

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-027710
Date Inspected: 01-Jun-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	As noted 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:

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

13E PP122.2-LS1 (Interior)

This QA Inspector made random observations of ABF welder Edward Brown (ID 9331) performing the Shielded Metal Arc Welding (SMAW) Process in the 3G vertical position utilizing E 9018-H4R electrodes on Longitudinal Stiffener (LS) 1 located at 13E PP122.5 on the interior of the OBG. The welder was observed utilizing the Pro-Heat 35 thermal heating blankets for face "B" of the complete penetration joint (CJP) to pre-heat and provide constant heat to the work. QC Inspector Salvador Merino verified the temperature and recorded the parameters as acceptable and within the requirements of ABF-WPS-D1.5-1012-3. The welder was observed installing run off tabs and began welding the height of the joint followed by grinding and blending of the work utilizing a small disc grinder. On a subsequent observation, this QA Inspector noted that the ongoing production welding was performed in the vertical position utilizing the E9018-H4R low hydrogen electrodes. The 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observation no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that

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the work was in progress and appeared to be in general conformance with the contract documents. This joint is a Seismic Performance Critical Member (SPCM).

13E Drop-In Panels (Interior)

This QA Inspector made random observations of the fit-up and Visual Inspection (VT) process conducted by QC Inspector Salvador Merino. The Inspector was observed measuring the planar offset and misalignment of LS7 and LS8 located at 13E/14E-LS7 and 13E/14E-LS8 on the interior of the OBG. It was observed that the measurements were not in conformance with AWS D1.5-2002 Section 3.3, 3.3.3. (See photos below). This QA Inspector randomly observed the fit-up process of the Beam Web joint located at 13E PP122.5-BW1. QC Inspector Salvador Merino was observed measuring the planar offset of the web joint and rejected the joint as out of conformance with AWS D1.5-2002 Section 3.3, 3.3.3. This QA Inspector randomly observed QC Inspector Salvador Merino perform fit-up operations on the Beam Flange Joint at 13E PP122.5-FW1. It was noted that the measurements were out of tolerance in accordance with AWS D1.5-2002 Section 3.3, 3.3.1. QC Inspector Salvador Merino reported the findings to QC Manager Bonifacio Daquinag Jr. This QA Inspector generated three (3) TL-15's on this date and referenced the above AWS D1.5 sections. These joints are Seismic Performance Critical Members (SPCM).

13E/14E-LS1-3 QC NDT (Interior)

This QA Inspector randomly observed QC Inspector John Pagliero performing Magnetic Particle Testing (MT) and Ultrasonic Testing (UT) on the completed welds of the Longitudinal Stiffeners at 13E/14E-LS1-3 on the interior of the OBG. The QC Inspector was observed scanning from each side of the weld and the scanning pattern as described in D1.5 6.24. The QC Inspector was noted as identifying one (1) rejectable indication located at y+100 at 40mm in length and 4mm deep on LS3. This QA Inspector noted that the work at this location was completed on this date and appeared to be in general conformance with the contract documents and SE-UT-D1.5-CT-100-Revision 4. This joint is a Seismic Performance Critical Member (SPCM).

FW Spencer Pipe Welding (Exterior)

This QA Inspector made random observations of FW Spencer welder Damian Llanos performing SMAW on 127mm x 12mm x 4mm lugs to pipe at a temporary fabrication station on the exterior of the OBG. The lugs required 6mm fillet welds on the sides and QC Inspector Ted Ilo monitored the welding and the parameters as they pertained to WPS-FWS Fillets Murex SFOBB Revision 1. The welder was observed implementing E7018-H4R Murex electrodes which this QA Inspector verified that they were obtained from a new container. This QA Inspector made subsequent observations throughout the shift for quality and noted that the work appeared to be in general conformance with the contract specifications.

6W PP46.5 W2-DAH (Exterior)

This QA Inspector performed an Ultrasonic Inspection (UT) inspection on approximately 10% of the welds on the Deck Access hole (DAH located at 6W PP46.5 W2-DAH. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work

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observed at this location appeared to be in compliance with the contract specifications.

13E PP122.5-BF1 (Interior)

This QA Inspector randomly observed the continuing in process SMAW on the Beam Flange weld at 13E PP122.5-BF1. ABF welder Steven Davis (ID 7889) was observed removing previously deposited metal from the site utilizing the Carbon Arc Gouging (CAG) method and a small disc grinder. On a subsequent observation, the welder was observed continuing the SMAW process in the 4G overhead position on the underside of the joint. This QA Inspector observed QC Inspector Sal Merino verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-1030. This welding was in progress for the duration of the shift. This QA Inspector verified that the electrodes were stored in electric rod ovens and appeared to be in accordance with AWS D1.5 Section 4.5.2 and exposure rates appeared to be in accordance with AWS D1.5 Table 4.7. During subsequent observations it was noted that the welders were using a power disc grinder and/or rotary die grinders at weld starts and stops as needed and were cleaning between weld passes with power wire wheel brushes. This joint is a Seismic Performance Critical Member (SPCM).

13E PP120.6-TS1 (Interior)

This QA Inspector made random observations of ABF welder Khit Lounechaney (ID 4985) performing SMAW in the 3G vertical position on the Transverse Stiffener (TS) at 13E PP120.6-TS1 on the interior of the OBG. The welder was observed pre-heating the joint by use of the Pro-Heat 35 thermal blankets where they remained throughout the welding process to provide continuous heat. QC Inspector Salvador Merino monitored the welding and the parameters as they pertained to ABF-WPS-D1.5-1012-3 and measured the inter-pass temperatures between passes as the welder cleaned the work utilizing a small disc grinder. On a subsequent observation, the welder was observed back-gouging the root side of the weld to clean bright metal so as to allow QC to perform MT on the site. Upon completion of testing, the QC Inspector observed no rejectable indications and welding commenced on the root side of the joint. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work at this location was in progress and appeared to be in general conformance with the contract specifications. This joint is a Seismic Performance Critical Member (SPCM).

13E Drop-In Panels Repair Welding (Interior)

This QA Inspector randomly observed the repair welding operations performed by ABF welder Salvador Sandoval (ID 2202) at 13E-E2.8 on the interior of the OBG. ProHeat 35 thermal blankets were placed over the welds to pre-heat to 110°C (225°F) prior to excavation with Carbon Arc Gouging (CAG). Upon removal of the discontinuities, QC Inspector Salvador Merino performed Magnetic Particle Testing (MT) to ensure soundness of the metal and observed no relevant indications and recorded the dimensions of the excavations which are listed below. The welder was observed depositing metal by utilizing the SMAW process in the 4G overhead positions employing 3.2mm E7018-H4R electrodes drawing amperage of 127 as pertaining to ABF-WPS-D1.5-1004-Repair. This QA Inspector verified that the electrodes were obtained from a baking oven at the correct temperature and within acceptable exposure limits. The welders were observed cleaning the start/stop edges of the work utilizing small disc grinders and compressed air and restored the base metal to the original surface and ground smooth, and the welds to their specific profiles. Post Weld Heat Treatment (PWHT) was applied to each completed weld

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surface at 230°C (450°F) for a period of 1 hour in accordance with Section 12.15 of AWS D1.5-2002. The repairs were completed on this date. These joints are Seismic Performance Critical Members (SPCM).

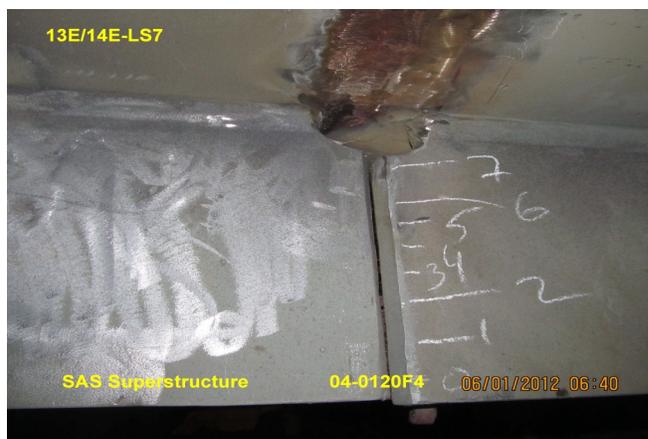
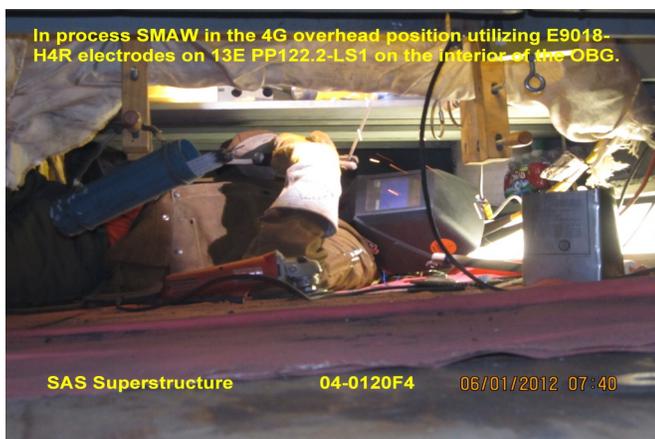
Dimensions of the Excavations.

Salvador Sandoval (ID 2202)

13E-2.8 (Interior)-y+9015mm; 50mm in length, 30mm wide and 5mm deep, y+7865mm; 55mm in length, 20mm wide and 5mm deep, y+7700mm; 80mm in length, 18mm wide and 5mm deep, y+7695; 80mm in length, 25mm wide and 8mm deep, y+7220mm; 50mm in length, 18mm wide and 5mm deep.

Summary of Conversations:

This QA Inspector discussed welder assignments and locations in the Drop-In panels with QC Inspector Slavador Merino.



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 Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

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Inspected By: Frey,Doug

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer