

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-001896**Date Inspected:** 25-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Chen Zhi Ming**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:** Side and Deck Plates**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M, Orthotropic Box Girders (OBG) and Tower, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item Description	WBS	Dwg No.	Status
1 Deck Panel	NA	NA	QA VT

OBG Bay 1: Caltrans QA Inspector performed visual inspection of the completed submerged arc welding (SAW) cover pass welds; partial joint penetration (PJP) welds joining the closed ribs to deck plate panel DP055-001, u-rib U151, welds 1 & 2; u-rib U52, welds 3 & 4; u-rib U85, welds 5 & 6, u-rib U79 welds 7 & 8, u-rib U100 welds 9 & 10.

Caltrans QA observed welding overlap, over size welds, underfill and incomplete fusion. These indications observed at the weld were marked in yellow paint stick along the distance from the "Y" axis, starting at the weld start to weld completion end. The weld indications observed were recorded on Caltrans spreadsheet for future reference.

2 Side Plates	NA	NA	Fabrication Work In Progress
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New OBG Building: Caltrans QA observed ZPMC in the process of performing root face weld build up at locations identified as having excessive root openings as defined in the welding procedure specification (WPS) designated for welding these weld joints. The WPS is identified as WPS-B-T-223 (2) 1T, Revision 1, which stipulates maximum root opening with tolerance, 8mm. The plate assemblies are identified as SP018-001 splice weld joining SP026-001 and SP009-001 splice weld joining SP008-001. Caltrans QA met with ZPMC Quality Control Inspector, Mr. Zhao Shuang Bao and Certified Welding Inspector (CWI) Mr. Chen Zhi Ming in regards to work being performed at work-station. Mr. Zhao Shuang Bao pointed out that deck panel DP018-001 splice weld joint joining DP026-001 has eight locations where the root opening is over 8mm to 10mm. The length of the out of tolerance root opening is randomly dispersed

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over the entire length of the weld joint. The length of the weld measures 8732mm and the total length of the eight locations measures 4484mm. Deck panel DP009-001 splice weld joint joining DP008-001 has eight locations where the root opening is over 8mm to 10mm. The length of the out of tolerance root opening is randomly dispersed over the entire length of the weld. The length of the weld joint measures 8732mm and the total length of the eight locations measures 1440mm.

Mr. Zhao Shuang Bao said that the butter-up of the root face is being performed to WPS-B-T-223 (2) 1T, flux cored arc welding (FCAW) requirements in the as fit-up position. Mr. Zhao Shuang Bao said the butter-up weld will be deposited in one weld pass on one of the plates root faces with ceramic backing. Then the butter-up will be prep'd by grinding, verified for maximum root opening requirements and magnetic particle tested for soundness. The following digital picture illustrates typical weld joint root opening at DP018-001 joining DP026-001 and typical ZPMC location marking for butter-up.



Summary of Conversations:

As identified within the contents of this report.

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 Patrick Lowry (858) 344-2712, who represents the Office of Structural Materials for your project.

Inspected By:	Hasler, Mike	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
