

**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 #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030078**Date Inspected:** 01-Oct-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Tony Sherwood, Bernie Docena	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A

**Bridge No:** 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Quality Assurance Inspector Simion Ramirez (QA Inspector) arrived at job site. QA Inspector performed random QA visual testing (VT) and non-destructive testing (NDT) of ongoing ABF production work. QC Inspectors verified joint fit-up and pre-heat and checked electrical welding parameters of each welder at the start of shift and randomly until the end of shift. Welding procedure specifications (WPS) for complete joint penetration (CJP) welds and partial joint penetration (PJP) were available for reference on site. Caltrans QA Inspector random observation of quality control functions are noted below:

Tower Skirt: In Process Welds, Skirt Base Plate Jt's #001, Skirt Plate #2 #156 W. Shaft, Skirt Plate #1 #155 West and #155 North Shaft

ABF personnel continued fit-up and welding of joints #001 CJP and #156 W, PJP splice welds noted above. WPS #ABF-WPS-D15-2030-1 and ABF-D15-2140-3 for flux core arc welding (FCAW) was utilized by QC Inspectors. ABF personnel installed backing bar plate (9mm x 38mm) at base plate, and QC Inspector verified fit-up complied with specified tolerance. Approved welder installed stringer passes and operated welding equipment within WPS electrical parameters. Weld run-off tabs will be removed and ground flush with tips of base plate. The preliminary alignment for Skirt Plate #1 weld joints 155 west and 155 north leaves an excessive root gap which requires the contractor to submit a field survey of actual gaps and proposed resolution, reference ABF-RFI-003417R02. Be advised that the backing bar for joint #001 and #002 will remain in place, in accordance with RFI# ABF-RFI-003417R00.

- The weld joint fit-up and alignment was checked with a straight edge and bridge cam gauge.
- Pre-heat was performed with a rosebud torch and verified by QC with temperature stick (250°F).
- Welding was performed by approved welders (Kit Li & Rich Clayborn).

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# WELDING INSPECTION REPORT

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- Electrical parameter check results for Kit Li (20.5 volts / 315 amps), Rick Clayborn (20.5V / 275A).
- The weld procedure and joint details utilized (FWT22) is CJP weld, (FWT19) is for PJP weld.
- Electrode utilized is FCAW NR-232, .072" diameter.
- Weld passes were de-slugged by grinder and wire wheel.

Tower Skirt: NDT Weld Jt's, Base Pl. #001, #002 CJP Splice, Skirt Plate #2 Jt #156 PJP S. Shaft  
Weld crowns of CJP welds are in the as welded condition with 1/16" reinforcing on face side. After 24 hour hold period, QC Inspector performed VT and MT on 100% of weld #002 exterior face and weld ends and 25% of #156 face. QC deemed results acceptable. QC performed MT inspection of CJP weld #001 root pass, QC found no rejectable indications. CJP weld #001 remains in progress. QA Inspector performed verification MT on approximately 10% of QC inspected areas. QA test results are in general compliance with project specifications. Reference QA NDT reports for details.

### Summary of Conversations:

QCI informed QAI that documentation would be submitted to the Engineer for the excessive gaps at skirt plate #1 joint #'s 155 West and 155 North.

QC MT root pass at #001 base plate splice.



Pre-heat at #001 base plate splice prior to welding.



### 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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

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**Inspected By:** Ramirez, Simion

Quality Assurance Inspector

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**Reviewed By:** Riley, Ken

QA Reviewer