

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-014874**Date Inspected:** 13-Jun-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 Inspectors: Mr. Liu Hua Jie, Mr. Zhu Zhong Hai

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

This QA Inspector observed ZPMC welder Mr. Wang Fu Peng, stencil 205718 is using shielded metal arc procedure WPS-B-T-2232-TC-U4b-F to perform hold back weld CB202A-009-001.

This weld joins cross beam CB9 side plate and OBG segment 8AW deck plate near panel point 64. As Mr. Wang Fu Peng was preparing to make another weld pass, this QA Inspector observed the location where this weld is located is poorly illuminated by the overhead lights and that Mr. Wang Fu Peng does not appear to have any flashlight or other portable light to allow him to clearly see that all the slag is removed from the previously deposited weld pass. This QA Inspector asked Mr. Wang Fu Peng and later asked ZPMC QC Inspector (not a CWI) Mr. Song Hui if there is enough light to see that all the slag is removed from the weld. Mr. Wang Fu Peng left the area and returned with an electric flashlight. Mr. Wang Fu Peng then used the flashlight to illuminate the weld and he then removed additional weld slag prior to making his next weld pass. The base material was preheated with a torch prior to welding. This QA Inspector measured a welding current of approximately 150 amps and Mr. Wang Fu Peng appears to be certified to make this weld. This QA Inspector observed the shielded

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metal arc welding electrodes are being stored in an electrically heated electrode storage container. Items observed on this date appear to generally comply with applicable contract documents.

OBG Segments located in the yard behind bay 14

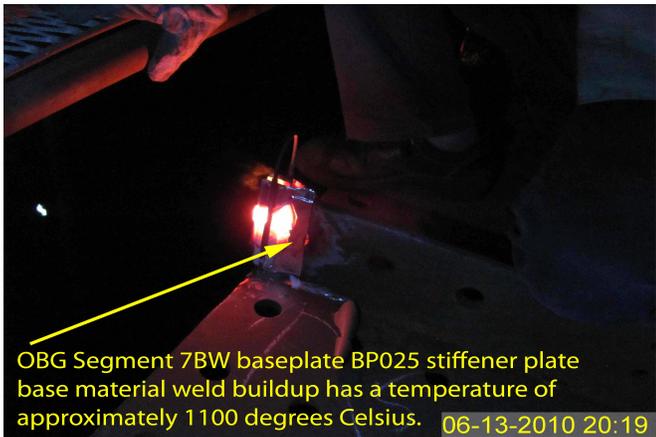
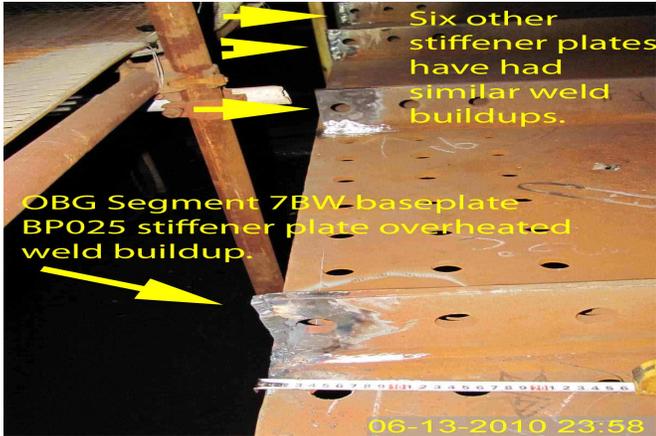
This QA Inspector observed ZPMC welder Mr. Zhou Pan, welder 220063 performing base material weld buildup of OBG segment 7BW bottom plate BP025 stiffener adjacent to weld BP025-050 , using flux cored welding procedure WPS-345-FCAW-3G(3F)-Repair-1, reference repair document B-WR13561. This repair document identified that bottom plate BP025, near panel point PP51 in the area where cross beam CB7 is to be attached has various stiffener plates that are too short. The repair document allows use of a single piece of ceramic backing on the end of the stiffener plate during the weld repairs and ZPMC has two ceramic backing plates, one on either side of the stiffener plate. Welder Mr. Zhou Pan appeared to be making multiple weld passes on the stiffener plate adjacent to weld BP025-050 without allowing the weld material to cool. This QA Inspector observed the weld material and adjacent base material to be bright red as a result of the welding heat input. This QA Inspector used an 1100 degree Celsius Tempilstik to determine the base material directly adjacent to the weld appears to have been heated to a temperature that exceeds 1100 degrees Celsius. The welding procedure states the maximum welding interpass temperature is 230 degrees Celsius. ZPMC CWI Inspectors Mr. Liu Hua Jie and Mr. Zhu Zhong Hai were informed that an incident report will be issued. ZPMC had the majority of the weld material on the end of this stiffener plate cut off with a torch. ZPMC intends to reweld this area at a later time. Several other stiffeners have also been welded in a similar manner. Items observed on this date do not appear to fully comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 is using shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-Repair-1 to make shielded metal arc repair weld between the longitudinal diaphragm web plate and the flange plate as directed by weld repair document B-WR12958. This longitudinal diaphragm is located on the cross beam side of OBG segment 7CW between panel points PP55 and PP56. This longitudinal diaphragm had been identified as having misalignment with 7BW longitudinal diaphragm. This QA Inspector observed Mr. Tian Zhaoquan has a welding current of approximately 155 amps and Mr. Tian Zhaoquan appears to be certified to make this weld. This QA Inspector observed the welding electrodes are being stored in a heated portable electrode storage oven and the base material is being preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Mao Li Wei, stencil 045213 is using shielded metal welding procedure WPS-345-SMAW-3G(3F)-Repair to make OBG stiffener plate weld repairs to weld SEG039-050 which was identified as having visual rejections. This weld is located on OBG segment 7DW between panel points PP57 and PP58 adjacent to where the crossbeam is to be attached. This QA Inspector observed Mr. Mao Li Wei has made 3F (vertical) and 4F (overhead) position welds. This QA Inspector observed Mr. Mao Li Wei appears to be certified to make welds in the 3F position and that he is not certified to make 4F position welds. This QA Inspector informed ZPMC CWI Inspectors Mr. Liu Hua Jie and Mr. Zhu Zhong Hai that Mr. Mao Li Wei has welded in the 4F (overhead) position and he does not appear to be certified to make that position weld. ZPMC CWI Inspector Mr. Liu Hua Jie informed this QA Inspector that this weld material will be ground off and the area will be MT inspected prior to having another welder make this weld repair. This QA Inspector observed ZPMC did appear to grind off the weld and an ABF MT Inspector performed MT inspections of the ground areas. Items observed on this date do not fully appear to comply with applicable contract documents.

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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.

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Carreon,Albert

QA Reviewer
