

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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013985**Date Inspected:** 08-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Bernard Docena, Bnifacio Daquinag			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 4E/5E-A, B, F		

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 4E/5E-A, B, F and the following observations were made:

4E/5E-A

Upon the arrival of the QA Inspector it was observed the American Bridge/Fluor (ABF) welding representatives were preparing to perform shielded metal arc welding tack welds, of the steel backing bar of the above identified weld joint. The QA Inspector randomly observed all of the ABF welding personnel was concentrated on the East side at the above identified weld joint and 4E/5E-D. The QA Inspector randomly observed the ABF welders James Zhen and Son Tao Huang begin performing the SMAW tack welds intermittently stitch welded on either side of the weld joint. The QA Inspector noted the Smith Emery (SE) Quality Control (QC) Inspector Bnifacio Daquinag was on site to monitor the in process tack welding and fit up. The QA Inspector randomly observed the SMAW parameters for the above identified welders and they were as follows: Song Toa Huang 5/32" E7018 low hydrogen electrodes with 162Amps and James Zhen 5/32" E7018 low hydrogen electrodes with 155Amps. The QA Inspector randomly observed two ABF apprentices preheating the weld joint to 150°F utilizing a rose bud torch. The QA Inspector noted the SMAW parameters appeared to be in general compliance with the contract requirements.

The QA Inspector observed after several attempts to correct any gaps between the steel backing and the beveled edge of the top deck plate some areas were corrected but several areas remained over 2mm of a gap. The QA Inspector was informed by the ABF representative John Callaghan ABF is aware that it requires engineering

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approval to perform welding over a gap greater than 2mm. The QA Inspector informed Mr. Callaghan ABF has verbal approval to weld over the gap as long as the areas are mapped out and documented so engineering approval can be requested in the form of a weld repair on Monday 5/10/10. The QA Inspector and the QC Inspector performed the dimensional verification of the gaps greater than 2mm between the steel backing and the bevel. The following areas and lengths are all of the areas where the gap exceeded 2mm:

Y=6130mm-6320mm (2.5mm gap)

Y=11920mm-12130mm (2.5mm gap)

Y=16400mm-16555mm (2.5mm gap)

Y=18550mm-18630mm (2.5mm gap)

Y=20970mm-21180mm (2.5mm gap)

Y=25250mm-25320mm (4mm gap)

Y=25720mm-25850mm (2.5mm gap)

The QA Inspector noted the above identified dimensions and measurements depict the gaps at the steel backing and the bevel after ABF attempted to correct them. The QA Inspector randomly observed the ABF welder Rick Clayborn and helper attempt to close the gaps utilizing wedges and temporary attachments. Mr. Clayborn informed the QC Inspector and the QA Inspector, if no sunlight can be seen from the bottom, no additional fitting tasks could be performed by him. Mr. Clayborn informed the QC Inspector the gaps would remain as they were no additional fit up could be performed.

Once the steel backing was intermittently stitch welded on either side of the steel backing bar through out the full length of the weld joint, the QA Inspector and the QC Inspector along with QC Lead Leonard Cross performed dimensional measurements of the planar misalignment. The QA Inspector noted the QC Inspector Bnifacio Daquinag performed the dimensional measurements as the QA Inspector and the QC Lead Leonard Cross verified the dimensions for conformity. The above identified performed dimensional verifications of 100% of the top deck plate identified as "A". The following dimensions depict the areas which appeared to be unacceptable planar misalignment:

1.) 0mm-1280mm (2-3-2mm misalignment)

2.) 11860mm-12130mm

3.) 16390mm-16555mm

4.) 20935mm-21250mm

5.) 27120mm-27280mm

The QA Inspector noted the five areas identified above were measured and reviewed by the above identified persons. The data collected was transposed on the pre determined spreadsheet and signed by QC Leonard Cross and the QA Inspector Rick Bettencourt. The QA Inspector noted Mr. Cross scanned and distributed the planar misalignment spread sheet to the appropriate parties. The QA Inspector noted no additional welding other than SMAW tack welding was performed on this date at the above identified location. The ABF Welding Superintendent Dan Ieraci Informed the QA Inspector ABF will weld the submerged arc welding root pass on Monday 5-10-10.

4E/4E-B/F

The QA Inspector was previously informed be the ABF Welding Superintendent Dan Ieraci, no weld tabs or runoff tabs would be utilized for the top deck weld "A". The QA Inspector noted the ABF welder Jin Quan Huang and Chun Fai Tsui performed SMAW root/fill/cover pass for the top 150mm of the weld joint. The QA Inspector

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was informed this method was performed in an attempt to eliminate any possible cracking. The QA Inspector noted the SMAW root/fill/cover was wrapped around the corner of the deck section and approximately 100mm of the weld segment A5/A1. The QA Inspector noted the contractor has elected to perform the above identified method of welding in lieu of utilizing runoff tabs which has produced cracking in the past weld joints.

Summary of Conversations:

As noted above.

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

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
