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

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027301
Date Inspected: 12-Mar-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: jobsite

CWI Name:	Steve McConnell			**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: SAS project

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Orthotropic Box Girder (OBG) sections:

12W/13W-Longitudinal Stiffener (LS) Bottom Stiffener Flange (BSF): This QA Inspector observed the welding of the BSF's, both (North and South) on LS-4, 5 and 6 appeared to be completed. This QA Inspector observed the vast majority of the welding was in the as welded condition and required grinding. This QA Inspector observed the ends of the flanges had not been transitioned into the longitudinal stiffeners, which is required. Due to the amount of work pending pick up welding may need to be performed prior to completion. ABF welding personnel Jeremy Dolman (#5042) was moving equipment to 12E/13E LS-4, 5 and 6 to set up for welding of the BSF's at this location. This QA Inspector did not observed welding at this location this date. This QA Inspector did observe the offset, both planar and high/low plate height at this location between LS-4, 5 and 6. This QA Inspector and QC Inspectors Steve McConnell and Bonifacio Daquinag Jr. discussed the amount of offset; approximately 7-8 mm planar and 7-8 high/ low plate height. See photos below. All 3 LS locations are typical for measurements.

13W/14W- Longitudinal Stiffener (LS) Bottom Stiffener Flange (BSF): This QA Inspector observed the welding of the BSF's, both (North and South) on LS-4, 5 and 6 appeared to be completed. This QA Inspector observed the

vast majority of the welding was in the as welded condition and required grinding. This QA Inspector observed the ends of the flanges had not been transitioned into the longitudinal stiffeners, which is required. Due to the amount of work pending pick up welding may need to be performed prior to completion. ABF welding personnel Richard Garcia (#5892) was moving equipment to 13E/14E LS-4, 5 and 6 to set up for welding on LS-5 at this location. This QA Inspector randomly observed QC Inspector Steve McConnell perform and accept the fit up of LS-4, 5 and 6 prior to the run off tabs being attached and ceramic backing, QC stated this was a preliminary fit up check of the root opening, bevel angles and offset. This QA Inspector observed the offset was less than 3 mm on all 3 LS joints. Later this shift this QA Inspector was informed by QC Inspector Steve McConnell ABF welding personnel Richard Garcia (#5892) had welded on the run off tabs, attached the ceramic backing and he had inspected and accepted the final fit up. This QA Inspector observed the Shielded Metal Arc Welding process being used to weld the South face of weld joint LS-5 at this location. QC Inspector Steve McConnell informed this QA Inspector he had verified the welding parameters to be 117 amperes. This QA Inspector reviewed the Welding Procedure Specification (WPS) ABF-WPS-D15-1012-3, being used by QC. The welding observed appeared to comply with the contract requirements. This QA Inspector confirmed with QC Inspector Steve McConnell the preheat temperature (200°F) was to be maintained until welding was completed.

8E-PP70.5-E2 Access Hole: This QA Inspector randomly observed QC Inspector John Pagliero performing Ultrasonic Testing (UT) on the Complete Joint Penetration (CJP) deck weld. This QA Inspector observed a 70 degree shearwave transducer was being used and the scanning pattern and scanning speed appeared to comply with the contract requirements. While this QA Inspector was observing the UT QC Inspector John Pagliero marked out a defect using what appeared to be the applicable technique for determining the length of a defect. This QA Inspector was informed he had completed approximately 50% of the overall weld length and observed QC had marked 4 areas which were rejected; all 4 defects ranged in length from approximately 100 mm to 400 mm.

F.W. Spencer: This QA Inspector randomly observed F.W. Spencer personnel fitting up and welding the 2-1/2-inch water line and 4-inch air line piping welds. This QA Inspector observed an E6010 electrode was used to weld the root pass and an E7018 electrode to weld the fill and cover pass. This QA Inspector observed QC Inspector Steve Jensen verify the following welding parameters for F. W. Spencer welding personnel Damian Llanos: 90 amperes for the 1/8-inch diameter E6010 and 99 amperes for the 3/32-inch diameter E7018 electrode. This QA Inspector reviewed WPS-1-12-J being used by QC and the welding appeared to comply with the contract requirements. This QA Inspector performed a visual verification of the final weld on the following weld joints: 50/2.5/95/NW, 51/2.5/97/NW, 52/2.5/99/NW, 53/2.5/101/NW, 54/2.5/104/NW, 50/4/95/NW, 51/4/97/NW, 52/4/99/NW, 53/4/101/NW and 54/4/103/NW. The welding and visual verifications performed appeared to comply with the contract requirements.

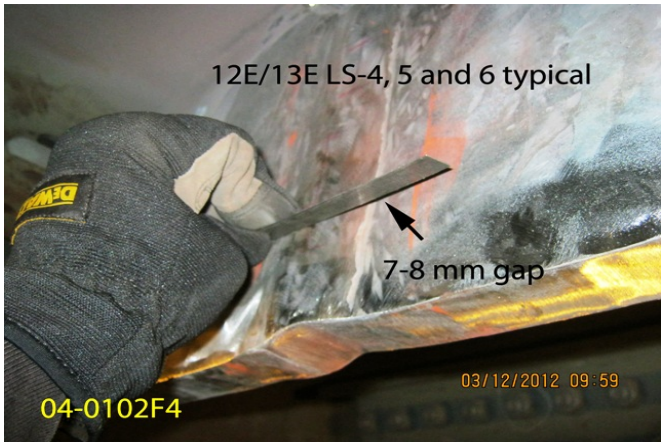
This QA Inspector was requested to verify the transition of the planar offset at 9E/10E/F from 0-90 mm and 1300-1392 mm by Lead QA Inspector Danny Reyes. This QA Inspector observed as QC Inspector Steve Jensen measure the planar offset and the width of the weld at the locations noted above. QC Inspector Steve Jensen informed this QA Inspector the transitions were all less than the required 2.5:1. This QA Inspector performed a measurement of the areas and concurred with the QC Inspectors' findings.

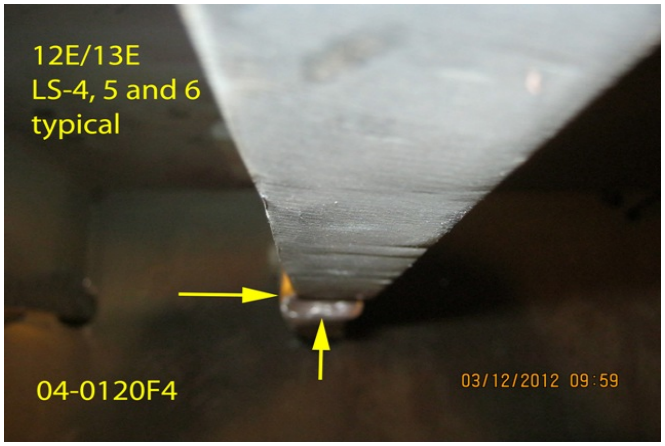
Summary of Conversations:

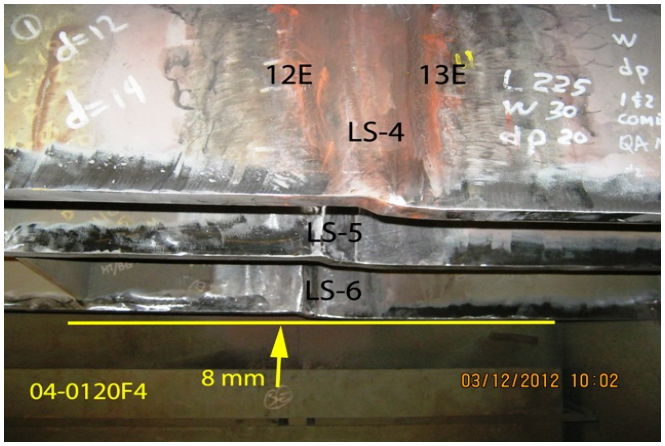
WELDING INSPECTION REPORT

(Continued Page 3 of 3)

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable 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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer