

**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-020721**Date Inspected:** 14-Feb-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) Chanxing Island**Location:** Shanghai, China**CWI Name:** Mr. Qui Wen**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 Segment**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance Inspector (QA), Vibin Kumar Selvanayaham, was present during the times noted above for observations relative to the work being performed.

Ultrasonic Testing (UT) – NWIT Document No: 008332

This QA inspector performed UT of approximately 10% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an UT report for this date. The members are identified as OBG Segment 13AE. The weld designations reviewed are as follows:

1. SEG3011G-222, 223, 225, 226, 227, 228, 229
2. SEG3011G-230, 231, 232, 233, 234, 235, 236

Description of Incident: During the Quality Assurance Ultrasonic Testing (UT) review of weld located on OBG Segment 13CE, this Quality Assurance Inspector (QA) discovered one (1) Class "A" indications measuring approximately 20mm in length. The weld is Complete Joint Penetration "T" joint joining the stiffener to floor beam at panel point 123.5 CB Side. The indication details that The Indication rating is +9dB and length approximately 20mm. The Thickness of the plate is 14mm and depth of the indication approximately 10mm. The indication is located on the weld joint identified as SEG3011G-230. The "Y" location for this indication is approximately 50mm from top edge of the stiffener. The weld is a Complete Joint Penetration (CJP) "T" weld joint Vertical Plate Stiffener at Bike Path Side. The indication is clearly marked by the QA Inspectors near the weld. This weld joint is designated as Seismic Performance Critical Member (SPCM). The OBG Segment 13AE located in the inside of

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fabrication bay 14. The indication is located within the area 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% UT inspection of this weld. Regarding this UT indication, QA inform to ZPMC QC. The ZPMC QC identified as Mr. Wang Xu.

## Description of VT Observation:

During the Quality Assurance random visual inspection of welds located on Floor beam (FL2)-deck panel diaphragm to Longitudinal Diaphragm welds of OBG Segment 13CW at panel point 124 and 124.5, this Quality Assurance Inspector (QA) observed the following issues;

- Linear Longitudinal Crack measuring approximately 200mm length.
- After back gouging, these indications were discovered visually and confirmed by Magnetic particle Testing (MT) by ZPMC MT personnel.
- The indications are clearly marked on the material near the weld for further repairs. The weld numbers are identified as DP3148-001-255 and DP3148-001-252. The panel point is identified as a PP124 and PP124.5 Counter Weight Side FL2.
- This weld is a CJP weld joining the Deck Panel Diaphragm to Longitudinal Diaphragm.
- The Deck Panel Diaphragm to Longitudinal Diaphragm weld is identified as Seismic Performance Critical Member (SPCM).
- The cracks are completely removed and re-weld shall be performed as per required contract document and approved CWR and WPS. For further information, Please see attached pictures.

## Bay 14

This QA Inspector observed the following work in progress:

Shielded Metal Arc Welding (SMAW) welding of weld joint SEG3020U-588 located on Bottom Plate to Anchor at panel point 126 of OBG Segment 14W. ZPMC Welders are identified as 067707, 067904 and 067588. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-P-2212-Tc-U4b-FCM.

SMAW repair welding of weld joint SEG3020BB-019 located on Bottom Plate to Vertical Shear Plate at panel point 125/126 of OBG Segment 14W. ZPMC Welder is identified as 066038. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-345-SMAW-2G-(2F)-FCM-Repair, which is used as per Critical Welding Repair (CWR) B-CWR-2752.

SMAW repair welding of weld joint SEG3020BB-073 located on Bottom Plate to Vertical Shear Plate at panel point 125/126 of OBG Segment 14W. ZPMC Welder is identified as 067942. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-345-SMAW-2G-(2F)-FCM-Repair, which is used as per Critical Welding Repair (CWR) B-CWR-2794.

Flux Core Arc Welding (FCAW) welding of weld joint SEG3020BE-113 located on Anchor Plate to Vertical Shear Plate at panel point 126 of OBG Segment 14W. ZPMC Welder is identified as 067764. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2233-ESAB.

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FCAW welding of weld joint SEG3020BB-117 located on Anchor Plate to Vertical Shear Plate at panel point 126 of OBG Segment 14W. ZPMC Welder is identified as 067888. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2233-ESAB.

FCAW welding of weld joint OBW-13A-001-016 located on Corner Assembly deck panel to deck pane splice weld of OBG Segment 13BW to OBG Segment 13CW at Cross Beam side. ZPMC Welder is identified as 066734. ZPMC Quality Control (QC) is identified as Mr. Zhang Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2231-ESAB.

SMAW repair welding of weld joint SEG3015K-189 located on Floor Beam to Vertical Plate at panel point 122.5 of OBG Segment 13CW. ZPMC Welder is identified as 045213. ZPMC Quality Control (QC) is identified as Mr. Zhang Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-345-SMAW-2G-(2F)-FCM-Repair, which is used as per Critical Welding Repair (CWR) B-CWR-2794.

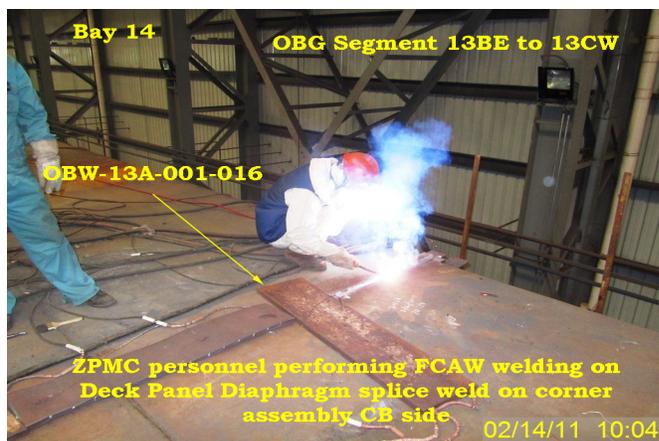
Bay 16

This QA Inspector observed the following work in progress:

Flux Core Arc Welding (FCAW) welding of weld joint SEG3095-001-023 to 32 located on Bottom Plate Stiffener edge of OBG Segment 14E. ZPMC Welder is identified as 068858. ZPMC Quality Control (QC) is identified as Mr. Guo Xing Hui. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2232-ESAB.

FCAW welding of weld joint W5-SB15-002 located on OBG Component. ZPMC Welder is identified as 068858. ZPMC Quality Control (QC) is identified as Mr. Guo Xing Hui. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2231-ESAB.

Unless otherwise noted, all work observed on this date appeared to be in general compliance with the applicable contract documents.



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**Summary of Conversations:**

Only general conversation was held between QA and QC concerning this project.

**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 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Kumar,Vibin	Quality Assurance Inspector
<b>Reviewed By:</b>	Patel,Hiranch	QA Reviewer

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