

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-029360**Date Inspected:** 06-Mar-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

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|------------------------------------|--|-----------|------------|----------------------------------|------------|-----------|------------|
| CWI Name: | William Sherwood and Bonifacio Quijano | | | 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 Hinge 'A' expansion joint of OBG to skyway, this QAI randomly observed ABF welder Mathew Cochran continuing to perform flat and horizontal stud welding on 3/4 " diameter x 8 3/16" long stud to the top and side of the expansion joint deck implementing procedures ABF-WPS-D1.5-5062 (horizontal position) and ABF-WPS-D1.5-5063 (flat position). The welder performed pre-production test of two (2) studs and were bent to an approximate angle of 30 degrees utilizing a ten pound sledge hammer. The welding and testing of the two studs were performed in flat position. At the conclusion of the test, the welder started the production stud welding. Later in the shift the welder performed a pre-production test on two studs that were welded in the horizontal position utilizing the same size studs. The test results were noted as acceptable and at the conclusion of the test the welder started the stud welding on the side of the expansion deck implementing ABF-WPS-WPS-D1.5-5062. The stud welding was not completed during the shift.

At East bound skyway lifting lug hole plate to top deck plate SLLH #4 outside, this QA randomly observed ABF welder Wai Kit Lai continuing to perform 1G SMAW welding fill pass on the plate to top deck plate butt joint. The joint being welded has a 45 degrees single bevel groove joint with copper backing plate that will be removed, back gouged and ground then back welded. The welder was noted welding the access hole infill plate to top deck using 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1030-1. ABF QC Steve William Sherwood was noted monitoring the welder's welding

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parameters. Prior welding, ABF QC William Sherwood together with this QA performed fit up inspection and verification and noted acceptable result. At the end of the shift, cover pass welding was completed was completed from the outside.

At east bound Skyway alignment lifting lug hole (ALLH) #2 plate to top deck plate outside, ABF welder Mike Jimenez was observed continuing to perform 4G Shielded Metal Arc Welding (SMAW) back welding fill pass to cover pass on the plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1110A. Prior welding, ABF QC Fred Michels was noted performing Magnetic Particle Testing (MT) on the back gouged surface with noted acceptable result. During welding, ABF QC Fred Michels was noted monitoring the welder's welding parameters with measured working current of 180 amperes on the 5/32" diameter E7018H4R electrode. The welder was also noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding from the inside was completed.

At OBG 13W-PP116.5-W2 LSE longitudinal stiffener inside, QA randomly observed ABF welder Chris Bruce perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding butter pass to root 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 is being 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 Bonifacio Daquinag. QA also verified the root gap of more than 7mm and that the butter pass was welded. 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 propylene gas torch prior/during welding. The QA Inspector noted the ABF QC Bonifacio Daquinag was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding 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 on temporary welded lifting lug removal mentioned below. The QA verification was performed to verify that 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 ground removal of the lifting lugs and the QC inspection complied with the contract documents.

1. L13E-PP121.65 North – OBG lifting lug (pyramid) removal QA verified
2. L13E-PP122.65 North – OBG lifting lug (pyramid) removal QA verified

FW Spencer:

At location Panel Point PP27.5-PP28.5 Bikepath 'E', this QA randomly observed FW Spencer qualified welder Rick Kiikvee ID-5319 continuing to perform Complete Joint Penetration (CJP) 6G (all position) Shielded Metal Arc Welding (SMAW) welding root pass to cover pass on the 2" weldolet for 4" diameter compressed air line. The welder was noted welding the root pass with 3/32" diameter E6010 electrode and followed by fill pass to

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cover pass using 3/32" diameter E7018H4R electrode implementing Caltrans approved procedure FW Spencer WPS 1-12-1. The welder was noted preheating and removing the moisture of the joint using a portable propane gas torch prior welding. During welding, ABF QC Bonifacio Daquinag was noted monitoring the parameters of the welder. At the end of the shift, two (2) 2" diameter weldolet were completed and visually accepted by QC. This QA performed VT verification on the completed weld splices and they appear in compliance to the Contract requirements.

At Bikepath 'E', this QA randomly observed FW Spencer qualified welder Damian Llanos continuing to perform Complete Joint Penetration (CJP) 6G (all position) Shielded Metal Arc Welding (SMAW) welding root pass to cover pass on 1" diameter weldolet to 2 1/2" domestic water line T-joints. The welder was noted welding the root pass with 3/32" diameter E6010 electrode and followed by fill pass to cover pass using 3/32" diameter E7018H4R electrode implementing Caltrans procedure FW Spencer WPS 1-12-1. The welder was noted preheating and removing the moisture of the joint using a portable propylene gas torch prior welding. During welding, ABF QC Bonifacio Daquinag was noted monitoring the parameters of the welder. At the end of the FW Spencer shift, CJP welding on four (4) 1" diameter to 2 1/2' diameter compressed air weldolet T- joints were completed. The four completed weld joints from panel point 43.5 to PP46.5 were designated as 1/CA2/43.5/BE, 1/CA2/44.5/BE, 1/CA2/45.5/BE and 1/CA2/46.5/BE.

At the same work area, another FW Spencer welder Craig Perry was observed perform all position stainless steel welding of 4" diameter air ducting for Tower Head dehumidification. This QA had asked the qualification of the welder and the working welding procedure the welder was welding but replied that he will ask their company for the necessary documents if there are any. According to the welder, the 316L stainless steel duct pipes and miter joints were welded in their company shop and brought them to the job site for field weld joints welding.

At east bound Hinge A expansion joint, ABF welder Matthew Calkins was observed perform two (2) horizontal pre-production test prior to stud welding production. The two tests were noted to have 360 degree flash and the welder bent them to 90 degrees with acceptable results.

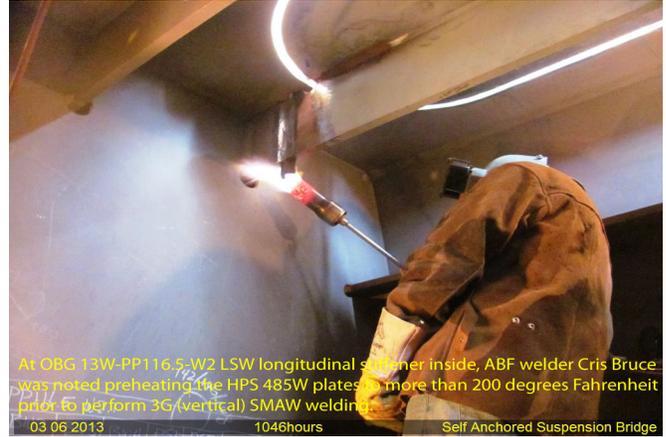


At OIG FW Spencer workshop, FW Spencer welder Craig Perry was observed perform all position stainless steel welding of Tower Head Dehumidification ducting.



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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 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