

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-019499**Date Inspected:** 21-Jan-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.

Magnetic Particle Testing (MT) – NWIT Document No's: 008248

This QA inspector performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an MT report for this date. The members are identified as OBG Segment 13AW. The weld designations reviewed are as follows:

1. SEG3007T-101, 102, 103, 104, 105, 106, 107, 108

Bay 14

This QA Inspector observed the following work in progress:

Flux Core Arc Welding (FCAW) repair welding of weld joint SEG3020BB-019 and 073 located on Vertical Shear Plate to Bottom Plate of OBG Segment 14W. ZPMC Welder is identified as 067949. ZPMC Quality Control (QC) is identified as Mr. Zhu Lin. The welding variables recorded by QC appeared to comply with the Applicable WPS-345-FCAW-2G (2F) – FCM – ESAB- Repair-1, which is used as per Critical Welding Repair (CWR) B-CWR-2752.

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Shielded Metal Arc Welding (SMAW) repair welding of weld joint SEG3020BB-028 located on Vertical Shear Plate to Bottom Plate 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-1, which is used as per Critical Welding Repair (CWR) B-CWR-2752.

SMAW repair welding of weld joint SEG3020BB-028 located on Vertical Shear Plate to Bottom Plate 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-1, which is used as per Critical Welding Repair (CWR) B-CWR-2752.

SMAW repair welding of weld joint SEG3020X-008 located on Floor Beam to Longitudinal Diaphragm 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-3G (3F) – FCM – Repair-1, which is used as per Welding Repair Report (WRR) B-WRR-20152.

Flux Core Arc Welding (FCAW) welding of weld joint SEG3020AG-005 located on Floor Beam to Edge Plate of OBG Segment 14W. ZPMC Welder is identified as 066695. 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.

SMAW welding of weld joint SEG3020AG-063 located on Side Plate to Edge Beam of OBG Segment 14W. ZPMC Welder is identified as 037748. 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-2214-Tc-U4b-FCM-1.

SMAW welding of weld joint DP3135-001-028 and 029 located on Deck Panel Diaphragm to Deck Panel Diaphragm of the OBG Segment 13BW. ZPMC Welders are identified as 045204 and 037840. ZPMC Quality Control (QC) is identified as Mr. Sun Tian Liang. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-P-2213-Tc-U4b-FCM-1.

FCAW welding of weld joint SEG3014F-193 located on Key Plate and Side Plate of the OBG Segment 13BW. ZPMC Welders are identified as 045143. ZPMC Quality Control (QC) is identified as Mr. Sun Tian Liang. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2232-ESAB.

FCAW welding of weld joint SEG3014H-111 located on Key Plate and Side Plate of the OBG Segment 13BW. ZPMC Welders are identified as 201583. ZPMC Quality Control (QC) is identified as Mr. Sun Tian Liang. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2232-ESAB.

SMAW welding of weld joint SEG3014J-010, 011, SEG3014G-010, 011, SEG3014E-010, 011 and SEG3015C-010, 011 located on Floor Beam Flange to Deck Panel Diaphragm of the OBG Segment 13BW. ZPMC Welders are identified as 066674, 067993 and 037932. ZPMC Quality Control (QC) is identified as Mr. Sun Tian Liang. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-P-2312-Tc-Tc-FCM.

FCAW welding of weld joint SEG3014H-001, 002, SEG3014F-351, 352, SEG3014D-227, 228, and SEG3014B-021, 022 located on Floor Beam to Deck Panel Diaphragm of the OBG Segment 13BW. ZPMC

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Welders are identified as 067876, 067275 and 066734. ZPMC Quality Control (QC) is identified as Mr. Sun Tian Liang. The welding variables recorded by QC appeared to comply with the Applicable WPS-B-T-2232-ESAB.

Description of Incident: During the Quality Assurance random visual inspection of welds located on OBG Segment 13BW at panel point 121.5, this Quality Assurance Inspector (QA) observed three (3) Linear Longitudinal Indications measuring approximately 8 to 20mm in lengths. The indications were discovered visually and confirmed by Magnetic particle Testing (MT) by ZPMC MT personnel. ZPMC performed MT on this weld after back gouging as per the contract documents. The indications are clearly marked on the material near the weld for further repair. The weld number is identified as SEG3014H-001. The panel point is identified as a PP121.5. This weld is a CJP weld joining the Floor beam Flange to Deck Panel Diaphragm. The Floor beam Flange to Deck Panel Diaphragm weld is identified as SPCM. This weld is designated as Seismic Performance Critical Member (SPCM). The cracks are completely removed and re-welded as per required contract document WPS. For further information, please see the attached pictures

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



## 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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**Inspected By:** Kumar,Vibin

Quality Assurance Inspector

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**Reviewed By:** Patel,Hiranch

QA Reviewer