

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022028**Date Inspected:** 17-Mar-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:	Steve Mc Connell and John Paglie			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:	Orthotropic Box Girder		

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.

QA randomly observed ABF/JV qualified welder Rory Hogan and Songtao, Huang continuing to perform CJP groove (splice) back welding fill pass on Orthotropic Box Girder (OBG) 9E/10E bottom plate 'D2' outside. The welder was observed back 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 was remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The gouged and ground splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT). The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and by moving the blanket to the side of the weld being welded during welding. The vicinity was also properly protected from wind and other climatic conditions. ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. During the shift, fill pass welding was still continuing and should remain tomorrow. ABF welder Songtao, Huang was also with fellow welder Rory Hogan for the turnover of the overhead welding of splice butt joints. The welder Songtao, Huang was with the welder Rory most of the day to get acquainted with the machine and Bug-o setting at overhead position.

At OBG 6E-PP37.5-E5-NW LSW longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang

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Hwang perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding root pass to fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side to be back gouged, Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. Prior welding, the fit up was inspected and accepted by ABF QC Pat Swain. QA also verified the root gap of less than 7mm and alignment of less than 2mm which deemed acceptable to the contract requirements. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1. 5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Steve Mc Connell was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Steve Mc Connell was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding on one side of the butt joint was still continuing and should remain tomorrow.

At OBG 10E/11E edge plate 'F' outside, QA randomly observed ABF/JV qualified welder Fred Kaddu continuing to perform welding fill pass to cover pass on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with steel backing bar that has been back gouged. ABF Quality Control (QC) John Pagliero was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 130 amperes which appears in conformance to the contract requirements. At the end of the shift, SMAW cover pass welding was completed.

At OBG 6E-PP37.5-E5 NW TS transverse stiffener inside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform CJP repair welding. The welder was noted welding in 3G (vertical) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repair. The first time welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Steve Mc Connell was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 128 amperes which appears in compliance to the WPS. At the end of the shift, welding repair at the following locations was completed. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1.	50mm	75mm	20mm	8mm	Completed/R1
2.	195mm	80mm	25mm	12mm	Completed/R1

After completing the repairs just mentioned above, the welder has moved to OBG 8W-PP70.5-W5-SE deck access hole to top deck plate outside and performed welding repair number three (R3). This third time repair has Request for Weld Repair (RWR) number of 201103-003 dated March 7, 2011. The welder was noted welding in 1G (flat) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repair. The third time welding repair located at Y=3260 and having excavation profile of 100mm long x 25mm wide x 12mm deep was excavated to a boat shape profile and was tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Steve Mc Connell was

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noted monitoring the welder and his welding parameters. QA noted parameter during welding was 130 amperes which appears in compliance to the WPS. At the end of the shift, welding repair at this location was still continuing and should remain tomorrow.

At OBG 6W edge plate 'B' (panel point PP43 to PP44) outside, QA randomly observed ABF Darcel Jackson perform 1G (flat) position CJP welding 3/8" thick x 3 5/8" wide counter weight connection plate to the edge plate 'B'. The welder was using SMAW with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-D1080 Rev. 1. The connection plate has a 45 degree bevel that was welded from the bottom side and then back gouged and back welded from the top side. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 130 amperes which appears in compliance to the WPS. At the end of shift, fill pass welding was still ongoing and should continue tomorrow.



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.

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Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
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Reviewed By:	Levell, Bill	QA Reviewer
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