

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection



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Contract #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-000577
Date Inspected: 04-Oct-2007

Project Name: SAS Superstructure **OSM Arrival Time:** 630
Prime Contractor: American Bridge/Fluor Enterprises, a JV **OSM Departure Time:** 1530
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Xu Bing	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:	N/A	

Summary of Items Observed:

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77, 89 and 114 meters elevations scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.
 Tower 89 Meters Elevation.
 The QA inspector observed ZPMC performing oxyfuel gas cutting and machining (beveling) operations.
 See digital photograph below:



Item	Description	WBS	Dwg No.	Status
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1 Heat Straightening

Tower Splice Mock-up 114 Meter Elevation.

The QA inspector observed ZPMC personnel performing heat straightening operations at the Skin plate B lower panel, MA102 subassembly longitudinal stiffeners by weld joints # 5 and 8. ZPMC had approval from the Engineer to proceed. ZPMC used the heat straightening procedure HRS-CT-003. The QA inspector observed that the heat straightening operations appeared to be in compliance with the HRS-CT-003 and contract documents.

Tower Mock-up 77 Meter Elevation

The QA inspector observed ZPMC performing heat straightening operation at the skin plate E. See the photograph below.



2 Ultrasonic Testing (UT)

Tower Splice Mock-up 114 Meters Elevation

The QA inspector witnessed ZPMC Quality Control inspector E Shuiqin and LiLi Ming performing Ultrasonic testing at the junction of the skin D and longitudinal stiffeners joint # 3, 6, 10 and 13 lower panel. The QA inspector observed that Ms. E and Mr. Li recorded on the steel one(1) rejectable indication located: joint #MA110-3, Y value of 494 mm, depth of 47 mm and length of 6 mm; three rejectable indications joint #MA110-6, indication # 1, Y value of 490 mm, depth of 44 mm and length of 10 mm and joint #, indication # 2, Y value of 485 mm, depth 48 mm and length of 15 mm, indication # 3, Y value of 450 mm, depth of 67 mm and length of 50 mm. MA110-9 indication # 1, Y value of 0, depth of 50 mm and length of 500 mm, indication # 2, Y value of 485 mm, depth of 53 mm and length of 15 mm, indication # 3, Y value of 0, depth of 33 mm and length of 500 mm. MA110-12, indication # 1, Y value of 430 mm, depth of 53 mm and length of 20 mm and indication # 2, Y value of 20 mm, depth of 30 mm and length of 40 mm.

The QA inspector had a conversation with the Senior Level III John Kinsey. The QA inspector brought to his attention that ZPMC did not mark the location of the rejectable indications directly over the weld clearly with the depth and rating of the indication nearby, in addition the QA inspector relayed that the QA inspector had mentioned before to ABF and ZPMC representatives in several occasions. Mr. Kinsey relayed to the QA inspector that he would bring these issues in the ABF, ZPMC and Caltrans meeting.

The photographs below show on the left side ZPMC's actual marking and on the right side the required marking (directly on the weld) as per AWS D1.5 (2002).

Note# 1: ZPMC was still using a IIW block which did not allow the technicians to read directly on the IIW block a +/- 2 degrees tolerance for the refracted angle beam.

Note # 2: In random inspection to ZPMC's welding repair procedures the QA inspector has observed that ZPMC has tracked the location of the indications by drawing in CAD a map with the actual location on the welding repair report,

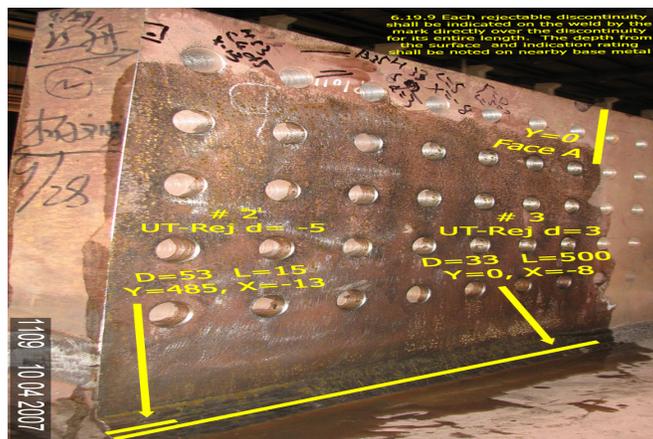
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which allows the QC personnel to identify the locations and directs the welding personnel and supervisors of the actual locations of the rejectable discontinuities. However, the QA inspector has observed that ZPMC apparently has been removing the complete region attempting to find the discontinuities where the rejectable indications were located instead of looking for exact locations.

Tower Mock-up 77 Meter elevation

The QA inspector witnessed ZPMC Quality Control inspector Li Li Ming and E Shuiqin performing Ultrasonic testing on the weld repairs at the junction of the skin E, MA1 and longitudinal stiffeners joint # 1 thru 4. The QA inspector observed that Mr. Li recorded on the steel a rejectable indication with the 45° angle wedge transducer located at joint #MA110-4, Y value of 1975 mm, depth of 61 mm and length of 25 mm.



Summary of Conversations:

As noted 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Acuna,Alfredo

Quality Assurance Inspector

Reviewed By: Cuellar,Robert

QA Reviewer