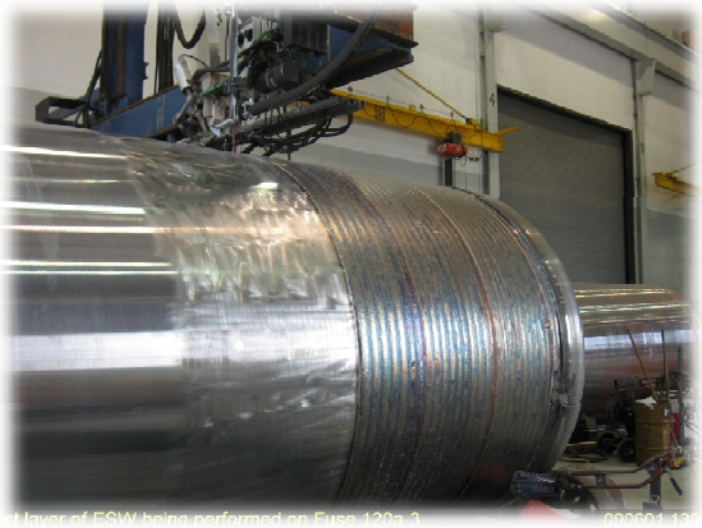
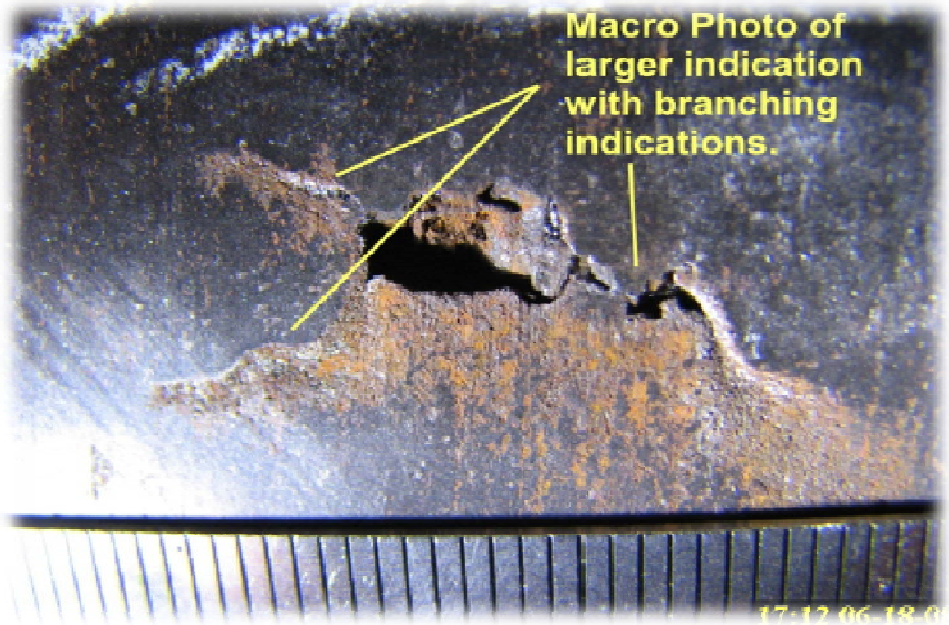


NOPC #6

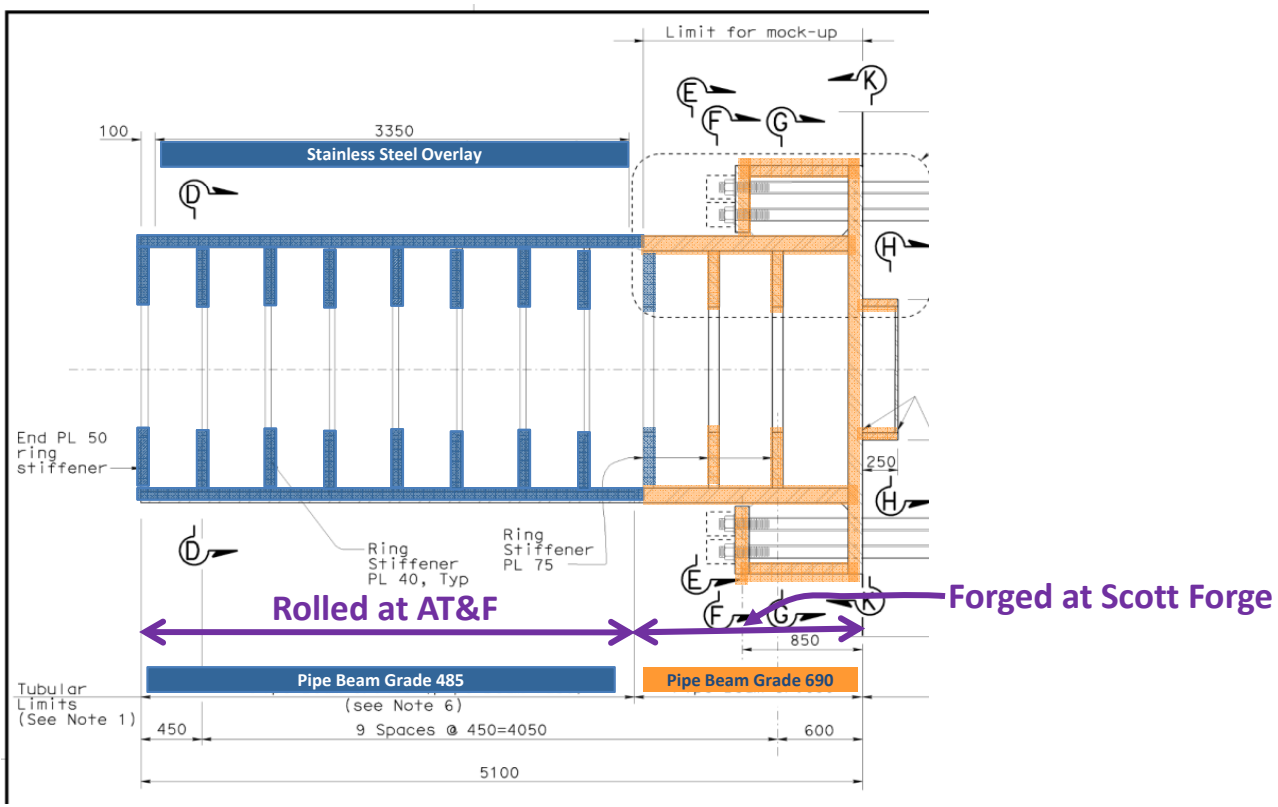
OIW Claim regarding Hinge K Alternative Fabrication Procedure Submittal Approval Process



OIW Contract work

- ABF Subcontracts OIW to provide Hinge K Pipe Beams - Special Provision 10-1.59

Item 62 (F) – Furnish Structural Steel (Bridge) (Pipe Beam)	$9,880,000
Item 65 (F) – Furnish Structural Steel (Bridge) (Spare Pipe Beam Fuses)	$400,000
Total Contract Item -Furnish Hinge Pipe Beams (8)	**$10,280,000**



CCO 15
Removes HPB from Critical Path

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Page 1 of 20

CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO: 15	Suppl. No. 0	Contract No. 04 - 0120F4	Road SF-80-13.2/13.9	FED. AID LOC.:

To: AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENT

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. ***NOTE: This change order is not effective until approved by the Engineer.***

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

Adjustment of Compensation at Lump Sum:

Allow the construction of the W2 Cap Beam before the placement of the Hinge K Pipe Beam Assembly and address Contractor Request For Information (RFI's) 130R0, 132R0, 134R0, 246R0, 246R1, 275R0, 275R2, 304R0, 311R0, 400R0, 406R0, 421R0 and 617R0 as shown on Sheets Two (2) through Twenty (20) of this change order.

The following revised sheets detail all changes:

Contract Plan Sheet Nos. 459R2, 460R2, 461R2, 471R2, 497S25R1, 730R1, 740R1, 765R1, 766R1, 767R1, 768R1, 769R1, 791R1, 842R1, 843R1, 844R1, 845R1, 913R1 and 980R1 (of 1204).

For this work the Contractor shall receive and accept the sum of $230,285.00. This sum constitutes full and complete compensation for furnishing all labor, material, tools and incidentals including all markups by reason of this change.

There is no adjustment of contract time for this change.

Cost of Adjustment of Compensation at Lump Sum $230,285.00

Estimated Cost: Increase ☑ Decrease ☐ $230,285.00

By reason of this order the time of completion will be adjusted as follows: 0 days

Submitted by

Signature	Resident Engineer	Date
Gilel Kelbanov	Gil Kelbanov for Gary Purcell, RE	12/11/2007

Approval Recommended by

Signature	Supervising Bridge Engineer	Date
[illegible]	Richard Morrow, P.E., Sup. BE	12/6/2007

Engineer Approval by

Signature	Supervising Transportation Engineer	Date
Gary Purcell	Gary Purcell, P.E., Sup. TE	1/9/2008

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by

Signature	(Print name and title)	Date
[illegible]	Michael D. Flowers Project Director	12-18-07

- ABF submits a CRIP on 7/14/2006 to have Blockouts on W2 for HPB. CRIP denied but concept agreed to in CCO 15.
- Covers several RFI and provides minor modifications and allows blockouts for hinge K
- ATP in STL 197 issued 4/11/07
- CCO 15 Signed on 12/18/07
- No mention of delays or impacts from OIW

•**January 30, 2008 schedule meeting notes – "**ABF indicated that they are waiting for OIW "Hinge K" schedule to report on the status of "Hinge K". To-date ABF has rejected OIW's schedule and are awaiting a revision. ABF may prepare a schedule themselves and send it to OIW for their review and update. ABF would prefer that OIW make their own schedule to be incorporated in the project schedule.

Ask ABF to provide OIW schedules.

CCO 22
Requires "Hinge K Assembly" Fab Proced

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Page 1 of 8

CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO 22	Suppl. No. 0	Contract No. 04 - 0120F4	Road SF-80-13.2/13.9	FED. AID LOC.:

To: AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENT

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. ***NOTE: This change order is not effective until approved by the Engineer.***

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

Extra Work at Lump Sum:

1. Revise Contract Plan Sheet Numbers 521, 629 and 651 (of 1204), with Contract Plan Sheet Numbers 521R1, 629R1 and 651R1 (of 1204), as shown in this change order.

2. Revise Item 3 of the fifth paragraph in Section 10-1.44, "CABLE TIE-DOWN", of the Special Provisions, as shown in this change order.

3. Revise the third paragraph of the Special Provisions, Section 10-1.59, "STEEL STRUCTURES", subsection "FABRICATION", subsection "Fabrication/Erection Procedure and Mock-Ups", by adding (2) new additional locations "R" and "S" requiring fabrication and erection procedures, as shown below:
   "R. Tower Saddle
   S. Hinge K Assembly"

4. Revise the nondestructive testing (NDT) table of the Special Provisions, Section 10-1.59, "STEEL STRUCTURES", subsection "INSPECTION AND TESTING", as shown in this change order (changes shown in bold italics).

5. Revise Note 9 and Add Note 14 to the NDT table shown in the Special Provisions, Section 10-1.59, "STEEL STRUCTURES", subsection "INSPECTION AND TESTING", as shown in this change order.

For this work, the contractor will be paid the sum of $61,050.00. This sum constitutes full compensation, including markups, for this change.

Estimated cost of Extra Work at Lump Sum $61,050.00

Estimated Cost: Increase ☑ Decrease ☐ $61,050.00

By reason of this order the time of completion will be adjusted as follows: 0 days

Submitted by

Signature	Resident Engineer: Gary Pursell, P.E., Sup.T.E.	Date 1/23/07

Approval Recommended by

Signature	Construction Engineer: Gary Pursell, P.E., Sup T.E.	Date 2/9/07

Engineer Approval by

Signature	(Print name and title) Gary Pursell, P.E., Sup T.E. - Construction Engineer	Date 2/9/07

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

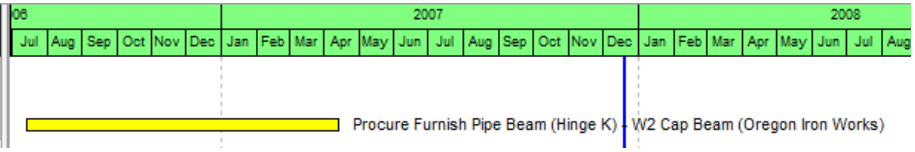
Contractor Acceptance by

Signature	(Print name and title) Michael D. Flowers Project Director	Date 2-1-07

- Added hinge K fabrication procedures and modified NDT requirements
- Total agreed cost $61,050
- Signed on Feb 1, 2007
- ATP to ABF on July 20, 2006 (STL 37)
- No mention of delays or impacts from OIW

When did ABFJV Award Hinge K Work to OIW

Activity ID	Activity Description	Start	Finish	OD
SAS Project - Update 15 dd 12/20/07 rev 0		14-Jul-06 A	13-Apr-07 A	64
Working Drawing and Fab Proced		14-Jul-06 A	13-Apr-07 A	64
W2MOB000090	Procure Furnish Pipe Beam (Hinge K) - W2 Cap Beam (Oregon Iron Works)	14-Jul-06 A	13-Apr-07 A	64



American Bridge / FLUOR
A JOINT VENTURE

375 Burma Road
Oakland, CA 94607 USA
Phone 510-808-4600
Fax 510-808-4601

23-May-2007 ABF-CAL-LTR-000189

Mr. Gary Pursell, P.E.
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: **San Francisco Oakland Bay SAS Bridge Superstructure**
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: **SPECIAL PROVISIONS SECTION 2-1.08 ESCROW OF BID DOCUMENTATION SUBMISSION OF ABF AGREEMENT WITH OREGON IRON WORKS, INC.**

Gentlemen:

In accordance with the requirements of Special Provisions Section 2-1.08 – Escrow of Bid Documentation, American Bridge/Fluor Enterprises, Inc. A Joint Venture (ABF) hereby submits, within the attached sealed envelope, one (1) copy of the following executed Agreement between ABF and the party noted for the above referenced project.

Agreement: Supply Agreement 660110-SA-002 between ABF and Oregon Iron Works, Inc.
Date of Agreement: 30 March, 2007
Date Fully Executed: 13 April, 2007

Should you have any questions regarding the above, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE

<<< ORIGINAL SIGNED >>>
Michael Flowers
Project Director

MF/km

Encl: Agreement in sealed envelope

File: 02.01

cc: W. Felker (copy and attachments)

OREGON IRON WORKS, INC.

9700 S.E. LAWNFIELD ROAD • CLACKAMAS, OREGON 97015
TELEPHONE (503) 653-6300 • FAX (503) 653-5870

August 12, 2011

American Bridge/Fluor , J.V.
375 Burma Rd
Oakland, CA 94607

Reply to: SL-2244-00068

Attention: **Michael Flowers**

Contract: **Hinge K Pipe Beams**
Contract No. CALTRANS CONTRACT NO. 04-0120F4

Subject: **Notice of Potential Claim No. 6**

Dear Mr. Flowers,

This letter is regarding Oregon Iron Work's (OIW) Notice of Potential Claim No. 6 (NOPC 6), for the Hinge K Pipe Beam work on the above noted contract. OIW is forwarding this final documentation of NOPC 6 to resolve the significant delays for this work and the cost associated with those delays.

OIW was awarded the Hinge K work in July 2006, and entered into a contract with American Bridge/Flour Enterprises Inc., a Joint Venture ("ABF") for the performance of this work. OIW was very familiar with the project and had previously bid several other portions of the work, including the Hinge A Pipe Beams. OIW was also aware of the severe quality and cost impacts to Caltrans regarding the Hinge A rolled plate fuse assemblies supplied by Trans Bay.

When OIW bid the Hinge K work, the project was on a short, 17 month timeline. This timeline was a major cost factor in preparing OIW's proposal. When OIW was awarded the work, it was scheduled according to this timeline. Although Caltrans later extended the delivery date at ABF's request, OIW remained committed to the original schedule it bid and planned its work accordingly. OIW was aware that any delay would increase costs, including labor rates, overhead costs, and project management, considering the other work planned for the shop and the need to work around a busy shop schedule that allocated 17 months to this project.

As soon as ABF awarded the work, OIW's manufacturing team evaluated the fabrication means, methods and failures experienced in the Hinge A Pipe Beam tubulars and determined that the failures were due to improper forming and welding technique. OIW then proposed the

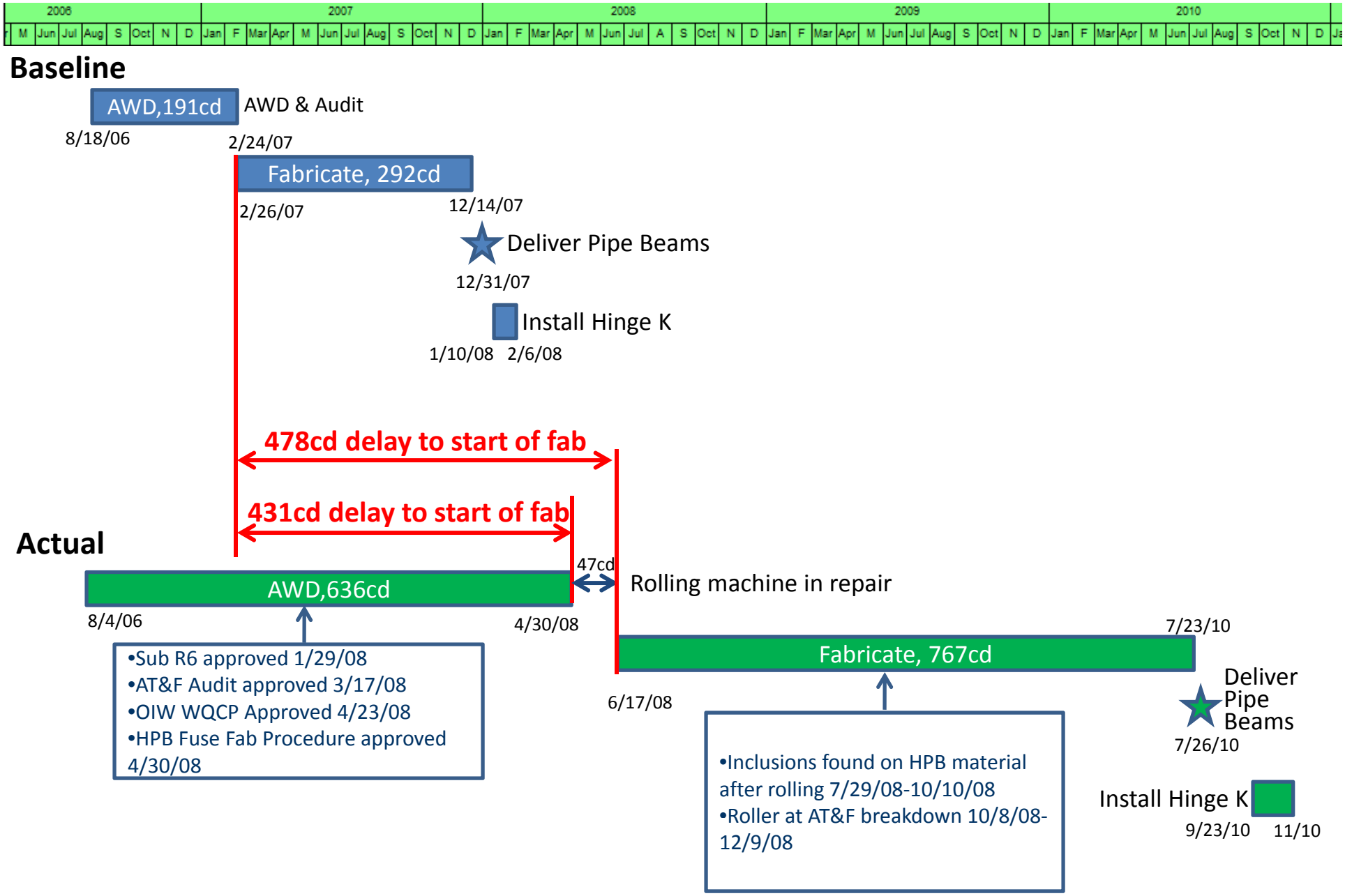
Contract Deviations Requested by ABF/OIW

1. Forging vs Rolling

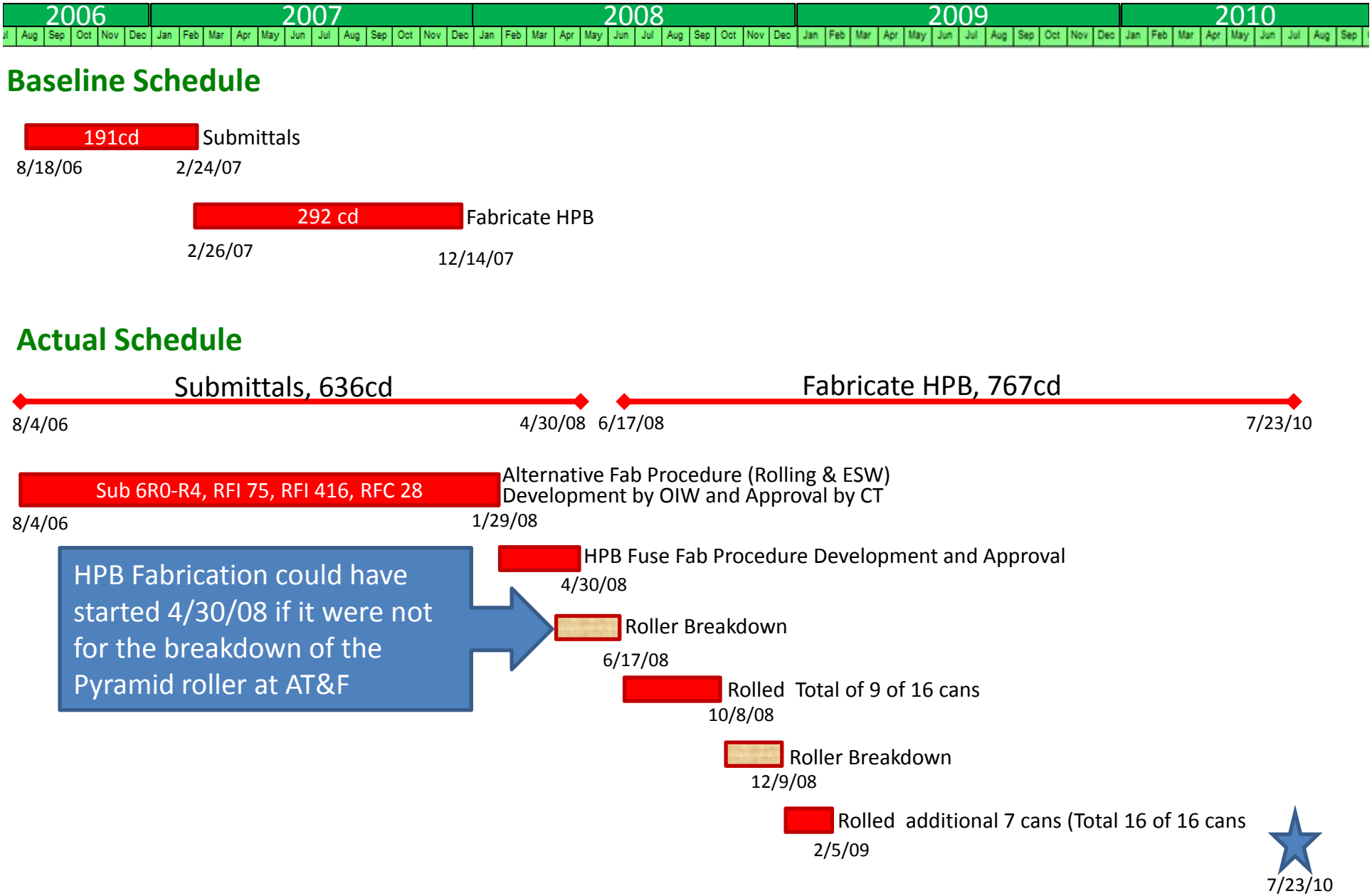
- <u>SP 10-1.59 Steel Structures, Hinge K Pipe Beam</u>
  "Pipe beam tubulars shall be forgings. The Contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to review and approval of the Engineer."

2. SAW overlay vs ESW overlay

- <u>SP 10-1.59 Steel Structures, Hinge K Pipe Beam</u>
  "Welding of the pipe beam groove welds and stainless steel overlay shall be made using the SAW process unless otherwise approved by the Engineer."


2006
2007
2008
2009
2010
Baseline
AWD,191cd
AWD & Audit
8/18/06
2/24/07
Fabricate, 292cd
2/26/07
12/14/07
Deliver Pipe Beams
12/31/07
Install Hinge K
1/10/08
2/6/08
478cd delay to start of fab
431cd delay to start of fab
Actual
47cd
Rolling machine in repair
AWD,636cd
8/4/06
4/30/08
•Sub R6 approved 1/29/08
•AT&F Audit approved 3/17/08
•OIW WQCP Approved 4/23/08
•HPB Fuse Fab Procedure approved 4/30/08
7/23/10
Fabricate, 767cd
6/17/08
Deliver Pipe Beams
7/26/10
•Inclusions found on HPB material after rolling 7/29/08-10/10/08
•Roller at AT&F breakdown 10/8/08-12/9/08
Install Hinge K
9/23/10
11/10

Critical Path to Start of HPB Fabrication

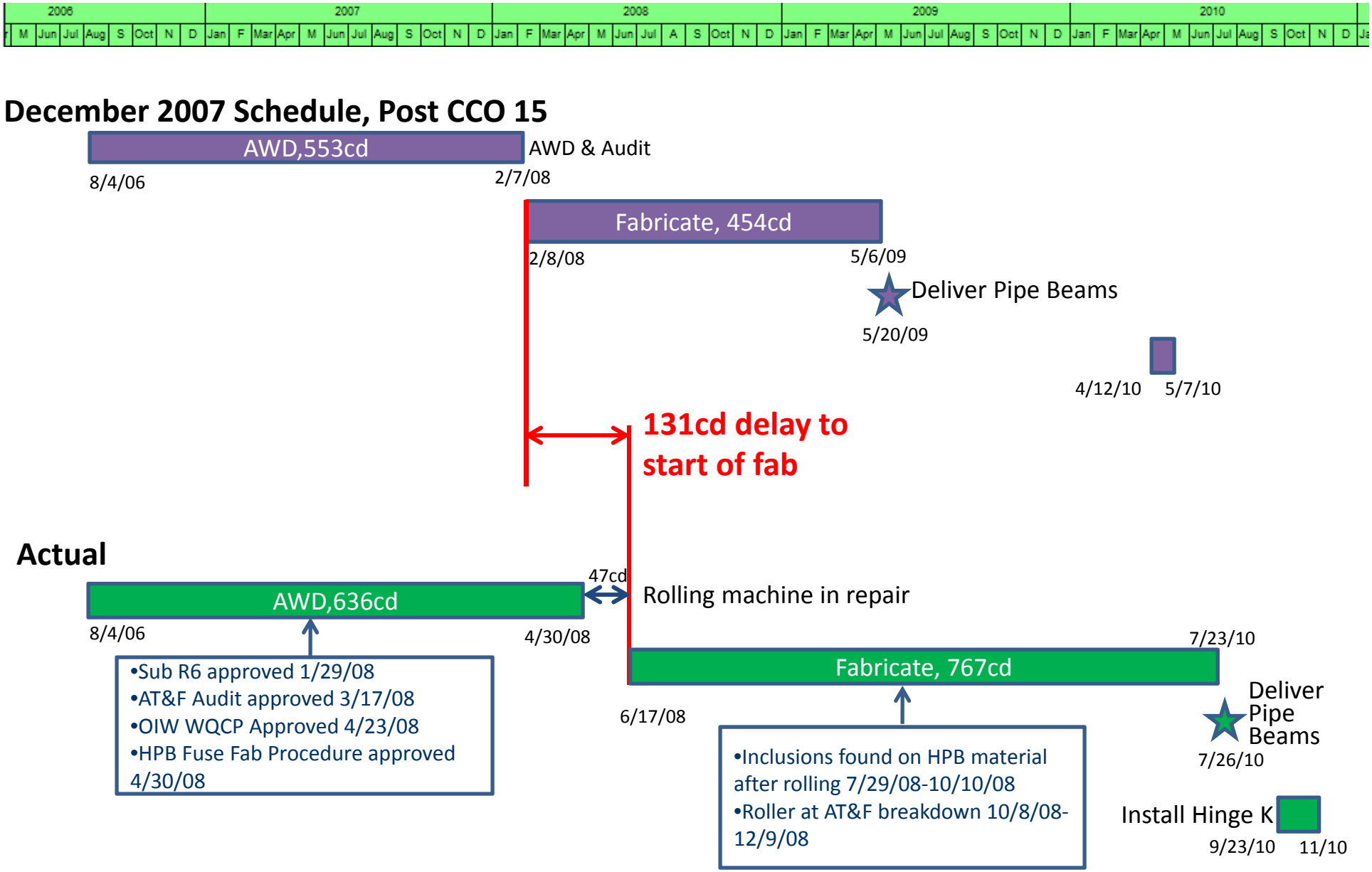


OIW Delay Accounting

Baseline Schedule	
Baseline Start of Fabrication	2/26/2007
Actual Start of Fabrication	6/17/2008
Fabrication Delay (Actual-Baseline, 7day Cal)	**478**

Actual Durations of ABF Preparation of Alternative Fab Procedure vs CT Response Time

	Start	**Finish**	**Duration (7dCal)**	**Contractual CT Response Time**	**Actual CT Response Time**	**CT Delay=** Actual-Contractual Response Time
ABF Prepares Sub 6R0 and submits on 9/20/06	08/11/06	09/20/06	41	50	19	-31
ABF Prepares Sub 6R1 and submits on 5/2/07	10/11/06	05/02/07	204	31	22	-9
ABF Prepares Sub 6R2 and submits on 9/20/07	05/25/07	09/20/07	119	14	8	-6
ABF Prepares Sub 6R3 and submits on 11/14/07	09/29/07	11/14/07	47	14	20	6
ABF Prepares Sub 6R4 and submits on 1/11/08	12/05/07	01/11/08	38	14	18	4
OIW Total Prep Time of Submittal 6			**449**			
OIW Delay after Sub R04 was approved			**141**			
Total OIW Delay			**590**			
Total CT Review Delay						**-36**


2006
2007
2008
2009
2010
December 2007 Schedule, Post CCO 15
AWD,553cd
AWD & Audit
8/4/06
2/7/08
Fabricate, 454cd
2/8/08
5/6/09
Deliver Pipe Beams
5/20/09
4/12/10
5/7/10
131cd delay to start of fab
Actual
47cd
AWD,636cd
Rolling machine in repair
8/4/06
4/30/08
7/23/10
Fabricate, 767cd
6/17/08
•Sub R6 approved 1/29/08
•AT&F Audit approved 3/17/08
•OIW WQCP Approved 4/23/08
•HPB Fuse Fab Procedure approved 4/30/08
•Inclusions found on HPB material after rolling 7/29/08-10/10/08
•Roller at AT&F breakdown 10/8/08-12/9/08
Deliver Pipe Beams
7/26/10
Install Hinge K
9/23/10
11/10

Summary of Department's Position

1. The basis of OIW dispute as stated in the Initial NOPC dated December 26, 2007 appears to be the Department response time (or lack thereof) to OIW's RFI 000010R00. However, OIW's letter dated May 16, 2008, clarified that this RFI was actually a submittal transmitted to the Department by ABFJV via ABF-SUB-000006R4 dated January 11, 2008. The Department responded in 18 days.
2. OIW was notified of mockup requirement as early as August 2006
3. CCO 15 removed HPB fabrication from the CP allowing more time for fabrication. OIW claims to have remained committed to the original schedule. This level of productivity is not reflected in actual schedule.
4. Department did not require additional testing above and beyond the contractual requirements except for one check sample required for rolling similar to the Skyway contract.
5. The Department reviewed OIW's submittal within the allotted time period
6. The Department did not require Penetrant testing on the 16 plates at AT&F. Penetrant testing was only done on HPB after ESW per OIW's fab procedure
7. Preforming of plates using the rolls was OIW's plan per Submittal 6R01; this was not directed or insisted upon by the Department

RFI 10R00 vs Submittal 6R4

ABF-CAL-LTR-000401 NOPC 6
Basis of Claim

Dear Mr. Kick:

On February 13, 2007, Oregon Iron Works, Inc. (OIW) submitted RFI 000010R00, regarding the "Alternative material and design for Pipe Beam Fuse" as allowed under the Special Provisions for the fabrication of the pipe beam fuse members on page 314, subtitle "Hinge K Pipe Beam" where it states, *"Pipe beam tubulars shall be forgings. The contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to review and approval of the Engineer."*

Page 2 of 4

This letter serves as notice of potential claim. OIW recognizes that we are responsible for some delay in the initial submittal of our alternative for the hinge K pipe beam fuse. However, following our submittal on February 13, 2007, we believe that 40 days is a reasonable period (similar to CalTrans established duration for shop drawing approval) for review and approval by the Engineer. Therefore, we are submitting a claim of $523,800, or $1,940 per day for every day we have been delayed, for the impact we have experienced to date. For every day going forward that approval is delayed, OIW is impacted by an additional $1,940 per day and will invoice AB/F accordingly.

Page 3 of 4

TO	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Gary Pursell (resident engineer)	04-0120F4	12/26/07	~~CCN 2244-0000~~ 006

This is an Initial Notice of Potential Claim for additional compensation submitted as required under the provisions of Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications. The act of the engineer, or his/her failure to act, or the event, thing, occurrence, or other cause giving rise to the potential claim occurred on:

DATE: 3/25/2007

The particular nature and circumstances of this potential claim are described as follows:

February 13, 2007 Oregon Iron Works submitted RFI 000010R00, regarding the " Alternative as allowed for under Special Provisions section 10-1.59 page 314, subtitle " Hinge K Pipe Beam" to date this submission remains unresolved and as such OIW now exercises our right as specified in section 9-1.04 of the Special Provisions to file this Notice of Potential Claim for delay and disruption to the manufacturing of the Hinge K Pipe Beam.

Page 4 of 4

CT Response to ABF NOPC 6 Regarding RFI 000010R00

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

Flex your power
Be energy efficient!

March 17, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-001553

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Notice of Potential Claim (NOPC) 6

This letter is issued in response to ABF-CAL-LTR-000401, "Potential Claim Number 006, Submission of Initial Notice of Potential Claim for Submittal ABF-SUB-000006, Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K," dated January 03, 2008. The Department has no record of OIW RFI 000010R00 referenced in the initial NOPC, which appears to be the basis of the delay costs. Furthermore, the Department has not received the required supplemental notice, which was due as required by the contract, on or before January 18, 2008.

ABF-CAL-LTR-000541
May 19, 2008

OREGON IRON WORKS, INC.

9700 S.E. LAWNFIELD ROAD • CLACKAMAS, OREGON 97015
TELEPHONE (503) 653-6300 • FAX (503) 653-5870

AMERICAN BRIDGE/FLUOR , J.V.
375 Burma Rd
Oakland, CA 94607

Attention: **Bob Kick**

Reference: **Hinge K Contract Drawings**
Caltrans Contact No. 04-0120F4
Supply Agreement 660110-SA-002

Subject: **Caltrans Letter No. 05.03.01-001553**
Notice of Potential Claim (NOPC) 6

Dear Mr. Kick:

This letter is issued as Oregon Iron Works Inc. (OIW) response for the above referenced State Letter regarding the current status of "Potential Claim Number 006, Submission of Initial Notice of Potential Claim for Submittal ABF-SUB-000006, Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K," dated January 3, 2008.

The Department states they have no record of OIW RFI 000010R00 supporting document referenced by NOPC, # 6. This statement is true; AB/F renamed OIW's document and submitted the same to Caltrans as ABF-SUB-0000006R4. All further correspondence from OIW will reference both the OIW and ABF document control numbers to ensure better communication and cooperation between all parties.

American Bridge / FLUOR
A JOINT VENTURE

375 Burma Road Oakland CA 94607
Phone 510-808-4600 / Fax 510-808-4601

LETTER OF SUBMITTAL
SAS Superstructure Project

Run Date *11-Jan-08*
Time *3:56 PM*

Dated: 11-Jan-2008

SUBMITTAL No: ABF-SUB-000006 **Rev:** 4

To: Gary Pursell
California Department of Transportation
333 Burma Road
Oakland CA 94607
Phone: (510) 622-5100 Fax: (510) 622-5165

Co/Job # 660110
Contract # 04-0120F4
Sub/Supplier: OIW
Sub/Supplier No:

Subject: Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K

Special Provis. (SP) REF: 10-1.59
Standard Spec. (SS) REF:

Schedule ID:

RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☑ Drawing ☐ Plans ☐ Design Report
☐ Samples ☐ Certificates of compliance ☐ Calculations
☐ Payroll ☑ Specs ☐ Copy of Letter
☐ Change Order ☐ Schedule ☐ Invoice

Item	Date	Copies	Description	Drawing No	Rev	Subcon Dwg No	Status	Pages
01	11-Jan-08	6	Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K		4		Pending	50

Submittal 6R04 was submitted on Jan 11, 2008 and AAN on Jan 29, 2008 via State Letter 1221

ABF-CAL-LTR-000401 NOPC 6
Basis of Claim

Dear Mr. Kick:

On February 13, 2007, Oregon Iron Works, Inc. (OIW) submitted RFI 000010R00, regarding the "Alternative material and design for Pipe Beam Fuse" as allowed under the Special Provisions for the fabrication of the pipe beam fuse members on page 314, subtitle "Hinge K Pipe Beam" where it states, *"Pipe beam tubulars shall be forgings. The contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to review and approval of the Engineer."*

Page 2 of 4

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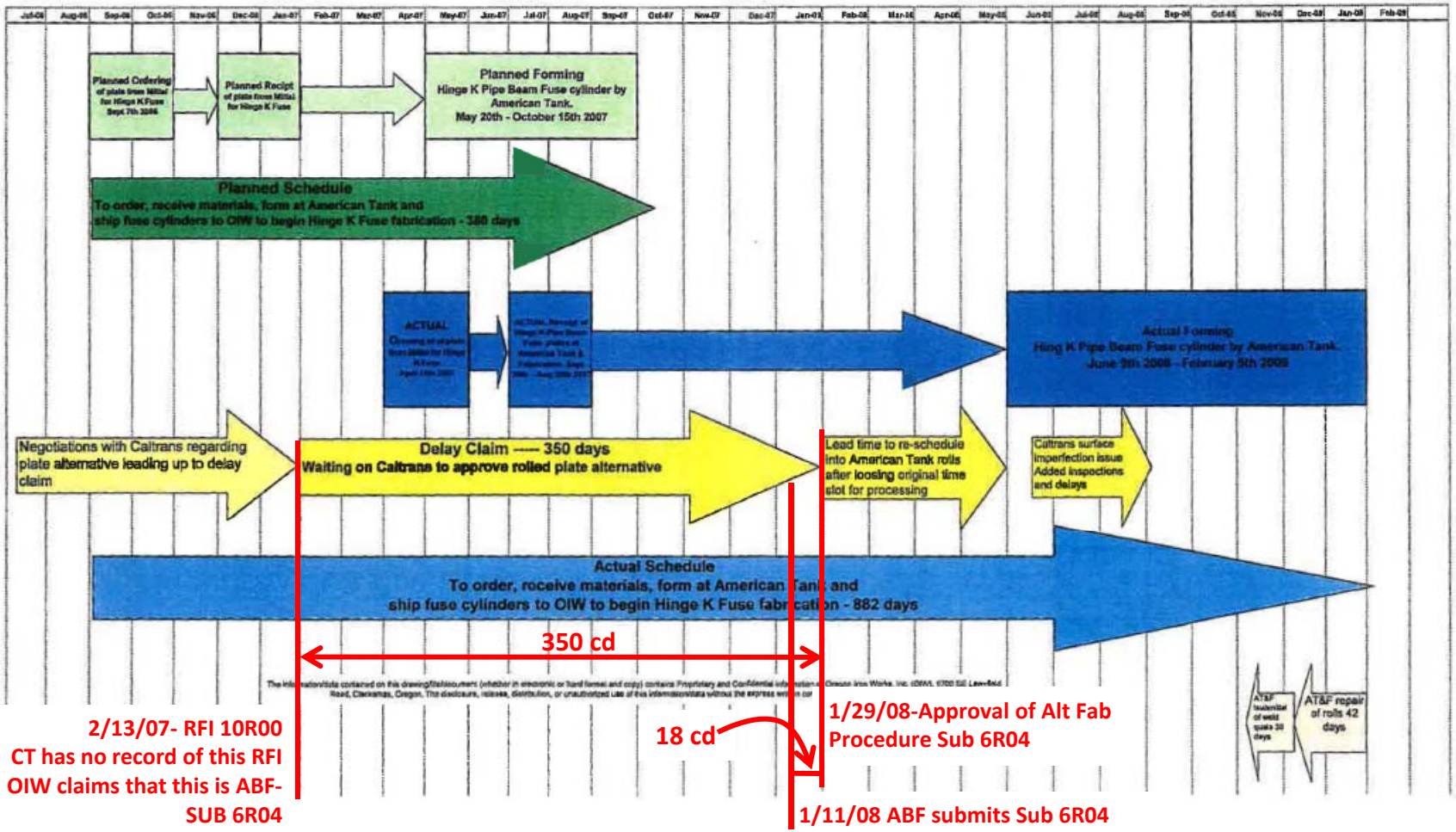
Page 3 of 4

- RFI 000010R00 (Feb 13,2007)= ABF-SUB-000006R04 (Jan 11, 2008)
- ABF Submittal 6R04 was approved on Jan 29, 2008

American Tank and Fabrication --- Planned forming schedule of Fuse Cylinders vs Actual forming schedule of Fuse Cylinders

Oakland Bay Bridge SAS Hinge K Pipe Beam Contract History — Delays re AT&F - post 1/29/08
Caltrans Project No. 04-0120F4
American Bridge / Flour Contract number: 660110-SA-002
Oregon Iron Works Job Number: 2244

OIW PO 2244-00008 issued to AT&F on 3/10/07 --- Original end delivery date was 10/15/07



Although some of the delay is attributable to OIW's decision to seek approval of an alternate fabrication method, the majority of the delay is Caltrans' failure to approve the method within a reasonable time.[2] OIW was not allowed to begin fabrication of the pipe beam tubulars for over 300 calendar days from the originally scheduled start date, which increased costs in all areas (Please see attached timeline of delay).

ABF-CAL-LTR-001625

Timeline Between August 4, 2006 and May 5, 2007

This period was left out in OIW's timeline

NOPC 6 Timeline
August 4, 2006- May 5, 2007

The following is a timeline, in chronological order, related to this extended approval process:

- August 4, 2006 thru December 1, 2006 - OIW submits detailed information for the alternate method. Caltrans responds with additional questions, conference calls and meetings. See detailed information for info between Aug 2006 and May 2007
- February 13, 2007 - OIW submits another extensive binder of information regarding the proposed rolled fabrication method. CT has no record of this info (OIW RFI 10R00)
- May 5, 2007 - No response received from Caltrans. OIW writes to Caltrans requesting a response to the alternative fabrication method. CT has no record of OIW letter. Submittal 6R01 submitted on May 2, 2007 and response provided on May 24, 2007 (STL 265.

ABF-CAL-LTR-001625, Aug 29, 2011

August 4, 2006- ABF submits RFI 75R00 requesting to roll base plate of fuse in lieu of forging and supply explosion bonded 316L plate in lieu of weld overlay.

August 11, 2006- CT responds to RFI 75R00 informing ABF that a formal submittal must be submitted for the approval of an alternate fabrication methods and materials

August 28, 2006- ABF submits RFI 75R01 with a brochure from DMC Clad Metal and answers to questions raised by the Dept in response to RFI 75R00.

September 6, 2006- CT responds to RFI 75R01 reiterating the response to RFI 75R00 where ABF was notified that a formal submittal would be required for the proposal to utilize an alternate fabrication method to the forging of the Hinge K pipe beams. This was reaffirmed in the meeting held on September 05, 2006 between Caltrans, DMC Clad Metal, OIW, and ABF.

September 20, 2006- ABF submits Submittal 6R0 "Alternative Material And Design for Hinge K Pipe Beam Fuse"

October 10, 2006- CT responds to submittal 6R0 in State Letter 48

December 11, 2006- ABF submits RFI 416R00 requesting to use ESW to perform the overlay

December 27, 2006- CT responds to RFI 416R00 with direction to submit an RFC, (Request For Change) for the use of ESW process to perform the 316L stainless steel weld overlay. In the RFC, please provide welding procedures and a mock-up, with sufficient size, to demonstrate 6 items.

February 28, 2007- OIW submitted RFC 28 requesting to use ESW in lieu of SAW to perform stainless steel overlay. OIW also included a mockup proced qual sample and responses to the 6 points of concern in CT response to RFI 416R0

March 7, 2007- CT responds to RFC 28 with the following: Acceptance of ESW procedure will be considered upon completion of acceptable mockup demo. Most concerns in RFI 416 were addressed in RFC, but would also like 4 addtl points addressed in Mockup demo and procedures.

May 2, 2007- ABF submits Submittal 6R01 (preparation time was 203 calendar days)

State Letter 48- October 10, 2006
CT Response to Submittal 6R0

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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October 10, 2006

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000048

Mr. Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94608

Dear Mr. Michael Flowers,

Alternative to Pipe Beam Forgings

The Department has reviewed the above referenced submittal. **Special Provisions Section 10-1.59, "STEEL STRUCTURES"**, subsection, **"Hinge K Pipe Beam"** states, "Pipe beam tubulars shall be forgings. The Contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to the review and approval of the Engineer." The fifth paragraph of this same section also states, "The stainless steel overlay shall be welded in the circumferential direction over the full specified pipe beam thickness using a procedure qualified for the Pipe Beam Grade 690 in accordance with AWSD 1.6." As such, the Department will be considering your proposal in two parts; 1) the rolling and welding of the tubular requiring approval of the Engineer and 2) the explosive bonding cladding of the stainless will be considered a contractor requested change order. The Department finds it acceptable to proceed with the proposed methods of rolling and welding hinge K pipe beams with the following conditions.

- As stated in the September 27th teleconference, all issues concerning the ultimate acceptance of the pipe beams for use on the contract are the responsibility of the Contractor, including impacts to schedule and additional costs. Acceptance is defined as meeting all provisions of the Contract Plans and Specifications in addition to changes contained in the final approved fabrication procedures and/or approved contract change orders.
- As discussed in the phone conference of September 27th, it was agreed that UT indications of lack of bonding of the Stainless Steel cladding would be held to less than 1 ½% of the bonded area and that further UT testing would be performed after rolling and would confirm that no additional bonding problems were occurring. Please confirm this understanding in writing through a revised NDT procedure.
- Acceptance of the pipe beam is contingent upon a full size mock-up that demonstrates through destructive testing that the fabricated material conforms to the contract requirements. If successful, this mock-up may be acceptable for use in the contract. Please confirm your intent to provide said mock-up.

State Letter 05.03.01-000048
American Bridge/Fluor Enterprises, a JV
October 10, 2006
Page 2 of 3

Contract: 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge

The Department has the following specific comments related to the submittal:

1. The OIW "Data Submittal / Specification No." sheet following the RFI sheet incorrectly states that the base metal for the tubular fuse is ASTM A709 HPS 485W. All tubulars are specified as forgings on the relevant plans and special provisions.
2. The DMC Clad Metal Quotation indicates nominal cladding metal thickness of both 12.7mm and 19mm. The 12.7mm thickness should be deleted to conform to the remainder of the submittal.
3. The DMC Clad Metal Quotation indicates under "Technical Requirements" that the welds will be "spot RT." This should be revised for job-specific NDT as mentioned above.
4. The DMC Clad Metal "information requested in email of 22 August 2006" sheet suggests Magnesium Melting Pots as a similar application example. These are apparently for a thinner cladding alloy layer but were formed after cladding. What was the severity of the forming for these? (e.g., D/t, or % outer fiber strain on interface and/or outside fiber). Were bond shear strength or A578 UT tests performed after forming?
5. The welding procedures do not evaluate the properties of the formed and welded joint. The special provisions provide requirements for Charpy V-Notch tests of the as-fabricated HAZ. Flat plates will not provide relevant data for the as fabricated condition because some degradation of toughness properties and tensile ductility is expected after forming. The weld procedures qualification test should use the thickest plates formed to the highest forming strain to provide this data. This could be a relatively small plate per D1.5 modified for the additional testing. It is recommended to use a full cylinder prototype is produced that can be used to provide all test specimens required for weld procedure qualification testing to D1.5 and the special provisions as well as demonstrate the process. Charpy V-Notch tests should be removed from the as-fabricated plate, coarse-grain heat affected zone and weld metal.

The Department requests the following considerations be addressed in your revised proposal:

Rolling

1. How many rolling cycles does the Contractor anticipate it will take to form the bonded plates into to a tubular section with the +/- 10 mm roundness tolerance proposed?
2. What effects will heating of the material have on the number of rolling cycles required to achieve the proposed +/- 10 mm tolerance?
3. Does American Tank have a detailed rolling procedure that will be followed for this project?
4. Will any rolling occur after the longitudinal seam has been welded? If so, how many cycles?
5. If re-rolling after welding is required, what precautions will the Contractor take to ensure the material is not damaged?
6. Will the edges of the bonded material be pre-formed? If so, how will this be accomplished?
7. What is the type and capacity of the roller to be used by American Tank?
8. What effect will heating the material have on the material properties of the steel?
9. What is the tempering temperature of the proposed A709, HPS 485W steel?
10. What destructive tests will be performed on a prototype to verify material properties? Where will the samples be taken?
11. What welding procedures will be used to weld the HPS 485W material? How will this be qualified?

State Letter 05.03.01-000048
American Bridge/Fluor Enterprises, a JV
October 10, 2006
Page 3 of 3

Contract: 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge

Overlay

12. How will the Contractor verify complete fusion between the SA-240-316L stainless steel and the HPS 485W material?
13. What welding procedures will be used to weld the 316L stainless steel together before bonding?
14. Does the Contractor have a written UT procedure to verify stainless steel bond after rolling?
15. What effect does the bonded surface have on the UT signal and does the UT inspection procedure address issues specific to clad plate and stainless steel to the extent relevant.?
16. What destructive tests will be performed on a prototype to verify fusion? How will these samples be selected and taken?

NDT

17. How far is the stainless steel overlay held back from the longitudinal weld joint?
18. Why did the Contractor not perform UT of the longitudinal weld?
19. How would the Contractor perform UT of the longitudinal weld seam?
20. What type of film will be used during the RT?

It is understood this information will be required prior to fabrication of the hinge pipe beams. The Contractor may, however, elect to begin material procurement or other preparations to expedite the work. In order to facilitate preparation of an associated CCO, please provide any cost, schedule, and/or risk ramifications for consideration in the CCO. If you have any questions please contact Stanley Ku at (510) 808-4542 or Chris Havel at (510) 808-4606.

Sincerely,

<<< ORIGINAL SIGNED >>>

GARY PURSELL
Resident Engineer

cc: Rick Morrow
file: 05.03.01, 55.0006

Submittal 6R0 included explosion bonded ASTM A240 plate in lieu of weld overlay.

State Letter 265- May 24, 2007
CT Response to Submittal 6R1

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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May 24, 2007

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000265

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 6 - Alternative Pipe Beam Fabrication Method

Submittal ABF-SUB-000006R01, "Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K," dated May 02, 2007 has been reviewed. As listed below, we are requesting additional information to complete the review and issue an approval status.

1. The referenced submittal indicates the steel tubular to be 90 mm after rough machining (OD being 1900 as per plan, ID is shown 20mm less than plan). This thickness is outside of the allowable tolerance. Sketches have been provided informally showing a detail for transitioning the ID at the connection to the 100mm forged tubular. Please submit a request for a change addressing this deviation from the plans.

2. The UT procedure is not adequate to examine the longitudinal seam weld of the tubular. A modified procedure will be required in order to examine the full volume of the longitudinal seam weld.

3. The "Guide Specification for Highway Bridge Fabrication with HPS 70W (HPS 485W) Steel" is not applicable and should be deleted. Preheat temperatures should be based on AWS D1.5, Section 12.14.

4. Destructive testing should include all specimens required by AWS D1.5 for PQR qualification tests using Fig. 5.1 for WPS Qualification, along with Charpy V-Notch tests from the weld and heat affected zone near both the inside and outside surfaces to capture possible degradation from forming and welding. It is our understanding that these samples would be proposed for use in qualifying the procedures.

5. Please note it is our understanding that no rolling is expected after the welding of the longitudinal seam. If this is not your intention please revise the procedure.

Please be aware that approval for an alternate pipe beam fabrication method is contingent upon satisfactory results of the mock-up followed by submission of a final fabrication procedure. All issues concerning the mock-up procedures of the ESW process shall be in accordance with the response to RFC 20. In addition, approval of ESW process for the stainless steel overlay requires an agreed contract change order.

If you have any questions please contact Gary Lai in the Working Drawing Campus.

Sincerely,

<<< ORIGINAL SIGNED >>>

GARY PURSELL
Resident Engineer

cc: Rick Morrow
Brian Boal

file: 05.03.01, 55.006

OIW was notified of mockup requirement as early as August 2006

Mockup Requirement

AMERICAN BRIDGE / FLUOR ENTERPRISES, A JV — Bay Bridge – SAS 04

REQUEST FOR INFORMATION (RFI)

RFI No :	ABF-RFI-000075R00	Submitted by:	Adam Roebuck	Page(s):	
RFI Date:	04-August-2006	Contact Name:	Bill Pender	Phone No.	(503

Subject: Alternative Material and Design for Pipe Beam Fuse
References: Section 10-1.59 Hinge K Pipe Beam
Response requested by: 10-August-2006 Response affects critical path activity? Yes

Description:
Paragraphs 2 and 5 under "Hinge K Pipe Beam" read as follows:
#2 "Pipe Beam tubulars shall be forgings. The contractor may fabricate the pipe beam tubulars using a differe fabrication method (other than forging) subject to review and approval of the Engineer. "
#5 "The stainless Steel overlay shall be welded… shall meet the chemical limits for AWS A5.9 Classification ER316L.

Oregon Iron Works, ABF's Hinge K supplier, proposes the following alternative fabrication method and design for the pipe beam fuse:

Please review the attached OIW Sketch SK-2244-001for fabrication and dimensional references on the proposed alternative.

1. Use 85 mm ASTM A709M HPS Grade 485W base plate explosion bonded to 13mm ASTM A240 316L clad plate per ASTM A264, "with UT per SA 578 S1 (100%) S6 and 30,000 psi minimum shear test."
2. Plates will be rolled with the 316L stainless bonded surface facing out in lieu of performing the weld overlay.
3. The steel and 316L combination long seam shall be welded in accordance with approved butt weld and overlay procedures
4. The steel and 316L combination long seam shall be examined by NDT as required in specification 100% UT, VT, PT and MT
   A. The Steel interior and exterior surface shall be examined by VT, UT and MT prior to applying the 316L overlay to the seam.
   B. The 316L seam surface will be examined by VT and PT prior to machining and after final machining.

ABF-RFI-000075R00, Aug 4, 2006

The following is a timeline, in chronological order, related to this extended approval process:

- August 4, 2006 thru December 1, 2006 - OIW submits detailed information for the alternate method. Caltrans responds with additional questions, conference calls and meetings.
- February 13, 2007 - OIW submits another extensive binder of information regarding the proposed rolled fabrication method.
- May 5, 2007 - No response received from Caltrans. OIW writes to Caltrans requesting a response to the alternative fabrication method.
- May 24, 2007 - Caltrans responds that a mock up of the alternate fabrication is required for approval.

Mockup requirement was first communicated to OIW in CT response to RFI 75R00 and agreed to by OIW in RFI 75R01 in August 2006

ABF-CAL-LTR-001625, Aug 29, 2011

AMERICAN BRIDGE / FLUOR ENTERPRISES, A JV — Bay Bridge – SAS 04-0120F4

Response:
The contract under Special Provisions Section 10-1.59, "Hinge K Pipe Beam," requires that the above referenced pipe beam tubulars be forged. Note 1 on Plan Sheet 844 of 1204 also states that the Pipe Beam Tubulars shall be forgings. Alternate fabrication methods and materials may be utilized but are subject to the review and approval of the Engineer.

If ABF is proposing to utilize alternate fabrication methods and materials, this must be presented in a formal submittal for approval. This package shall address all the requirements of the Special Provisions and provide detailed information regarding the proposed process, materials, and testing procedures.

Based upon the information contained within the RFI, the following comments shall also be addressed by the submittal:

1. The radius of 945 mm shown on Oregon Iron Works (OIW) sketch SK-2244-001 does not equal the radius of 950 mm shown on Section D-D of contract plan sheet 844 of 1204.
2. It is unclear if the Contractor is to fabricate the Pipe Beam Fuse in one piece or from multiple pieces with girth seam welds.
3. A testing program will need to be established to address the degradation of the base plate due to forming as well as degradation of the bond between the stainless steel plate and the base plate during forming.
4. Relevant examples of successful fabrication of similar components need to be provided to demonstrate the success of the proposed method.
5. NDT of the completed weld which are comprised of two different material properties.
6. NDT per SA 578 S1 is required after final rolling.
7. The acceptance/rejection criteria level per SA 578 S1 needs to be clearly defined.
8. Mock-ups will be required to develop UT techniques for the interface of stainless steel and carbon steel in order to comply with the general requirements of AWS D1.5.
9. The 316L seam surface weld will still require UT per AWS D1.6.

The procedures set forth in this RFI are not approved at this time, but the State is available for further discussion at the working drawing campus with ABF and OIW.

Date:	11-August-2006	Respondent:	Stanley Ku	Phone No.:	(510)286-0510

CT Response to ABF-RFI-000075R00, Aug 11, 2006

Mockup Requirement

OREGON IRON WORKS, INC.
9700 S.E. LAWNFIELD ROAD • CLACKAMAS, OREGON 97015
TELEPHONE (503) 653-6300 • FAX (503) 653-5670

REQUEST FOR INFORMATION

CUSTOMER: American Bridge		CONTRACT No.: Supply Agreement 660110 - SA	
RFI # 2244- 004	DATE SUBMITTED: 8/24/06	CLIENT'S HOME OFFICE CONTACTED PRIOR TO SENDING RFI ☐ Ye PERSON CONTACTED: Michael Flowers	
		TELEPHONE: 1 415 631-1060	EMAIL : mflowersAamerica
OIW REQUESTER'S NAME: Bill Pender		TELEPHONE: (503) 653-6300	EMAIL : bpender@oregonir

SUBJECT: **Submission of additional data as followup to "Alternative material and design for Pipe Beam Fuse"**

Response needed By: 8/31/06

AFFECTED DOCUMENT(S) (DOCUMENT AND REV NUMBER) Section 10-1.59 Hinge K Pipe Beam

DESCRIPTION OF ISSUE

Reference: Paragraphs # 2 and # 5 under "Hinge K Pipe Beam" read as follows:

#2 "Pipe Beam tubulars shall be forgings. The contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to review and approval of the engineer."

#5 "The stainless Steel overlay shall be welded ----- shall meet the chemical limits for AWS A5.9 Classif

OIW proposes the following alternative fabrication method and design for pipe beam fuse.

Please review the attached OIW Sketch SK-2244-001**Rev1** for fabrication and dimensional references on the prosed alternative.

I.) Use 85 mm ASTM A709M HPS Grade 485W base plate explosion bonded to 19mm ASTM A240 316L clad plate per ASTM A264

II.) Plates will be rolled with the 316L stainless bonded surface facing out in lue of performing the weld overlay.

III.) The steel and 316L combination long seam shall be welded in accordance with approved butt weld and overlay proceedures

IV.) The steel and 316L combination long seam shall be examined by NDT as required in specification 100% UT ,VT , PT and MT

Answers to Questions raised by Stanley Ku on ABF-RFI-000075R00 dated

1.) Radius of 945 has been corrected to 950 as per contract drawing (See SK-2244-001 Rev1 attached)

2.) Pipe Beam fuse will be fabricated from one plate rolled and welded with one long seam only, no girth

3.) Degredation Testing: See line item # 1 of DMC data letter dated August 23 2006

4.) Relevant examples: See line item # 1 and # 3 of DMC data letter dated August 23 2006

5.) OIW will submit an NDT Plan complete with proceedures prior to examining the completed weld of th

6.) NDT per SA 578 S1 100% to S6 acceptance criteria will be performed after rolling and before welding

7.) NDT per SA 578 S1 needs to be clearly defined. See item # 6 above and line item # 2 of DMC data le

8.) OIW will develop mock-ups to ensure that our NDT proceedure meets the applicable code requireme acceptability.

9.) UT of this weld will be covered in our NDT plan. See answer to # 5 above.

Please see attached DMC brochure and DMC response letter also the applicable AST

INFORMATION REQUESTED

OIW requests approval to use rolled ASTM A709M HPS Grade 485W base plate.

OIW requests approval to supply explosion bonded ASTM a240 316L plate in lue of weld overlay

OIW request release to procure the above materials

ABF-RFI-000075R01, Aug 28, 2006

The following is a timeline, in chronological order, related to this extended approval process:

- August 4, 2006 thru December 1, 2006 - OIW submits detailed information for the alternate method. Caltrans responds with additional questions, conference calls and meetings.
- February 13, 2007 - OIW submits another extensive binder of information regarding the proposed rolled fabrication method.
- May 5, 2007 - No response received from Caltrans. OIW writes to Caltrans requesting a response to the alternative fabrication method.
- May 24, 2007 - Caltrans responds that a mock up of the alternate fabrication is required for approval.

Mockup requirement was first communicated to OIW in CT response to RFI 75R00 and agreed to by OIW in RFI 75R01 in August 2006

ABF-CAL-LTR-001625, Aug 29, 2011

Answers to Questions raised by Stanley Ku on ABF-RFI-000075R00 dated August 11th 2006

1.) Radius of 945 has been corrected to 950 as per contract drawing (See SK-2244-001 Rev1 attached)

2.) Pipe Beam fuse will be fabricated from one plate rolled and welded with one long seam only, no girth welds.

3.) Degredation Testing: See line item # 1 of DMC data letter dated August 23 2006

4.) Relevant examples: See line item # 1 and # 3 of DMC data letter dated August 23 2006

5.) OIW will submit an NDT Plan complete with proceedures prior to examining the completed weld of the clad plate.

6.) NDT per SA 578 S1 100% to S6 acceptance criteria will be performed after rolling and before welding Long seam.

7.) NDT per SA 578 S1 needs to be clearly defined. See item # 6 above and line item # 2 of DMC data letter dated August 23 2006.

8.) OIW will develop mock-ups to ensure that our NDT proceedure meets the applicable code requirements while verifing weld acceptability.

9.) UT of this weld will be covered in our NDT plan. See answer to # 5 above.

Please see attached DMC brochure and DMC response letter also the applicable ASTM specifications.

INFORMATION REQUESTED

OIW requests approval to use rolled ASTM A709M HPS Grade 485W base plate.

OIW requests approval to supply explosion bonded ASTM a240 316L plate in lue of weld overlay

OIW request release to procure the above materials

Department did not require additional testing above and beyond the contractual requirements except for one check sample required for rolling similar to the Skyway contract.

NOPC 6 Timeline
Sept 13, 2007- Dec 12, 2007

- September 13, 2007 - OIW submits revised AT&F forming procedure and OIW fabrication plan for approval, per Caltrans' request.
- September 28, 2007 - Caltrans requires additional testing and data in SL 00643.
- November 9, 2007 - OIW responds to Caltrans request with submittal 6 rev 2.
- November 29, 2007 - Caltrans requests additional time to review alternative fabrication method.
- December 6, 2007 - Caltrans requests a meeting to again discuss the alternate fabrication method that OIW originally proposed on August 4, 2006.
- December 12, 2007 - Caltrans requests additional testing to prove the alternate fabrication method. This testing is not required by the contract, nor is it standard industry practice.

Submittal 6R02 dated Sept 20, 2007. CT responds on Sept 28, 2007 (SL 643, incomplete submittal)

What is the addtl testing?

ABF submits Submittal 6R03 on Nov 14 2007 and CT responds on Dec 4, 2007 (STL 913, Resubmit)

What is the additional testing requested and what state letter, RFI, etc. was the request made in?

ABF-CAL-LTR-001625, Aug 29, 2011

State Letter 643- September 28, 2007
CT Response to Submittal 6R2

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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September 28, 2007

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000643

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 6, Rev. 2 - Alternative Fabrication Method at Hinge K Pipe Beam

The Department is returning Submittal ABF-SUB-000006R00, "Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K," dated September 20, 2007. The submittal is returned as "Incomplete." Specifically, the following items were not addressed as previously discussed in ABF-CAL-LTR-000243, dated August 03, 2007 and State Letter 05.03.01-000470, dated August 20, 2007:

1. The submittal does not address or acknowledge the fabrication of a "useable mock-up."
2. The outstanding issues outlined in State Letter 05.03.01-000265 addressing ABF-SUB-000006R01 include:
   a. The steel tubular is shown to be 90 mm after rough machining, which is outside of allowable tolerances. Please submit a request for change addressing this deviation from the plans.
   b. The UT procedure is not adequate to examine the longitudinal seam weld of the tubular. A modified procedure will be required to examine the full volume of the longitudinal seam weld.
   c. Destructive testing should include all specimens required by AWS D1.5 for PQR qualification, along with Charpy V-Notch tests from the weld and heat affected zone near both the inside and outside surfaces to capture possible degradation from forming and welding. Confirm if these samples will be proposed for use in qualifying the procedures.
   d. Confirm if any additional rolling is to be performed after welding of the longitudinal seam.

American Bridge/Fluor Enterprises, a JV
September 28, 2007
Page 2 of 2

3. Destructive testing of coupons – provide information on the availability of samples to be obtained after seam welding for QA purposes.
4. Notification to the Department for QA testing/witnessing of both the NDT and destructive testing. This includes the placement of hold points in the fabrication procedure.

Please be aware that approval for an alternative pipe beam fabrication method is contingent upon satisfactory results of the "useable mock-up." Approval of the ESW process for the stainless steel overlay requires an agreed Contractor requested contract change order

Sincerely,

<<< ORIGINAL SIGNED >>>

GARY PURSELL
Resident Engineer

cc: Rick Morrow, Brian Boal
file: 05.03.01, 55.0006

1. What is the additional testing above contract requirements (ASW D1.5, etc) that OIW is referring to?
2. OIW's submittal 6R2 did not address questions/comments from CT response to 6R1

State Letter 913- December 4, 2007
CT Response to Submittal 6R3

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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December 04, 2007

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000913

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 6, Rev. 3 – Alternative Fabrication Method, Material and Design at Hinge K

The Department has completed review of Submittal ABF-SUB-000006R03, "Alternative Fabrication Method, Material and Design for Pipe Beam at Hinge K," dated November 14, 2007. The submittal is "Returned for Correction," as outlined by the comments below.

In both State Letters 05.03.01-000265 and 05.03.01-000643 the Department requested that a request for change be submitted in order to address the deviation from the contract documents in OIW's alternative fabrication method for the Hinge K pipe beams. While the Department acknowledges this has been responded to, a Submittal is not the appropriate means in which to make such a request. The Contractor has established a formal procedure to request changes to the contract documents, that being a Request for Change Order (RFCO). This procedure would be an acceptable means to request a deviation from contract documents, should it still be desired to pursue this change.

In addition, as stated in the Departments response to ABF-RFC-00028R0 and in State Letter 05.03.01-000643, a Contractor requested Change Order is required in order that the ESW stainless steel overlay welding process can be utilized. Approval for its use on the project will be contingent on the successful completion of the mock-up.

CATEGORY A:

1. Item 1 – Insufficient material is being provided to allow for adequate testing from the "usable mock-up" segment designated E-8 on OIW drawing 2244-124 Rev 2, from which test coupons are to be obtained for destructive testing. The standard D1.5 weld procedure qualification test piece is a minimum 600mm long and does not include the additional CVN specimens specified for the weld Heat Affected Zone on the inside and outside surface.

2. Item 2a – The 90mm plate depicted on OIW drawing 2244-101 Rev 0 (Sheet 2 of 2) is not to be tapered at the joint connection to the 100mm plate.

3. Item 2b – NDT is to be performed in accordance with AWS D1.5-2002. The submitted procedure appears to be based on D1.5-1995

4. Item 2b – Incorporate Table 6.3 – UT Acceptance-Rejection Criteria from AWS D1.5-2002 into the UT procedure.

5. Item 2c – Insufficient material is being provided to allow for adequate testing from the "usable mock-up" segment designated E-8 on OIW drawing 2244-124 Rev 2. The submittal indicates that specimens for mechanical testing will come from the PQR test plate. However, as the test is performed on flat plate, the effects of the forming procedure will not be accounted for. The "usable mock-up" is to provide all tests required by D1.5 for a standard Weld Procedure Qualification as well as the additional ID and OD HAZ CVN tests to ensure that the results represent the "as-fabricated" condition. The same numbers of tests are required to qualify both the longitudinal and the circumferential welds.

6. Item 4 – Pursuant to section 10-1.59 "STEEL STRUCTURES" of the Special Provisions, subsection "FABRICATION," subsection "Fabrication/Erection and Mock-Ups," detailed fabrication procedures are to be submitted to the Engineer which are to include inspection hold points. Written notification to the Department after discussion on establishing Hold Points with the Engineers representative is not in compliance with the Contract requirements.

If you have any questions, please contact Brian Boal at (510) 622-5191

Sincerely,

<<< ORIGINAL SIGNED >>>

GARY PURSELL
Resident Engineer

Attachment

cc: Rick Morrow; Brian Boal; Gary Lai
file: 05.03.01, 55.0006

Surface Indications on Rolled Material and the use of Penetrant Testing

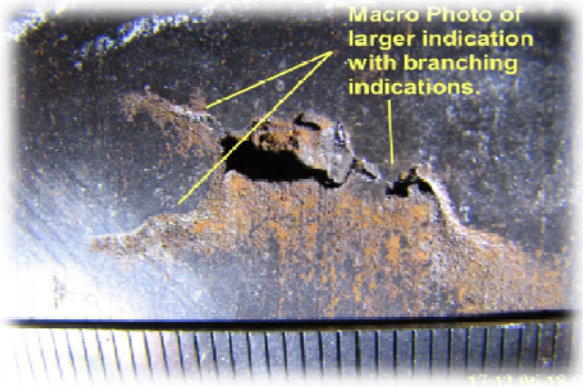
January 29, 2008- February 2009

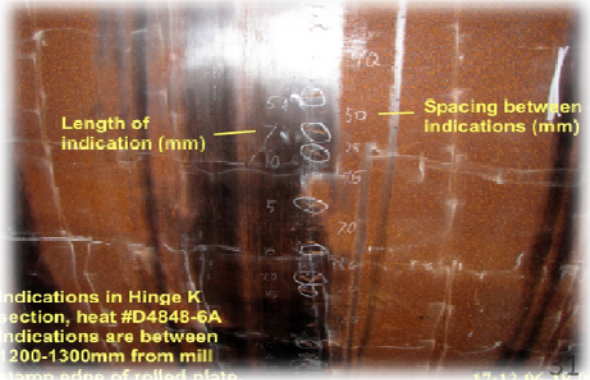
- January 29, 2008 through February, 2009 (after rolling was approved) - Caltrans believed that the Hinge K fuse plate in the flat, unformed condition stored at AT&F, had surface cracks that indicated structural defects. Caltrans insisted that these cracks were outside of the normal surface conditions of quenched and tempered plate. In response, OIW brought the material supply representative to AT&F for examination of the surface condition. The material supplier confirmed that the surface conditions were not cracks, but merely surface imperfections that are typical for quenched and tempered plate of this thickness. After this inspection and explanation, Caltrans still insisted that the surface condition indicated a defect. In an effort to progress the work OIW hired a third party quality assurance consultant to perform Penetrant Testing on both sides of all sixteen plates stored at AT&F. No defect or imperfection requiring repair was found in any of the sixteen plates tested. All sixteen plates were then rolled by AT&F without any incidence of material failure. The Penetrant Testing required by Caltrans is well outside of industry standards and Contract requirements for quenched and tempered plate.

ABF-CAL-LTR-001625, Aug 29, 2011

June 18, 2008 Source Inspection Report

When the rolled section was moved and inspection was started, the QA Inspector was informed that there appeared to be separations in the outside diameter surface of the rolled plate. The OIW QC Inspector Ron Brown was observed conducting magnetic particle testing (MT) on the outside diameter surface of the rolled section with a Parker Contour Probe, DA-400 SN 9966 and gray particles. The QA Inspector noted that during the testing, the visible separations were producing linear indications and these indications were being marked by the QC Inspector. The QA Inspector also conducted visual examination of the rolled hinge section. The QA Inspector observed the separations in the outside diameter of the rolled plate. The separations appear to be similar to cracks by having sharp ends, narrow width and a measurable length between 3mm to 25mm. The QA Inspector noted that some of the separations are open to the surface and have a visible depth that could be measured to 3mm with a steel rule. The QA Inspector also observed the OIW QC Inspector using ultrasonic testing to determine the depth of the separations. The QC Inspector was using a 12mm diameter 0 degree transducer from the inside diameter surface of the rolled plate. The QA Inspector was informed that the separations appear to have a maximum depth of 6mm from the UT scanning. The QA Inspector noted that the separations appear to be generally parallel to the direction of rolling. The QA Inspector made measurements of the indications and noted their general length and X / Y position from the plate edges. The main grouping of linear indications appear within similar locations along 1200mm length of plate with average spacing of 54mm between the indications. The QA Inspector noted that 22 indications were identified by the QC Inspector during MT. The QA Inspector asked the QC Inspector what did OIW / ATFC plan on doing with this plate section, as the approved as noted submittal ABF-SUB-00583R01 does not allow the plate surface to have visibly identifiable cracks or MT identifiable cracks. The QA Inspector was informed that these linear indications were not cracks but were "mill caused indications." The QA Inspector then noted that the QC Inspector used paint marker to write "OIW QC RB, MTOK 6/18/08, Except @ Mill caused indications." The QA Inspector asked the QC Inspector why the plate was acceptable and how were the linear indications not cracks. The QA Inspector was informed that these indications were resulting from laminations in the plate that have apparently been pulled open during the rolling process. The QA Inspector was then informed that OIW plans to mill the surface and remove the indications during the final fabrication process. The QA Inspector remarked that this plate did not conform to the approved contract requirements at this time. The QA Inspector then relayed these observations and conversations to the Structural Materials Representative (SMR) Ryan Smith and the QA Inspector Mark Wright. The QA Inspector was asked to document and photograph these observed separations / linear indications. See the attached photos. The QA Inspector noted that there has been no





August 29, 2008 SMR Summary

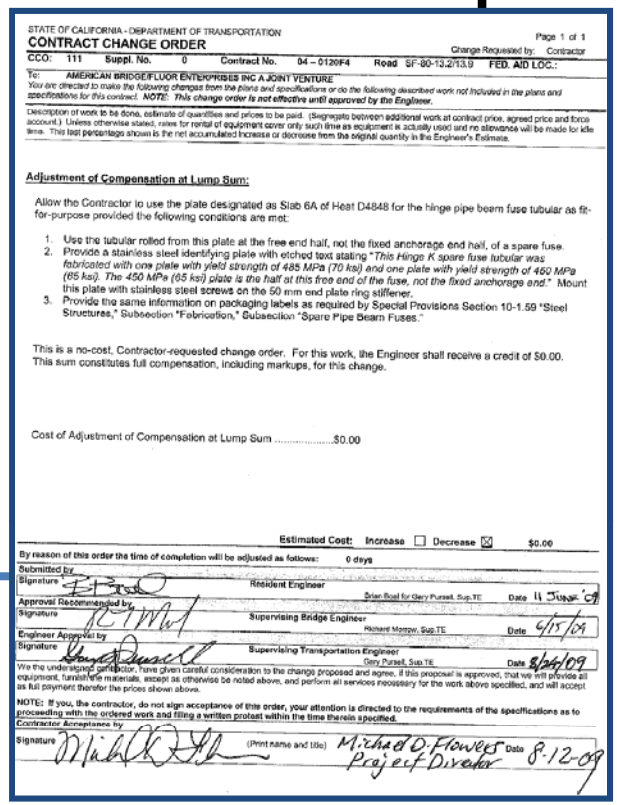
Office of Structural Materials, Bay Area Branch
Keith Hoffman, Senior Bridge Engineer
August 29, 2008 SMR Summary

Hinge K Fabrication:
American Tank has completed rolling of the nine (9) of sixteen (16) tubular sections for the Hinge K Pipe Beams as of August 21, 2008. After performing Magnetic Particle examination of the first 7 sections and all have been found to contain numerous rejectable MT indications. On 29-Jul-08, METS representatives traveled to the American Tank facility to further examine the indications. After examining three of the completed tubulars, the METS representatives found no distinguishable pattern to the location or depth of the indications when comparing the indications from one can to another. Based on the randomness of the indications, METS believes the indications to possibly be inclusions in the material that opened up during the rolling process. This is also supported by the Ultrasonic Testing performed in other locations of the tubulars where METS found similar sized indications in the plate that were not apparent by MT examination. Through discussions with Construction at Pier 7, METS agreed that no decision would be made regarding these indications until the Check Sample results from each motherplate were sampled and tested to verify the material was in compliance with the required specifications.

On 29-Jul-08, METS reported that the first check sample from the A709 Grade HPS 485W materials failed for low yield strength. After discussing the results with the Contractor on 05-AUG-08, the Department agreed to allow the Contractor to have a retest of the material. On 08-AUG-08, METS received the second sample and on 11-AUG-08 METS reported that the second sample failed for low yield and tensile strength. On 12-Aug-08, the Department met with ABF/OIW to discuss the results and agreed to perform additional testing in the presence of both the Engineer and the Contractor. Results of the additional testing, performed on 18-19-Aug-08 showed the results were similar to the previous tests and failed for low yield. Additional samples were submitted by the Contractor and subsequently tested by the Structural Materials Testing Branch.

Check Sample Data

Melt No.	Slab No.	Check Sample Notes	CT Check Sample Yield (ksi)	Mill Test Yield (ksi)
D5002	2	Check Sample Taken 9/08	75.742	78.7
	3	Check Sample Taken 9/08	75.965	77.7
	4	OIW Originally Planned Sample; check sample passed 3/09		75.4
D5551	2A	Check Sample Taken 9/08	73.210	76.8
	3A	No Check Sample Available		**76.1**
	5A	Not Used - Gauges @ Edges		80.3
	5B	No Check Sample Available		**76.2**
	6A	OIW Originally Planned Sample; No Check Sample Available		**75.6**
D4848	5A	Check Sample Taken 9/08	69.289	71.4
	5B	No Check Sample Available		**72.4**
	6A	Originally Planned Sample; Low Yield Strength - Rejected 8/08 - Accepted as "Fit for Purpose" 12/08	64.893	70.5
D4838	8A	No Check Sample Available		**77.6**
	10B	OIW Originally Planned Sample; Check Sample Taken 9/08	74.396	76.4
D4076	2	Base Plate Material; No Check Sample Available; See RFI 1548R0		**72.0**
	3	Base Plate Material; No Check Sample Available; See RFI 1548R0		**73.8**
	4	Base Plate Material; No Check Sample Available; See RFI 1548R0		**79.7**
	5	Base Plate Material; No Check Sample Available; See RFI 1548R0		**74.5**
	6A	Check sample passed 3/09		73.1
	7A	Check sample passed 3/09		72.2
	8A	Check sample passed 3/09		75.0
	9A	OIW Originally Planned Sample; check sample passed 3/09		72.2



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONTRACT CHANGE ORDER
Page 1 of 1
Change Requested by: Contractor
CCO: 111 Suppl. No. 0 Contract No. 04 – 0120F4 Road SF-80-13.2/13.9 FED. AID LOC.:

To: AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENTURE
You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. NOTE: This change order is not effective until approved by the Engineer.

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

Adjustment of Compensation at Lump Sum:

Allow the Contractor to use the plate designated as Slab 6A of Heat D4848 for the hinge pipe beam fuse tubular as fit-for-purpose provided the following conditions are met:

1. Use the tubular rolled from this plate at the free end half, not the fixed anchorage end half, of a spare fuse.
2. Provide a stainless steel identifying plate with etched text stating "*This Hinge K spare fuse tubular was fabricated with one plate with yield strength of 485 MPa (70 ksi) and one plate with yield strength of 450 MPa (65 ksi). The 450 MPa (65 ksi) plate is the half at this free end of the fuse, not the fixed anchorage end.*" Mount this plate with stainless steel screws on the 50 mm end plate ring stiffener.
3. Provide the same information on packaging labels as required by Special Provisions Section 10-1.59 "Steel Structures," Subsection "Fabrication," Subsection "Spare Pipe Beam Fuses."

This is a no-cost, Contractor-requested change order. For this work, the Engineer shall receive a credit of $0.00. This sum constitutes full compensation, including markups, for this change.

Cost of Adjustment of Compensation at Lump Sum $0.00

Estimated Cost: Increase ☐ Decrease ☒ $0.00

By reason of this order the time of completion will be adjusted as follows: 0 days

Submitted by
Signature [signature] Resident Engineer Brian Boal for Gary Pursell, Sup.TE Date 11 June '09
Approval Recommended by
Signature [signature] Supervising Bridge Engineer Richard Morrow, Sup.TE Date 6/15/09
Engineer Approved by
Signature [signature] Supervising Transportation Engineer Gary Pursell, Sup.TE Date 8/24/09

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by
Signature [signature] (Print name and title) Michael D. Flowers Project Director Date 8-12-09

CCO 111 allows fit-for-purpose steel

Plate Slab 6A Heat D4848 was tested by the Department and found to have an unacceptable yield strength as required by Section 10-1.59 "Steel Structures," Subsection "Check Testing." At the request of the Contractor, the Department performed an additional analysis to determine if the as-tested yield strength of the material was acceptable. The Designer of Record determined that the plate material was fit-for-purpose provided the plate is: 1. Used at the free end of a spare fuse and 2. An identification plate is mounted to the fuse free end identifying it for future use.

OIW Plan to Address Surface Indications (ABF-SUB-000742R00)

OIW Plan for Control, Tracking and Repair of Base Metal -- Pc mark a124-b

OIW plan is to ship both cylinders to our Clackamas Oregon facility where the indications will be fully investigated by OIW Quality department personnel. The preliminary data indicates these indications to be within the layer which will be removed during the rough machining process. Assuming this is indeed the actual condition, OIW intends to fabricate the first Hinge K Pipe Beam fuse weldment, rough machine the weldment, and re-examine the exterior surface by MT to assure sound base material throughout. Should indications be found, UT examination will be employed to determine depth of defect and, the base metal repair shall be performed after approval by Engineer.

Note: To proceed with final rounding of the cylinders, OIW released AT/F to perform temporary tack welding of Pc mark a124-a and a124-b long seams. Concurrent to performing this task OIW has directed AT/F to perform SMAW welder qualification for the E9018-m filler metal. *(Caltrans will NCR the temporary welds pending results of AT/F welder qualification)*

1) Ship both cylinders a124-a and a124-b plus trim tabs to OIW Clackamas Oregon facility, *(Per conference call discussion, Caltrans will blue tag Pc mark a124-b for shipping)*
2) The Check Samples will be cut from the trim tabs at OIW Clackamas Oregon facility and submitted to the Caltrans testing lab. *(Reference: OIW Fabrication Procedure- 2244-FP-3, Phase 2 – B, 2.)*
3) OIW Quality personnel to fully examine cylinder a124-b, mapping and documenting all indications.
4) OIW will then fabricate the Hinge K Pipe Beam Fuse weldment, composed of cylinders a124-a, a124-b and the internal stiffener rings. *(Reference: OIW drawing 2244-123 sheets 1 & 2)*
5) OIW will then rough machine Hinge K Pipe Beam Fuse weldment *(Reference: OIW drawing 2244-122)*
6) OIW will re-examine 100% of exterior surface of Pipe Beam Fuse weldment by MT *Should indications be found, UT examination will be employed to determine depth of defect. Base Metal repair shall then be performed per WQCP approved procedure.*
7) OIW will receive Caltrans approval of final rough machined NDT prior to proceeding with stainless steel overlay.

Please contact the undersigned if you have any questions or concerns regarding information contained within this document.

Sincerely,

OREGON IRON WORKS, INC.

Bill Pender
Project Manager

☑ APPROVED
☐ APPROVED AS NOTED
☐ RETURNED FOR CORRECTION
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Structure Construction
for RTM 03 July 2008
Structure Representative Date

The information/data contained on this drawing/file/document (whether in electronic or hard format and copy) contains Proprietary and Confidential information of Oregon Iron Works, Inc. (OIW), 9700 SE Lawnfield Road, Clackamas, Oregon. The disclosure, release, distribution, or unauthorized use of this information/data without the express written consent of OIW is expressly prohibited."

1. Ship both cylinders to OIW Clackamas
2. Cut check samples and submit to Translab
3. OIW QC to examine cylinder a124-b mapping and documenting all indications
4. Fabricate Hinge K Pipe Beam fuse weldment
5. Rough machine fuse weldment
6. Re-examine 100% MT of exterior surface of pipe beam fuse. UT exam will be employed if indications are found to determine depth of defect
7. OIW to receive CT approval of final rough machined NDT prior to proceeding with SS overlay

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

Flex your power
Be energy efficient!

July 03, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-002326

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 742 - Surface Indications Plan for Pipe Beam Tubulars

The Department has completed review of Submittal ABF-SUB-000742R00, "OIW plan to address Surface Indications for Pipe Beam Tubulars - Oregon Iron Works," dated June 24, 2008. The submittal is "Approved." Please be aware of the comment provided below.

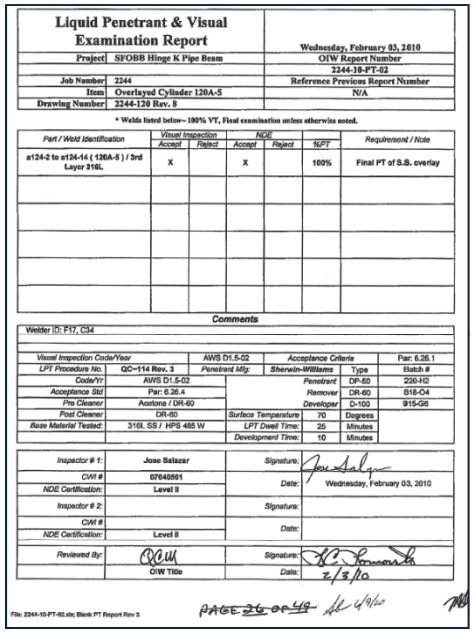
CATEGORY B:
1. Provide all NDT reports and documents relating to the indications discovered in the Pipe Beam Tubular - Pc mark a124-a for the Departments review.

If you have any questions, please contact Brian Boal at (510) 622-5191

Sincerely,

GARY PURSELL
Resident Engineer

Penetrant Testing (ESW Only)



Liquid Penetrant & Visual Examination Report

Wednesday, February 03, 2010

Project	SFOBB Hinge K Pipe Beam
	OIW Report Number 2244-10-PT-02
Job Number	2244
	Reference Previous Report Number N/A
Item	Overlayed Cylinder 120A-5
Drawing Number	2244-120 Rev. 8

* Welds listed below-- 100% VT, Final examination unless otherwise noted.

Part / Weld Identification	Visual Inspection Accept	Visual Inspection Reject	NDE Accept	NDE Reject	%PT	Requirement / Note
s124-2 to s124-14 (120A-5) / 3rd Layer 316L	X		X		100%	Final PT of S.S. overlay

Comments

Welder ID: F17, C34

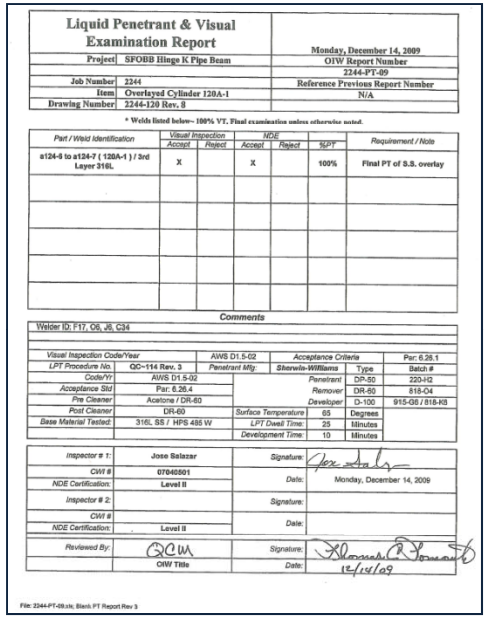
Visual Inspection Code/Year		AWS D1.5-02	Acceptance Criteria		Par: 6.26.1
LPT Procedure No.	QC-114 Rev. 3	Penetrant Mfg:	Sherwin-Williams	Type	Batch #
Code/Yr	AWS D1.5-02		Penetrant	DP-50	220-H2
Acceptance Std	Par: 6.26.4		Remover	DR-60	818-O4
Pre Cleaner	Acetone / DR-60		Developer	D-100	915-O6
Post Cleaner	DR-60	Surface Temperature	70	Degrees	
Base Material Tested:	316L SS / HPS 485 W	LPT Dwell Time:	25	Minutes	
		Development Time:	10	Minutes	

Inspector # 1:	Jose Salazar	Signature:	
CWI #	07040501	Date:	Wednesday, February 03, 2010
NDE Certification:	Level II		
Inspector # 2:		Signature:	
CWI #		Date:	
NDE Certification:	Level II		
Reviewed By:	QCM	Signature:	
	OIW Title	Date:	2/3/10

File: 2244-10-PT-02.xls; Blank PT Report Rev 3

PAGE ~~26~~ OF ~~48~~ 4/9/10

120A-5 COC Transmittal 3681



Liquid Penetrant & Visual Examination Report

Monday, December 14, 2009

Project	SFOBB Hinge K Pipe Beam
	OIW Report Number 2244-PT-09
Job Number	2244
	Reference Previous Report Number N/A
Item	Overlayed Cylinder 120A-1
Drawing Number	2244-120 Rev. 8

* Welds listed below-- 100% VT, Final examination unless otherwise noted.

Part / Weld Identification	Visual Inspection Accept	Visual Inspection Reject	NDE Accept	NDE Reject	%PT	Requirement / Note
s124-5 to s124-7 (120A-1) / 3rd Layer 316L	X		X		100%	Final PT of S.S. overlay

Comments

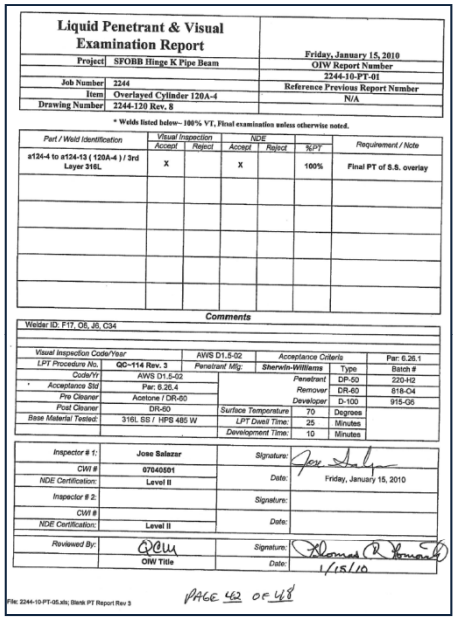
Welder ID: F17, O6, J6, C34

Visual Inspection Code/Year		AWS D1.5-02	Acceptance Criteria		Par: 6.26.1
LPT Procedure No.	QC-114 Rev. 3	Penetrant Mfg:	Sherwin-Williams	Type	Batch #
Code/Yr	AWS D1.5-02		Penetrant	DP-50	220-H2
Acceptance Std	Par: 6.26.4		Remover	DR-60	818-O4
Pre Cleaner	Acetone / DR-60		Developer	D-100	915-O6 / 818-K6
Post Cleaner	DR-60	Surface Temperature	65	Degrees	
Base Material Tested:	316L SS / HPS 485 W	LPT Dwell Time:	25	Minutes	
		Development Time:	10	Minutes	

Inspector # 1:	Jose Salazar	Signature:	
CWI #	07040501	Date:	Monday, December 14, 2009
NDE Certification:	Level II		
Inspector # 2:		Signature:	
CWI #		Date:	
NDE Certification:	Level II		
Reviewed By:	QCM	Signature:	
	OIW Title	Date:	12/14/09

File: 2244-PT-09.xls; Blank PT Report Rev 3

120A-1 COC Transmittal 3680



Liquid Penetrant & Visual Examination Report

Friday, January 15, 2010

Project	SFOBB Hinge K Pipe Beam
	OIW Report Number 2244-10-PT-01
Job Number	2244
	Reference Previous Report Number N/A
Item	Overlayed Cylinder 120A-4
Drawing Number	2244-120 Rev. 8

* Welds listed below-- 100% VT, Final examination unless otherwise noted.

Part / Weld Identification	Visual Inspection Accept	Visual Inspection Reject	NDE Accept	NDE Reject	%PT	Requirement / Note
s124-4 to s124-13 (120A-4) / 3rd Layer 316L	X		X		100%	Final PT of S.S. overlay

Comments

Welder ID: F17, O6, J6, C34

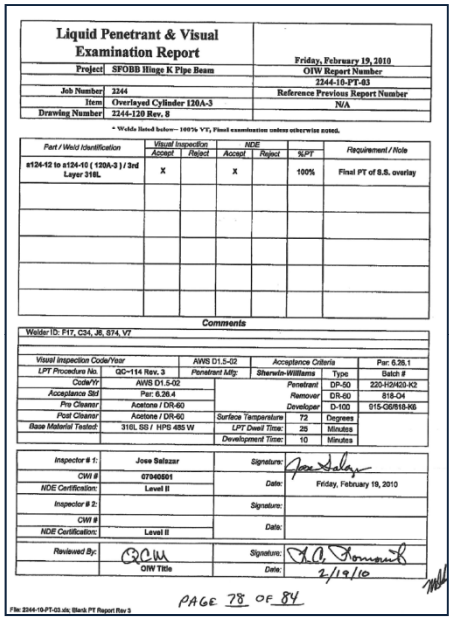
Visual Inspection Code/Year		AWS D1.5-02	Acceptance Criteria		Par: 6.26.1
LPT Procedure No.	QC-114 Rev. 3	Penetrant Mfg:	Sherwin-Williams	Type	Batch #
Code/Yr	AWS D1.5-02		Penetrant	DP-50	220-H2
Acceptance Std	Par: 6.26.4		Remover	DR-60	818-O4
Pre Cleaner	Acetone / DR-60		Developer	D-100	915-O6
Post Cleaner	DR-60	Surface Temperature	70	Degrees	
Base Material Tested:	316L SS / HPS 485 W	LPT Dwell Time:	25	Minutes	
		Development Time:	10	Minutes	

Inspector # 1:	Jose Salazar	Signature:	
CWI #	07040501	Date:	Friday, January 15, 2010
NDE Certification:	Level II		
Inspector # 2:		Signature:	
CWI #		Date:	
NDE Certification:	Level II		
Reviewed By:	QCM	Signature:	
	OIW Title	Date:	1/15/10

File: 2244-10-PT-05.xls; Blank PT Report Rev 3

PAGE 42 OF 48

120A-4 COC Transmittal 3679



Liquid Penetrant & Visual Examination Report

Friday, February 19, 2010

Project	SFOBB Hinge K Pipe Beam
	OIW Report Number 2244-10-PT-03
Job Number	2244
	Reference Previous Report Number N/A
Item	Overlayed Cylinder 120A-3
Drawing Number	2244-120 Rev. 8

* Welds listed below-- 100% VT, Final examination unless otherwise noted.

Part / Weld Identification	Visual Inspection Accept	Visual Inspection Reject	NDE Accept	NDE Reject	%PT	Requirement / Note
s124-12 to s124-10 (120A-3) / 3rd Layer 316L	X		X		100%	Final PT of S.S. overlay

Comments

Welder ID: F17, C34, J6, S74, V7

Visual Inspection Code/Year		AWS D1.5-02	Acceptance Criteria		Par: 6.26.1
LPT Procedure No.	QC-114 Rev. 3	Penetrant Mfg:	Sherwin-Williams	Type	Batch #
Code/Yr	AWS D1.5-02		Penetrant	DP-50	220-H2/420-K2
Acceptance Std	Par: 6.26.4		Remover	DR-60	818-O4
Pre Cleaner	Acetone / DR-60		Developer	D-100	915-O6/818-K6
Post Cleaner	Acetone / DR-60	Surface Temperature	72	Degrees	
Base Material Tested:	316L SS / HPS 485 W	LPT Dwell Time:	25	Minutes	
		Development Time:	10	Minutes	

Inspector # 1:	Jose Salazar	Signature:	
CWI #	07040501	Date:	Friday, February 19, 2010
NDE Certification:	Level II		
Inspector # 2:		Signature:	
CWI #		Date:	
NDE Certification:	Level II		
Reviewed By:	QCM	Signature:	
	OIW Title	Date:	2/19/10

File: 2244-10-PT-03.xls; Blank PT Report Rev 3

PAGE 78 OF 84

120A-3 COC Transmittal 3776

- The Department does not have Penetrant Testing Records performed rolled plates at AT&F as noted in ABF Letter 1625.
- The Department has records of Penetrant tests at OIW after stainless steel overlay

Preforming Ends Using Press Brake

Preforming of Ends Using Roll or Press Brake

- During the forming of the sixteen plates, Caltrans insisted that the plate had to be 'bumped' in the rolls rather than the ends of the plates being formed in a press brake, as is the common industry practice. Despite OIW and AT&F's protests to the Caltrans proposed method, Caltrans insisted that the forming of plate ends in the press brake would require another audit of AT&F and resubmission of AT&F forming procedure. As a result of using the Caltrans required procedure, the forming rolls used by AT&F broke during the process and had to be repaired. This caused 6 weeks of additional delay (5 weeks to repair plus 1 week to run forming trials), which could have been avoided had Caltrans followed standard industry practice as requested by OIW and AT&F.

Bumping of plates using the rolls was in OIW's forming procedure in Sub 6R0. This was not CT's suggestion.

What are the dates of this 6 week delay?

ABF-CAL-LTR-001625, Aug 29, 2011

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TANK ARMOR™

The American Tank & Fabricating Company
12314 Elmwood Avenue
Cleveland, Ohio 44111
Toll Free: 1-800-544-5316

ABF STEEL SOLUTIONS

To :
001033
OREGON IRON WORKS INC
9700 SE Lawnfield Rd
Clackamas OR 97015-7636

Quote #: 005024-00
Quote Date: 10/26/2006
Customer RFQ: VERBAL

Attention : BILL PENDER
Phone (503)653-6300
Fax (503)653-5870

Quotation Valid Thru : 11/26/2006

Part / Rev / Description / Details	Quantity Quoted	Unit Price	Extended Price
HINGE K PIPE BEAMS 100mm ASTM A709 HPS 485W X 1730mm ID x 72" LONG Delivery:START 3 WKS AROM FOB AT&F CO. WORKSCOPE: LABOR ONLY PREFORM ENDS, OXYFUEL CUT OFF EXTRA STOCK AND DOUBLE BEVEL LONG SEAMS, COLD ROLL TO 1730mm ID, FIT, TACK AND SIZE. DIAMETER TOLERANCE: +/- 5/16" TO (HOPEFULLY) +/- 1/4" ON O.D. SEND 16 PLATES 100mm x 72" x 260"	16.0000		

Use for Check Samples
355 mm x 460 mm

PREFORMING OF ENDS WILL BE DONE IN OUR (3) ROLL 3500 TON PYRAMID ROLLS. OUR ESTIMATE FOR NUMBER OF PASSES TO ROLL INTO A COMPLETE CIRCLE IS (8) EIGHT.

HINGE K PIPE BEAM TUBULARS FOR OAKLAND BAY BRIDGE

ABF-SUB-00006R01, May 2, 2007

- AT&F noted that they would preform the ends using the rolls as part of ABF-SUB-6R01
- This was not a suggestion made by the Department

NCR OIW-0010, Dec 9, 2008

STATE OF CALIFORNIA BUSINESS,TRANSPORTATION AND HOUSING AGENCY — Arnold Schwarzenegger, Governor

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

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: American Tank & Fabrication, Cleveland, Ohio — **Report No:** NCR-000223
Prime Contractor: American Bridge/Fluor Enterprises, a JV — **Date:** 09-Dec-2008
Submitting Contractor: Oregon Iron Works Clackamas, Or. — **NCR #:** OIW-0010

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑
Welding	☐	**Curing**	☐	**Procedural**	☑
Joint fit-up	☐	**Coating**	☐	**Other**	☐
Procedural	☐	**Procedural**	☐		

Bridge No: 34-0006
Component: Hinge K pipe beam fuses
Description: Not following approved fabrication plan.

Reference Description: Preforming of Hinge K pipe beam fuse sections, plate / heats D4076-9A and D5002-4.

Description of Non-Conformance:
The contractor ATFC used a 25000 ton hydraulic press to preform Hinge K pipe beam fuse sections / heats D4076-9A and D5002-4. Their approved fabrication plan states that only the rolling press will be used to pre-bend/pre-form the 100mm thick, ASTM A709 HPS 485W F3 plates.

Applicable reference:
ABF Submittal 583 (American Tank's Fabrication Plan)

Who discovered the problem: Scott Croff, QA Inspector
Name of individual from Contractor notified: Jerry Danko, ATFC QC Representative
Time and method of notification: 12-09-2008, 1230 hours, verbal notification
Name of Caltrans Engineer notified: Mark Woods, Caltrans Structures Representative
Time and method of notification: 12-11-2008, 1300 hours, verbal notification
QC Inspector's Name: Jerry Danko
Was QC Inspector aware of the problem: ☐ Yes ☑ No
Contractor's proposal to correct the problem:
Unknown

NCR OIW-0010 Dec 9, 2008

- Transmittal for NCR OIW-0010 issued for using a hyrdraulic press to preform Hinge K Pipe Beam
- Approved fabrication procedure (Sub 6R04) said rolls would be used

Process outline for Hinge K "First article" Pipe Beam Fuse including Caltrans requested additional check sample. Fabrication and Welding Sequence.

Phase 1 Material Procurement

The first two of 16 plates ordered from Mittal Steel in Coatsville PA will be used for manufacturing the Hinge K Pipe Beam Tubular "First Article." With the Caltrans requested additional check sample coupon. Each plate is 100mm x 1880 mm x 6629 mm ASTM A709 Grade HPS-485W with supplementary requirements specified in Conformed Special Provisions.
(Reference: Oregon Iron Works purchase order 2244-00007)

Phase 2 Roll Forming of Subassembly Cylinder

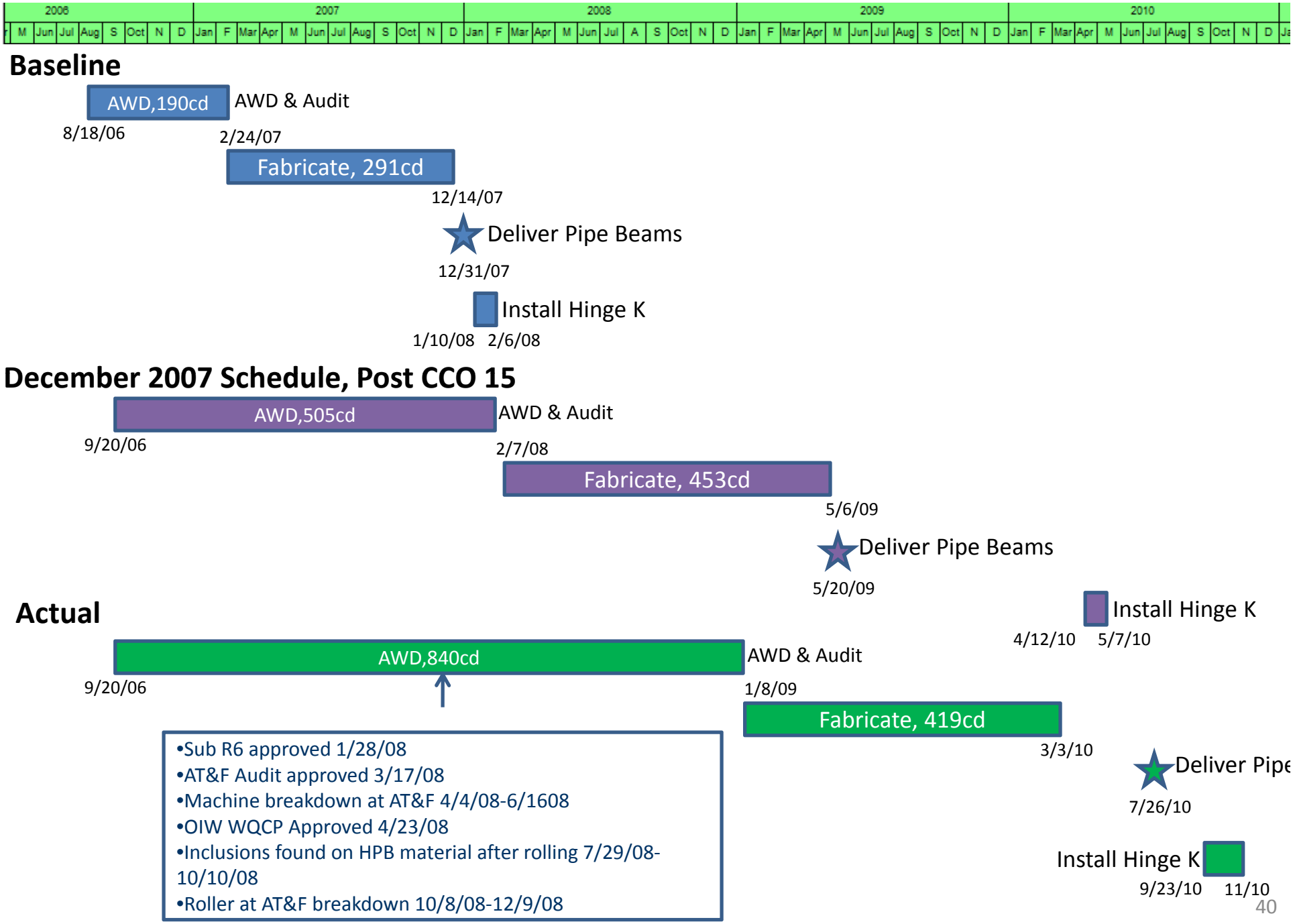
All Plates are shipped directly from Mittal Steel to the American Tank facility, located in Cleveland OH where the roll forming process will be performed to produce the Pipe Beam Tubular "subassembly cylinder" sections.
(Reference: Oregon Iron Works purchase order 2244-00008)

A.) Each subassembly cylinder plate is purchased with 450 mm of extra material length at both ends of each plate to allow American Tank to pre-roll form both ends to the 960mm radius in their pyramid forming rolls and then trim off the flat portion at each end. This step serves to accomplish two objectives, first the elimination of any possible flat or unformed portions of the cylinder, second the trimmed portion removed from these pre-formed ends will be used to fulfill the check testing sample requirement referenced on page 305 of Conformed Special Provisions. *(Reference OIW drawing 2244-124)*

B.) After the trimming of both ends of each plate to proper length for final rolling, American Tank will then bevel both ends in accordance with the approved WPS. Upon completion of beveling process, American Tank will then finish the roll-forming of each plate into a subassembly cylinder with an outside diameter of 1920 mm +/- 9 mm. American Tank has estimated this roll-forming process to take approximately eight passes through their pyramid rolls, once the desired roundness is achieved, American Tank will then tack weld the exterior of the long seam weld joint with the approved WPS.

ABF-SUB-000006R04, Jan 11, 2008

END


2006
2007
2008
2009
2010
Baseline
AWD,190cd
AWD & Audit
8/18/06
2/24/07
Fabricate, 291cd
12/14/07
Deliver Pipe Beams
12/31/07
Install Hinge K
1/10/08
2/6/08
December 2007 Schedule, Post CCO 15
AWD,505cd
AWD & Audit
9/20/06
2/7/08
Fabricate, 453cd
5/6/09
Deliver Pipe Beams
5/20/09
Install Hinge K
4/12/10
5/7/10
Actual
AWD,840cd
AWD & Audit
9/20/06
1/8/09
Fabricate, 419cd
3/3/10
Deliver Pipe
7/26/10
Install Hinge K
9/23/10
11/10
•Sub R6 approved 1/28/08
•AT&F Audit approved 3/17/08
•Machine breakdown at AT&F 4/4/08-6/1608
•OIW WQCP Approved 4/23/08
•Inclusions found on HPB material after rolling 7/29/08-10/10/08
•Roller at AT&F breakdown 10/8/08-12/9/08

Fabrication Steps

Permanent Fuses	
Step 1	Machine cap plate for base mill to bear
Step 2	Fit and weld rolled tubular sections
Step 3	Fabricate base assembly
Step 4	Rough machine OD of fuse prior to overlay
Step 5	Perform overlay welding of tubular fuse
Step 6	Machine Top surface of Base for mill to bear
Step 7	Machining to finish dimension
Step 8	Install machined fuse in base section
Step 9	Perform final inspection

Spare Fuses	
Step 1	Fit and weld rolled tubular sections
Step 2	Rough machine OD of fuse prior to overlay
Step 3	Perform overlay welding of tubular fuse
Step 4	Machining to finish dimension
Step 5	Perform final inspection

June 2nd, 2009 SMR Summary

June 16th, 2009 SMR Summary

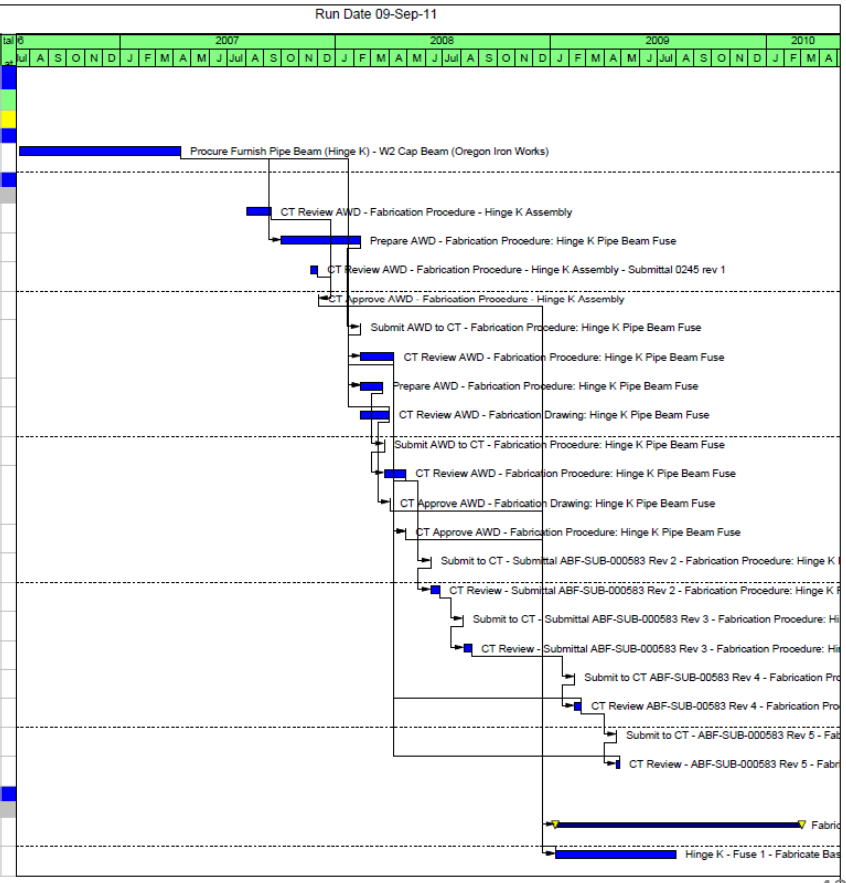
5-28-09-First pass of EQ390L started on 120a-3. Approx. 75% complete on first ring, ESW stopped due to equipment problems. 5-29-09 & 6-01-09: 1ST layer 309L completed 6-03-09. Second 316L layer started 6-03-09, completed 6-05-09. 3rd 309L Layer started 6-08-09 and completed on 6-10-09

Contract schedule does not show the true CT reviews?

- Need to review this

SAS Project - Update 43 dd 6/20/10 rev 0 | Run Date 09-Sep-11

Activity ID	Activity Name	Activity Count	Start	Finish	OD	AD	RD	TD	Calendar
SAS Project - Update 43 dd 6/20/10 rev 0		23	14-Jul-06 A	03-Mar-10 A	907	918	0	918	
MAIN		23	14-Jul-06 A	03-Mar-10 A	907	918	0	918	
W2 Cap Beam		23	14-Jul-06 A	03-Mar-10 A	907	918	0	918	
Mobilization		1	14-Jul-06 A	13-Apr-07 A	64	189	0	189	5D-SH
W2MOB000090	Procure Furnish Pipe Beam (Hinge K) - W2 Cap Beam (Oregon Iron Works)	1	14-Jul-06 A	13-Apr-07 A	64	189	0	189	5D-SH
Submittals		20	04-Aug-07	27-Apr-09 A	675	436	0	436	
Hinge K		20	04-Aug-07	27-Apr-09 A	675	436	0	436	
W2SUBAK1720	CT Review AWD - Fabrication Procedure - Hinge K Assembly	1	04-Aug-07 A	14-Sep-07 A	50	41	0	41	7D
W2SUBCF0900	Prepare AWD - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	01-Oct-07 A	12-Feb-08 A	95	91	0	91	5D-SH
W2SUBBI1720	CT Review AWD - Fabrication Procedure - Hinge K Assembly - Submittal 0245 rev 1	1	20-Nov-07 A	02-Dec-07 A	50	12	0	12	7D
W2SUBAK1730	CT Approve AWD - Fabrication Procedure - Hinge K Assembly	1	03-Dec-07 A	03-Dec-07 A	1	0	0	0	7D
W2SUBCF0905	Submit AWD to CT - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	13-Feb-08 A	13-Feb-08 A	1	0	0	0	5D-SH
W2SUBCF0910	CT Review AWD - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	14-Feb-08 A	10-Apr-08 A	50	56	0	56	7D
W2SUBCF0920	Prepare AWD - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	14-Feb-08 A	21-Mar-08 A	0	26	0	26	5D-SH
W2SUBCH0910	CT Review AWD - Fabrication Drawing: Hinge K Pipe Beam Fuse	1	14-Feb-08 A	02-Apr-08 A	50	48	0	48	7D
W2SUBCF0925	Submit AWD to CT - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	24-Mar-08 A	24-Mar-08 A	1	0	0	0	5D-SH
W2SUBCF0930	CT Review AWD - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	25-Mar-08 A	29-Apr-08 A	14	35	0	35	7D
W2SUBCH0915	CT Approve AWD - Fabrication Drawing: Hinge K Pipe Beam Fuse	1	03-Apr-08 A	03-Apr-08 A	1	1	0	1	7D
W2SUBCF0915	CT Approve AWD - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	30-Apr-08 A	30-Apr-08 A	1	0	0	0	7D
W2SUBCL0372	Submit to CT - Submittal ABF-SUB-000583 Rev 2 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	11-Jun-08 A	11-Jun-08 A	1	0	0	0	5D-SH
W2SUBCL0374	CT Review - Submittal ABF-SUB-000583 Rev 2 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	12-Jun-08 A	26-Jun-08 A	14	14	0	14	7D
W2SUBCL0376	Submit to CT - Submittal ABF-SUB-000583 Rev 3 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	05-Aug-08 A	05-Aug-08 A	1	0	0	0	5D-SH
W2SUBCL0378	CT Review - Submittal ABF-SUB-000583 Rev 3 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	06-Aug-08 A	20-Aug-08 A	14	14	0	14	7D
W2SUBDB0410	Submit to CT ABF-SUB-00583 Rev 4 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	10-Feb-09 A	10-Feb-09 A	0	0	0	0	5D-SH
W2SUBDB0415	CT Review ABF-SUB-00583 Rev 4 - Fabrication Procedure: Hinge K Pipe Beam Fuse	1	11-Feb-09 A	22-Feb-09 A	0	11	0	11	7D
W2SUBDE2730	Submit to CT - ABF-SUB-000583 Rev 5 - Fabrication Procedure (Oregon Iron Works): Hinge K Pipe Beam Fuse	1	22-Apr-09 A	22-Apr-09 A	5	0	0	0	5D-SH
W2SUBDE2735	CT Review - ABF-SUB-000583 Rev 5 - Fabrication Procedure (Oregon Iron Works): Hinge K Pipe Beam Fuse	1	23-Apr-09 A	27-Apr-09 A	5	4	0	4	7D
Fabrication		2	08-Jan-09	03-Mar-10 A	190	290	0	290	5D-SH
Hinge K		2	08-Jan-09	03-Mar-10 A	190	290	0	290	5D-SH
W2FAB000190	Fabricate Pipe Beam (Hinge K) - W2 Cap Beam - LOE	1	08-Jan-09 A	03-Mar-10 A	190	290	0	290	5D-SH
W2FABBJ0190	Hinge K - Fuse 1 - Fabricate Base Assembly	1	08-Jan-09 A	31-Jul-09 A	25	143	0	143	5D-SH



NOPC 6 Timeline
August 1-10, 2007

ABF-CAL-LTR-001625, Aug 29, 2011

The following is a timeline, in chronological order, related to this extended approval process:

- August 4, 2006 thru December 1, 2006 - OIW submits detailed information for the alternate method. Caltrans responds with additional questions, conference calls and meetings.
- February 13, 2007 - OIW submits another extensive binder of information regarding the proposed rolled fabrication method.
- May 5, 2007 - No response received from Caltrans. OIW writes to Caltrans requesting a response to the alternative fabrication method.
- May 24, 2007 - Caltrans responds that a mock up of the alternate fabrication is required for approval.
- July 2, 2007 - Caltrans requests a meeting to discuss the alternative fabrication method; Caltrans finally determines that no mock up is required.
- August 1, 2007 - Caltrans audits American Tank & Fabrication (AT&F) in order to approve AT&F for rolling the plate. ← Audit conducted on 7/16/07. AT&F received a contingent pass on 8/1/07 via STI 429 and required additional information
- August 10, 2007 - OIW responds to the AT&F audit findings.

OVERVIEW

American Tank and Fabricating Company (AT&F), a subcontractor to Oregon Iron Works (OIW), successfully completed the Material Fabrication Self-Qualification Audit (MFSQA) on July 11, 2007, per Special Provisions section 8-4.01. A previous MFSQA submittal, dated June 12, 2007, was rejected due to incomplete information.

On July 16, 2007, the audit team visited the AT&F facility. The audit team included Dr. Mazen Wahbeh, P.E., and Mr. Markian Petrina. Representing OIW were Mr. Steve Williams, Quality Control Manager, and Mr. Brandon Crittenden, Quality Control. AT&F was respresented by Mr. Michael Puleo, Vice President; Mr. Thomas Miller, Vice President; Mr. George Fayer IV, General Manager and Welding Engineer; Mr. Jerry Danko, Quality Control Manager; and Mr. Michael Erb, Sales Engineer. Mr. Charles Kanipicki, P.E., Quality Control Manager from American Bridge/Fluor, a Joint Venture (ABF) was present during the audit as well.

AUDIT SUMMARY

The SAS *Special Provisions,* Section 10-1.59, "FABRICATION," "Hinge K Pipe Beam," states: "Pipe beam tubulars shall be forgings. The Contractor may fabricate the pipe beam tubulars using a different fabrication method (other than forging) subject to review and approval of the Engineer." OIW proposes an alternative method, having AT&F cold-roll 100 mm thick HPS-485W plate.

The main objective of the Department audit was to evaluate AT&F cold-rolling capabilities, previous experience with rolling a 100mm thick ASTM A709 HPS-485W plate to the specified diameters, and AT&F quality control system.

Caltrans

Page 1

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

Flex your power
Be energy efficient!

August 01, 2007

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000429

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Department Audit - American Tank and Fabricating Company

In accordance with Section 8-4.01, "Audits," of the Special Provisions, the Department has completed an audit of the American Tank and Fabricating Company (AT&F) facility in Cleveland, Ohio. At this time AT&F is receiving a Contingent Pass and must submit additional information to receive a passing audit. The Contractor is reminded that Special Provisions, Section 10-1.59 "Steel Structures," Subsection, "Hinge K Pipe Beam," requires that the pipe beam tubulars be forgings. The Contractor may propose alternate fabrication methods subject to the approval of the Engineer. Such approval is still being discussed and has not yet been provided.

The following are items which need to be addressed:

1. AT&F has no experience with cold-rolling 100mm thick HPS-70W/485W material and must propose specific actions to be taken to address this lack of experience. This shall include confirmation from the mills that plates of the required thickness can be rolled and confirmation that the proposed equipment is capable of rolling the plates to the dimensions and thickness required by the contract.

2. The proper AWS D1.5-2002 WPS with supporting PQR must be submitted in accordance with the contract documents for the proposed welding. It is emphasized that the 485W material also requires compliance with the heightened requirements of Chapter 12 of AWS D1.5-2002. As noted during the audit, welding performed beyond tack welding will require an additional audit.

The following are items of concern noted for this facility:

1. Numerous in-process and completed items were observed on the ground without dunnage or other protection beneath them. Raw materials, in-process and completed pieces produced for the Project, must be properly stored above ground.

NOPC 6 Timeline August 1-10, 2007

American Bridge / FLUOR
A JOINT VENTURE

375 Burma Road
Oakland, CA 94607 USA
Phone 510-808-4600
Fax 510-808-4601

16-Aug-2007 ABF-CAL-LTR-000260

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: FABRICATION OF HINGE K PIPE B
DEPARTMENT AUDIT OF AMERICA

Gentlemen:

Attached please find a copy of letter SL-2244-019 from Oregon Iron
to Caltrans Letter No. 05.03.01-000429 concerning the audit of An
that this response adequately addresses the audit findings please i
received a "Pass" on their audit.

If you have any questions or comments please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A

Michael Flowers
Project Director

MF/rk/cg

cc:

Encl.: Oregon Iron Works letter dated August 10, 2007

File: 02.01

OREGON IRON WORKS, INC.
9700 S.E. LAWNFIELD ROAD • CLACKAMAS, OREGON 97015
TELEPHONE (503) 653-6300 • FAX (503) 653-5870

August 10, 2007

AMERICAN BRIDGE
375 Burma Rd
Oakland, CA 94607

Reply to: SL-2244-019

Attention: Bob Kick

Reference: HINGE K PIPE BEAMS OIW JOB #

Subject: CALTRANS AUDIT OF AMERICAN TANK AND FABRICATION

Dear Mr. Kick:

Oregon Iron Works, Inc. (OIW) has reviewed Caltrans serial letter No. 05.
regarding their Audit performed at American Tank and Fabricating (AT&
following comments to each of their requested "items which need to be a

1. *"AT&F has no experience with cold-rolling 100mm thick H*

In the time since the audit, AT&F has collected and forwarde
providing evidence of their past experience in rolling 75 mm
Although this previous project by AT&F references materials
than that of the current project, they have reviewed the forming ca
rolls and are confident in their capability to perform the roll formi
project.
(Reference: AT&F purchase order, sketch and MTR for past exp

"This shall include confirmation from the mills that plates of requi
rolled"

Mittal Steel has been supplied a copy of the report regarding the problems experienc
manufacturing of the Hinge A tubulars. They see no reason for concern with rolling of
their plate and consider this problem to be weld and processing related. According to
ASTM A6, Section X4, tables X4.1 and X4.2, the A709 HPS 485W plate can be formed
with a bend radius of 3x the thickness in the favorable direction and 4.5x the thickness if
bend lines are parallel to the direction of final rolling. To quote from the mill's letter
attached, "If you follow these guide lines, material is expected to form successfully".
(Reference: ArcelorMittal letter and copy of A 6/A 6M section X4)

2. *"The proper AWS D1.5-2002 WPS with supporting PQR must be submitted."*

The information/data contained on this drawing/file/document (whether in electronic or hard format and copy) contains Proprietary and Confidential information of Oregon Iron Works, Inc. (OIW), 9700 SE Lawnfield Road, Clackamas, Oregon. The disclosure, release, distribution, or unauthorized use of this information/data without the express written consent of OIW is expressly prohibited.

American Bridge / FLUOR
A JOINT VENTURE

375 Burma Road Oakland CA 94607
Phone 510-808-4600 / Fax 510-808-4601

LETTER OF SUBMITTAL
SAS Superstructure Project

Run Date 04-Mar-08
Time 12:30 PM

Dated: 04-Mar-2008
SUBMITTAL No: ABF-SUB-000159 **Rev:** 2

To: Gary Pursell
California Department of Transportation
333 Burma Road
Oakland CA 94607
Phone: (510) 622-5100 Fax: (510) 622-5165

Co/Job # 660110
Contract # 04-0120F4
Sub/Supplier: OIW
Sub/Supplier No:

Subject: MFSQA for American Tank and Fabricating Co., a subcontractor for Oregon Iron Works

Special Provis. (SP) REF: 8-4.01
Standard Spec. (SS) REF:

Schedule ID:

RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Drawing
☐ Design Report
☐ Calculations
☐ Copy of Letter
☐ Invoice

Drawing No	Rev	Subcon Dwg No	Rev	Status	Pages
	0			Pending	27

☐ Return For Correction
☐ For Information

JV) acknowledges receipt of the Department's Letter No.05.03.01-0000429 dated
n Tank and Fabricating Company.

dit. Please note that this response was previously sent to the Engineer as ABFJV serial
d is now being resubmitted as revision 2 to ABFJV's submittal ABF-SUB-000159R1 dated

We trus will find the above satisfactory and will grant a PASS for their audit of American Tank and Fabricating Company.

If you have any questions, please contact Chuck Kanapicki at (510) 808-4609.

CC:

Please review / approve by : 18-Mar-2008

Submitted By: Charles Kanapicki
Project Manager

Why didn't CT respond to ABF Letter 260?

ABF-CAL-LTR-000260, Aug 16, 2006

ABF-SUB-000159, March 4, 2008

State Letter 1554 March 17, 2008
CT Response to Submittal 159R02 AT&F Audit

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

Flex your power
Be energy efficient!

March 17, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-001554

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 159, Rev. 2 – American Tank & Fabricating Co. – Respons

The Department has completed review of Submittal A
Tank & Fabricating Co., a subcontractor to Oregon
discussed at the WDC, this document is not an MI
Department's audit findings and areas of concern.
ABF-SUB-00589R00, "Response to CT Audi
submittal is "Approved as Noted," with the

1. **Audit Finding #1:** The Department ac
Fabricating (AT&F) documentation verify
A709M Grade HPS 485W. However, th
material to be formed for this Project and
rolled into a tubular as is required for the
concerned with AT&F's lack of experience re
required in this Contract. Consequently, the Depart
inspection of the HPS material at AT&F. Notification s
this work commences.

2. **Audit Finding #2:** The Department does not expect the Contractor to perform an additional Procedure Qualification Record (PQR) to write the Welding Procedure Specification (WPS) for tack welding. However, the Contractor's tack welding WPS for work performed in accordance with AWS D1.5-2002 is required to have a supporting PQR when submitted. If the Contractor chooses to utilize the prequalified welding process of Shield Metal Arc Welding (SMAW) to perform tack-welding, a PQR will not be necessary to qualify the WPS.

3. **Audit Item of Concern #1:** The Contractor's response is acceptable to resolve the Department's concern regarding the storage of materials at AT&F. If during the fabrication of the Hinge K pipe beams the materials are not properly stored, the Department will notify the Contractor to take action to resolve the issue.

Did CT prevent OIW from starting after approval of Sub 6R04 on 1/29/08

Submittal 742- Surface Indications Plan for Pipe Beam Tubulars

Dear Mr. Kick:

The following is an outline of Oregon Iron Works plan for inspecting, tracking and repairing of surface indications in the exterior surface of Pc mark a124-b

History:

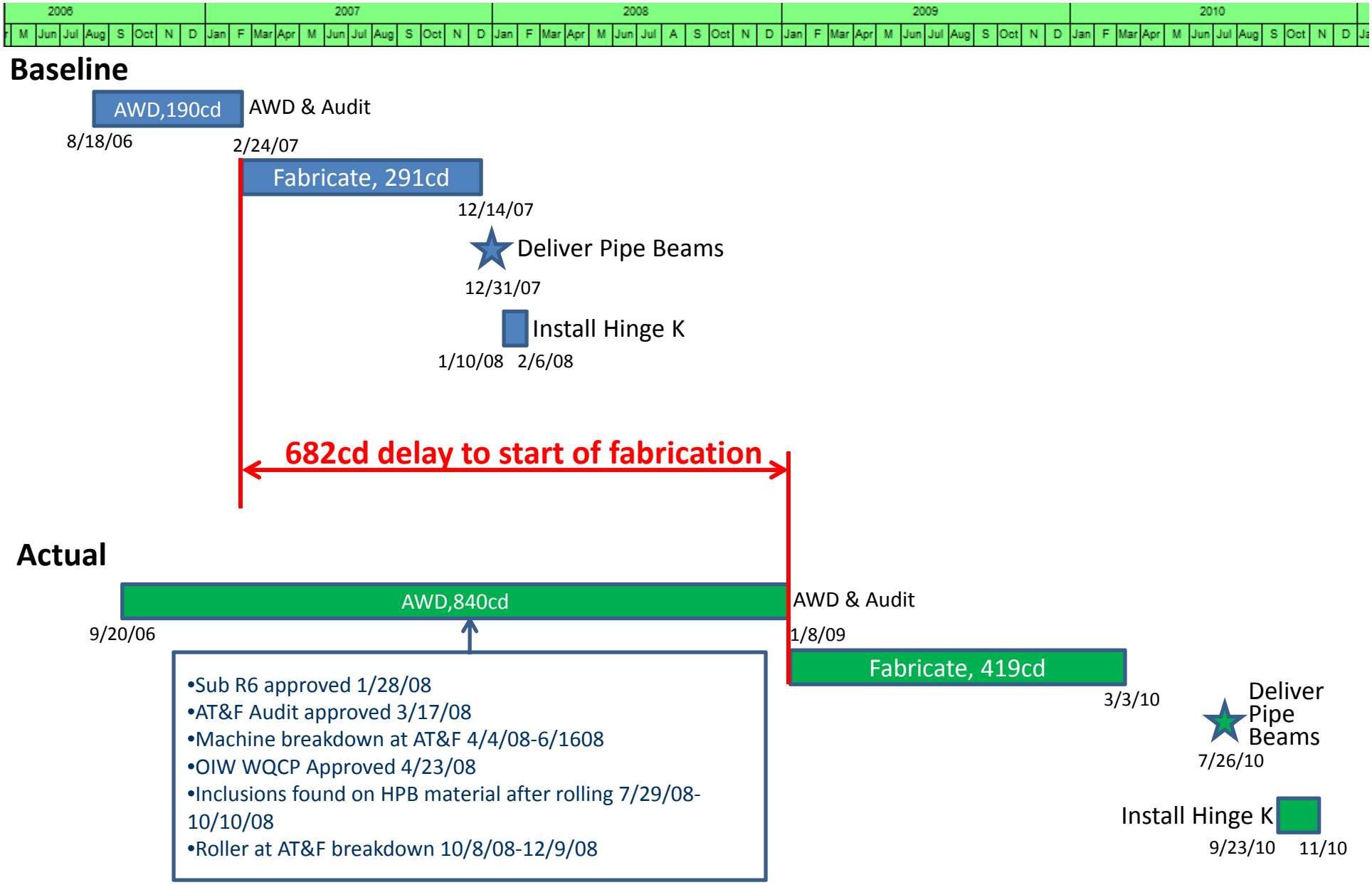
American Tank and Fabrication is contracted by Oregon Iron Works to roll form 100 mm HPS 485W plates for the Hinge K Pipe Beam Fuse. Material is purchased by OIW and supplied by Mittal Steel.

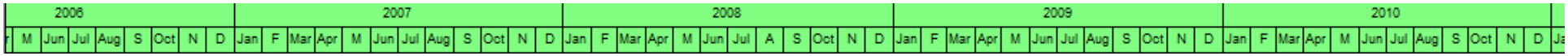
- June 17th American Tank roll formed first article, Pc mark a124-a.
  After roll forming, cylinder was examined 100% by OIW using MT, no indications.
  (See-OIW, MT report 2244-001)

- June 18th American Tank Roll formed second article, pc mark a124-b.
  After roll forming, cylinder was examined 100% by OIW using MT.
  Minor indications are discovered running transverse to rolling/grain direction.
  Forming of further plates is placed on hold by OIW pending investigation results.
  (See- OIW, MT report 2244-001)

- Preliminary review revealed the presence of rust in a majority of the indications, noting these imperfections were present in the as supplied material and not as a direct result of the AT/F forming process.

OIW has contacted Mittal Steel to arrange for a Quality representative to arrive at OIW Clackamas Oregon Facility in early July. Upon completion of inspection, Mittal Steel shall supply a report of their findings. Said report will be forward to AB/F and Caltrans for review and comment


2006
2007
2008
2009
2010
Baseline
AWD,190cd
AWD & Audit
8/18/06
2/24/07
Fabricate, 291cd
12/14/07
Deliver Pipe Beams
12/31/07
Install Hinge K
1/10/08
2/6/08
682cd delay to start of fabrication
Actual
AWD,840cd
AWD & Audit
9/20/06
1/8/09
Fabricate, 419cd
3/3/10
Deliver Pipe Beams
7/26/10
Install Hinge K
9/23/10
11/10
•Sub R6 approved 1/28/08
•AT&F Audit approved 3/17/08
•Machine breakdown at AT&F 4/4/08-6/1608
•OIW WQCP Approved 4/23/08
•Inclusions found on HPB material after rolling 7/29/08-10/10/08
•Roller at AT&F breakdown 10/8/08-12/9/08



December 2007 Schedule, Post CCO 15

AWD,505cd

AWD & Audit

9/20/06

2/7/08

Fabricate, 453cd

5/6/09

Deliver Pipe Beams

5/20/09

4/12/10 5/7/10

335cd delay to start of fab

Actual

AWD,840cd

AWD & Audit

9/20/06

1/8/09

Fabricate, 419cd

3/3/10

Deliver Pipe Beams

7/26/10

Install Hinge K

9/23/10 11/10

- Sub R6 approved 1/28/08
- AT&F Audit approved 3/17/08
- Machine breakdown at AT&F 4/4/08-6/1608
- OIW WQCP Approved 4/23/08
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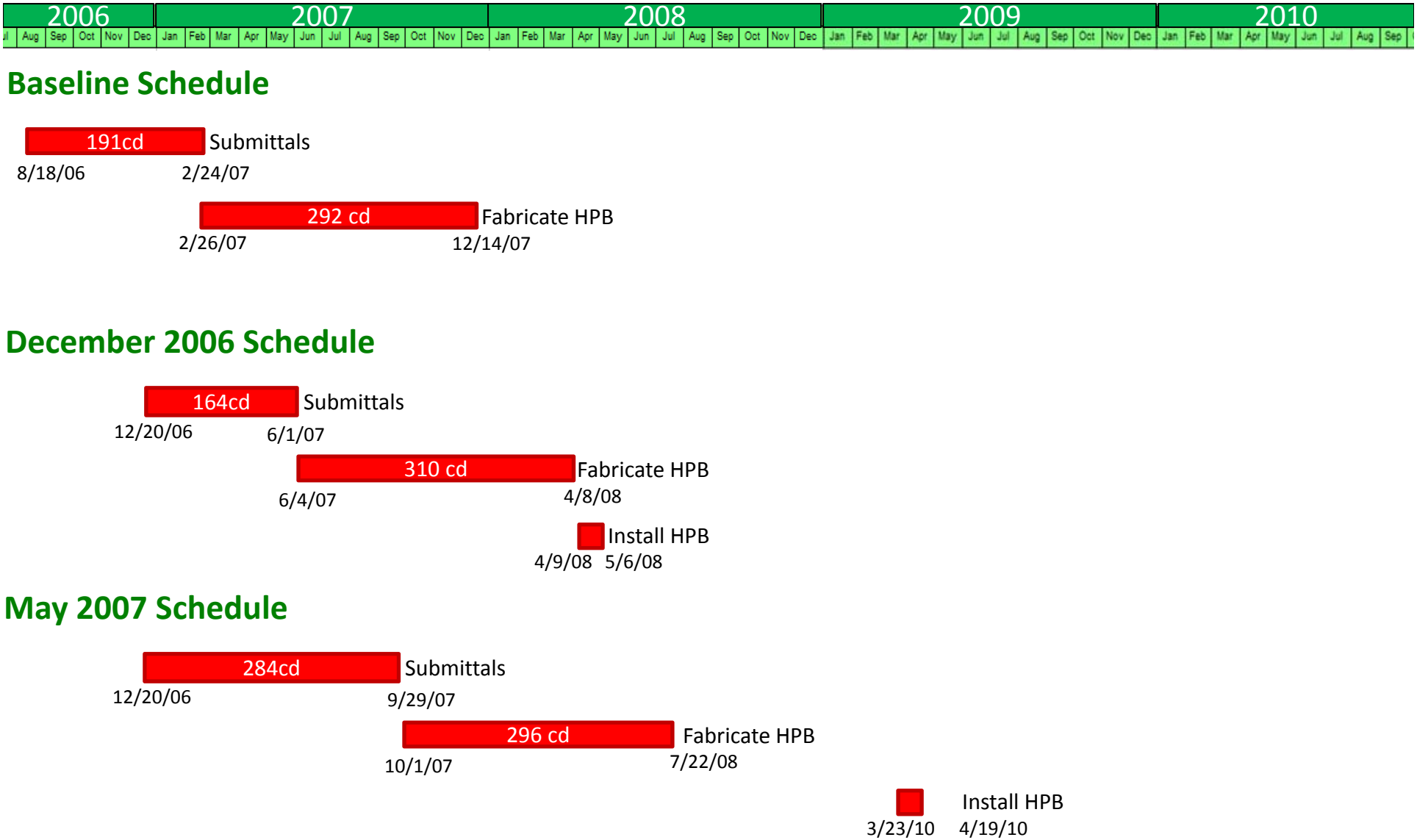
Critical Path to Start of HPB Fabrication