

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: 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-028038**Date Inspected:** 25-Jul-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Steve Jensen and Salvador Merino			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 Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 13E-EK-S1 K plate stiffener # 1 inside, QA randomly observed ABF/JV qualified welder Richard Garcia perform fit up on the 22mm thick X 170mm wide stiffener splice butt joint. During fit up, the web where the abutting stiffeners are welded has already an offset and so the stiffener to be welded has already a built in offset which was measured 10mm. According to ABF QC Bonifacio Daquinag, he sent an e-mail with corresponding fit up report to ABF QC Manager Jim Bowers regarding this issue dated July 10, 2012. Mr. Bowers and Caltrans SMR Bajhat Dagher went and assess the situation but according to QC they never received an official response to that e-mail and fit up report. Due to the out of tolerance offset on the stiffener butt joint mentioned above, an Incident Report was generated.

After the completion of the fit up wherein an offset of 2mm to 10mm was measured from Y=60 to Y=170mm, the welder was noted perform 4G (overhead) position Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on K plate stiffener S1 splice butt joint. The welder was using 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040A Rev. 1. The joint being welded has a single V-groove butt joint without backing bar. During the shift, ABF QC Salvador Merino was noted monitoring the welder with measured working current of 127 amperes on the 3.2mm electrode. At the end of the shift, fill pass SMAW welding was still continuing and should remain tomorrow.

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At OBG 2W-PP13-W5 deck access hole outside, QA randomly observed ABF/JV qualified welder Roby Smith perform cover pass welding on the Complete Joint Penetration (CJP) butt joint. The welder was observed manually welding in the 1G (flat) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS)

ABF-WPS-D15-1040C-Cu. The joint being welded has a single V-groove butt joint welded with copper backing bar. ABF Quality Control (QC) Fred Michels was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 130 amperes on the 3.2mm E7018H4R electrode. During the shift, SMAW cover pass welding was completed on the top side of the weld joint and the welder has moved underneath and removed the copper backing bar then started back gouging. The welder ground the groove of the gouged area until the end of the shift.

At OBG 12W-W2.1 corner drop-in assembly top deck plate inside, QA randomly observed ABF/JV qualified welder James Zhen perform back welding on butt joint location Y=21800mm to Y=24300mm. The welder was noted welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4. The welder was using a track mounted welder holder assembly that is remotely controlled. The joint being welded has the steel backing bar removed and gouged using carbon air arc gouging and was ground smooth. The backing bar removal was also tested using Magnetic Particle Testing (MT). The butt joint was preheated to greater than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket on top of the weld joint. During welding, ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. The parameters measured during welding were 262 amperes, 22.5 volts with travel speed of 180 mm per minute travel speed which are deemed acceptable to contract specifications. At the end of the shift, fill pass to cover pass was still continuing and should remain tomorrow.

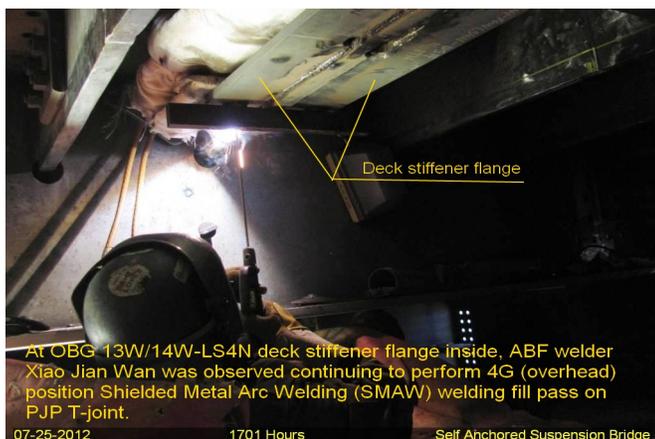
At OBG 12W-W2.1 corner drop-in side plate 'C1' outside, QA randomly observed ABF/JV qualified welder Jin Pei Wang continuing to perform CJP groove (splice) back welding fill pass to cover pass on the splice butt joint from Y=25,000mm to Y=28,000mm. The welder was observed perform manual welding in the 4G (overhead) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040C-Cu. The joint being welded has a single V-groove butt joint with copper backing bar that has been removed, back gouged and ground. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder with measured working current of 128 amperes. At the end of the shift, cover pass welding at location mentioned above was still continuing and should remain tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of drop-in top deck plate butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 13E-E2.8 @ 11970 – ground flush bottom weld cover QA verified
2. 13E-E2.5 @ 4720 – ground flush bottom weld cover QA verified
3. 13E-PP121.2 @ 1900 – ground flush bottom weld cover QA verified
4. 13E-E2.4 @ 2600 – ground flush bottom weld cover QA verified

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Summary of Conversations:

No significant conversation occurred today.

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 SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer