

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-018129**Date Inspected:** 10-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**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 Welding of East Line Lifting Rod Access Penetration Inserts (SMAW)
- 2). OBG East Line Lifting Rod Access Penetration Insert Welds (QC NDT)
- 3). OBG East Line Lifting Rod Access Penetration Insert Welds (QA verification)
- 4). OBG Field Splice of Ventilation Access Insert Weld at 3E-PP23.5-E5-NE – (SMAW)
- 5). OBG Field Splice of Ventilation Access Insert Weld at 5E-PP29.5-E2-S – (SMAW)
- 6). R-1 Repairs in OBG Field Splice of Vent. Access Insert Long. Stiffeners – (SMAW)
- 7). OBG Field Splice 6E/7E Weld ID: B1, Face A – (SMAW R-1 Repairs)

- 1). OBG Field Welding of East Line Lifting Rod Access Penetration Insert (SMAW)

Interior: OBG 4E-PP27-E4-weld 4 & 3E-PP20-E4- weld 1 & 3

The QAI periodically observed AB/F approved welder Earl Espinoza (ID 5824) performing back welding per the Shielded Metal Arc Welding (SMAW) process in the 4G (overhead) position of E4-weld 4. QC Inspector John Pagliero 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 ABF-WPS-D1.5-1110B rev. 1. Welding was completed at this location and the QAI observed that the work appeared to be in general compliance with contract documents. The QAI periodically observed that AB/F approved welder Earl Espinoza (ID 5824) moved to 3E-PP20-E4- weld 1 and was performing back welding per the SMAW process in the 4G (overhead) position to complete welding at a location worked previously (by Welder Eric Sparks on 11-8-10). QC

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Inspector John Pagliero 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 ABF-WPS-D1.5-1110B rev. 1. Welding was completed at this location and the QAI then periodically observed AB/F approved welder Earl Espinoza (ID 5824) moved to weld 3 at the same PP location and began air carbon arc gouging to clear indications. While gouging Mr. Espinoza blew through to the exterior. The SMAW continued from the interior and repairs will later be made from the exterior. The QAI observed that work at this location appeared to be in general compliance with contract documents.

Interior: OBG 3E-PP20-E3-weld 2 weld 4

The QAI periodically observed AB/F approved welder Darcell Jackson (ID 9967 performing back welding per the Shielded Metal Arc Welding (SMAW) process in the 4G (overhead) position of E3-weld 2. QC Inspector John Pagliero 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 ABF-WPS-D1.5-1110B rev. 1. Welding was completed from the interior at this location and the QAI observed Mr. Jackson back welding per the Shielded Metal Arc Welding (SMAW) process in the 4G (overhead) position of E3-weld 4. The QAI observed that the work was completed at this location and appeared to be in general compliance with contract documents.

2). OBG East Line Lifting Rod Access Penetration Insert Welds (QC NDT)

The QAI periodically observed QC Inspector Patrick Swain performing Ultrasonic Testing (UT) from Face A of OBG East Line Lifting Rod Access Penetration Insert Welds.

Ultrasonic Testing (UT)

The QAI periodically observed Mr. Swain performing QC UT of R-2 repair locations at the following locations with the following results:

| Location: | QC UT Results: |
|-------------------|----------------------|
| 1E-PP15-E3 weld 1 | Multiple R-1 Rejects |

The QAI observed that Mr. Swain utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of the repair welds. The QAI observed as 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 in process during the QA Inspectors shift and the work at this location appeared to be in general compliance with contract documents.

3). OBG East Line Lifting Rod Access Penetration Insert Welds (QAI Verification)

The QAI performed verification Ultrasonic Testing (UT) of 20% of the lengths of OBG East Line Lifting Rod Access Penetration Insert Welds at the following locations:

PP8.5-E4 welds 1-4 and PP9.5-E3 weld 1.

The PP8.5-E4 welds 1-4 and PP9.5-E3 weld 1 verified by the QAI appeared to be in general compliance with contract documents. See Ultrasonic Testing Report Form TL-6027.

4). OBG Field Splice of Ventilation Access Insert Weld at 3E-PP23.5-E5-NE – (SMAW)

The QAI periodically observed welding of the Ventilation Access Insert at 3E-PP23.5-E5-NE. The QAI periodically observed AB/F approved welder Mick Chan (ID 9265) performing welding per the Shielded Metal Arc Welding (SMAW) process in the 1G (flat) position. QC Inspector Patrick Swain was periodically present to monitor the progress and verify that the welding parameters were within the limits established by the approved

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welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-1010 rev 1. The QAI observed that welding of fill passes was in process at this location and the work appeared to be in general compliance with contract documents.

5). OBG Field Splice of Ventilation Access Insert Weld at 5E-PP29.5-E2-S – (SMAW)

The QAI periodically observed back welding of the Ventilation Access Insert at 5E-PP29.5-E2-S. The QAI periodically observed that AB/F approved welder Jin Pei Wang (ID 7299) performed welding per the Shielded Metal Arc Welding (SMAW) process in the 4G (overhead) position. QC Inspector John Pagliero 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 ABF-WPS-D1.5-1010 rev 1. The QAI observed that back welding was in process at this location and the work at this location appeared to be in general compliance with contract documents.

6). R-1 Repairs in OBG Field Splice of Vent. Access Insert Long. Stiffeners – (SMAW)

1E PP10.5 E2 LSW

The QAI periodically observed AB/F approved welder Hua Qiang Hwang (ID 2930) performing welding per the Shielded Metal Arc Welding (SMAW) process in the 3G (vertical) position of an R-1 repair in OBG Field Splice of Vent. Access Insert Long. Stiffeners at 1E PP10.5 E2 LSW. See photo below. QC Inspector John Pagliero 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-D1.5-1012-3. The repair welding was completed at this location and appeared to be in general compliance with contract documents.

1E PP13.5 E2 SE LSW

The QAI periodically observed AB/F approved welder James Zhen (ID 6001) performing welding per the Shielded Metal Arc Welding (SMAW) process in the 3G (vertical) position of an R-1 repair in OBG Field Splice of Vent. Access Insert Long. Stiffeners at 1E PP13.5 E2 SE LSW QC Inspector John Pagliero 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-D1.5-1012-3. The repair welding was completed at this location and appeared to be in general compliance with contract documents.

7). OBG Field Splice 6E/7E Weld ID: B1, Face A – (SMAW R-1 Repairs)

The QAI periodically observed AB/F approved welder Fred Kaddu (ID 2188) performing air carbon arc gouging to excavate and grinding to prepare R-3 Ultrasonic Testing (UT) repair locations in OBG Field Splice 7W/8W Weld ID: A1 & A2 and subsequently performing welding per the Shielded Metal Arc Welding (SMAW) process in the 1G (flat) position of OBG Field Splice 7W/8W Weld ID: A1. See photo below. QC Inspector Tom Pasqualone 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. Mr. Pasqualone also performed Magnetic Particle Testing (MT) of the excavated areas prior to the 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 observed that Mr. Kaddu completed welding of (1) one excavation with the following dimensions of the excavation Y location:

A1 (R-3) Excavation 1) – Y = 10mm, Length = 280mm, Depth = 20mm and Width = 25mm,

Note: The (R-3) indication Y locations of the above excavation were (two separate indications) with A1 - Y = 25mm & Y = 175mm

The QAI periodically observed AB/F approved welder Jorge Lopez (ID6149) performing welding per the Shielded Metal Arc Welding (SMAW) process in the 1G (flat) position of OBG Field Splice 7W/8W Weld ID: A2. The QAI observed that Mr. Lopez completed welding of (1) one excavation with the following dimensions of the excavation Y location:

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A2 (R-3) Excavation 1) - Y = 4880mm, Length = 290mm, Depth = 14mm and Width = 20mm.

Note: The (R-3) indication Y location of the above excavation was A2 - Y = 4905mm.

The QAI observed that work at this location appeared to be in general compliance with contract documents.



Summary of Conversations:

In a conversation with Lead QC Inspector Bonafacio Daquinag Jr. The QAI was informed that several OBG Splice welds have been tested and found acceptable by QC Inspection and are released to QA for verification testing. The areas were as follows:

OBG Field Splice 7E/8E welds A1 through A5 (although A5 has 1 pending repair).

OBG East Line Lifting Rod Access Penetration Insert Welds at PP8.5 E4 welds 1-4 & PP9.5 E3 weld 1.

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.

Inspected By: Madison, Bert

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer