

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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026769**Date Inspected:** 29-Nov-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Pat Swain**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 randomly observed F.W. Spencer personnel fitting up and welding the 3-inch diameter piping to be used as an airline for the maintenance of the tower during the shift this date. 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 the following during the fit up of the weld joints; the ends of the piping appeared to be cleaned and beveled, the bevels appeared to be between 30 and 45 degrees, what appeared to be a 3/32-inch diameter electrode (with the flux removed) was positioned between the ends of the pipe to create a root opening, the ends of the pipe were positioned into a fitting aid and clamped. This QA Inspector observed the straightness was checked and then the two ends tack welded together. This QA Inspector randomly observed during the Shielded Metal Arc Welding (SMAW) process 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 was informed by QC Inspector Steve Jensen of the following welding parameters for F.W. Spencer welding personnel Damian Llanos; 78 amperes for the 1/8-inch diameter E6010 electrode and 84 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.

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See below for the list of weld joints in which this QA Inspector performed a random verification inspection of the fit up and a final weld visual verification after QC inspection and acceptance: 30//3/T/73 and 33/3/T/61.

Orthotropic Bridge Girder (OBG) section:

13E14E weld joint F: This QA Inspector observed ABF welding personnel Fred Kaddu (#2188) using the carbon arc process to remove the backing bar and back gouge the weld.

13E/14E-weld joint H (SPCM): This QA Inspector observed ABF welding personnel Wai Kitlai (#2953) setting up to begin using the Flux Cored Arc Welding (FCAW) process from outside the OBG section after the backing bar had been removed and the weld back gouged. QC Inspector Fred Von Hoff confirmed the back gouged weld had been previously accepted by QC personnel after a visual and Magnetic Particle Testing (MT) inspection. This QA Inspector observed the induction heating blankets were in position over the weld. This QA Inspector observed as QC Inspector Fred Von Hoff verified the following welding parameters on a piece of scrap plate clamped into position; 250 amperes and 23 volts at a travel speed of 165 mm per minute to produce a heat input of 2.09 Kj per mm. The parameters observed appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4 being used by the QC Inspector. This QA Inspector observed QC Inspector Fred Von Hoff monitoring the preheat temperature prior to the start of welding this shift.

13E/14E-weld joint D-2: This QA Inspector observed ABF welding personnel James Zhen (#6001) setting up the track system (Bug-O) for the FCAW process to begin welding from outside the OBG section at this location. This QA Inspector observed the induction heating blankets were in position over the back gouged weld to provide preheat prior to the start of welding. This QA Inspector observed there appeared to be issues with the track system. This QA Inspector observed QC Inspector Fred Von Hoff monitoring the progress of the work at this location. This QA Inspector was reassigned to a different location and did not observe welding at this location during the shift.

14E-PP125-E4 Lifting Lug Hole (LLH) LLH-3 (SPCM): This QA Inspector observed ABF welding personnel Rick Clayborn (#2773) using the Shielded Metal Arc Welding (SMAW) process inside the OBG section in the overhead (4G) position at this location. This QA Inspector observed QC Inspector Salvador Merino was monitoring the welding and informed this QA Inspector of the following welding parameters; 132 amperes. This QA Inspector observed a 3.2 mm diameter E7018H4R electrode was being used. The welding observed by this QA Inspector appeared to comply with ABF-WPS-D15-1110A-CU. This QA Inspector observed welding was completed at this location during the shift.

W-2 Jacking Saddle – Frame: This QA Inspector observed a linear indication approximately 160 mm from the saddle end of the frame was marked for repair. The indication was marked as having a length of 120 mm. This QA Inspector was informed by Caltrans Engineer Doug Wright the indication was located on the ground face of a Partial Joint Penetration (PJP) weld. He also informed this QA Inspector an additional indication was present but not marked on the face of the weld. This QA Inspector was informed by QA Inspector Robert Mertz (present at this location) the PJP weld was designed to have an effective throat of 14 mm. This QA Inspector observed as ABF welding personnel Rick Clayborn (#2773) set up the carbon arc equipment to begin the excavation of the marked defect. This QA Inspector observed ABF welding personnel Rick Clayborn (#2773) made two passes

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using the carbon arc process and then stopped. ABF welding personnel Rick Clayborn (#2773) started he had excavated the weld metal and could visually see the original joint design of bevel preparation was present. This QA Inspector observed QC Inspector Jesus Cayabyab use a depth gauge measure the depth of the excavation, approximately 6 mm. See photo below of the excavation at this stage. This QA Inspector was informed via phone by QA Inspector Bill Levell that QA Inspector Robert Mertz would be covering this issue and was reassigned.

14W-PP125-W3-Lifting Lug Hole (LLH) LLH-2 (SPCM): This QA Inspector randomly observed as ABF welding personnel Salvador Sandoval (#2202) fit up the infill plate at this location. This QA Inspector randomly observed QC Inspector Salvador Merino visually inspect and accept the fit up inspection. This QA Inspector performed a visual verification of the fit up and observed the work appeared to comply with the contract requirements. This QA Inspector observed as a hand held torch was used to preheat the base metal and QC Inspector Salvador Merino verify the temperature was greater than the minimum. This QA Inspector observed QC Inspector Salvador verified the following SMAW welding parameters for ABF welding personnel Salvador Sandoval (#2202); 142 amperes. This QA observed a 3.2 mm diameter E7018H4R electrode was being used. The welding observed appeared to comply with ABF-WPS-D15-1050A-CU. This QA Inspector observed welding was not completed during the shift.

14W-PP126.7-W3.7 – Vent Hole (SPCM): This QA Inspector randomly observed as ABF welding personnel Mike Jiminez (#4671) fit up the infill plate at this location. This QA Inspector randomly observed QC Inspector Salvador Merino visually inspect and accept the fit up inspection. This QA Inspector performed a visual verification of the fit up and observed the work appeared to comply with the contract requirements. This QA Inspector observed as a hand held torch was used to preheat the base metal and QC Inspector Salvador Merino verify the temperature was greater than the minimum. This QA Inspector observed QC Inspector Salvador verified the following SMAW welding parameters for ABF welding personnel Mike Jiminez (#4671); 150 amperes. This QA observed a 3.2 mm diameter E7018H4R electrode was being used. The welding observed appeared to comply with ABF-WPS-D15-1050A-CU. This QA Inspector observed welding was not completed during the shift.

14W-PP128-W3-Southwest of LLH # 2 (SPCM): This QA Inspector randomly observed QC Inspector Pat Swain performed preliminary Ultrasonic Testing (UT) at this location at approximately 1400 hours this shift. QC Inspector Pat Swain informed this QA Inspector the UT was preliminary but that appeared to be acceptable at this time.

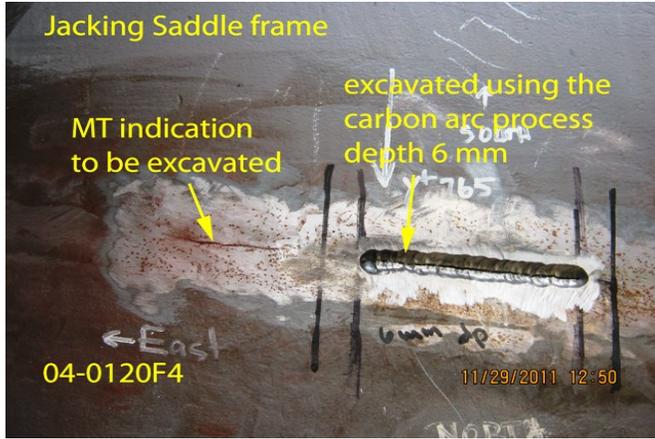
This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.

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.

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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