

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024484**Date Inspected:** 02-Jun-2011**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), Changxing Island **Location:** Shanghai, China**CWI Name:** An Qing Xiang**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 Components**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance (QA) Inspector, Anand Upadhye was present during the times noted above for observations relative to the work being performed.

NDT

Outside Yard – OBG Trial Assembly

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted notification number 09334.

Ultrasonic Testing (UT).

This QA inspector performed UT of approximately 10 % of the area previously tested and accepted by ZPMC Quality control personnel. This QA inspector generated UT report for this date. The members are identified as OBG Components. The weld designations reviewed are as follows:

SEG3020E-028, 119, 121, 115.

NDT

Outside Yard – OBG Trial Assembly

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted notification number 09336.

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Magnetic Particle Testing (MT).

This QA inspector performed MT of approximately 15 % of the area previously tested and accepted by ZPMC Quality control personnel. This QA inspector generated MT report for this date. The members are identified as OBG Components. The weld designations reviewed are as follows:

SP3091-001- 057 ~ 062.

SP3092-001- 057 ~ 066.

SP3094-001- 001 ~ 005.

SP3095-001- 001 ~ 010.

The above mentioned welds appeared to be in general compliance with the applicable contract documents. Weld # SP3094-001- 006 was not in compliance with the applicable contract documents. During the Quality Assurance (QA) Magnetic Particle Testing (MT) review of weld # SP3094-001-006 located on OBG Segment 13BW Side plate stiffener, this Quality Assurance (QA) Inspector discovered the following issue:

- One Longitudinal Crack measuring approximately 35mm in length.
- The Weld is a Fillet weld, joining the stiffener plate to Side plate SP3094.
- The Weld is identified as Non Seismic Performance Critical Member (NON SPCM).
- The above crack was clearly marked on the material near the weld.

The crack is located on Fillet weld that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% MT inspection of this weld. This QA Inspector informed ZPMC QC identified as Mr. Zhu Peng that an incident report shall be raised for the above mentioned issue. The attached photographs provide additional details.

### WELDING

This QA Inspector observed the following work in progress:

Outside Yard – OBG Trial Assembly

This QA Inspector observed ZPMC qualified welding personnel identified as 058245 perform repair welding by Flux Cored Arc Welding (FCAW), on Deck panel diaphragm to Floor beam weld at panel point 128.3 of OBG Segment 14W. Weld joint is identified as SEG3020E-001. ZPMC Quality Control (QC) Inspector identified as Zhu Lin was present to monitor the welding process. The welding variables recorded by ZPMC QC appeared to be in general compliance with WPS-345-FCAW-2G (2F)-FCM-Repair, which is used as per Critical welding repair report B-CWR2997.

This QA Inspector observed ZPMC qualified welding personnel identified as 066675 perform repair welding by Shielded Metal Arc Welding (SMAW), on Deck panel diaphragm to Floor beam weld at panel point 128.3 of OBG Segment 14W. Weld joint is identified as SEG3020D-038. ZPMC Quality Control (QC) Inspector identified as Zhu Lin was present to monitor the welding process. The welding variables recorded by ZPMC QC appeared to be

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in general compliance with WPS-345-SMAW-2G (2F)-FCM-Repair-1, which is used as per Critical welding repair report B-CWR2997.

This QA Inspector observed ZPMC qualified welding personnel identified as 069896 perform welding by Shielded Metal Arc Welding (SMAW), on Floor beam I Rib stiffener to Floor beam weld at panel point 128.7 of OBG Segment 14W. Weld joint is identified as FB3345-001-021, 032. ZPMC Quality Control (QC) Inspector identified as Zhu Lin was present to monitor the welding process. The welding variables recorded by ZPMC QC appeared to be in general compliance with WPS-B-P-2112-FCM-1.

This QA Inspector observed ZPMC qualified welding personnel identified as 067610 perform welding by Shielded Metal Arc Welding (SMAW), on Floor beam I Rib stiffener to Floor beam weld at panel point 128.3 of OBG Segment 14W. Weld joint is identified as FB3342-001-040, 047. ZPMC Quality Control (QC) Inspector identified as Zhu Lin was present to monitor the welding process. The welding variables recorded by ZPMC QC appeared to be in general compliance with WPS-B-P-2114-FCM-1.

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



### Summary of Conversations:

No significant 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, phone: 15000422372 , who represents the Office of Structural Materials for your project.

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**Inspected By:** Upadhye, Anand

Quality Assurance Inspector

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**Reviewed By:** Clifford, William

QA Reviewer