

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-010410**Date Inspected:** 23-Nov-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Liu Fawen**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:** Orthotropic Box Girder Components**Summary of Items Observed:**

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

**BAY 2**

The following NDT inspection carried out as per the ZPMC submitted Notification No. 004708

**Magnetic Particle Testing**

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 member is identified as OBG Component. The weld designations reviewed are as follows:

1. FB3082 – 001 – 010; 020 – Green Tag # 11220
2. FB3098 – 001 – 066; 013; 015; 042; 060
3. FB3096 – 001 – 022; 030; 044; 064 – Green Tag # 11233
4. FB3023 – 001 – 065; 050; 025; 026; 038 – Green Tag # 11211

This QA Inspector observed the following work in progress:

**Shielded Metal Arc Welding:**

This process tack welding of weld joint # 004 located on Longitudinal Diaphragm LD3018 – 001. Welder is identified as 049972. ZPMC QC is identified as Yang Qing Feng. The welding variables recorded by QC

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appeared to comply with the WPS – B – P – 2112.

This QA Inspector observed the following work not in compliance:

During random verification Magnetic Particle Testing (MT) of the OBG Floor Beam located in Bay # 2 as per the Non Destructive Testing (NDT) Inspection Notification Sheet # 004708 submitted by ZPMC, this Caltrans Quality Assurance Inspector (QA) observed One (1) Transverse linear indication. The indication length measured approximately 4mm in length. This is inside the 25% area previously tested and accepted by ZPMC MT technician. The Floor Beam is identified as FB3098-001-014.

Applicable reference:

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.

This QA notified ZPMC QC identified as Mr. Yang Qing Feng and ABF inspector identified as Mr. Luo Gui Lin of the above issue and that an incident report will be generated.

See attached photos:

### BAY 3

This QA Inspector observed the following work in progress:

Submerged Arc Welding:

This process welding of weld joint # 012 located on Longitudinal Diaphragm LD3010 – 001. Welder is identified as 062406. ZPMC QC is identified as Guo Yuan Ting. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2221 – B – L2c – S – 2.

This process welding of weld joint # 018 located on Longitudinal Diaphragm LD3010 – 001. Welder is identified as 050502. ZPMC QC is identified as Guo Yuan Ting. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2221 – B – L2c – S – 2.

Flux Core Arc Welding:

This process welding of weld joint # 014 located on Longitudinal Diaphragm LD3011 – 001. Welder is identified as 208035. ZPMC QC is identified as Guo Yuan Ting. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2231 – B – U2 – F – 1.

### BAY 5

This QA Inspector observed the following work in progress:

Flux Core Arc Welding:

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This process welding of weld joint # 008 located on Traveler Rail 10TR1 – 030. Welder is identified as 250353. ZPMC QC is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

This process welding of weld joint # 010 located on Traveler Rail 10TR1 – 030. Welder is identified as 215078. ZPMC QC is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – Tc – U5 – F.

This process welding of weld joint # 008 located on Traveler Rail 11TR3 – 018. Welder is identified as 205390. ZPMC QC is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

This process welding of weld joint # 013 located on Traveler Rail 11TR3 – 019. Welder is identified as 215078. ZPMC QC is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – Tc – U5 – F.

BAY 6

The following NDT inspection carried out as per the ZPMC submitted Notification No. 004708

### Magnetic Particle Testing

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 member is identified as OBG Component. The weld designations reviewed are as follows:

1. SP3021 – 001 – 113; 118; 060; 069; 080; 049; 082; 025; 092; 012; 127; 041
2. SP3045 – 001 – 105; 064; 052; 080; 081; 008; 010; 094; 110

This QA Inspector observed the following work not in compliance:

During random verification Magnetic Particle Testing (MT) of the OBG Side Plate located in Bay # 6 as per the “NDT Inspection Notification Sheet” # 004714 submitted by ZPMC, this Caltrans Quality Assurance Inspector (QA) observed One (1) Transverse linear indication. The indication length measured approximately 4mm in length. The Side Plate is identified as SP3045 – 001 – 069. ZPMC technician tested and accepted 100% MT on this side plate.

Applicable reference:

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.

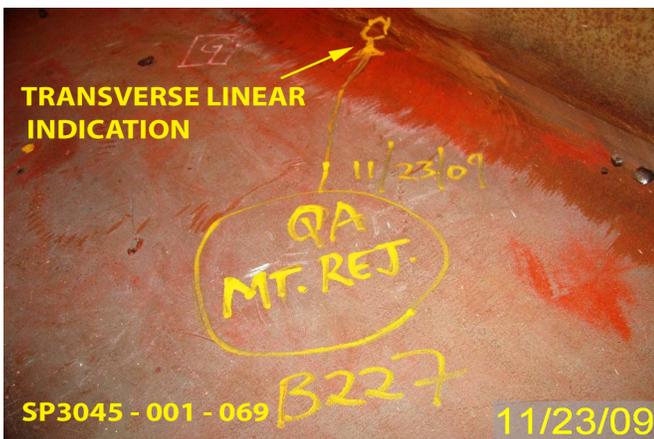
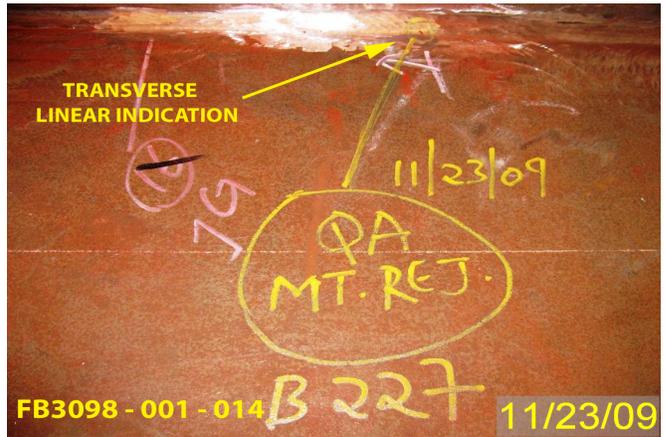
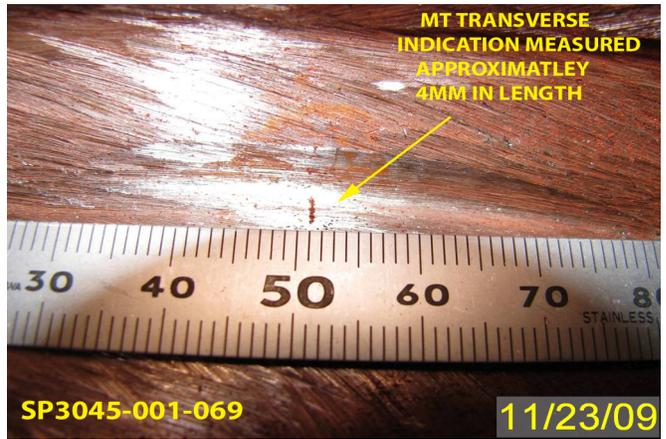
This QA notified ZPMC QC identified as Mr. Huang Min and ABF inspector identified as Mr. Chang Bao Qian of the above issue and that an incident report will be generated.

See attached photos:

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



## Summary of Conversations:

No Relevant Conversations.

## 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

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remedial efforts please contact Eric Tsang - 15000422372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Kumar,Sandeep	Quality Assurance Inspector
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<b>Reviewed By:</b>	Hall,Steven	QA Reviewer
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