

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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014033**Date Inspected:** 14-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				

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 5E/6E-A and the following observations were made:

5E/6E-A

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welding personnel set up and begin tack welding and tying in the corners of the above identified complete joint penetration (CJP) groove weld. The QA Inspector randomly observed the Smith Emery (SE) Quality Control (QC) Inspector Bnifacio Daquinag on site monitoring and recording the in process shielded metal arc welding (SMAW). The QA Inspector noted the ABF welder Song Tao Huang and James Zhen performing SMAW fillet welds full length of the steel backing bar starting the center of the weld joint and moving outward. The QA Inspector noted the ABF welders were utilizing 5/32" E7018 low hydrogen electrodes with approximately 156 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with ABF-WPS-D1.5-F1200-A.

The QA Inspector noted the following areas of gaps exceeding 2mm between the steel backing bar and the bevel, have been submitted by ABF and granted approval at 1000 hrs to weld per QA Lead Inspector Robert Mertz:

Y=0mm-170mm 2.5mm gap

Y= 1980mm-2030mm 2-4mm gap

Y=5330mm-5430mm 2-4mm gap

Y=6240mm-6335mm 2-3mm gap

Y=7450mm-7540mm 2.5mm gap

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

Y=8660mm-8725mm 2.5mm gap
Y=8690mm-9045mm 4mm gap
Y=9470mm-9630mm 2-4mm gap
Y=10125mm-10220 2-3mm gap
Y=10715mm-10800mm 2.5mm gap
Y=17325mm-17415mm 2-3mm
Y=17645mm-17740mm 2-4mm gap
Y=17980mm-18090mm 2-2.5mm gap
Y=22785mm-22865mm 2-4mm gap

Deck "A" to Edge plate "B"

The QA Inspector randomly observed the ABF welder Jin Quan Huang performing the root/fill/cover pass, in an attempt to lock the corner of the weld joints identified above in place. The QA Inspector randomly observed the ABF welder had deposited approximately 150mm of SMAW root/fill pass on at the corner of the "A" deck weld and the "B" deck plate. The QA Inspector noted the SMAW was being performed in the vertical and flat position. The QA Inspector randomly observed the SMAW parameters appeared to be in general compliance ABF-WPS-D1.5-1040B. The ABF Project Engineer informed the QA Inspector, ABF is performing the same procedure that was done at the previous top deck weld joint 4E/5E-A to ensure the members were locked together as well as eliminating the weld tabs at the end of the weld joint. Mr. Callaghan went on to add the previously weld joint welded with run off tabs resulted in cracking from the inception of the runoff tab.

Deck "A" to Edge plate "F"

The QA Inspector randomly observed the ABF welder Chun Fai Tsui performing the root/fill/cover pass, in an attempt to lock the corner of the weld joints identified above in place. The QA Inspector noted the above identified weld procedure was repeated at the opposite end identified as the "A" to "F" corner joint.

The QA Inspector was approached by the SE Lead QC Inspector Leonard Cross and the ABF Representative Chuck Kanapicki to perform the planar misalignment dimensional verifications. The QA Inspector noted the top deck plates were joined by welding at the corners as noted above as well as 75% of the steel backing bar was welded on both sides of the weld joint. The QA Inspector and the SE QC Inspector Bnifacio Daquinag performed the dimensional verifications simultaneously while Mr. Cross and Mr. Kanapicki looked on. After the dimensional measurements were completed the QA Inspector noted significant planar misalignment was noted through out the full length of the weld joint. The QA Inspector was informed by Mr. Callaghan no additional fitting could be performed at that time and the planar misalignment present will be correct by welding. The following dimensional measurements or reading were recorded both by the QA and QC Inspector, and signed and concurred with by Leonard Cross:

y=0mm-250mm 2-5-2mm misalignment (250mm in length)
y=6000mm-7000mm 2-5-4-3.5-2mm misalignment (1000mm in length)
y=7210mm-7580mm 2-4-2mm misalignment (370mm in length)
y=8050mm-9120mm 2-3-4-5-6-2mm misalignment (1070mm in length)
y=9420mm-10250mm 2-6-5-2mm misalignment (830mm in length)
y=10440mm-10865mm 2-3-2mm misalignment (425mm in length)
y=11015mm-11175mm 2-3-2mm misalignment (160-mm in length)
y=17180mm-17555mm 2-4-5-2mm misalignment (375mm in length)

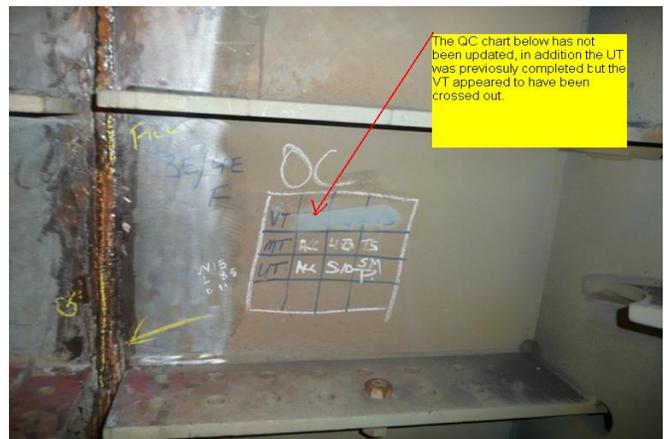
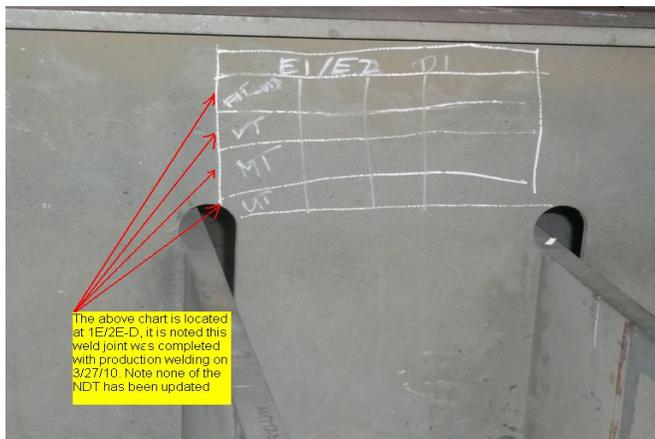
WELDING INSPECTION REPORT

(Continued Page 3 of 3)

- y=17600mm-17820mm 2-5-2mm misalignment (220mm in length)
- y=17910mm-18080mm 2-3-2mm misalignment (170mm in length)
- y=22380mm-22545mm 2-3-2mm misalignment (165mm in length)
- y=22710mm-23150mm 2-6-3-4-2mm misalignment (440mm in length)
- y=23310mm-23480mm 2-4-2mm misalignment (170mm in length)
- y=27045mm-27220mm 2-3-2mm misalignment (175mm in length)

The QA Inspector noted the total planar misalignment was 5820mm or 21.3% of the total length of the weld joint.

The QA Inspector Rick Bettencourt and the QA Inspector Mike Foerder randomly observed all of the QC NDT status charts in an attempt to determine the status of several weld joints with outstanding weld repairs. After the review of the charts was completed it was noted by both inspectors the charts were not all updated thus it was not possible to accurately determine the status of the NDT performed by the SE QC Inspectors. Pictured below is an example of an NDT chart that does not appear to be completed.



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