

**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-026720**Date Inspected:** 16-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:** Fred Von Hoff**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.

Orthotropic Bridge Girder (OBG) Sections: The QC documents observed being used by this QA Inspector for the following weld joints appeared to be designated as Seismic Performance Critical Members (SPCM).

14E-PP126.2- E2.6 – Vent Hole: This QA Inspector observed ABF welding personnel Sal Sandoval (#2202) fitting up the infill plate at this location. This QA Inspector observed as QC Inspector Fred Von Hoff inspected the fit up and then informed this QA Inspector he had accepted the work. This QA Inspector performed a visual verification of the fit up checking the planar offset, root opening and that the “arrow” designating the direction of rolling was longitudinal to the OBG deck. The fit up verification appeared to comply with the contract requirements. This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) used a hand held gas torch to preheat the base metal. QC Inspector Fred Von Hoff informed this QA Inspector the temperature was greater than 125°F the minimum preheat temperature. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters for ABF welding personnel Salvador Sandoval (#2202) using the Shielded Metal Arc Welding (SMAW) process; 132 amperes. This QA Inspector observed a 3.2 mm diameter E7018 electrode was being used in the flat (1G) position. The welding and fit up observed appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-10050-CU being used by the QC Inspector.

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14E-PP125.2-E5 – Vent Hole: This QA Inspector observed ABF welding personnel Todd Jackson (#3946) setting to begin using the SMAW process at this location. This QA Inspector observed a hand held gas torch was used to preheat the base metal and verified it was greater than the minimum temperature prior to welding using an electronic temperature gauge. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters; 175 amperes using a 4.0 mm diameter electrode. The welding observed by this QA Inspector appeared to comply with ABF-WPS-D15-1050-CU being used by the QC Inspector.

14E-PP126.7-E2.5 – Vent Hole: This QA Inspector observed ABF welding personnel Eric Sparks (#3040) starting to fit up the infill plate at this location.

This QA Inspector observed QC inspection personnel performing the following inspections at the following locations:

14E-PP126.7-E3.2 – Vent Hole – First time repair (R-1) - QC Inspector Bernard Docena performed a visual and Magnetic Particle Testing (MT) on the area of the weld marked as being R-1. QC Inspector Bernard Docena informed this QA Inspector he had accepted the inspections. QC Inspector Pat Swain performed Ultrasonic Testing (UT) on the area marked R-1 and informed this QA Inspector he had accepted the UT inspection. This QA Inspector performed a visual verification, MT and UT verifications and the work observed appeared to comply with the contract requirements.

14E-PP128-E3 – Lifting Lug Hole (LLH) #4 – First time repair (R-1) - QC Inspector Bernard Docena performed a visual and MT inspection on the area of the weld marked as R-1. QC Inspector Bernard Docena informed this QA Inspector he had accepted the inspections. QC Inspector Pat Swain performed UT on the area marked R-1 and informed this QA Inspector he had accepted the UT inspection. This QA Inspector performed a visual verification, MT and UT verifications and the work observed appeared to comply with the contract requirements.

14E-PP128-E4 – Lifting Lug Hole (LLH) #1 thru #4: LLH #2, LLH#3 and LLH#4 were designated and marked as having a first time repair (R-1). LLH#1 was previously inspected (visual, MT and UT) by QC personnel and noted as being accepted. QC Inspector Bernard Docena performed a visual and MT inspection on LLH#2, LLH#3 and LLH#4 at the areas marked as R-1 repairs. QC Inspector Bernard Docena informed this QA Inspector he had accepted the inspections noted above. QC Inspector Pat Swain performed UT on the areas marked R-1 and informed this QA Inspector he had accepted the UT inspection but had a recordable UT indication on LLH#3. This QA Inspector performed a visual verification, MT and UT verification on LLH#1 thru LLH#4. This QA Inspector observed a recordable indication on LLH#3 and verified it was at approximately the same location and length as observed by QC Inspector Pat Swain. This QA Inspector observed a short area of undercut, approximately 5 mm in length which exceeded the allowable depth for SPCM welds in LLH#3 and notified QC Inspector Fred Von Hoff and QC Inspector Bernard Docena. This QA Inspector was informed by Lead QA Inspector Danny Reyes that QA Inspector Bill Levell requested that this QA Inspector be relocated to the Tower section of the SAS to assist with QA verifications for F.W. Spencer. See the applicable MT and UT inspection reports (6028 and 6027) for inspection details.

SAS – Tower – FW Spencer:

This QA Inspector observed the following 3-inch air line piping weld joints at the various stages of work as noted

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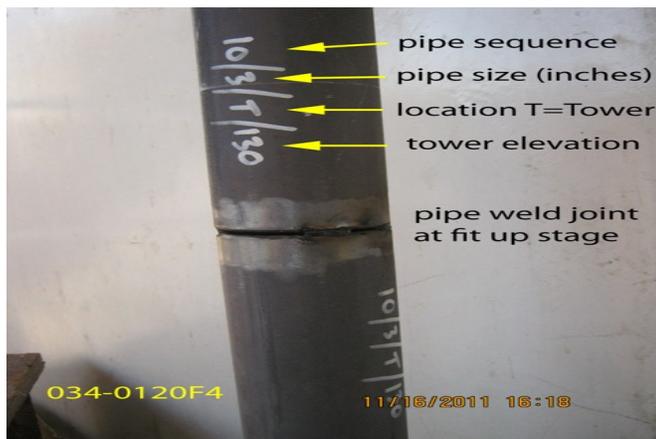
below. This QA Inspector observed QC Inspector Steve Jensen perform a visual inspection of the weld and was informed he had accepted the inspection on weld joint 7/3/T/139. This QA Inspector performed a visual verification and the work appeared to comply with the contract requirements. This QA Inspector observed QC Inspector Steve Jensen perform a fit up inspection and was informed he had accepted the fit up of weld joint 8/3/T/139. This QA Inspector performed a visual verification of the fit up and the work appeared to comply with the contract requirements. This QA Inspector observed QC Inspector Steve Jensen perform a visual inspection on the weld at weld joint 8/3/T/139 and was informed he had accepted the inspection. This QA Inspector performed a visual verification and the work appeared to comply with the contract requirements. This QA Inspector randomly observed Curtis Jump performing SMAW during the production welding of above members and the welding appeared to comply with WPS: 1-12-1 Revision-2. See photo below for weld joint designations.

This QA Inspector randomly observed the welding personnel periodically take welding electrodes from a heated storage oven and place them in what appeared to be clean portable containers capable of keeping them warm and dry.

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.

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**Inspected By:** Hager, Craig

Quality Assurance Inspector

**Reviewed By:** Levell, Bill

QA Reviewer