

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-028690**Date Inspected:** 29-Oct-2012**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

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|------------------------------------|--------------------------------|-----------|------------|----------------------------------|------------|-----------|------------|
| CWI Name: | William Sherwood and Fred Mich | | | 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 OBG | | |

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 12E-E2.1-C corner drop-in side plate outside, QA randomly observed ABF/JV qualified welder Mike Jimenez continuing to perform CJP groove welding repair at location Y=4900mm to Y=5700mm with excavation profile of 800mm long x 55mm wide x 10mm deep. The repair welding is being performed per Caltrans approved Request for Weld Repair (RWR) #201210-013. The welder was observed manually welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 4.0mm diameter E7018H4R electrode implementing Caltrans welding procedure ABF-WPS-D15-1004 Repair. The second time repair excavation was preheated to more than 225 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket put in place on top of the side plate prior excavation. During the shift, ABF QC William Sherwood was noted monitoring the welder with measured working current of 170 amperes on the 4.0mm E7018H4R electrode and adjusted preheat temperature of 325°F during welding. During the shift, the welder has not completed the welding repair mentioned above but performed the Post Weld Heat Treatment (PWHT) of 450°F and held it for one (1) hour after welding as required.

At OBG 12E-E2.1-C corner drop-in side plate outside, QA randomly observed ABF/JV qualified welder Wai Kit Lai continuing to perform CJP groove welding repair at location Y=2860mm to Y=38860mm with excavation profile of 1000mm long x 50mm wide x 11mm deep. The repair welding is being performed per Caltrans approved Request for Weld Repair (RWR) #201210-013. The welder was observed manually welding in the 4G (overhead)

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position utilizing Shielded Metal Arc Welding (SMAW) with 4.0mm diameter E7018H4R electrode implementing Caltrans welding procedure ABF-WPS-D15-1004 Repair. The second time repair excavation was preheated to more than 225 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket put in place on top of the side plate prior excavation. During the shift, ABF QC William Sherwood was noted monitoring the welder with measured working current of 160 amperes on the 4.0mm E7018H4R electrode and adjusted preheat temperature of 325°F during welding. During the shift, the welder has not completed the welding repair mentioned above but performed the Post Weld Heat Treatment (PWHT) of 450°F and held it for one (1) hour after welding as required.

At Tower elevation 131 and 135 meter, this QA randomly observed ABF/JV qualified welder Richard Garcia continuing to perform 1G/4G (flat/overhead) position Partial Joint Penetration (PJP) welding 6mm bent plate butt joint per Request for Information ABF-RFI-002642R01 dated December 6, 2011. The RFI pertains to the modification of the Tower Lift 4 Façade Seal Elevator interference. The welder was noted implementing the Option #3 and detail #3 of the RFI's attachment.

During welding, the welder was observed manually welding in 1G (flat) position utilizing self-shielded Flux Cored Arc Welding (FCAW-S) with 0.035" diameter E71T-11 wire electrode implementing Caltrans welding procedure ABF-WPS-D11-2044. ABF QC Fred Michels was noted on site monitoring the welder and his welding parameters with measured working current of 80 amperes and 16 volts. During the shift, two bent plates modification were done at north and west shafts of the Tower at elevation 131 meter and the welder has moved to elevation 135 meter and performed 4G (overhead) FCAW-S welding on the same bent/seal plate modification. Two of the bent/seal plates were also completed at 135 meter elevation. The remaining modification of the same bent plates at higher elevation will continue tomorrow.

FW Spenser:

The QAI observe the ongoing installation, field fit-up and tack welding of the utility pipe support PS-7 (WT 4 ½" x 24" long) along the W2 grid line (panel point PP111). The pre-fabricated PS-7 WT utility support was fillet welded all around to the bridge barrier. The QC inspection was performed by Steve Jensen utilizing the Welding Procedure Specification (WPS) identified as Fillet Murex to monitor the tack welding and fillet welding to verify the welding parameters. The welding parameters were observed and recorded as 90 amps utilizing 2.4 mm electrodes with the welding performed in the 2F, 3F and 4F positions. The tack welding/fillet welding was performed by FW Spenser welder Damian Llanos.

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At Tower elevation 131 meter, ABF welder Richard Garcia was noted preheating the bent/seal plate using propylene gas torch prior FCAW S PIP welding.



10 29 2012 0830hours Self Anchored Suspension Bridge



At OBG 12E-E2.1-C corner drop in side plate outside, ABF welder Wai Kit Lai was observed performing 4G (overhead) position Shielded Metal Arc Welding (SMAW) welding repair on welded butt joint L= 2860mm.

10 29 2012 1504hours Self Anchored Suspension Bridge



At Tower elevation 131 meter, ABF QC Fred Michels was observed performing Magnetic Particle Testing (MT) on PIP welded bent/seal plate during the shift.

10 29 2012 1331hours Self Anchored Suspension Bridge



At 12W-PP111-W2 location, FW Spencer welder Damian Lianos was observed performing multiple position Shielded Metal Arc Welding (SMAW) fillet welding WT pipe support PS-7 to the back side of bridge barrier.

10 29 2012 1037hours Self Anchored Suspension Bridge

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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Reyes, Danny

QA Reviewer