

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-016126**Date Inspected:** 29-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**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**Summary of Items Observed:**

CWI Inspector: Mr. Liu Hua Jie

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

**OBG Segment Trial Assembly**

Earlier today ZPMC presented QA personnel with "Notification of Witness Inspection" document number 6302 that stated ZPMC was requesting Caltrans to perform visual and magnetic particle (MT) inspections of "T" and "I" rib hold back welds adjacent to the transverse splice weld joint between OBG segments 9DE and 9EE. This QA Inspector performed random visual and magnetic particle (MT) inspections of welds DP699-001-015, 016; DP700-001-009, 010; EP148-002-017, 018; EP149-001-005, 006; SP587-002-049, 050; SP588-001-001, 002; SP627-002-051, 052, 055, 056, and SP628-001-003, 004, 007, 008. This QA Inspector observed an arc strike near one end of weld SP628-001-008. See the photographs below for additional information. This QA Inspector informed one of the ZPMC workers, and the worker used a grinder to remove the arc strike. This QA Inspector then performed magnetic particle inspections of this arc strike removal area and items observed by this QA Inspector appeared to comply with AWS D1.5 MT requirements. For additional information on these inspections see this QA Inspector's TL6028 Magnetic Particle Test Report. Caltrans QA Inspector Mr. Mike Hasler also performed MT and visual inspections of other "T" and "I" rib hold back welds adjacent to the transverse splice

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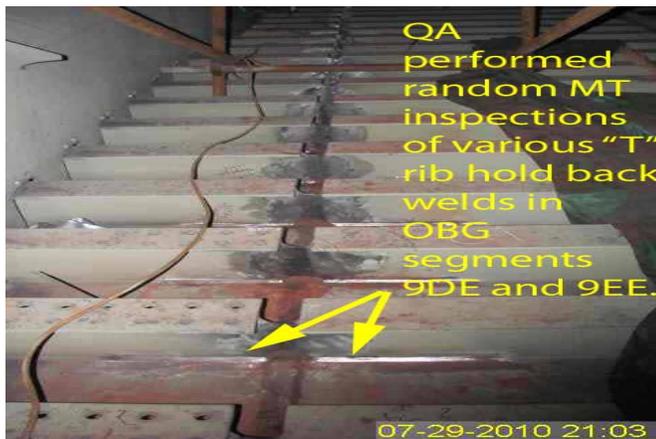
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weld joint between OBG segments 9DE and 9EE.

This QA Inspector observed ZPMC welder Mr. Wang Qixiang, stencil 062812 used the shielded metal arc welding process to make tack welds 11 and 12 on the suspender bracket that was located on the bikepath side of OBG segment 9EE near panel point PP83. As this QA Inspector approached this location, ZPMC personnel ignited an acetylene/oxygen torch and proceeded to heat the base material adjacent to where Mr. Wang Qixiang had made this tack weld. This QA Inspector measured the base material temperature near this tack weld and it appeared that the base material was slightly above ambient temperature. This QA Inspector also observed the areas that had been tack welded do not appear to have been ground to remove rust and other foreign material as required by AWS D1.5. paragraph 3.2.1 which states "Surfaces to be welded and surfaces adjacent to a weld shall also be free from loose or thick scale, slag, rust, moisture, grease, and other foreign material that would prevent proper welding or produce objectionable fumes." This QA Inspector informed ZPMC Quality Control Certified Welding Inspector Mr. Liu Hua Jie that the base material did not appear to have been preheated prior to welding and that the tack welds appear to have been made over surfaces that contain light rust. Mr. Liu Hua Jie informed this QA Inspector that he will have ZPMC workers grind the areas that are to be welded and he will ensure the base materials are properly headed prior to welding. After ZPMC ground the weld surfaces and preheated the base materials, this QA Inspector measured a welding current of approximately 160 amps. This QA Inspector asked Mr. Liu Hua Jie if he knew the weld identification numbers that were being tack welded and Mr. Liu Hua Jie said he did not know the weld identification numbers. This QA Inspector Mr. Wang Qixiang appeared to be certified to make these welds. Items observed on this date did not fully appear to comply with applicable contract documents.



## Summary of Conversations:

See Above.

## 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 Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer