

**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program**

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September 24, 2009

Contract No. 04-0120F4

04-SF-80-13.2 / 13.9

Self-Anchored Suspension Bridge

Letter No. 05.03.01-005538

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

Dear Michael Flowers,

### Submittal 1320 - August 2009 Proposed Update Schedule

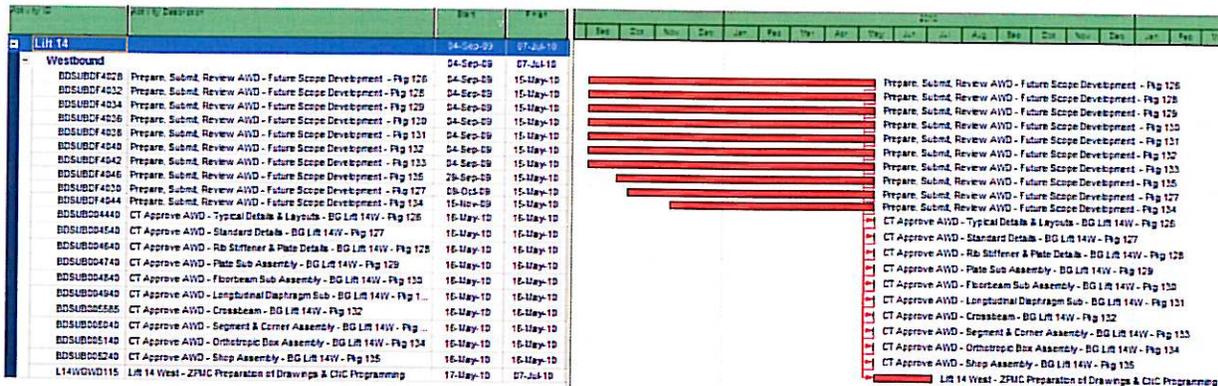
The Department has completed review of Submittal ABF-SUB-001320R00, "Project Schedule Monthly Update No. 33 (20-AUGUST-2009)." The monthly schedule presentation was held on September 10, 2009. The current schedule forecast for project completion remains unchanged from the July 2009 schedule and is over 13 months beyond the current accepted project completion date of August 8, 2013. Mitigation of all non-compensable delays will be required. The August 2009 schedule revision is "Accepted" with the following comments:

#### CATEGORY B:

##### **B1. Longest Path Logic Concerns**

Longest Path Activity, "L14WGW0115, Lift 14 West – ZPMC Preparation of Drawings & CNC Programming," has a Finish-to-Start (FS) predecessor to Activity "L14WGFAB024, Lift 14 West – Fabrication of Parts / Components." This (FS) logic appears to be unrealistic since, as in the past, fabrication will begin as translated drawings become available. Please explain or make appropriate modification to this logic.

In addition, the start of Activity "L14WGW0115, Lift 14 West – ZPMC Preparation of Drawings & CNC Programming" is constrained by the completion of ten critical Caltrans approval activities, which are constrained by "Future Scope Development" activities as shown in the figure below. Although it is understood that the "Future Scope Development" activities are simply "place holders," the logic does not appear to represent the actual start of ZPMC's drawing preparation. The Department requests that ABF review this logic and propose changes that will facilitate more realistic projections.



**B2. Shop Assembly Yard (SHO) Resource Change**

As discussed in the Department’s response to the July 2009 Schedule submittal (STL 05.03.01-005391), the shop assembly yard resource remains unchanged with a 50% reduction from the June 2009 Schedule. This change in resource limit continues to impact OBG and T1 delivery dates as shown in the table below. This significant change to the schedule was not included in the narrative. The Department is unclear as to what caused the change to this particular resource. As requested in State Letter 05.03.01-005391, provide a detailed explanation of the cause of this delay and potential mitigation alternatives.

	Sea Transportation Start Dates			Comparisons		
	June R1 2009	July R1 2009	Aug R0 2009	Jun vs July	July vs Aug	June vs Aug
Lifts 1 - 4	4-Aug-09	2-Sep-09	11-Sep-09	29	9	38
Lifts 5 - 6	26-Sep-09	1-Dec-09	12-Dec-09	66	11	77
T1 Lift 1	1-Jan-10	10-Mar-10	14-Mar-10	68	4	72
Lifts 7 - 8	6-Jan-10	19-Apr-10	7-May-10	103	18	121
Lifts 9 - 10 & T1 Lift 2	25-Mar-10	1-Sep-10	13-Sep-10	160	12	172
Lift 11 & Tower Lift 3	8-Jun-10	7-Dec-10	18-Dec-10	182	11	193
Lift 12 & Tower Lifts 4 & 5	8-Jul-10	14-Dec-10	25-Dec-10	159	11	170
Lifts 13 - 14	12-Jun-11	26-Jul-11	26-Jul-11	44	0	44

**B3. Unsubstantiated Changes in Activity Original Durations**

Although the amount of original duration changes without explanation has decreased from 145 activities in the July 2009 submission to 46 activities in the August 2009 submission, it remains a concern. Many of these activities are related to east end fabrication. The Department is still awaiting the substantiation and justification for these duration changes.

**B4. Out-of-Sequence Activities with GAPS**

The scheduling/leveling report included in the ABF submittal identifies 169 out-of-sequence activities. Some of these activities are as-built out-of-sequence activities. Although the as-built out-of-sequence is important and must be corrected, the current concern is with the in-progress out-of-sequence activities.

The Department has identified 207 in progress activities containing gaps. Although gaps can result from resource leveling, the majority of the time a gap is the result of an out-of-sequence condition. (See Attachment-GapsAndOut-Of-SequenceReport\_Aug2009.pdf) However, a gap may be the result of resource leveling and an out-of-sequence condition. In these situations the size of the gap is compounded by the resource leveling. Therefore, all out-of-sequence conditions must be resolved. The Department suggests that ABF correct the out-of-sequence activities which appear through the data date in all future submissions. The Department’s scheduling team is proactively assisting the ABF schedule team by identifying activities containing gaps and suggesting a correction.

**B5. Redundant Logic**

The schedule contains an excessive amount of redundant logic. Redundant logic unnecessarily complicates the schedule, resulting in misleading activity total float calculations and contributes to the long import time (currently approximately two hours). For example, Activity "BDCONDF2610- OBG Field Splice Completion (02E, 03E)" includes 22 successors. Due to the amount of redundancy in the schedule, it is suggested that the Department and the ABF schedule teams hold a weekly workshop to identify and correct these deficiencies. The Department's schedule team is committed to assisting ABF with this issue. Otherwise, it is requested that ABF outline a program to review and purge the redundancy from the schedule and explain the logic changes made in the monthly schedule narrative report.

**B6. Active Activities Without Progress**

This update has no slippage from the previous submission, however it contains 253-Active Activities reporting a lack of progress or diminishing progress during the reporting period. (See Attachment – Active Activities Without Progress.pdf) A large percentage of these activities are fabrication which should normally have a diminishing remaining duration until delivery. Review these activities prior to the next schedule submission to ensure the correct status is represented. If the activities were statused correctly, provide explanation for the lack of progress. The narrative for future updates should contain an explanation for the lack of progress in specific areas of the work and include a mitigation plan as required.

**B7. MEP Activities**

The MEP section of the schedule is similar to the baseline schedule which was developed at a time when MEP planning was preliminary. Planning of MEP work has evolved since the baseline schedule, but is not reflected in the current project schedule or 4-week schedules. It is noted that ABF is in the process of revising the MEP portion of the schedule. The MEP detailing must be expedited to reflect ABF's current plan since the OBG decks will be arriving shortly.

**B8. East End Fabrication Details**

The Department has been requesting the addition of the East End fabrication activities since the review of the March 2009 schedule submission. ABF was also advised that the East End fabrication activities did not require the same level of detail as that used in Lifts 1-11. It is understood that ABF is in the process of adding the fabrication activities, but will most likely not be completed by the submission of the September 2009 schedule. As done with the Lifts 1-11 fabrication details, the Department would like to review and discuss the level of detail proposed for the East End fabrication activities prior to the inclusion in the schedule.

**B9. Bid Item Costs**

In the Caltrans review of the May, June, and July 2009 submissions, ABF was advised that the total of all activity costs must equal the total contract bid amount, and that the deletion of numerous activities over the past months has resulted in the total cost currently reported to be \$327M less than the contract price. It is understood that this detail including CCO costs will be included in the September 2009 submittal.

**B10. Original and Remaining Duration Changes**

The remaining durations for the following activities may need to be revised based on actual data:

- **Blast Cleaning & Painting (Prime) for Segment and Crossbeam:** The schedule currently includes an original duration of 3 days for the blasting and cleaning of segments and crossbeams that have not yet started, with the exception of the East End activities. The average actual duration for the blast and painting of the prime coat is approximately nine (9) days for segments and eight (8) days for crossbeams (moving of segment assembly jigs to blast workshop and moving out of the painting workshop). Review and revise accordingly.
- **Horizontally Drill Field Splice:** The schedule currently includes an original duration of 10 days for Horizontally Drill Field Splice activities. The total durations are forecasted to be 46 and 44 days for Lifts 1 and 2 east and west, respectively. Review and revise accordingly.

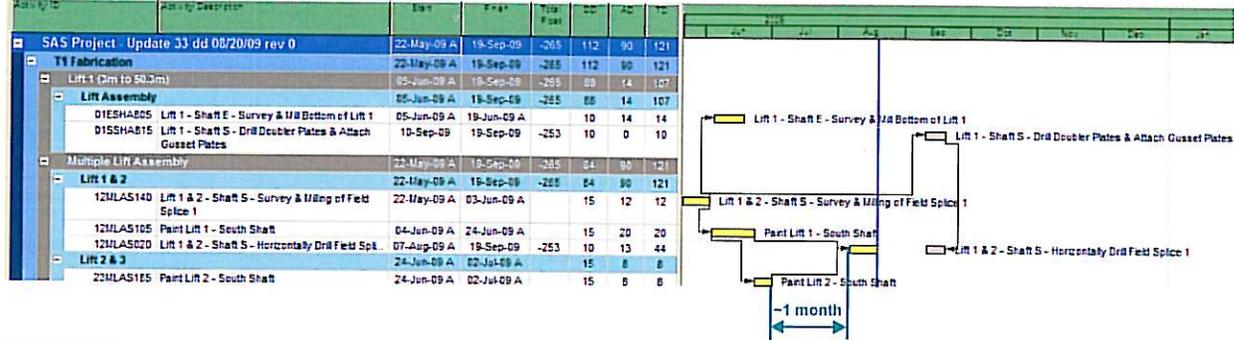
Activity ID	Activity Description	Start	Finish	Total F-cat	CD	RD	AD	TD
<b>SAS Project - Update 33 dd 08/20/09 rev 0</b>								
<b>T1 Fabrication</b>								
<b>Multiple Lift Assembly</b>								
12MLAS035	Lift 1 & 2 - Shaft E - Horizontally Drill Field Splice 1	05-Aug-09 A	19-Sep-09	-248	10	6	15	46
12MLAS020	Lift 1 & 2 - Shaft S - Horizontally Drill Field Splice 1	07-Aug-09 A	19-Sep-09	-253	10	9	13	44
12MLAS025	Lift 1 & 2 - Shaft W - Horizontally Drill Field Splice 1	05-Nov-09	14-Nov-09	-283	10	10	0	10
12MLAS030	Lift 1 & 2 - Shaft N - Horizontally Drill Field Splice 1	11-Nov-09	20-Nov-09	-274	10	10	0	10
23MLAS115	Lift 2 & 3 - Shaft W - Horizontally Drill Field Splice 2	10-Feb-10	25-Feb-10	-183	10	10	0	10
23MLAS120	Lift 2 & 3 - Shaft N - Horizontally Drill Field Splice 2	10-Feb-10	25-Feb-10	-194	10	10	0	10
23MLAS110	Lift 2 & 3 - Shaft S - Horizontally Drill Field Splice 2	21-Feb-10	02-Mar-10	-199	10	10	0	10
23MLAS125	Lift 2 & 3 - Shaft E - Horizontally Drill Field Splice 2	03-Mar-10	12-Mar-10	-209	10	10	0	10
34MLAS190	Lift 3 & 4 - Shaft S - Horizontally Drill Field Splice 3	16-Apr-10	25-Apr-10	-174	10	10	0	10
34MLAS200	Lift 3 & 4 - Shaft N - Horizontally Drill Field Splice 3	21-Apr-10	06-May-10	-166	10	10	0	10
34MLAS195	Lift 3 & 4 - Shaft W - Horizontally Drill Field Splice 3	12-May-10	21-May-10	-183	10	10	0	10
34MLAS205	Lift 3 & 4 - Shaft E - Horizontally Drill Field Splice 3	02-Jun-10	11-Jun-10	-215	10	10	0	10

- **Weld Shaft Assembly:** The original duration for weld shaft assembly is different for four Lifts. 72 days for each shaft of Lift 1, 48 days for each shaft of Lift 2, 48 days for each shaft of Lift 3 and 34 days for each shaft of Lift 4. These original durations have yet to be accomplished. As shown in the table below, the total durations far exceed the planned original durations. Review and revise remaining durations accordingly.

Activity ID	Activity Description	Start	Finish	Total F-cat	CD	RD	AD	TD
<b>SAS Project - Update 33 dd 08/20/09 rev 0</b>								
<b>T1 Fabrication</b>								
<b>Lift 1 (3m to 50.3m)</b>								
01ESHA795	Lift 1 - Shaft E - Weld Shaft Assembly	27-Oct-08 A	13-May-09 A	72	0	166	166	
01SSHA795	Lift 1 - Shaft S - Weld Shaft Assembly	04-Nov-08 A	26-Apr-09 A	72	0	167	167	
01NSHA795	Lift 1 - Shaft N - Weld Shaft Assembly	15-Mar-09 A	07-Sep-09	-272	72	4	152	171
01WSHA795	Lift 1 - Shaft W - Weld Shaft Assembly	22-Mar-09 A	04-Sep-09	-275	72	1	145	161
<b>Lift 2 (50.3m to 83m)</b>								
02SSHA535	Lift 2 - Shaft S - Weld Shaft Assembly	06-Jan-09 A	19-May-09 A	48	0	121	121	
02ESHA535	Lift 2 - Shaft E - Weld Shaft Assembly	09-Jan-09 A	19-May-09 A	48	0	118	118	
02WSHA535	Lift 2 - Shaft W - Weld Shaft Assembly	01-Apr-09 A	09-Oct-09	-293	48	4	135	180
02NSHA535	Lift 2 - Shaft N - Weld Shaft Assembly	07-Apr-09 A	18-Sep-09	-257	48	9	129	159
<b>Lift 3 (83m to 114m)</b>								
03SSHA520	Lift 3 - Shaft S - Weld Shaft Assembly	20-May-09 A	27-Sep-09	-354	48	18	92	131
03ESHA520	Lift 3 - Shaft E - Weld Shaft Assembly	21-May-09 A	05-Oct-09	-336	48	20	91	132
03WSHA520	Lift 3 - Shaft W - Weld Shaft Assembly	09-Jun-09 A	02-Nov-09	-256	48	30	72	141
03NSHA520	Lift 3 - Shaft N - Weld Shaft Assembly	14-Jun-09 A	20-Oct-09	-316	48	35	67	123
<b>Lift 4 (114m to 146.19m)</b>								
04SSHA700	Lift 4 - Shaft S - Weld Shaft Assembly	21-Sep-09	30-Oct-09	-123	34	34	0	34
04ESHA700	Lift 4 - Shaft E - Weld Shaft Assembly	06-Oct-09	08-Nov-09	-122	34	34	0	34
04NSHA700	Lift 4 - Shaft N - Weld Shaft Assembly	10-Oct-09	12-Nov-09	-116	34	34	0	34
04WSHA700	Lift 4 - Shaft W - Weld Shaft Assembly	21-Oct-09	23-Nov-09	-116	34	34	0	34
<b>Lift 5 - Saddle Grillage (146.19m to 151m)</b>								
05NSHA075	Lift 5 - Shaft N - Weld Shaft Assembly	16-Nov-09	09-Dec-09	-91	24	24	0	24
05WSHA075	Lift 5 - Shaft W - Weld Shaft Assembly	16-Nov-09	09-Dec-09	-76	24	24	0	24
05SSHA075	Lift 5 - Shaft S - Weld Shaft Assembly	16-Nov-09	09-Dec-09	-121	24	24	0	24
05ESHA075	Lift 5 - Shaft E - Weld Shaft Assembly	16-Nov-09	09-Dec-09	-105	24	24	0	24

**B11. Milling and Match Drill**

There is approximately a 1 month gap between Survey & Milling of Field Splice 1 (12MLAS140) and Horizontally Drill Field Splice 1 (12MLAS020), whereby ZPMC is aligning the two lifts in preparation for drilling the field splices. ABF should consider adding an activity such as “Align Skin Plates” as this activity is taking a considerable amount of time. Review and revise accordingly.



**CATEGORY C:**

**C1. Reference: 4.2 (OBG) Description of Current Problem Areas/Anticipated Delays**

ABF is respectfully advised that there exist other contract procedures and remedies by which to pursue and document the 10-pages of interrogatories contained in the above referenced section of the schedule narrative. All of the items involve East End and/or related issues and are already documented by ABF Letters, Contract Change Orders, Requests for Information, etc.

Although the contract requires that current and anticipated delays be reported in the narrative, the Contractor is also required to propose corrective action(s) and explain impact(s) on other activities. However schedule narrative section 4.2.3 – “Corrective Action and Proposed Mitigation” only contains 3 general statements which are non-responsive to the specifics cited in the 10-pages of issues.

The August Schedule revision is accepted as ABF’s current plan to complete the project with the understanding that all non-excusable delays will be mitigated. The Department recognizes the recent level of effort that ABF is putting into the schedule submissions and will continue to offer assistance in mitigating potential impacts.

Sincerely,

GARY PURSELL  
Resident Engineer

Attachment

cc: Bill Shedd, Don Ross  
file: 05.03.01, 26.05