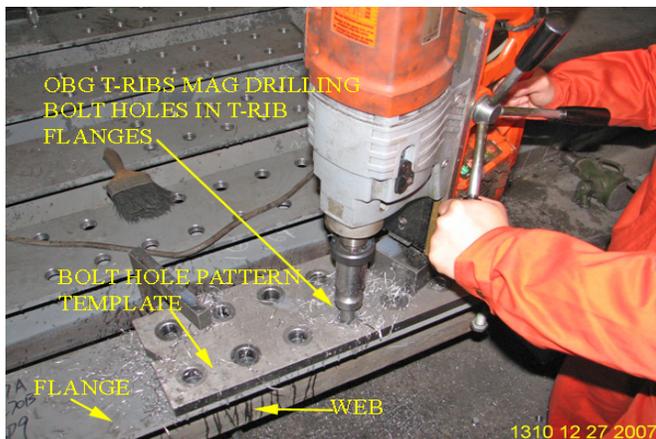
---

# WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

---

---



## Summary of Conversations:

The QA Inspector asked ZPMC CWI Cui Yi Ru why the FCAW welding on WJ's FB015-04-001, 009 was continued after the worm hole porosity was observed. Mr. Cui did not have an explanation for the QA Inspector.

## 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Franco,Charlie

Quality Assurance Inspector

**Reviewed By:** Cochran,Jim

QA Reviewer