

**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-014376**Date Inspected:** 10-May-2010**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

<b>CWI Name:</b>	Li Yang and Wu Zhi Cheng	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	OBG Trial Assembly	

**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector, S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) Trial Assembly Areas

Incident Report for Segment 8AE (FL3 Stiffener)

This Quality Assurance (QA) Inspector wrote an Incident Report for flatness of Stiffener at Cross Beam side for Segment 8AE Panel Point (PP) 62 for more comprehensive details please refer the Incident Report # 04-0120F4\_TL-15\_B278\_05-10-2010\_FL3 Stiffener\_8AE at PP 62 Dated May 10, 2010. Please refer the attached pictures for more comprehensive details.

Segment 7EW to 8AW (Root Gap and Offset)

This QA Inspector performed dimension Inspection for the Root Gap and Offset for Segment 7EW to 8AW (Field Segment Splice) between Panel Point (PP) 60 and PP 61 at the following locations

Deck Panel from work point W2 to W5.

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Edge Panel from work point W5 to W6.

Side Panel from work point W6 to W4.

Bottom Panel from work point W4 to W3.

Side Panel from work point W3 to W1.

Edge Panel from work point W2 to W5.

The measured and recorded readings were submitted to the Lead and Engineer for review.

### Hardness Test

This QA Inspector witnessed the Hardness test performed by ZPMC CWI Mr. Geng Wei for the following locations as excessive heat was utilized during heat straightening.

Traveler Rail # 10TR3-022 (At bay no.3)

Hardness test was performed at heat straightened area between Y locations 3800mm to 4000mm from one end and Hardness value was measured as 157HB, 191HB, 147HB, 160HB, 144HB, 149HB, 148HB, 144HB and 149HB. Please refer the attached pictures for more comprehensive details.

Comparison for the Hardness test was performed with the area where heat straightening was not performed area Y locations chosen was between 3000mm to 3200mm from one end and Hardness value was measured as 153HB, 146HB, 141HB, 160HB, 144HB, 139HB, 138HB, 153HB and 149HB.

Traveler Rail # 11TR2-007 (At bay no.3)

Hardness test was performed at heat straightened area between Y locations 3000mm to 3150mm from one end and Hardness value was measured as 148HB, 156HB, 164HB, 134HB, 142HB, 166HB, 151HB, 149HB and 151HB. Please refer the attached pictures for more comprehensive details.

Comparison for the Hardness test was performed with the area where heat straightening was not performed area Y locations chosen was between 1950mm to 2100mm from one end and Hardness value was measured as 165HB, 171HB, 161HB, 134HB, 140HB, 152HB, 193HB, 158HB and 157HB.

Traveler Rail Bracket # TR6A-PP52 (At bay no.5)

Hardness test was performed at heat straightened area on Traveler Rail Bracket face and Hardness value was measured as 152HB, 156HB, 165HB, 152HB, 160HB, 181HB, 158HB and 152HB. Please refer the attached pictures for more comprehensive details.

Comparison for the Hardness test was performed with the Traveler Rail Bracket TR6A-PP108 area where heat straightening was not performed and Hardness value was measured as 185HB, 179HB, 194HB, 195HB, 176HB,

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195HB, 165HB and 143HB.

Bay 14 Segment 12CE

Hardness test was performed at heat straightened area on Floor Beam Flange at FL2-1 at Panel Point (PP) 115.5 and Hardness value was measured as 145HB, 154HB, 151HB, 157HB, 141HB, 140HB, 142HB, 133HB and 146HB.

Hardness test was performed at heat straightened area on Floor Beam Flange at FL2-1 at Panel Point (PP) 115.5 where heat straightening was not performed and Hardness value was measured as 171HB, 160HB, 139HB, 161HB, 156HB, 143HB, 166HB, 165HB and 133HB.

Segment 8BW to 8CW

This QA Inspector observed segment 8BW to segment 8CW fit-up was in progress.

Segment 9AW to 9BW

This QA Inspector observed segment 9AW to segment 9BW were brought to trail assembly area and kept behind the

Segment 8AW to 8BW

This QA Inspector observed ZPMC welding personnel performing welding by Shielded Metal Arc Welding (SMAW) for Side Panel. The weld joints are identified as SP764-001-043. The welder is identified as 066734. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2233-B-U2a-F-1. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

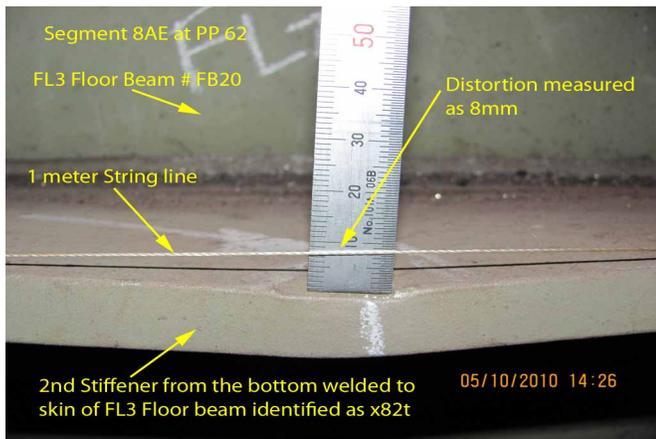
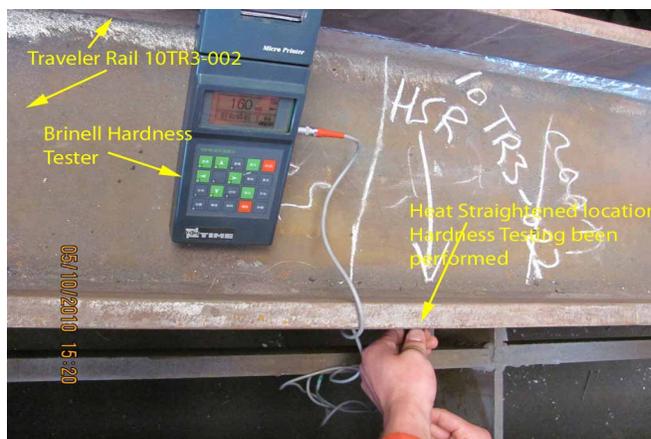
Segment 8AW to 8BW

This QA Inspector observed ZPMC welding personnel performing welding by Shielded Metal Arc Welding (SMAW) for Deck Panel I-Ribs. The weld joints are identified as SP764-001-043. The welder is identified as 066734. In process SMAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e., WPS-B-T-2233-B-U2a-F-1. It was observed that the parameters noted down by ZPMC QC are in compliance with WPS.

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

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## 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 remedial efforts please contact Eric T Sang 1500-0042-2372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Math,Manjunath	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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