

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-022502**Date Inspected:** 13-Apr-2011**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

| | | | | | | | |
|------------------------------------|---------------------------------|-----------|------------|----------------------------------|------------------------|-----------|------------|
| CWI Name: | Fred Von Hoff and John Pagliero | | | 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.

At OBG 10W/11W top deck plate 'A' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing new Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1003 Repair. The new repair procedure includes putting in place a copper backing alongside the typical steel backing bar when the repair excavation is expected to occur at the edge of the steel backing. 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 John Pagliero was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 138 amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

| Location | Y-dimension | Length | Width | Depth | Remarks |
|----------|-------------|--------|-------|-------|-----------------|
| 1. A2 | 4300mm | 100mm | 20mm | 16mm | Completed (R1) |
| 2. A1 | 0mm | 110mm | 20mm | 21mm | Completed (R1) |
| 3. A1 | 775mm | 120mm | 20mm | 21mm | Completed (R1) |
| 4. A5 | 2060mm | 110mm | 20mm | 17mm | Completed (R1) |
| 5. A5 | 5100mm | 125mm | 20mm | 22mm | In progress(R1) |

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At OBG 10W/11W side plate 'C2' (4577mm to 5277mm) inside, QA randomly observed ABF/JV qualified welder Fred Kaddu perform cover pass welding on the Complete Joint Penetration (CJP) splice butt joint where the track mounted Bug-o FCAW welder nozzle holder has limited access. 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. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. During the shift, cover pass SMAW welding was completed and the welder has moved to 9W/10W bottom plate 'D' inside and set up his welding equipment to perform welding repairs. There was no welding repair performed at this new location during the shift.

At OBG 10E/11E side plate 'C1' inside, ABF welded Songtao, Huang was still noted lining up his Bug-o track mounted FCAW nozzle holder. After lining up his track, the welder went outside the OBG butt joint and removed some of the fitting gear and pushed the Miller Proheat 35 Induction Heating System heater blanket directly into the base metal that was being welded. At the end of the shift, all preparation was done but no welding was performed.

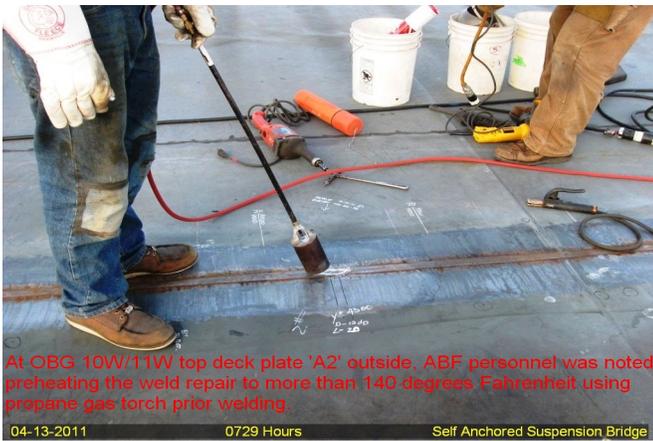
At OBG 6E-PP37.5-E5 LSE longitudinal stiffener plate inside, QA randomly observed ABF/JV qualified welder Hua Qiang Hwang perform CJP repair welding. The welder was noted welding in 3G (vertical) position utilizing SMAW with 1/8" diameter E9018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1012-3. The first time welding repair located at Y=85mm and having 100mm long x 20mm wide x 13mm deep boat shape excavation profile was tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Fred Von Hoff was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 130 amperes which appears in compliance to the WPS. The weld repair was preheated and maintained to required 200°F using propane gas torch prior/during welding. During the shift, welding repair at location mentioned above was completed and the welder has moved back to 11E-PP97.5-E5 LSW deck access hole longitudinal stiffener (that was wrongly cut) and performed grinding on the bevel faces and adjacent base metal of the joint in preparation for the butt welding.

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 two (2) edge 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 10W/11W edge plate 'B' inside - QA VT/MT verified
2. OBG 10W/11W edge plate 'F' inside - QA VT/MT 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