

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 #: 74.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007141**Date Inspected:** 12-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Goodwin Steel, UK**Location:** Stoke on Trent, UK

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|------------------------------------|------------|----------------------------------|------------|----|
| CWI Name: | N/A | 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: | Cable Band | |

Summary of Items Observed:

The following report is based on METS observations at Goodwin Foundry in Stoke on Trent and Goodwin International Machine shop in Trentham, England.

Magnetic Particle Testing

QA inspector observed, Goodwin Steel Castings NDT Level II technician Mr. Alan Banks perform Magnetic Particle testing (MT) of Cable Band casting B10/F, GG29417-7. The MT was performed in accordance with ASTM standard E709 and Goodwin Steel Castings Magnetic Particle Procedure for Cable Band Castings MT06-09-02 revision 1, using the prod method with leach magnet contacts. Wet florescent magnetic particles were utilized. The direct current magnetizing current appeared to be approximately 1,600 amps. Several relevant indications were located by Mr. Banks. These indications were evaluated by Mr. Banks in accordance with ASTM E125 and Goodwin Steel Castings Magnetic Particle Procedure for Cable Band Castings, MT06-09-02 revision 1. Indications found to be rejectable in accordance with MT-06-09-02 were marked for excavation and reported. The testing was not completed on this date and the Quality Assurance Inspector did concur with Mr. Bank's inspection results.

Repair

QA inspector witnessed repair welding of casting B7/M-1, GG29430-1 as submitted in ABF-SUB-000366 Rev. 33.

The welder, Adam Migas, was observed welding in the flat position utilizing approved welding procedure WPS04-0120F4B. Parameters were observed to be within the limits of the WPS.

Documents received and reviewed

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The QA inspector received a copy of the Goodwin Steel Castings "Weld Excavation Map" for casting GG29416-8, B1/M-8, Revision 2. The Weld Excavation Map, was reviewed for accuracy and compliance with contract documents. This third repair cycle of two additional repair locations is a minor repair and requires no post weld heat treatment. Caltrans Lot Number B228-021-09 was assigned for tracking purposes.

Dressing

Two Goodwin employees were observed removing excess material from the exterior surfaces of castings GG29417-4 and GG29439-1. The exterior surfaces of the castings were dressed by grinding. Work was not completed on this date and appears to meet the minimum requirements of the contract documents.

Fettle

Two Goodwin employees were observed removing riser material from the exterior surface of one Type 1 cable band casting and one Type 2 cable band casting. The material was removed utilizing an Oxygen Fuel Gas Torch method. Work was not completed on this date and appears to meet the minimum requirements of the contract documents.

Radiography

The QA inspector witnessed radiography performed by Goodwin Steel Castings. Mr. Scott Bennett performed radiography on casting GG29434-1, B8/F-1, a type 2 cable band. The casting was radiographed using a single wall exposure. The radiographs were performed using a 3.2mm effective focal spot size, 8MEV linear accelerator. The source to film distance was maintained at 2,500mm. Number 40 to 80 hole type and Set 1C or 1D wire type image quality indicators were placed source side on each different thickness radiographed. AGFA type D4 and D7 film of various sizes were used for single and composite views to cover the range of thicknesses. Radiography of this casting was not completed on this date. Radiography of the main body outside the suspender grooves was performed by Applied Inspections.

During the shift this cable band was removed from the shooting bay and casting GG29433-2, B8/F, a type 1 cable band was put in the shooting bay. Mr. Scott Bennett reported that only the bolting flange areas were to be radiographed and not the full volume of the casting as this type and model of cable band has had the casting method revised after the initial radiographic acceptance of Casting GG29433-1.

Machine

The QA inspector periodically observed the in process machining of casting B14/CBT, GG29446-1. Interior of this casting was being machined on a horizontal mill. Goodwin International personnel performed the machining. The remainder of the type B14 cable bands are at the machine shop awaiting start of final machining.

Summary of Conversations:

METS met with Mr. Kevin James, Goodwin International Technical Director who reviewed the drawing control system with this QA inspector. Mr. James stated that the approved drawings are maintained in his office with a Document transmittal record tracking the latest revision. Due to issues with printing quality copies of the stamped drawings, copies of the original submitted drawings are used in the machine shop. These drawings are controlled by Mr. James. Both RFI number 1724 and 1725 have been detailed and noted on the drawings in use at this time. Mr. James reported that Goodwin was in process of having the drawings revised for re-submittal at this time.

METS met with Mr. Jason Cross, Goodwin Foundry Quality Assurance Manager. Mr. Cross reported that Goodwin Steel had been in discussions with BST about requirements of the cable band bolt assembly marking

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requirements in accordance with ASTM requirements. Mr. Cross was referred to the contract special provisions for information on the required marking.

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: | Lanz,Joe | Quality Assurance Inspector |
| Reviewed By: | Levell,Bill | QA Reviewer |
