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-026751
Date Inspected: 22-Nov-2011

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: Job Site

CWI Name:	Steve Jensen			**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 Sections

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 monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

SAS – Tower – F.W. Spencer:

This QA Inspector observed F.W. Spencer personnel fitting up and using the Shielded Metal Arc Welding (SMAW) process for welding the 3-inch diameter piping to be used as an airline for the maintenance of the tower. This QA Inspector randomly observed during the fit up of the weld joints the ends of the piping appeared to be cleaned and beveled prior to the actual fit up operation. This QA Inspector observed the bevels appeared to be between 30 and 45 degrees. This QA Inspector observed what appeared to be a 3/32-inch diameter electrode, with the flux removed, positioned between the ends of the pipe at the weld joint to form the root opening, both ends were then positioned into a fitting aid and each pipe end was clamped. This QA Inspector observed the straightness appeared to be checked at a minimum of twice, once at a zero location and then again at approximately 90 degrees. This QA Inspector observed the two pipe ends were tack welded using a 1/8-inch diameter E6010 electrode at approximately 4 locations equally spaced around the circumference, ground and checked again for straightness. This QA Inspector observed that QC Inspector Steve Jensen was assigned to monitor and perform inspections for F.W. Spencer this shift. This QA Inspector randomly observed as QC Inspector Steve Jensen visually inspected the weld joint fit ups and was informed that he had accepted the inspections. This QA Inspector performed a random visual verification and observed the fit ups appeared to

comply with the Welding Procedure Specification (WPS) 1-12-1 Revision-2 being used by the QC Inspector. This QA Inspector randomly observed during the welding operation a 1/8-inch diameter E6010 electrode was used to weld the root pass and then a 3/32-inch diameter E7018 electrode was used to weld the fill and cover passes. This QA Inspector observed QC Inspector Steve Jensen verify the following welding parameters for welding personnel Curtis Jump; 75 amperes for the 1/8-inch diameter E6010 electrode and 93 amperes for the 3/32-inch diameter E7018 electrode. The welding observed by this QA Inspector appeared to comply with WPS-12-1-1 Revision-2, being used by the QC Inspector. See below for the list of weld joints in which this QA Inspector performed a random verification inspection of the fit up and visual verification of the welding after QC inspection and acceptance: 34/3/T/54 and 36/3/T/53. See photo below of completed weld joint. F.W. Spencer foreman Hector Garcia informed this QA Inspector that welding personnel Curtis Jump would be cutting holes in the 2-inch water line for branch nozzle connections the remainder of the shift therefore no more welding would be performed.

Orthotropic Bridge Girder (OBG) section:

13E/14E- weld joint F: This QA Inspector observed ABF welding personnel Fred Kaddu (#2188) performing Shielded Metal Arc Welding at the top 500 mm of the weld joint. This QA Inspector verified the preheat to be greater than 200°F and randomly observed QC Inspector Fred Von Hoff verify the following welding parameters; 132 amperes. This QA Inspector observed a 3.2 mm diameter E7018H4R being used. This QA Inspector observed the work appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-1110 Rev-1. This QA Inspector observed work continued at this location until approximately 1130 hours. The welding appeared to be approximately 95% completed at this time. ABF welding personnel Fred Kaddu (#2188) informed this QA Inspector and QC Inspector Fred Von Hoff that he had been instructed to stop work at this location and move to a repair at 13W/14W – weld joint A.

13W/14W-weld joint A: This QA Inspector randomly observed ABF welding personnel Fred Kaddu (#2188) setting up the equipment to start back gouging, using the carbon arc process, an area marked for repair. This QA Inspector observed the area was marked as Y-710 starting from the A-2.2 weld joint. This QA Inspector observed ABF personnel were also lowering the PWS (Parallel Wire Strand) Anchor Rods into position a short distance from this repair area. ABF welding personnel Fred Kaddu (#2188) elected to excavate the repair from the bottom side of the deck (inside the OBG section) which was adjacent to where the PWS Anchor Rods were being positioned. This QA Inspector was informed later by ABF welding personnel Fred Kaddu (#2188) that it was determined too much activity was being performed in a small area, the positioning of the PWS Anchor Rods was a high priority job and that he had reassigned to finish the work started at 13E/14E-weld joint F.

13E/14E- weld joint F: This QA Inspector observed ABF welding personnel Fred Kaddu (#2188) returned to this location to finish working. This QA Inspector observed the base metal was preheated using a hand held gas torch to a temperature greater than 200°F and verified by QC Inspector Fred Von Hoff using an electronic temperature gauge. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters for ABF welding personnel Fred Kaddu (#2188) using the SMAW process; 130 amperes. This QA Inspector observed QC Inspector Fred Von Hoff was informed the welding was completed and observed as a visual inspection was performed. This QA Inspector observed several areas of undercut were marked for additional welding and several areas marked for grinding due to excessive weld reinforcement. The visual inspection area was the top 1725 mm of the weld joint, the bottom area (approximately 500 mm) was consealed by the scaffolding used to access the top section. This QA Inspector was informed by QC Inspector Fred Von Hoff the work at this

location was not completed this date. The work observed by this QA appeared to comply with ABF-WPS-1110 Rev-1.

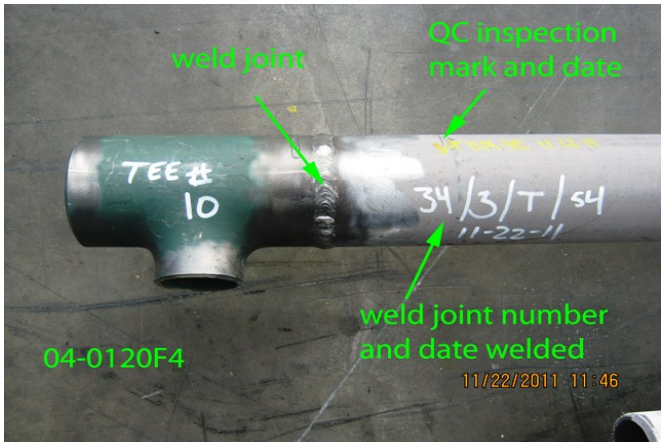
13W/14W – weld joint D – This QA Inspector observed ABF welding personnel Jeremy Dolman (#5042) using a plasma torch to remove the backing bar and back gouge the 30 mm thick section of the weld joint (D-3) from the bottom of the OBG section. See photo below. Work at this location was not completed this date.

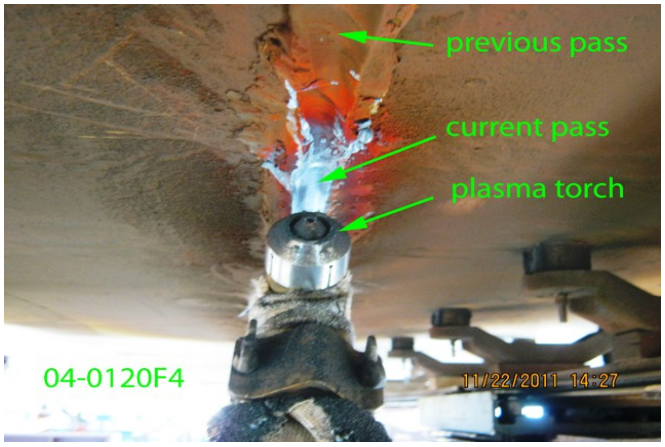
13E/14E – weld joint D – This QA Inspector observed ABF welding personnel James Zhen (#6001) using a plasma torch to remove the backing bar and back gouge the center section (D-2) of the weld joint from the bottom of the OBG section. Work at this location was not completed this date.

13W/14W – weld joints H and I (SPCM): This QA Inspector observed ABF welding personnel Rory Hogan (#3186) and Richard Garcia (#5892) working at this location between the bolted stiffeners to remove the backing bar by using the carbon arc process and grinding. Work at this location was not completed this date.

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.

Summary of Conversations:
This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted 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

WELDING INSPECTION REPORT

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Reviewed By: Levell,Bill QA Reviewer