

**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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017071**Date Inspected:** 28-Sep-2010**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:** Jobsite**CWI Name:** See below**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:**

On this date CALTRANS OSM Quality Assurance Inspector (QAI) Bert Madison was present at Yerba Buena Island in California between the times noted above for observations relative to the work being performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below.

- 1). OBG Field Splice 6E/7E weld ID: A2 through A5, Face A (QAI Verification)
- 2). OBG Field Splice 6E/7E weld ID: A4, Face A (QC UT Confirmation)
- 3). OBG Field Splice 6E/7E weld ID: A4, Face A (R-1 Repair SMAW)
- 4). OBG Field Splice 6W/7W weld ID: B1, Face A (SMAW)
- 5). OBG Field Splice 6W/7W weld ID: F1, Face A (SMAW)
- 6). West Line OBG Field Welding of Drip Edge (SMAW)

- 1). OBG Field Splice 6E/7E weld ID: A2 through A5, Face A (QAI Verification)

The QAI performed verification Visual Testing (VT) and Ultrasonic Testing (UT) of 10% of the lengths of OBG Field Splice 6E/7E Weld ID: A2, A3, and A4 & A5. With respect to VT the 6E/7E Weld ID: A2, A3, A4 & A5 verified by the QAI appeared to be in general compliance with contract documents. With respect to UT the 6E/7E Weld ID: A2, A3 & A5 verified by the QAI appeared to be in general compliance with contract documents. The 6E/7E Weld ID: A4 verified by the QAI did not appear to be in general compliance with contract documents. See Ultrasonic Testing Report Form TL-6027 generated by the QAI on this date. See Summary of Conversations below.

- 2). OBG Field Splice 6E/7E weld ID: A4, Face A (QC UT Confirmation)

The QAI observed QC Inspector Steve McConnell performing UT to confirm the rejectable UT indication

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identified by the QAI earlier in the shift at OBG Field Splice 6E/7E Weld ID: A4. See photo below. The QAI observed that Mr. McConnell utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of the splice weld. See photo below. The QC technician performed the required shear wave testing during the testing for weld soundness utilizing a .63 x .75 rectangular transducer. The UT examination was completed and the QC Mr. McConnell concurred with the QAI UT results that the indication was a Class A reject and the QC inspector then laid out the indication for repair.

### 3). OBG Field Splice 6E/7E weld ID: A4, Face A (R-1 Repair SMAW)

The QAI periodically observed AB/F approved welder Fred Kaddu performing grinding to excavate (1) one 27mm long R-1 repair located at Y = 290mm. The QC Inspector stated to the QAI that porosity had been observed as the excavation was in process. The QAI observed QC Inspector Tony Sherwood performing Magnetic Particle Testing (MT) of the R-1 repair excavation prior to the commencement of repair welding. The QAI observed that the performance and evaluation of the MT appeared to comply with the MT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The QAI then periodically observed AB/F approved welder Fred Kaddu (ID 2188) performing repair welding of the excavated area per the SMAW process in the 1G (flat) position. See photo below. QC Inspector Tony Sherwood was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-1000-Repair. The repair welding was completed at this location and the work appeared to be in general compliance with contract documents.

### 4). OBG Field Splice 6W/7W weld ID: B1, Face A (SMAW)

The QAI periodically observed the in process welding of the OBG Field Splice 6W/7W weld ID: B1 on the A face per the Shielded Metal Arc Welding (SMAW) process in the 3G (vertical) position by approved AB/F welder Hua Qiang Hwang (ID 2930) using 3.2mm E7018 electrodes. QC Inspector Jim Cunningham was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-1040A. Welding of the fill passes was in process during the QA Inspectors shift and work at this location appeared to be in general compliance with contract documents.

### 5). OBG Field Splice 6W/7W weld ID: F1, Face A (SMAW)

The QAI periodically observed the in process welding of the OBG Field Splice 6W/7W weld ID: F1 on the A face per the Shielded Metal Arc Welding (SMAW) process in the 3G (vertical) position by approved AB/F welder Yao Xin Liang (ID 7238) using 3.2mm E7018 electrodes. See photo below. QC Inspector Jim Cunningham was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-1040A. Welding of the fill passes was in process during the QA Inspectors shift and work at this location appeared to be in general compliance with contract documents.

### 6). West Line OBG Field Welding of Drip Edge (SMAW)

The QAI periodically observed AB/F approved welder Eric Sparks (ID 3040) performing fillet welding and partial penetration welding per the Shielded Metal Arc Welding (SMAW) process in the 4F (overhead) and 3G (vertical) positions to install drip edge pieces on the counterweight side of the West OBG line between PP18 and PP19. QC Inspector Mike Johnson was periodically present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as

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ABF-WPS-D1.5-F1202 & ABF-WPS-D1.5-1030. Work was in process at this location. The QAI observed that the work appeared to be in general compliance with contract documents.



### Summary of Conversations:

The QAI in a conversation with QC Lead Inspector Bonafacio Daquinag Jr. was told that OBG Field Splice 6E/7E Welds A2 –A5 were QC accepted and ready for QAI verification.

From item 1).

The QAI located QC Inspector Tom Pasqualone and informed him that the QAI had identified a rejectable indication in the 6E/7E weld A4. Mr. Pasqualone observed while the QAI performed UT and relocated the rejectable reflector. Mr. Pasqualone stated that he would need to find a welder to repair the area. The QAI stated to Mr. Pasqualone that a QC technician would need to confirm the QAI UT finding and generate a QC report from which the repair welding could be based upon. Mr. Pasqualone stated that either he or QC Steve McConnell would re-inspect the area.

Other conversations on this date with Quality Control Inspectors were general in nature and pertained to locations of welding and QC activities.

### 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 Mohammed Fatemi (916) 813 3677, who represents the Office of Structural Materials for your project.

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**Inspected By:** Madison,Bert

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer