

01-Nov-2007

ABF-CAL-LTR-000348

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: Request for Change Order (RFCO) No. 19 – RFI 876R0 and 944R0
Design Deficiencies on PWS Cable Geometry near Pier E2 and from PP 111 to PP 118

Gentlemen:

American Bridge / Fluor, JV (ABFJV) has received the Engineer's response to the subject RFI's. The issues described are Changes in what is indicated on Contract Sheets 967 and 978 of 1204. Pursuant to the Contract Documents, including Standard Specifications, Article 4-1.03C, Changes in Character of the Work and/or Article 5-1.116, Differing Site Conditions, ABFJV hereby notifies the Engineer that the following Change in the Contract Sheets requires that a Change Order be issued adjusting the Contract Compensation and Time:

ABF-RFI-000876R0 informed the Engineer that the PWS cable, while in the "free hanging" stage, will be in conflict with the OBG deck at PP116. The "free-cable" is indicated on Sheet 978 of 1204. The definition and common usage of the term "free cable" in the suspension bridge construction and engineering industry means the condition during initial cable construction when the cable hangs freely, suspended in a natural catenary between the saddles.

ABFJV is unaware of any major suspension bridge that has been constructed without a free-hanging cable between saddles. The conflict between the cable in its "free hanging" state and the OBG deck differs materially from those ordinarily encountered in the construction of a suspension bridge and is such a significant deviation from industry custom and practice that the conflict should have been addressed by the Department on the plans and by the design. The Contractor could not have expected, during the bid stage, that the design information provided by the Department was incomplete or that the term "free cable" provided on the plans misrepresented the true condition to be encountered during construction.

The Engineer's response indicated that the conflict was identified in Notes 3 and 4 of Sheet 978 of 1204 and Note 6 of Sheet 967 of 1204.

- Notes 6 of Sheet 967 states *"Movements During Construction: The Contractor shall take the necessary measures to allow for cable system movements during the construction particular at the top of the Tower (Tower Saddle), Pier E2 Bearing and Shear Key, East Saddle and Cable in main span and back span. The attention of the Contractor is directed to the fact that measures have to be taken to avoid potential interference between the cable and the box girder in the vicinity of the east saddle and between the cable and the tower saddle."*

ABF-CAL-LTR-000348

Page 2

ABFJV does not dispute that the statement exists and fully intends to ensure that conflicts during the "Load Transfer" process do not occur when the cable has "*Movements During Construction.*" However, when ABFJV constructs the cable in accordance with the Contract Plans, the cable is stationary and intersects the Box Girder west of the east saddle. It appears as if the constructability measures taken by the Engineer during design have failed to achieve a "free cable" result. ABFJV must make changes in the Work to accommodate this condition on the west side of the saddle, similar to what is indicated on Sheets 985 and 986 of 1204 on the east side of the saddle.

- Notes 3 of Sheet 978 stated "*The cable movements shown do not consider the interference between the cable and the box girder in the vicinity of the East Saddles, or the interference between the cable and the tower Saddle trough.*" Note 3 of Sheet 978 bear no relationship to the problems described by ABFJV in the preceding bullet regarding the inability to construct the cable in a "free cable" position. Cable movements occur during Load Transfer after the cable is initially constructed. There are no indications on the plans that the "free cable" will intersect the box girder on the west side of the saddle. Note that the omitted box girder components indicated on the east side of the east saddle (Sheets 985 and 986 of 1204) to allow initial cable construction must be installed prior to the Load Transfer when cable movements will occur.
- Note 4 of Sheet 978 stated "*The contractor shall take the necessary measures to prevent contact between the cable and the box girder. The contractor shall also ensure that the cable angle brake does not exceed 6 degrees, during the operation of tensioning the suspenders to transfer load to the cable.*" ABFJV understands the Engineers Note, however the Engineer has a responsibility to provide accurate Plans and Specifications and to identify known conflicts on the Contract Documents. ABFJV believes that the Engineer has failed to meet one or both of these tasks.

ABF-RFI-000944R0, ABFJV proposed a corner assembly installation to the Engineer to alleviate the "free hanging" cable interference on the west side of the east saddle. This is similar to the information indicated on the plans east side of the east saddle (see Sheets 985 and 986 of 1204). The Engineer's response indicated that the conflict was identified in Note 6 of Sheet 967 of 1204.

- The Engineers attention is directed to ABFJV's response provided in the first bullet of this Request for Change Order.

We also refer to ABFJV Letter No. ABF-CAL-LTR-000274 dated 8/31/2007 and ABF-CAL-LTR-000331 dated 10/11/2007, which provides additional information on this subject.

We look forward to receiving your prompt issuance of Contract Change Orders and this Notice Letter will be followed-up with a statement of the adjustment necessary to the Contract Compensation once we have determined the total costs associated with these Changes and the in the event we incur a delay, the adjustment to be made to the Contract Time.

ABF-CAL-LTR-000348
Page 3

If you have any questions, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director
MF/PW/rt

Encl: RFI 876R0 (6 pages)
RFI 944R0 (9 pages)
ABFJV Letter No. ABF-CAL-LTR-000274, dated 8/31/2007 (2 pages)
Caltrans Letter No. 05.03.01-000627, dated 9/26/2007 (1 page)
ABF-CAL-LTR-000331 dated 10/11/2007 (2 pages)

File: 02.01
RFI 876 and 944

REQUEST FOR INFORMATION (RFI)

RFI No.: ABF-RFI-000876R00 Submitted By: Smith, Kevin Pages: 5
 RFI Date: 17-August-2007 Contact Name: Smith, Kevin Phone No. (412) 631-1000
 Pages Attached: 4

Subject: PWS Cable Geometry Near Pier E2	
References:	
Sub/Sup: ABF	Sub RFI #:
Response Required by: 24-August-2007	Response affects critical path activity? Maybe

Description:

Using the preliminary cable geometry (derived from Contract weights and reactions) from Ammann & Whitney's analysis provided in ABF-SUB-000232R00, ABF has discovered potential interferences between the main cable and the box girders in the freehanging and loaded cable profiles. Please reference the attached sketches (Sheets 1 through 4) which illustrate the cable locations relative to the box girders for the Eastbound and Westbound girders from PP104 to PP116.

Please review and advise if TYLin's analysis indicates similar cable profiles and resulting conflicts.

If our layouts are correct, the following conflicts must be addressed:

1. The freehanging main cable interferes with the EB and WB box girders at PP116.
2. The loaded main cable interferes with the EB suspender bracket at PP110.
3. The main cables will interfere with the suspender brackets on the EB and WB girders during load transfer.
4. Cable compaction and cable wrapping near Pier E2 will not be possible due to the limited clearances between the cable and the box girder.
5. At PP112, PP114 and PP116 the suspender bracket geometry required to match the location of the loaded main cable will be significantly different than the dimensions (13.5°, 850mm and "A" dimension) shown on Contract Drawing number 744. As discussed in the most recent OBG Team Meeting held at the Working Drawing Campus, the detailing of these suspender brackets has been placed on hold until it is clarified how the suspender brackets are to be detailed to meet the design requirements. Further meetings at the Working Drawing Campus would be useful to resolve this issue.

Please review and advise how these conflicts are to be resolved.

Contractor Disposition:

This RFI is being submitted for:

The Cost and Time Impact from this RFI is: Not selected

RECEIVED

AUG 24 2007

AMERICAN BRIDGE/FLUOR

Response:

Agreed Ext. Due Date:

Pages: 2

Pages Attached: 0

1. The conflict of the free-hanging cable with the box girder in the vicinity of the East Saddle was identified in notes 3 and 4 of sheet 978/1204 and note 6 of sheet 967/1204. The Contractor was directed to take necessary measures to avoid interference between the cable and the deck during construction. The Contractor's erection solution to this interference will impact other items noted in this RFI.

REQUEST FOR INFORMATION (RFI)

2. The suspender forces chosen for the final cable profile control the cable clearances over the suspender brackets. Note that the north and south cables are at differing elevations with respect to the girder, and that the moment diagram reported in Submittal #232 (currently under review) is slightly out of limits in the vicinity of PP 110. Therefore, a relaxation of suspender forces is available to the Contractor, which should eliminate the noted cable – EB suspender bracket conflict.

3. See response to item 1.

4. The cable compaction and wrapping near Pier E2 can be accommodated as part of the Contractor's solution to item 1 above.

5. The cable location should match the bracket location “by definition.” The cable geometry should be determined by the requirement that the cable passes through the brackets, as explained in the response to RFI 776. The brackets positions may be adjusted along the line defined by the 13.5° angle, or another approved angle.

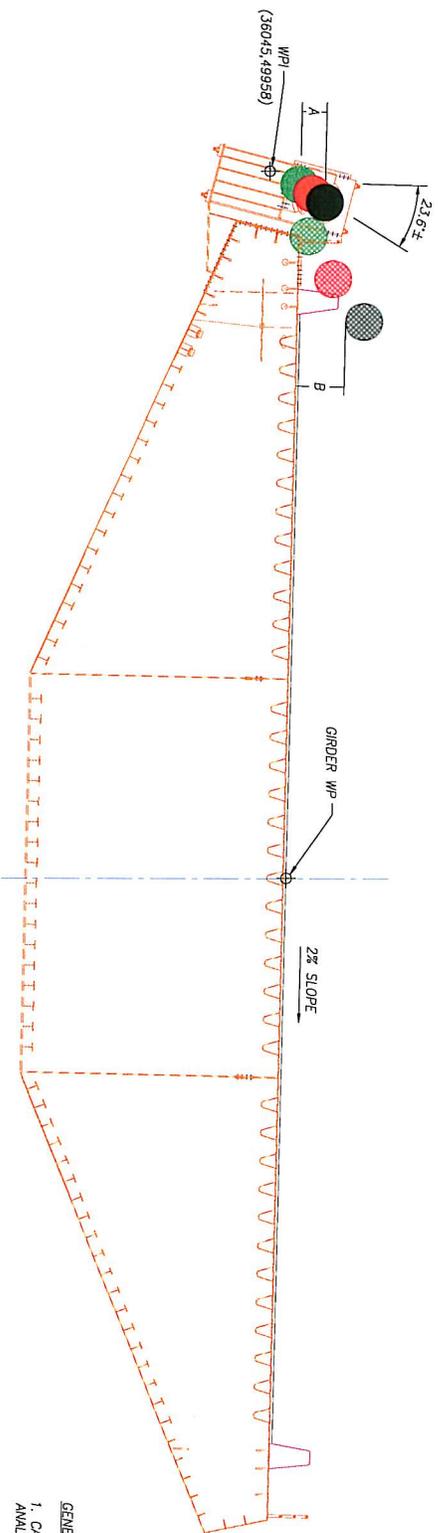
The sketches included in this RFI show the angles formed by the cable and the projected cable PI. The cable angles determined by the Contractor are similar to those determined by the design team. The inclination of the brackets does not need to match the cable inclination because the brackets can apply a force in any direction. As was stated in the response to RFI 776, the cable bracket shall be detailed to accommodate the final cable geometry, and preliminary detailing may require later revisions.

We are willing and prepared to meet and discuss these issues further.

Administrative Action:

This resolves the RFI. No further action required.

Date: 24-August-2007	Respondent: Collins, Warren	Phone No.: 510-622-5661
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WESTBOUND BRIDGE

TABLE 1: WESTBOUND CABLE LOCATION AND COORDINATES (mm)

	PP 112	PP 114	PP 116
STEEL GIRDER FREE POSITION	(21000, 50552)	(21000, 50441)	(21000, 50328)
STEEL GIRDER FINAL POSITION	(21000, 50712)	(21000, 50553)	(21000, 50395)
FREE CABLE	(32828, 52149)	(33736, 51383)	(34645, 50732)
LOADED CABLE	(35359, 51488)	(35553, 51036)	(35747, 50599)

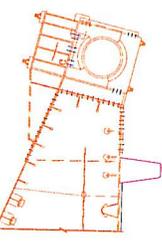
TABLE 2: STEEL GIRDER FREE POSITION CAMBER (mm)

(VALUES INCLUDED IN TABLE 1: STEEL GIRDER FREE POSITION AND TABLE 3 DIMENSION B)	TRANSVERSE	LONGITUDINAL	LIVE LOAD	TOTAL
PP 112	44	40	76	160
PP 114	31	28	53	112
PP 116	19	17	31	67

TABLE 3: DIMENSION "A" & "B" (mm)

PANEL POINT	A*	B**
PP 112	519	1018
PP 114	242	345
PP 116	-41	-210

* DIMENSION A IS THE DISTANCE BETWEEN THE CENTER OF CABLE IN THE LOADED POSITION AND THE TOP OF THE STEEL GIRDER DECK PLATE.
 ** DIMENSION B IS THE CLEARANCE BETWEEN THE BOTTOM OF THE CABLE IN THE FREE POSITION AND THE PROJECTION OF THE TOP OF THE STEEL GIRDER DECK PLATE.



SUSPENDER BRACKET ALTERNATIVE DESIGN

TABLE 4: PANEL POINT BRACKET TYPE

PANEL POINT	SUSPENDER BRACKET	TYPICAL	ALTERNATIVE
PP 112			
PP 114			
PP 116			

LEGEND:

- FREE POSITION (Dotted pattern)
- LOADED POSITION (Solid grey)
- PANEL POINT 112 (Black square)
- PANEL POINT 114 (Red square)
- PANEL POINT 116 (Green square)

- GENERAL NOTES
1. CABLE GEOMETRY FROM AMMANN & WHITNEY ANALYSIS PROVIDED IN ABF-SUB-000233R00.
 2. TRANSVERSE CAMBER CLEARANCE INTERPOLATED FROM CONTRACT DRAWING SHEET 644 TABLE 2.
 3. LONGITUDINAL CAMBER CLEARANCE IS DERIVED FROM THE BOX GIRDER ERECTION PROFILE.
 4. STEEL GIRDER CENTER LINE ELEVATION IN THE FINAL POSITION IS CALCULATED FROM CONTRACT DRAWING PROFILE GRADE LINE PLUS LIVE LOAD CAMBER.

REV	DATE	BY	DESCRIPTION
6			
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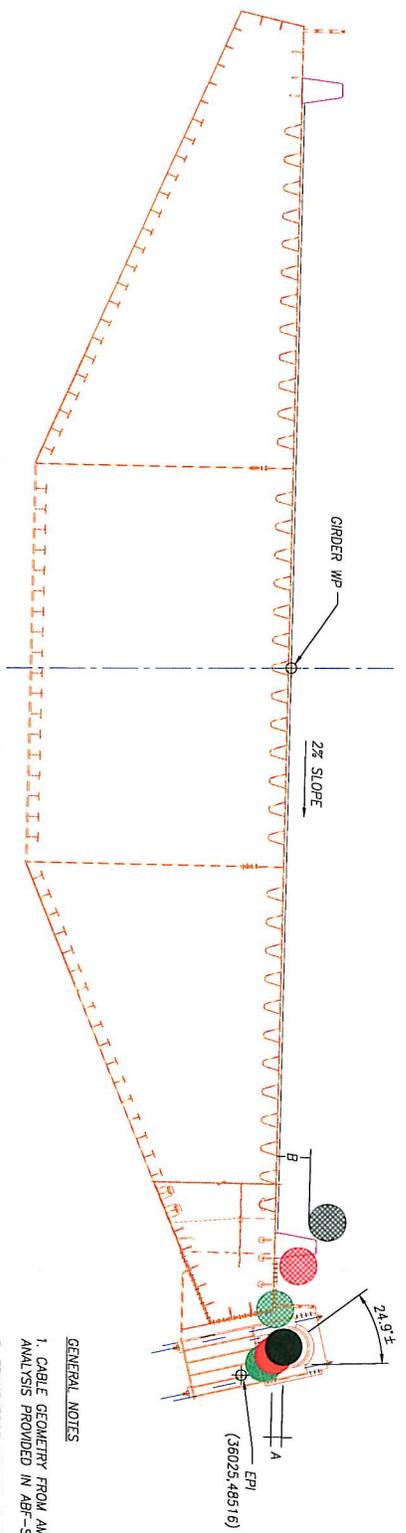
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 CONTRACT NO. 04-0120F-4
 BRIDGE NO. 34-0006LR

DISTRICT 04 COUNTY SF ROUTE 13.2 / 13.9
 SAN FRANCISCO OAKLAND BAY BRIDGE
 EAST SPAN SEISMIC SAFETY PROJECT
 SELF ANCHORED SUSPENSION BRIDGE
 (SUPERSTRUCTURE AND TOWER)

CABLE GEOMETRY NEAR PIER E2
 WESTBOUND BRIDGE
 PANEL POINTS 112 - 116

ASB American Bridge
 FLUOR
 A JOINT VENTURE

Media By: C. PRATT Date: 8/14/07
 Checked By: K. SMITH Date: 8/15/07
 In Charge Of: R. CROCKETT
 Job No. 680110 Sheet No. SHEET 1 OF 4
 Scale: NONE Revision: 0



EASTBOUND BRIDGE

TABLE 1: EASTBOUND CABLE LOCATION AND COORDINATES (mm)

	PP 112	PP 114	PP 116
STEEL GIRDER FREE POSITION	(21000, 49714)	(21000, 49603)	(21000, 49490)
STEEL GIRDER FINAL POSITION	(21000, 49874)	(21000, 49715)	(21000, 49557)
FREE CABLE	(32778, 50523)	(33895, 49804)	(34612, 49204)
LOADED CABLE	(35426, 49767)	(35596, 49394)	(35765, 49036)

TABLE 2: STEEL GIRDER FREE POSITION CAMBER (mm)

(VALUES INCLUDED IN TABLE 1: STEEL GIRDER FREE POSITION AND TABLE 3 DIMENSION B)	TRANSVERSE	LONGITUDINAL	LIVE LOAD	TOTAL
PP 112	44	40	76	160
PP 114	31	28	53	112
PP 116	19	17	31	67

TABLE 3: DIMENSION "A" & "B" (mm)

PANEL POINT	A*	B**
PP 112	231	704
PP 114	-21	113
PP 116	-175	-356

* DIMENSION A IS THE DISTANCE BETWEEN THE CENTER OF CABLE IN THE LOADED POSITION AND THE TOP OF THE STEEL GIRDER DECK PLATE.
 ** DIMENSION B THE CLEARANCE BETWEEN THE BOTTOM OF THE CABLE IN THE FREE POSITION AND THE PROJECTION OF THE TOP OF THE STEEL GIRDER DECK PLATE.

SUSPENDER BRACKET ALTERNATIVE DESIGN

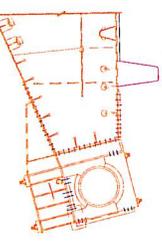
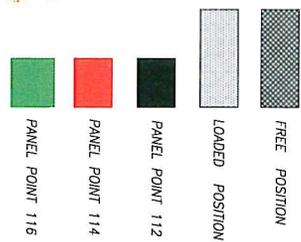


TABLE 4: PANEL POINT BRACKET TYPE

PANEL POINT	SUSPENDER BRACKET	TYPICAL	ALTERNATIVE
PP 112			
PP 114			
PP 116			



- GENERAL NOTES
- CABLE GEOMETRY FROM AMMANI & WHITNEY ANALYSIS PROVIDED IN ABF-SUB-00023R00.
 - TRANSVERSE CAMBER CLEARANCE INTERPOLATED FROM CONTRACT DRAWING SHEET 644 TABLE 2.
 - LONGITUDINAL CAMBER CLEARANCE IS DERIVED FROM THE BOX GIRDER ERECTION PROFILE.
 - STEEL GIRDER CENTER LINE ELEVATION IN THE FINAL POSITION IS CALCULATED FROM CONTRACT DRAWING PROFILE GRADE LINE PLUS LIVE LOAD CAMBER.

REV	DATE	BY	DESCRIPTION
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STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 CONTRACT NO. 04-0120F-4
 BRIDGE NO. 34-006LR

DISTRICT | COUNTY | ROUTE | KILOMETER POST
 04 | SF | 80 | 13.2 / 13.9

SAN FRANCISCO OAKLAND BAY BRIDGE
 EAST SPAN SEISMIC SAFETY PROJECT
 SELF ANCHORED SUSPENSION BRIDGE
 (SUPERSTRUCTURE AND TOWER)

CABLE GEOMETRY NEAR PIER E2
 EASTBOUND BRIDGE
 PANEL POINTS 112 - 116

American
 AB
 Bridge
 FLUOR
 A JOINT VENTURE

Made By: C. PARATI Date: 8/14/07
 Checked By: K. SMITH Date: 8/15/07
 In Charge Of: R. CROCKETT

Job No. 660110 SHEET 2 OF 4
 Scale: NONE Revision: 0

ABF-RFI-000876R00

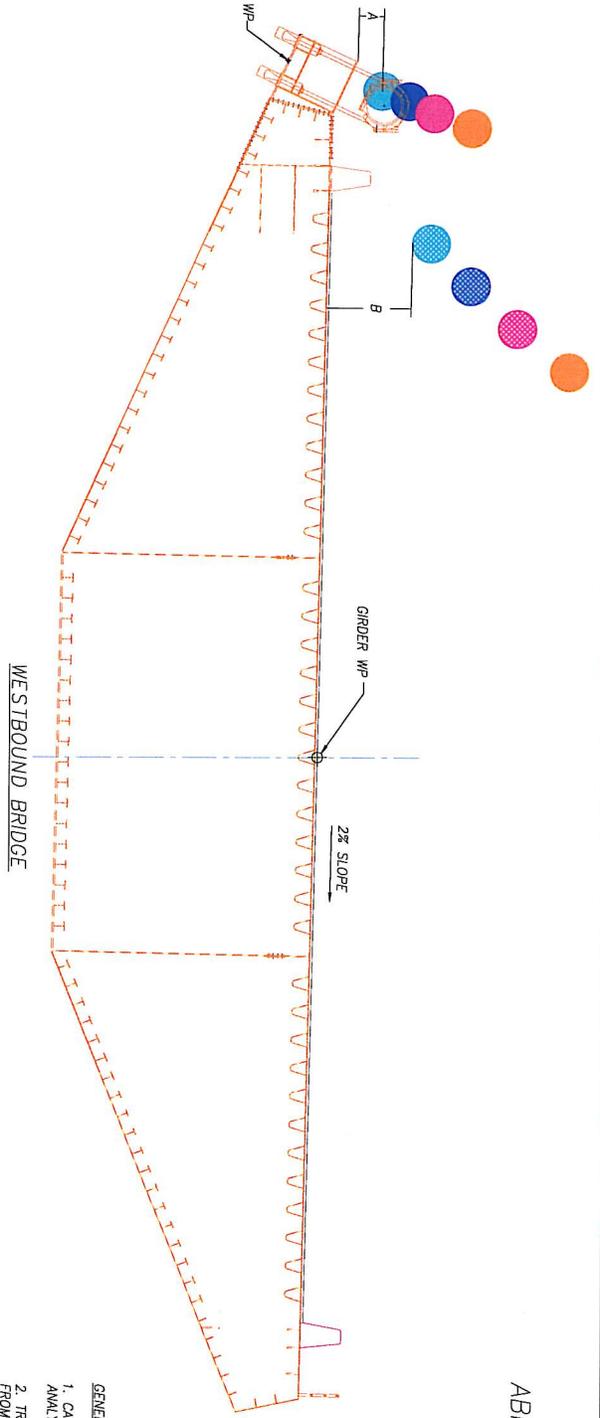


TABLE 1: WESTBOUND CABLE LOCATION AND COORDINATES (mm)

	PP 104	PP 106	PP 108	PP 110
STEEL GIRDER FREE POSITION	(21000, 51039)	(21000, 50917)	(21000, 50793)	(21000, 50670)
STEEL GIRDER FINAL POSITION	(21000, 51348)	(21000, 51190)	(21000, 51030)	(21000, 50871)
FREE CABLE	(29199, 58373)	(30106, 55143)	(31013, 54029)	(31921, 53031)
LOADED CABLE	(34373, 34384)	(34682, 33492)	(34941, 32655)	(35161, 32006)

TABLE 2: STEEL GIRDER FREE POSITION CAMBER (mm)

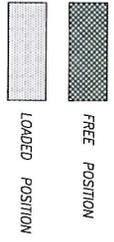
(VALUES INCLUDED IN TABLE 1: STEEL GIRDER FREE POSITION AND TABLE 3 DIMENSION B)	LONGITUDINAL				TOTAL
	TRANSVERSE	LONGITUDINAL	LIVE LOAD		
PP 104	50	86	173		309
PP 106	50	74	149		273
PP 108	50	63	124		237
PP 110	50	51	100		201

TABLE 3: DIMENSION "A" & "B" (mm)

PANEL POINT	A*	B**
PP 104	2455	4788
PP 106	1851	3662
PP 108	1119	2654
PP 110	553	1791

* DIMENSION A IS THE DISTANCE BETWEEN THE CENTER OF CABLE IN THE LOADED POSITION AND THE OUTSIDE EDGE OF THE SUSPENDER BRACKET

** DIMENSION B IS THE CLEARANCE BETWEEN THE BOTTOM OF THE CABLE IN THE FREE POSITION AND THE PROJECTION OF THE STEEL GIRDER DECK PLATE



GENERAL NOTES

1. CABLE GEOMETRY FROM AMMANN & WHITNEY ANALYSIS PROVIDED IN ABF-SUB-000232R00.
2. TRANSVERSE CAMBER CLEARANCE INTERPOLATED FROM CONTRACT DRAWING SHEET 644 TABLE 2.
3. LONGITUDINAL CAMBER CLEARANCE IS DERIVED FROM THE BOX GIRDER ERECTION PROFILE.
4. STEEL GIRDER CENTER LINE ELEVATION IN THE FINAL POSITION IS CALCULATED FROM CONTRACT DRAWING PROFILE GRADE LINE PLUS LIVE LOAD CAMBER.

REV	DATE	BY	DESCRIPTION
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STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONTRACT NO. 04D12954
BRIDGE NO. 34-0081UR
DISTRICT 04 COUNTY SF ROUTE 80 KILOMETER POST 13.2/13.9

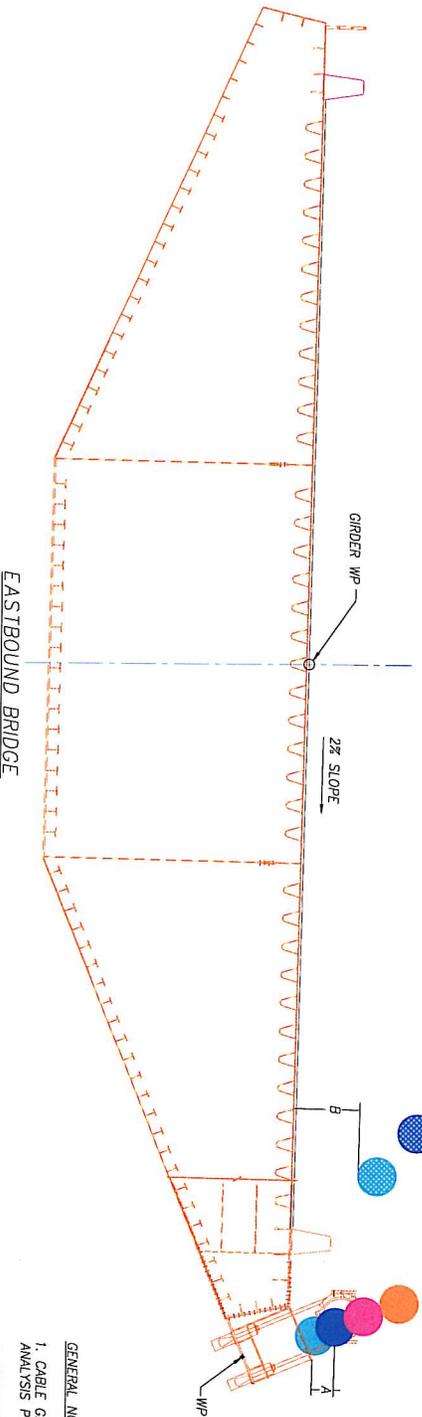
SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SUSPENSION BRIDGE
SELF ANCHORED SUSPENSION BRIDGE
(SUPERSTRUCTURE AND TOWER)

CABLE GEOMETRY NEAR PIER E2
WESTBOUND BRIDGE
PANEL POINTS 104 - 110

AB American Bridge
FLUOR A JOINT VENTURE

Made By: C.PRAYT Date: 8/14/07
Checked By: K.SMITH Date: 8/15/07
In Charge Of: R.CROCKETT

Job No. 660110 Sheet No. SHEET 3 OF 4
Scale: NONE Revision: 0



GENERAL NOTES

1. CABLE GEOMETRY FROM AMANN & WHITNEY ANALYSIS PROVIDED IN ABF-SUB-00022R00.
2. TRANSVERSE CAMBER CLEARANCE INTERPOLATED FROM CONTRACT DRAWING SHEET 644 TABLE 2.
3. LONGITUDINAL CAMBER CLEARANCE IS DERIVED FROM THE BOX GIRDER ERECTION PROFILE.
4. STEEL GIRDER CENTER LINE ELEVATION IN THE FINAL POSITION IS CALCULATED FROM CONTRACT DRAWING PROFILE GRADE LINE PLUS LIVE LOAD CAMBER.

TABLE 1: EASTBOUND CABLE LOCATION AND COORDINATES (mm)

(mm)	PP 104	PP 106	PP 108	PP 110
STEEL GIRDER FREE POSITION (21000, 50201)	(21000, 50079)	(21000, 48955)	(21000, 49832)	(21000, 50332)
STEEL GIRDER FINAL POSITION (21000, 50510)	(21000, 50352)	(21000, 50192)	(21000, 50033)	(21000, 50333)
FREE CABLE (29115, 54614)	(30031, 53410)	(30947, 52328)	(31862, 51366)	(32556, 50180)
LOADED CABLE (34569, 52361)	(34842, 51474)	(35067, 50743)	(35256, 50180)	

TABLE 2: STEEL GIRDER FREE POSITION CAMBER (mm)

(VALUES INCLUDED IN TABLE 1: STEEL GIRDER FREE POSITION AND TABLE 3: DIMENSION B)

(mm)	TRANSVERSE	LONGITUDINAL	LIVE LOAD	TOTAL
PP 104	50	86	173	309
PP 106	50	74	149	273
PP 108	50	63	124	237
PP 110	50	51	100	201

TABLE 3: DIMENSION "A" & "B" (mm)

PANEL POINT	A**	B**
PP 104	1809	4210
PP 106	1062	3164
PP 108	471	2222
PP 110	-47	1404

FREE POSITION
 PANEL POINT 104
 PANEL POINT 106
 PANEL POINT 108
 PANEL POINT 110
 LOADED POSITION

* DIMENSION A IS THE DISTANCE BETWEEN THE CENTER OF CABLE IN THE LOADED POSITION AND THE OUTSIDE EDGE OF THE SUSPENDER BRACKET

** DIMENSION B IS THE CLEARANCE BETWEEN THE BOTTOM OF THE CABLE IN THE FREE POSITION AND THE PROJECTION OF THE STEEL GIRDER DECK PLATE

REV	DATE	BY	DESCRIPTION
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STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONTRACT NO. 04-0120-F4
BRIDGE NO. 34-0008LUR

DISTRICT | COUNTY | ROUTE | KILOMETER POST
04 | SF | 80 | 13.2 / 13.9

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT
(SUPERSTRUCTURE AND TOWER)

CABLE GEOMETRY NEAR PIER E2
EASTBOUND BRIDGE
PANEL POINTS 104 - 110

American Bridge **FLUOR**
A JOINT VENTURE

Made By: C. PRATT Date: 8/14/07
Checked By: K. SMITH Date: 8/15/07
In Charge Of: R. GRACKETT

Job No. 680110
Scale: NONE

Sheet No. SHEET 4 OF 4
Revision: 0

REQUEST FOR INFORMATION (RFI)

RFI No.: ABF-RFI-000944R00 Submitted By: Gatsos, Levi Pages: 8
 Pages Attached: 7
 RFI Date: 26-September-2007 Contact Name: Smith, Kevin Phone No. (412) 631-1000

Subject: OBG Coner Assembly from PP 111 to PP 118	
References:	
Sub/Sup: ABF	Sub RFI #:
Response Required by: 05-October-2007	Response affects critical path activity? Yes

Description:

To accommodate the free hanging cable interference with the OBG, identified in ABF-RFI-000876R00, ABF proposes to field install the corner assembly from PP111+700 to PP118-1700 (field splice #12). For additional information please reference the attached sketches. In regards to this, we request the following:

1. ABF proposes to temporarily bolt the Corner Assembly to floorbeams at PP112-117, as shown on the attached sketches.
2. ABF proposes to field weld the Corner Assembly from PP111+700 to PP118-1700 to east bound and west bound box girders.

Please review and approve.

Contractor Disposition:

This RFI is being submitted for

The Cost and Time Impact from this RFI is: Cost and/or time impacts in the performance of our Work will result.

Response:	Agreed Ext. Due Date:
	Pages: <u>2</u>
	Pages Attached: <u>0</u>

The Department takes no exception to the Contractor's proposal to field install the corner assemblies from PP 111+700 to PP118+1700. With regards to the specific proposals:

1. No exception taken.
2. No exception taken.

Suitable measures shall be taken to prevent moisture/water from being introduced into the box girder during shipment.

The Contractor shall provide / address the following issues in a future submittal:

1. Calculations to substantiate the details
2. Revisions to axial camber for the corner assembly
3. The corner assembly shall be fit to the OBG segment and precisely aligned.

REQUEST FOR INFORMATION (RFI)

The Contractor is reminded of Note 6 on page 967/1204 which highlights the potential of interference between the cable and the box girder. As a result, the Department does not understand the full intent of the statement included in the Contractor Disposition section of this RFI. As noted in previous WDC discussions, this proposal is but one of many options available to address the interference of the free hanging cable with the OBG. The Department welcomes further discussion at the WDC.

Administrative Action:

This response resolves the RFI. Further discussions required

Date: 05-October-2007	Respondent: He, Philip	Phone No.: 510-808-4620
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REQUEST FOR INFORMATION (RFI)

RFI No.: ABF-RFI-000944R00 Submitted By: Gatsos, Levi Pages: 8
 RFI Date: 26-September-2007 Contact Name: Smith, Kevin Pages Attached: 7
 Phone No. (412) 631-1000

Subject: OBG Coner Assembly from PP 111 to PP 118	
References: ABF-RFI-000876	
Sub/Sup: ABF	Sub RFI #:
Response Required by: 05-October-2007	Response affects critical path activity? Yes

Description:

To accommodate the free hanging cable interference with the OBG, identified in ABF-RFI-000876R00, ABF proposes to field install the corner assembly from PP111+700 to PP118-1700 (field splice #12). For additional information please reference the attached sketches. In regards to this, we request the following:

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Please review and approve.

Contractor Disposition:

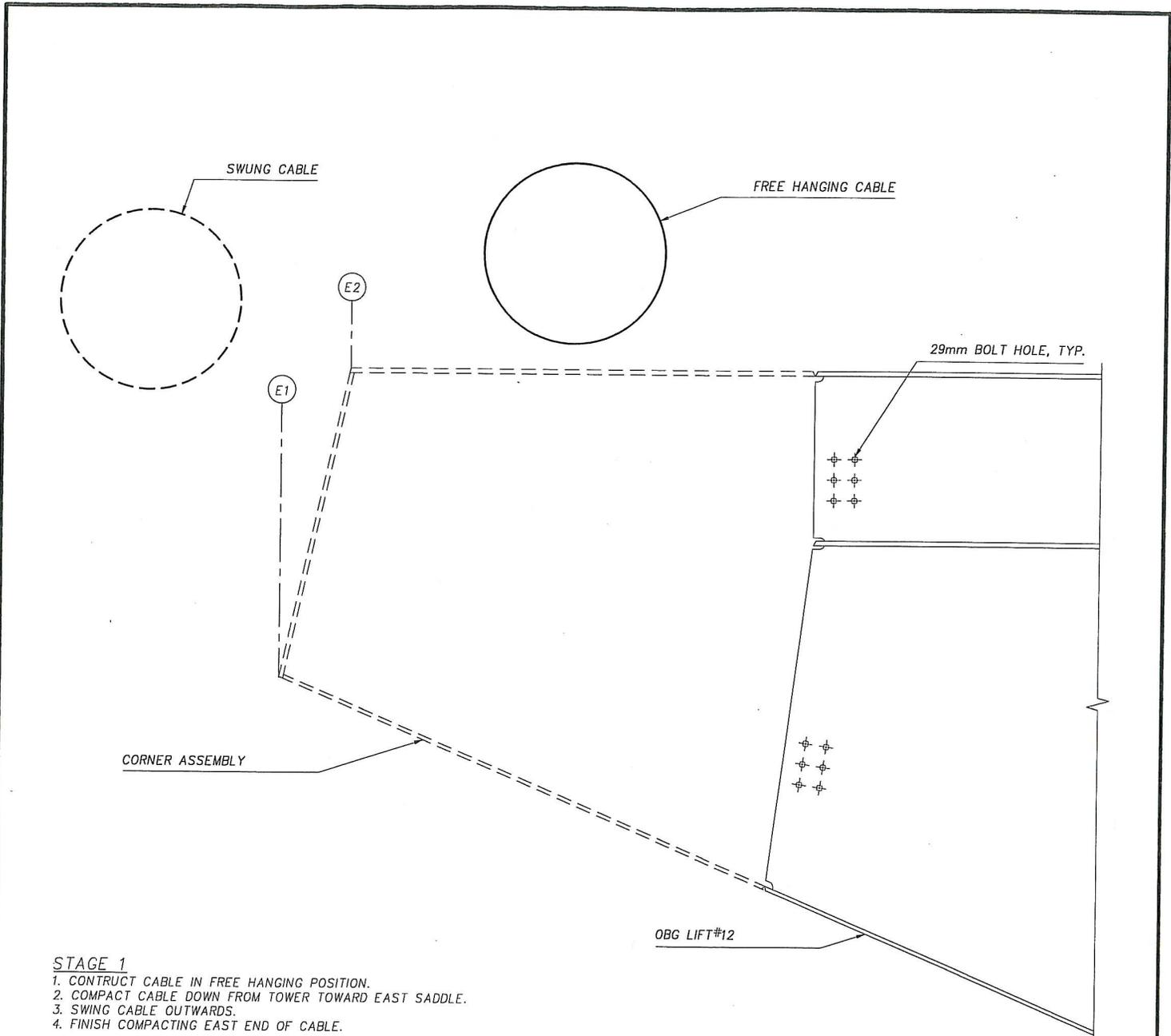
This RFI is being submitted for:

The Cost and Time Impact from this RFI is: Cost and/or time impacts in the performance of our Work will result.

Response: _____ **Agreed Ext. Due Date:** _____
Pages: _____
Pages Attached: _____

Administrative Action:

Date:	Respondent:	Phone No.:
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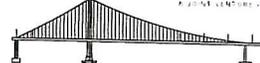
E-LINE PP114

STAGE 1

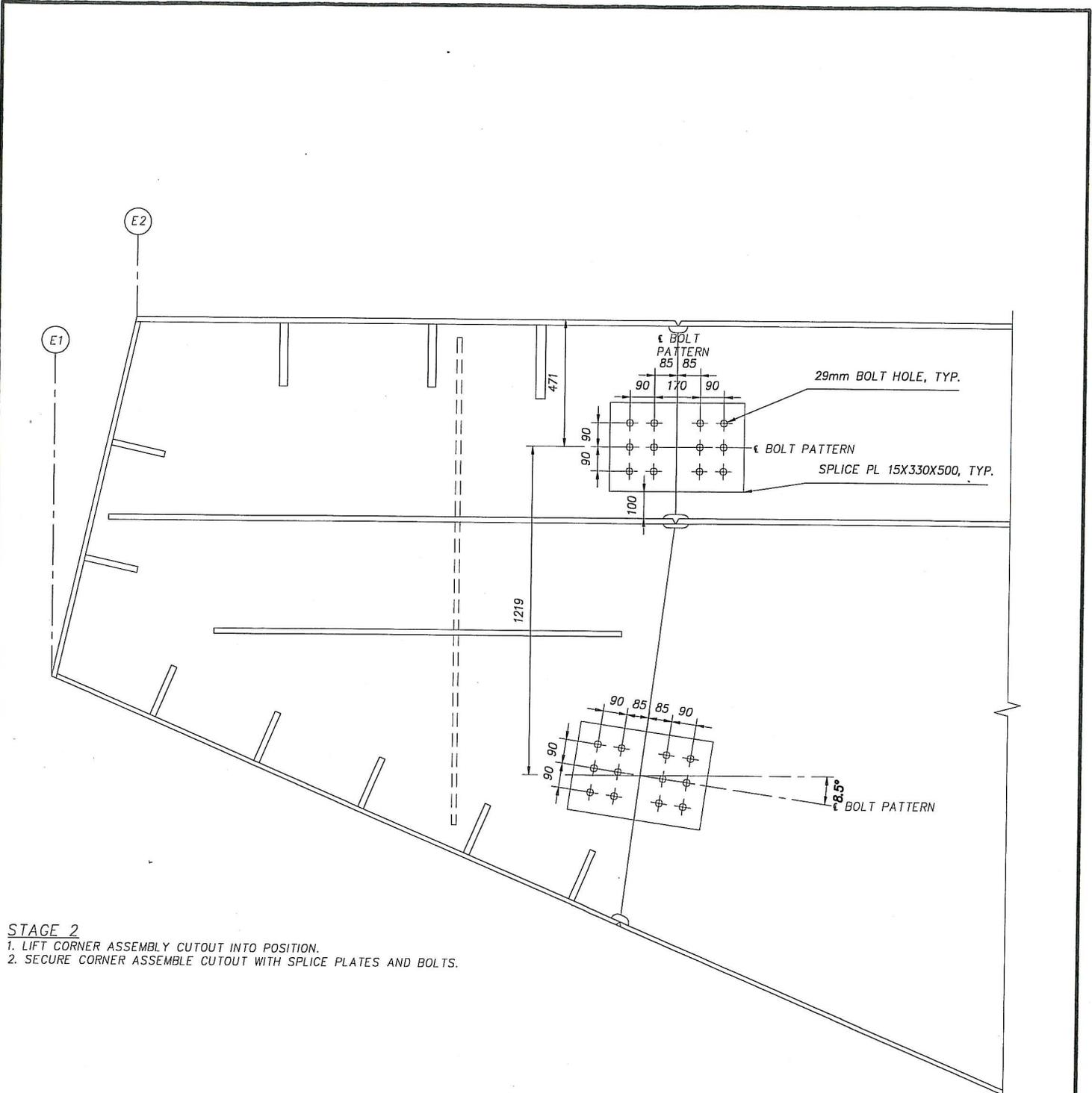
1. CONSTRUCT CABLE IN FREE HANGING POSITION.
2. COMPACT CABLE DOWN FROM TOWER TOWARD EAST SADDLE.
3. SWING CABLE OUTWARDS.
4. FINISH COMPACTING EAST END OF CABLE.

NOTE:

1. E-LINE PP114 SHOWN, PP112-117 SIMILAR; W-LINE SIMILAR.
2. CORNER ASSEMBLY CUTOUT SECTION SHALL EXTEND FROM PP111+700mm TO FIELD SPLICE#12 LOCATED AT PP118-1700mm.
3. PP112, 114, & 116 CABLE BRACKETS NOT SHOWN FOR CLARITY.
4. JOINT TO BE WELDED BEFORE LOAD TRANSFER BEGINS.
5. ALL BOLT HOLES SHALL BE PLUGGED WITH BOLTS AFTER WELDING IS COMPLETED.
6. ALL UNITS IN MILLIMETERS UNLESS NOTED OTHERWISE.

SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT SELF ANCHORED SUSPENSION BRIDGE (SUPERSTRUCTURE AND TOWER)	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION CONTRACT NO. 04-0120F4 BRIDGE NO. 34-0006L/R									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">DISTRICT</th> <th style="text-align: left;">COUNTY</th> <th style="text-align: left;">ROUTE</th> <th style="text-align: left;">KILOMETER POST</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">04</td> <td style="text-align: center;">SF</td> <td style="text-align: center;">80</td> <td style="text-align: center;">13.2 / 13.9</td> </tr> </tbody> </table>	DISTRICT	COUNTY	ROUTE	KILOMETER POST	04	SF	80	13.2 / 13.9		
DISTRICT	COUNTY	ROUTE	KILOMETER POST							
04	SF	80	13.2 / 13.9							

Made By: <u>L. Gatsos</u> Date: <u>9/24/2007</u> Checked By: <u>K. Smith</u> Date: <u>9/24/2007</u> In Charge Of: <u>R. CROCKETT</u> AB Job No. 660110	OBG CORNER ASSEMBLY CUTOUT PP112-PP117	Scale: N.T.S. Sheet No. 1 of 3
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STAGE 2

1. LIFT CORNER ASSEMBLY CUTOUT INTO POSITION.
2. SECURE CORNER ASSEMBLY CUTOUT WITH SPLICE PLATES AND BOLTS.

NOTE:

1. E-LINE PP114 SHOWN, PP112-117 SIMILAR; W-LINE SIMILAR.
2. CORNER ASSEMBLY CUTOUT SECTION SHALL EXTEND FROM PP111+700mm TO FIELD SPLICE #12 LOCATED AT PP118-1700mm.
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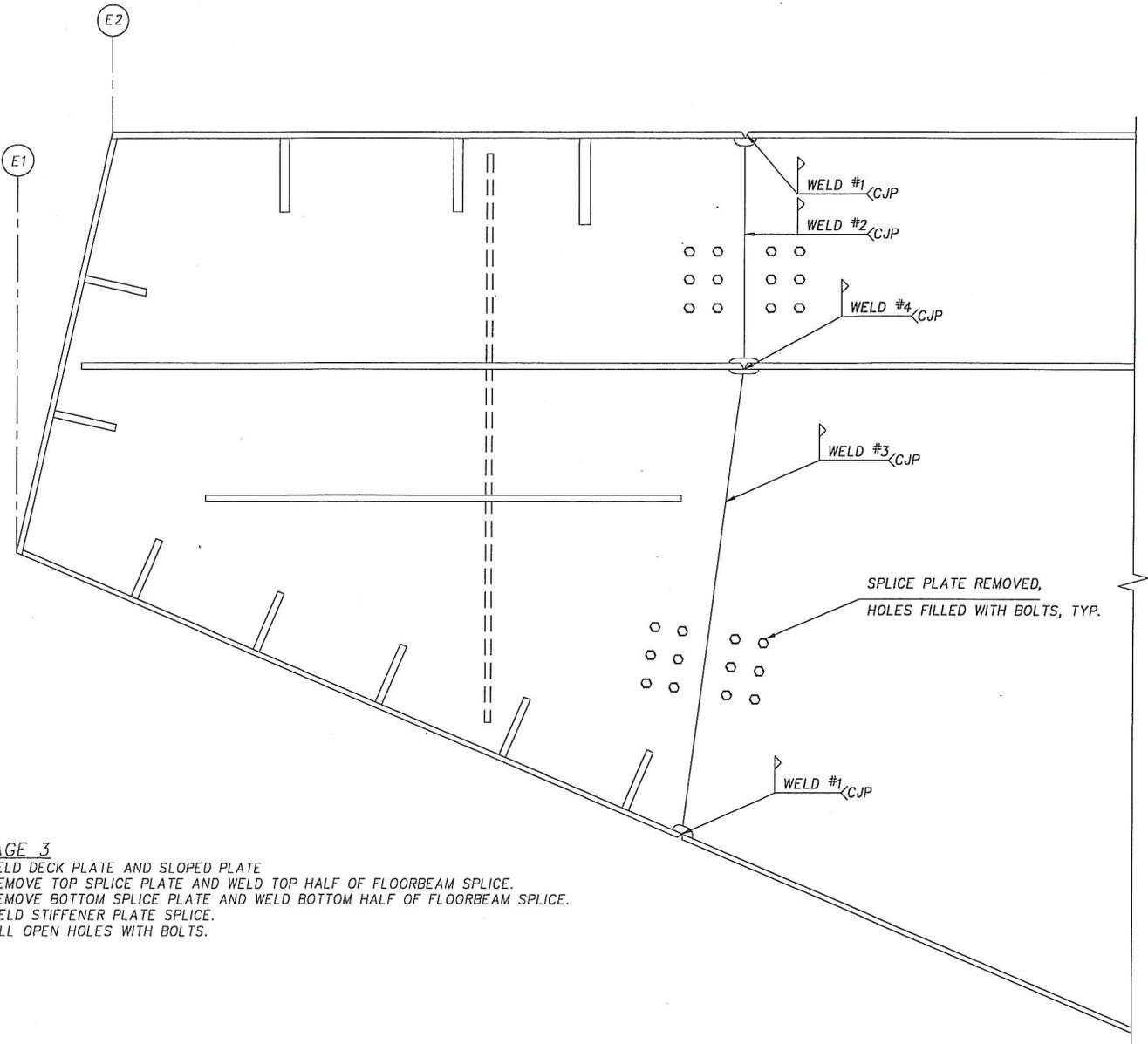
E-LINE PP114

<p>SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT SELF ANCHORED SUSPENSION BRIDGE (SUPERSTRUCTURE AND TOWER)</p>	<p>STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION CONTRACT NO. 04-0120F4 BRIDGE NO. 34-0006L/R</p>									
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Made By: L. Gatsos Date: 9/24/2007
 Checked By: K. Smith Date: 9/24/2007
 In Charge Of: R. CROCKETT
 AB Job No. 660110

OBG CORNER ASSEMBLY CUTOUT
PP112-PP117

Scale:
N.T.S.
Sheet No.
2 of 3



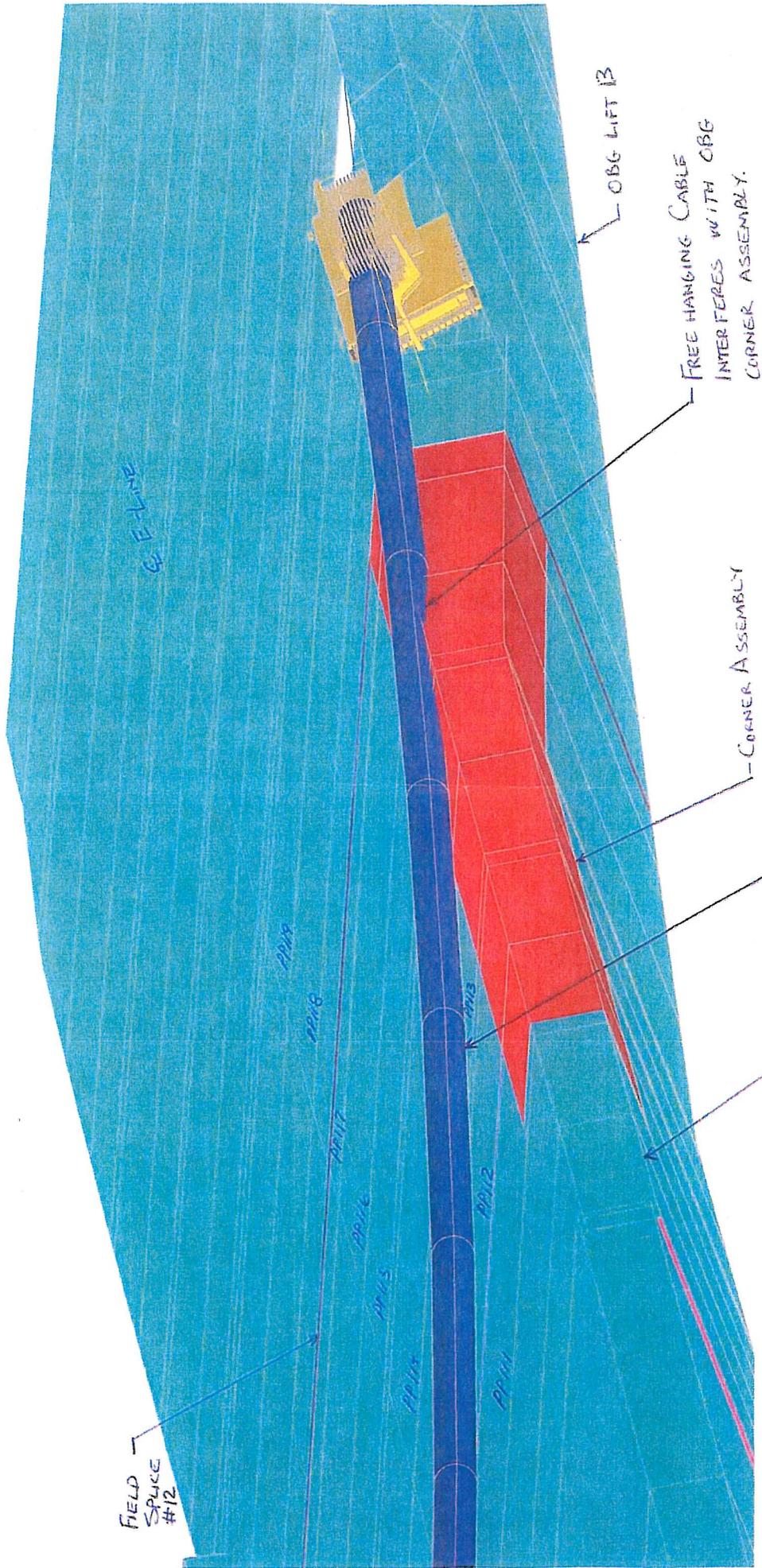
E-LINE PP114

- STAGE 3**
1. WELD DECK PLATE AND SLOPED PLATE
 2. REMOVE TOP SPLICE PLATE AND WELD TOP HALF OF FLOORBEAM SPLICE.
 3. REMOVE BOTTOM SPLICE PLATE AND WELD BOTTOM HALF OF FLOORBEAM SPLICE.
 4. WELD STIFFENER PLATE SPLICE.
 5. FILL OPEN HOLES WITH BOLTS.

- NOTE:**
1. E-LINE PP114 SHOWN, PP112-117 SIMILAR; W-LINE SIMILAR.
 2. CORNER ASSEMBLY CUTOUT SECTION SHALL EXTEND FROM PP111+700mm TO FIELD SPLICE#12 LOCATED AT PP118-1700mm.
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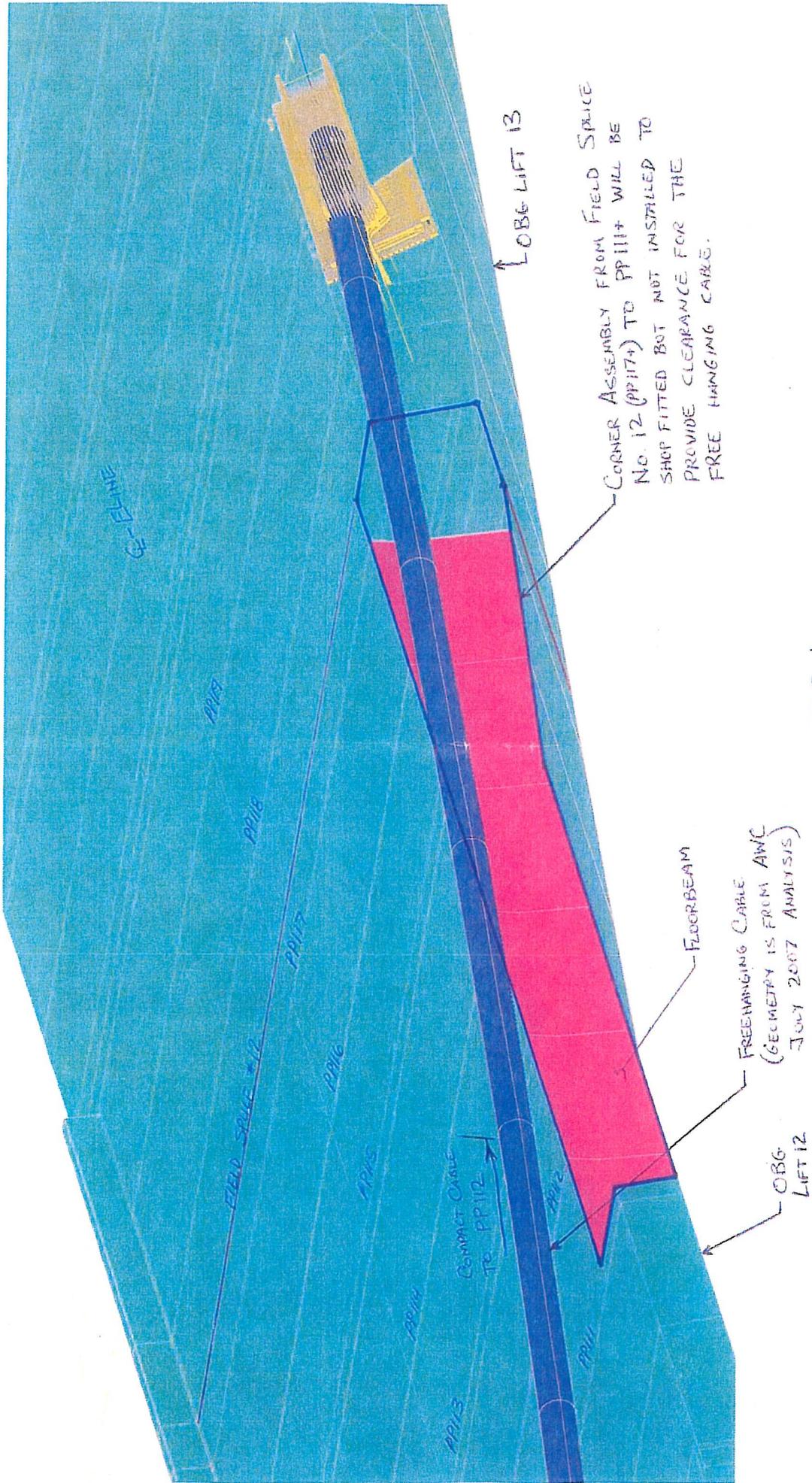
<p>SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT SELF ANCHORED SUSPENSION BRIDGE (SUPERSTRUCTURE AND TOWER)</p>	<p>STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION CONTRACT NO. 04-0120F4 BRIDGE NO. 34-0006L/R</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 15%;">DISTRICT</td> <td style="width: 15%;">COUNTY</td> <td style="width: 15%;">ROUTE</td> <td style="width: 15%;">KILOMETER POST</td> </tr> <tr> <td>04</td> <td>SF</td> <td>80</td> <td>13.2 / 13.9</td> </tr> </table>	DISTRICT	COUNTY	ROUTE	KILOMETER POST	04	SF	80	13.2 / 13.9	
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<p>Made By: L. Gatsos Date: 9/24/2007</p> <p>Checked By: K. Smith Date: 9/24/2007</p> <p>In Charge Of: R. CROCKETT</p> <p>AB Job No. 660110</p>	<p>OBG CORNER ASSEMBLY CUTOUT PP112-PP117</p>	<p>Scale: N.T.S.</p> <p>Sheet No. 3 of 3</p>								

9-24-07



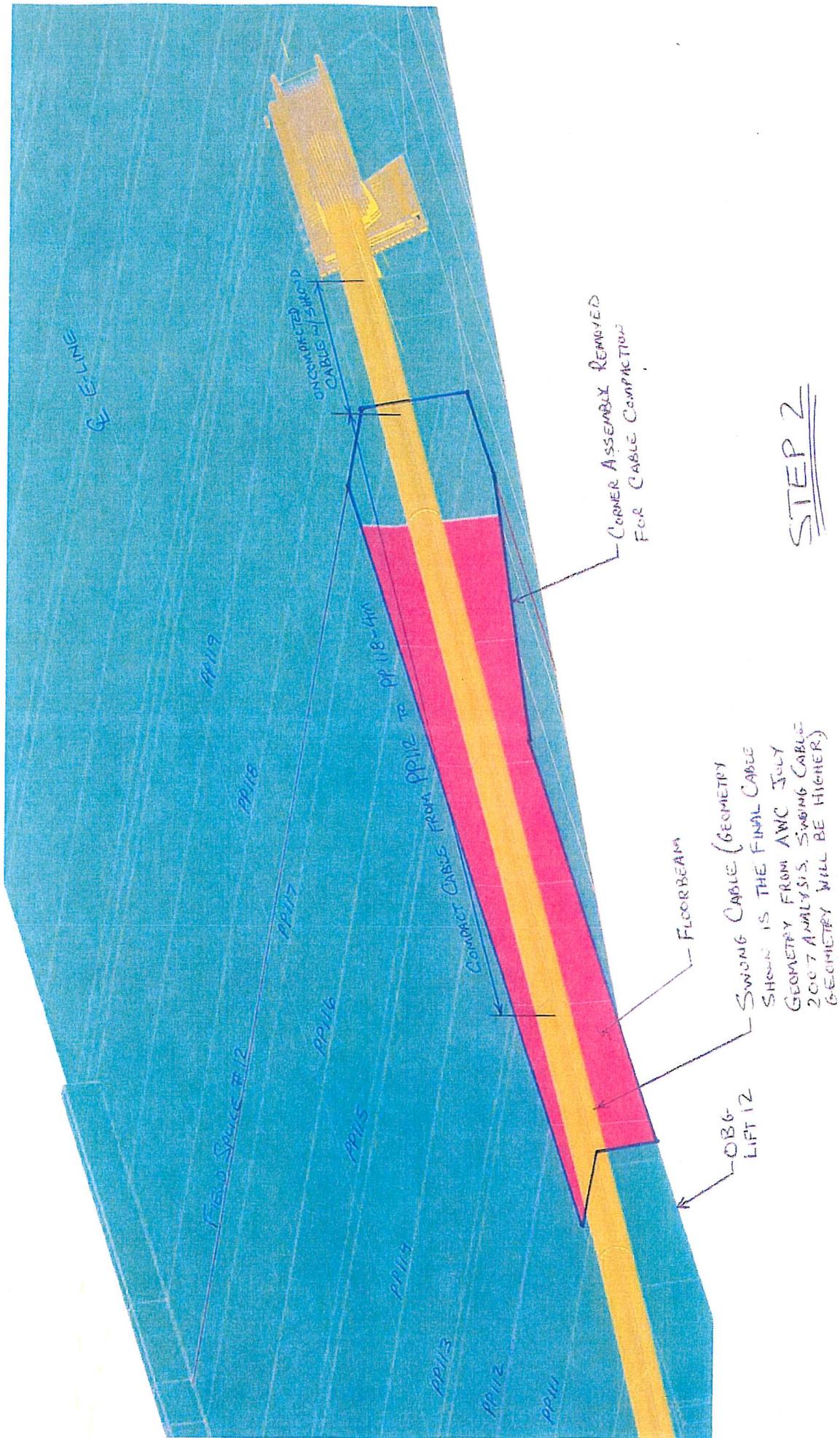
EXISTING CONDITION

9-24-07

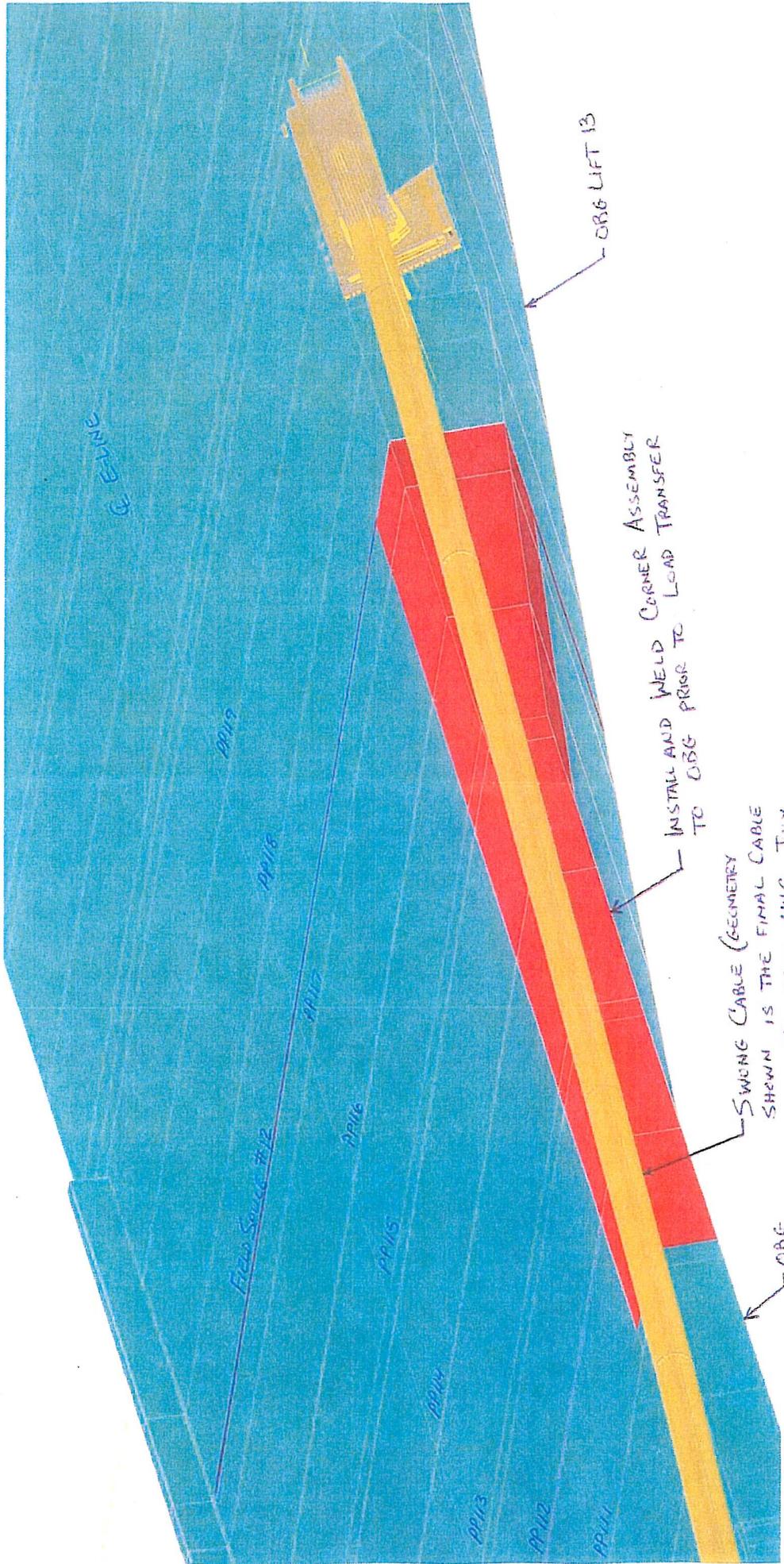


STEP 1

9-24-07



7-24-07



STEP 3

31-Aug-2007

ABF-CAL-LTR-000274

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: RESPONSE TO REQUEST FOR INFORMATION ABF-RFI-000876R0
PWS CABLE GEOMETRY NEAR PIER E-2

Gentlemen:

American Bridge / Fluor Enterprises, Inc. Joint Venture (ABFJV) acknowledges receipt of the Department's response to ABF-RFI-000876R00 dated August 24, 2007 regarding PWS Cable Geometry Near Pier E2.

With respect to the statement; "The conflict of the free-hanging cable with the box girder in the vicinity of the East Saddle was identified in notes 3 and 4 of sheet 978/1204 and note 6 of 967/1204. The Contractor was directed to take necessary measures to avoid interference between the cable and deck during construction", ABFJV offers the following response:

Sheet 978/1204 is clearly marked "Cable System Movements" and shows the movements of the Cable System to be from Free Cable to Loaded Cable. In accordance with the notes on sheet 972/1204 and sheet 973/1204 ABFJV expected to erect the Cable, Compact the Cable, erect Cable Bands and install the Suspenders before moving the Cable from Free Cable to Loaded Cable.

The Notes referred to in the RFI response identify the conflict between Cable and Box Girder during Cable movements. The Notes **do not** identify the conflict between the Free Cable and the Box Girder. Furthermore the Notes **do not** identify the conflict between the Loaded Cable and the Box Girder.

Considering the above, ABFJV considers the conflict between the Free Cable and the Box Girder to be a change in character of work. Additionally ABFJV considers the conflict between the Loaded Cable and the Box Girder to be a change in character of work. Pursuant to the Agreement, including Standard Specifications, Article 4-1.03C, Changes in Character of the Work, ABF hereby notifies the Engineer of these Changes in the Character of the Work. It is not possible at this time to quantify the time impact and/or extra costs that may be incurred as a result of these changes and no definitive assessment is possible until after these matters have been investigated more thoroughly.

The intent of the above is to provide the required notice per the Contract Documents. It is however, as with other matters such as these in the past, to work together with the Department and its consultants in an effort to obtain a solution that is the most beneficial for the Project.

2.01
RFI. 876. RD

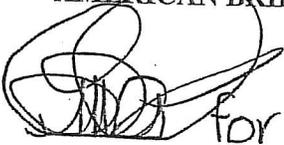
Letter No. ABF-CAL-LTR-000274

Page 2

If you have any questions, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael D. Flowers
Project Director

File: 02.01

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!*

September 26, 2007

Contract No. 04-0120F4

04-SF-80-13.2 / 13.9

Self-Anchored Suspension Bridge

Letter No. 05.03.01-000627

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

Dear Michael Flowers,

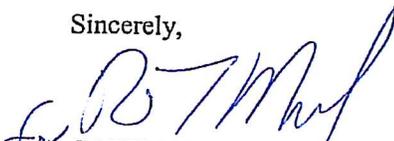
PWS Cable Geometry near Pier E2

This letter is sent in response to ABF-CAL-LTR-000274, "Response to RFI 876R0, PWS Cable Geometry near Pier E-2," dated August 31, 2007. The Department does not agree with your contention that conflict between the Main Cable and Box Girder constitutes a change in character of the work. Nor do we agree that a Contract Change order is required.

The Contract requires that the Bridge, in its final position, be as depicted in the plans. The contract plans in general, and Sheet 978/1204 specifically, do not require any specific temporary positions or relative locations of bridge components during construction. Nor do they warrant that there is no possibility of interference among bridge components during construction. Such temporary conditions are part of the means and methods by which the contractor achieves the end product of the bridge in its final position. It is further noted that the referenced Sheet 978/1204 is clearly indicated by note 1 on sheet 987/1204, to be schematic and informational only and thus subject to verification and further development by the Contractor and submittal to the Engineer for review and approval. There are several notes in the plans alerting the Contractor to the need to address potential contact, conflict, or interference between the cable and the box girder during construction. These include notes 3e and 6 on Sheet 967/1204 and notes 3 and 4 on Sheet 978/1204. While The Department accepts the Contractor's statement that these notes alerted him to conflicts during the movement of the cable, we cannot accept the mistaken contention that the notes therefore warrant no possibility of conflict at any other time during construction. There is nothing in the notes restricting the application of the notes in that manner. The notes do not specify whether the conflict occurs in a static condition prior to or after cable movement or during movement. Whether conflict occurs at all, the extent of the conflict, and at what stage of construction it occurs, all depend on the Contractor's erection plan. There are no changes to the Contract required to address this situation.

While the Department disagrees with the Contractor's position, we appreciate and fully support the Contractor's willingness to work together to achieve the most beneficial solution for the Project.

Sincerely,


GARY PURSELL
Resident Engineer

cc: Rick Morrow, Brian Boal
file: 05.03.01

11-Oct-2007

ABF-CAL-LTR-000331

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: Conflict between Free Cable and Box Girder

Gentlemen:

American Bridge / Fluor Enterprises Inc., A Joint Venture (ABFJV) and the Engineer's have been discussing the conflict between Free Cable and Box Girder since August 21, 2007 in the Working Drawing Campus (WDC). These discussions have resulted in the development of the "Freehanging Cable Interference Solutions 10-9-07" Matrix (see attached) that lists possible solutions to the problem.

As developed, solutions have been jointly studied and eliminated as appropriate. On October 9, 2007, at the WDC, TYLin informed ABFJV that solution #1 combined with solution #8 will resolve the conflict between the Main Cable and the box girder near Pier E2. When ABFJV questioned solution details, TYLin would not elaborate why they believed the solution was going to work or the basis upon which they arrived at their conclusion.

ABFJV is concerned that the combination of solutions #1 and #8 is not going to work because proposed solution #8 restrains the Main Cable from hanging freely between saddles during construction. One of the fundamental concepts of suspension bridge construction is that the Main Cable must be free-hanging between saddles during construction, in order to ensure equal tension in all Main Cable Wires. From ABFJV's past internal experience with suspension bridges plus our knowledge of these, ABFJV is not aware of any suspension bridge cable in the world that was erected without a free-hanging Main Cable between saddles.

ABFJV believes that Solution #6 is the best option available to resolve the free hanging cable interference problem, and Solution #6 will not delay completion of the project. However, as ABFJV advised in the WDC, solution #6 does not eliminate or exclude other possible solutions. ABFJV is interested in investigating other viable options to mitigate cost impact without delaying the contract completion date. However, it is imperative that the Engineer/TYLin share with ABFJV the details in support of TYLin's determination that combining solution #1 and solution #8 will rectify the problem. Without this supporting data, ABFJV can not evaluate the proposed solution and without a proper evaluation, ABFJV is hesitant to accept TYLin's suggestions that combining solution #1 and solution #8 is a viable option. As such we respectfully request the Department provide the requested supporting data to ABFJV as soon as possible.

Since solution #1 and #8 will take several months to develop and gain a full understanding of all the implications of using this method, time is of the essence for the Engineer to provide the requested information.

The intent of the above is, as with other matters such as these in the past, to work together with the Department and its consultants in an effort to obtain a solution that is the most beneficial for the Project.



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

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE

Michael Flowers
Project Director

cc:

File: 02.01