

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-026852**Date Inspected:** 08-Dec-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 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 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 14E-PP127.2-E5 vent hole infill plate to top deck plate inside, ABF welder Erick Sparks was observed continuing to perform 1G Shielded Metal Arc Welding (SMAW) welding fill pass to cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU Rev.1 for the Seismic Performance Critical Member (SPCM) butt joint. Prior welding, ABF QC Salvador Merino was noted checking the fit up alignment of the infill plate to the deck plate with positive result. QA verified the alignment and noted same result. During welding, ABF QC Salvador Merino was noted monitoring the welder's welding parameters with measured working current of 130 amperes on the 1/8" and 180 amperes on 5/32" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding was completed on the top side of the butt joint and the welder went down underneath the joint and performed carbon arc back gouging until the end of the shift.

At OBG 13E/14E side plate 'E' inside, QA randomly observed ABF/JV qualified welder Xiao Jian Wan continuing to perform CJP groove (splice) welding root then on the splice butt joint. The welder was observed perform manual welding in the 3G (vertical) 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-D15-3042B-1. The joint being welded has a single V-groove butt joint with

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backing bar that will be removed then back welded. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder with measured working current of 270 amperes and working voltage of 25.2 volts. At the end of the shift, fill pass welding on the splice butt joint was still continuing and should remain tomorrow.

At OBG 13E/14E bottom plate 'D1' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP groove welding repair. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repair for the Seismic Performance Critical Member (SPCM) butt joint. The repair excavation was preheated to more than 325 degrees Fahrenheit using Miller Proheat 35 Heating Induction System with blanket located at the opposite side of the weld joint being welded. During the shift, ABF QC Fred Von Hoff was noted monitoring the welder with 130 amperes measured current on the 1/8" diameter E7018H4R electrode. The second time welding repair (R2) located at Y=6140mm and having dimensions of 115mm long x 25mm wide x 23mm deep was repaired per Request for Welding Repair (RWR) # 201112-001 pending Caltrans approval. The RWR was initiated by ABF due to excessive depth on the excavation. (65% of 30/35mm unequal thickness butt joint). The completely welded repair was Post Weld Heat Treated (PWHT) at 450 degrees Fahrenheit for one and a half (1 1/2) hour as required using the Miller Proheat 35 Induction Heating System.

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 bottom and vertical 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. OBG 13E/14E bottom plate 'D1' inside - QA MT verified
2. OBG 13E/14E vertical plate 'I' inside - QA VT/MT verified

At the Tower Base, this QA performed survey on the ongoing cutting and grinding works being done by ABF personnel. ABF personnel led by foreman Eduardo Jimenez has three (3) other personnel with him performing the cutting and grinding. The following lifting eye/jacking lug were noted being ground or completed;

Location Remarks

1. At the Base Plate near ESW joint 'T' – 2 jacking lugs grinding in progress
2. At the Base Plate near ESW joint 'V' – 2 jacking lugs grinding completed ready for MT
3. At the Base Plate near ESW joint 'P' – 2 jacking lugs cut waiting to be ground
4. At the Base Plate near ESW joint 'Q' – 2 jacking lugs grinding completed ready for MT
5. At the Base Plate near ESW joint 'N' – 1 lifting eye grinding completed ready for MT
6. At the Base Plate near ESW joint 'W' – 1 lifting eye grinding completed ready for MT
7. At 9 meters elevation diaphragm outer west - 4 lifting eyes grinding completed ready for MT
8. At 9 meters elevation diaphragm inner west - 4 lifting eyes grinding completed ready for MT
9. At 9 meters elevation diaphragm center - 4 lifting eyes grinding completed ready for MT
10. At 9 meters elevation diaphragm outer east - 4 lifting eyes grinding completed ready for MT
11. At 9 meters elevation diaphragm inner east - 4 lifting eyes grinding completed ready for MT

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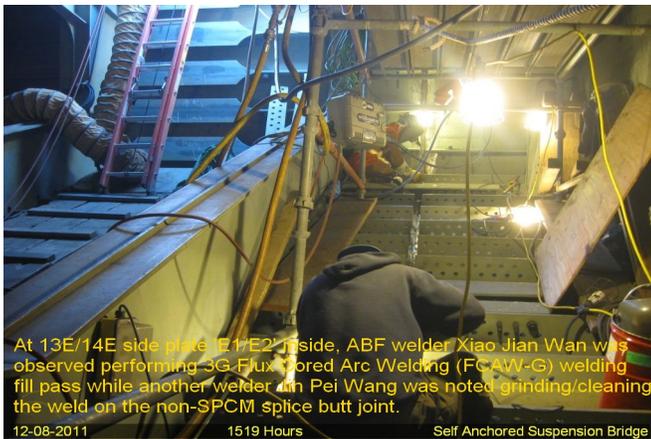
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12. At 9 meters elevation diaphragm north - 4 lifting eyes grinding completed ready for MT
13. At 9 meters elevation diaphragm south - 4 lifting eyes grinding completed ready for MT
14. At 13 meters elevation diaphragm outer west - 4 lifting eyes grinding completed and painted
15. At 13 meters elevation diaphragm inner west - 4 lifting eyes grinding completed and painted
16. At 13 meters elevation diaphragm center - 4 lifting eyes grinding completed and painted
17. At 13 meters elevation diaphragm outer east - 4 lifting eyes grinding completed and painted
18. At 13 meters elevation diaphragm inner east - 4 lifting eyes grinding completed and painted
19. At 13 meters elevation diaphragm north - 4 lifting eyes grinding completed and painted
20. At 13 meters elevation diaphragm south - 4 lifting eyes grinding completed and painted

At Tower Base plate, ABF personnel have cut the temporary welded jacking lug to 1/4" above the plate and to grind it flush using the flapper disc grinder.



At OBG 14E-PP127.2-E5 vent hole infill plate to top deck plate inside, ABF welder Erick Sparks was observed performing carbon arc gouging the bottom of the welded from the top butt joint.



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

Reviewed By: Levell, Bill

QA Reviewer