DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 74.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-028903
Date Inspected: 18-Dec-2012

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

OSM Arrival Time: 630
OSM Departure Time: 1700
Location: Trentham, UK

CWI Name: Fred Hawksworth

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☐ Yes	☑ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☐ Yes	☑ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Type B16 Cable Bands

Summary of Items Observed:

The Quality Assurance (QA) Inspector Art Peterson arrived at Goodwin International (GI) Machine Shop in Trentham, United Kingdom to observe the minor repair weld operation being performed on the sides of the Male and Female sections of Type B16 supplementary cable band casting #9 due to weld undercut visually observed after the removal of the fillet welds where the temporary attachments- (square tubing) were attached to the sides of the cable band casting.

The manufacturing of the Type B16 supplementary cable bands are part of a risk management strategy to address the concern with certain cable band gaps closing up as the work is progressing on-site during the main cable load transfer to the orthotropic box girders. The following items observed on this date were:

Type B16 Cable Band Casting Supplemental #9 (Male Section) and (Female Section):
The QA Inspector randomly observed GI welding personnel Ryan Bielawa preparing to perform the minor repair welding per the Shielded Metal Arc Welding (SMAW) process in the (2G) horizontal and (3G) vertical position on the sides of the Type B16 supplemental cable band casting #9 on both the Male and Female sections of the cable band casting.

The minor repair welding will be performed to repair weld undercut – (< 2 mm x approximately 75 ~ 100 mm in length) at six (6) locations on both sides of the Male and Female sections of the cable band casting where the temporary attachments – (square tubing) were located as part of GI's distortion control plan to minimize distortion from the major repair welding performed on the Male section of the cable band casting.

The QA Inspector verified the dimensions of the six (6) excavated areas on each side on both the Male and Female sections as mentioned above and the excavation dimensions at each location were classified as minor weld repairs against the weld excavation maps dimensions recorded by GI's Quality Control (QC) Coordinator Chris Ryder. Afterwards, the minor weld repair excavation map was forwarded to Goodwin Steel Casting's Quality Assurance Manager Jason Cross who will forward the weld excavation maps along with the minor weld repair submittal to American Bridge/Fluor (ABF) for review and written approval by the Caltrans Engineer.

Prior to the start of the minor repair weld operation, the QA Inspector observed the cable band casting Male and Female sections being preheated by GI welding personnel Ryan Bielawa to a minimum temperature listed in WPS 04-0120F4A Issue 5 of 160 degrees Celsius and Ryan Bielawa utilized the 175 degree Celsius tempilstik to ensure at least the minimum temperature was maintained in an area of at least 75 mm around the perimeter of the six (6) minor repair weld areas on each side of the Male and Female sections of the cable band casting prior to the start of the minor repair weld operation.

Afterwards, GI welding personnel Ryan Bielawa performed the minor weld repair operation at each of the excavated areas per the SMAW process in the (2G) horizontal and (3G) vertical positions and this QA Inspector verified that the welding parameters – (Amps) were observed to be between the minimum of (80) and maximum of (140) on the welding machine's calibrated meter utilizing the (3.2) mm diameter E7018 electrode – (Certification of electrode #2012/0369) as per approved WPS 04-0120F4A Issue 5.

The minor repair weld operation performed at the six (6) locations on each side of the Male and Female sections of the Type B16 supplemental cable band casting #9 appeared to be in general compliance with WPS 04-0120F4A Issue 5. The repair weld operation was completed by the end of this QA Inspector's shift.

Afterwards, the minor repair weld areas were ground smooth on each side of the cable band casting's section and this QA Inspector observed CWI Fred Hawksworth perform a visual inspection of the minor repair weld areas on both the Male and Female sections of the cable band casting for compliance with the visual requirements of MSS SP 55.

This QA Inspector also performed a random visual inspection of the minor repair weld areas on both the Male and Female sections of the cable band casting and the random visual inspection appeared to be in general compliance with the visual requirements in MSS SP 55.

WELDING INSPECTION REPORT

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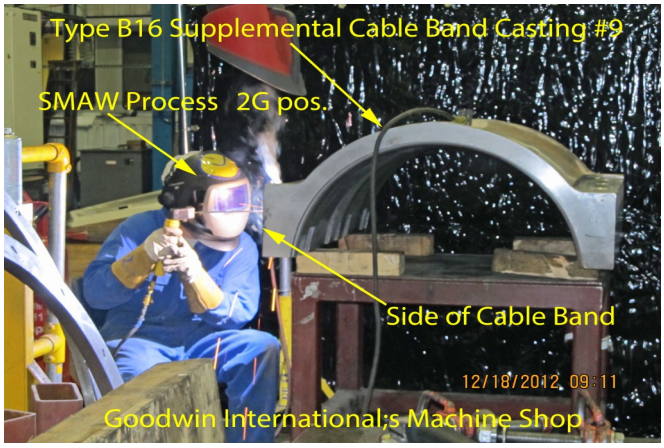

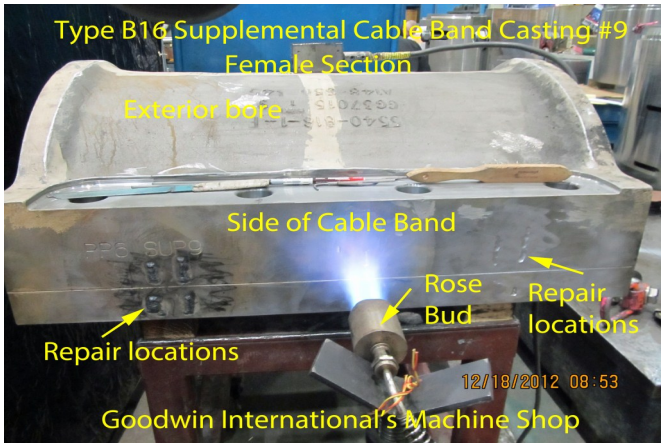

Summary of Conversations:

Except as noted above, only general conversations between this QA Inspector and GI's welding and inspection personnel relevant to the minor repair weld operation performed on the Type B16 supplemental cable band casting #9.

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.

Inspected By:	Peterson,Art	Quality Assurance Inspector
Reviewed By:	Foerder,Mike	QA Reviewer