STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

CONTRACT CHANGE ORDER INPUT

CEM-4901 REV 5/1993 CT# 7541-3516-2

ADA Notice

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CASOAC

CONTRACT NO. 04 0120F4 (1–8) CCO NO. 106 (9) SUPPL. 01 (13)

CONSTRUCTION DEPT. USE ONLY ☐ FUNCTION (14) ☐ OVERRIDE (15)

CARD TYPE 1 (16)

C. C. O. DESCRIPTION: PROVIDE ADDITIONAL FUNDS (17–56)

NET $ CHANGE THIS CCO: + 4000000.00 (56–66)

APPROVAL DATE: 12-01-09 (67)

TIME EXTENSION DAYS: - 00 (74)

CATEGORY: AWZZ (77)

CARD TYPE 2 (16)

PAYMENT METHOD

					$ AMOUNT
EW ☒ (17)	AC ☐ (18)	FA ☒ (19)	LS ☐ (20)	UP ☐	+ 4000000.00 (23–31)
EW ☐	AC ☐	FA ☐	LS ☐	UP ☐	
EW ☐	AC ☐	FA ☐	LS ☐	UP ☐	

CARD TYPE 4 (16)

NET $ AMOUNT BRIDGE WORK THIS CCO: + 4000000.00 (18–26)

CARD TYPE 3 (16)

ITEM NUMBER (17–19)	+/-	QUANTITY (21–32)

ITEM NUMBER (17–19)	+/-	QUANTITY (21–32)

CARD TYPE 5 (16)

FEDERAL PARTICIPATION: N (17)

P = PARTICIPATING

M = NON-PARTICIPATING (MAINTENANCE)

N = NON-PARTICIPATING (OTHER THAN MAINTENANCE)

R = NON-PARTICIPATING (REIMBURSEMENT BY OTHERS)

S = PARTICIPATING IN PART

IF PARTICIPATING IN PART (S), BREAKDOWN COST AS FOLLOWS: (INPUT TYPE AS P,M,N,R)

TYPE (18)	COST (19–27)

FEDERAL SEGREGATION (IF MORE THAN ONE FUNDING SOURCE)

☐ (28) E = CCO to be funded as per contract

☐ (29) F = CCO to be funded as follows:

FEDERAL FUNDING SOURCE (30–44)	PERCENT (45)

IN CASE OF QUESTIONS CONTACT: *NAME*

GEORGE BOU-GHOSN | GEORGE_BOUGHOSN@DOT.CA.GOV | BUSINESS PHONE (510) 622-5196 | VERIFY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONTRACT CHANGE ORDER MEMORANDUM

DATE: 11/25/2009 Page 1 of 1

TO: Pete Siegenthaler, Prin. TE / Gary Pursell, P.E., Sup T.E.	FILE: E.A. 04 - 0120F4
FROM: Gary Pursell, Sup.TE	CO-RTE-PM SF-80-13.2/13.9
	FED. NO.
CCO#: 106 SUPPLEMENT#: 1 Category Code: AWZZ	CONTINGENCY BALANCE (incl. this change) $58,735,437.40
COST: $400,000.00 INCREASE ☑ DECREASE ☐	HEADQUARTERS APPROVAL REQUIRED? ☐ YES ☑ NO
SUPPLEMENTAL FUNDS PROVIDED: $400,000.00	IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? ☑ YES ☐ NO
CCO DESCRIPTION: Provide Additional Funds	**PROJECT DESCRIPTION:** CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE

Original Contract Time:	Time Adj. This Change:	Previously Approved CCO Time Adjustments:	Percentage Time Adjusted: (including this change)	Total # of Unreconciled Deferred Time CCO(s): (including this change)
2490 Day(s)	0 Day(s)	90 Day(s)	4 %	6

THIS CHANGE ORDER PROVIDES FOR:

Providing additional funds for lowering OBG cantilever sections to the profile grade and performing survey work before, during and after lowering operations, to verify cantilever section geometry.

During the lowering of the Skyway OBG cantilever sections, it has been determined that additional weight (k-rail) is needed in order to lower the cantilever sections to the profile grade. This supplement will provide for the required additional weight and monitoring over the next few years.

It is estimated that this work will cost $400,000.00, which will be paid for as Extra Work at Force Account (Cumulative total of CCO 106s0 and this supplement is $900,000.00). There is a total of $2,152,000.00 in supplemental funds available for this work. A cost analysis is on file.

No time adjustment is warranted, as this change order does not affect the controlling operation.

This change order received concurrences from Gary Pursell (Resident Engineer), Rick Morrow (Structure Rep.), Ken Terpstra (Project Manager), Rich Foley (HQ Const. Coord.) and Pete Siegenthaler (Principal Engineer). Design and Maintenance concurrence is not needed for this change order.

CONCURRED BY:			
Construction Engineer:	Res. Eng., Gary Pursell, Sup. TE	Date	1/14/09
Bridge Engineer:	Struct Rep, Rick Morrow, Sup TE	Date	1/14/09
Project Engineer:		Date	
Project Manager:	Proj Manager, Ken Terpstra	Date	1/15/09
FHWA Rep.:		Date	
Environmental:		Date	
Other (specify):	HQ, Rich Foley	Date	1/14/09
Other (specify):	PCE, Pete Siegenthaler, Prin TE	Date	1/26/09
District Prior Approval By:		Date	
HQ (Issue Approve) By:		Date	
Resident Engineer's Signature:	Gary Pursell	Date	12/1/09

ESTIMATE OF COST

	THIS REQUEST	TOTAL TO DATE
ITEMS	$0.00	$0.00
FORCE ACCOUNT	$400,000.00	$900,000.00
AGREED PRICE	$0.00	$0.00
ADJUSTMENT	$0.00	$0.00
TOTAL	$400,000.00	$900,000.00

FEDERAL PARTICIPATION

☐ PARTICIPATING ☐ PARTICIPATING IN PART ☑ NONE
☐ NON-PARTICIPATING (MAINTENANCE) ☐ NON-PARTICIPATING

FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)
☐ CCO FUNDED PER CONTRACT ☐ CCO FUNDED AS FOLLOWS

FEDERAL FUNDING SOURCE	PERCENT

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO 106	Suppl. No. 1	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 Force Account:

Provide Additional Funds

Estimated cost of Extra Work at Force Account $400,000.00

Estimated Cost: **Increase** ☑ **Decrease** ☐ **$400,000.00**

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

Submitted by

Signature	Resident Engineer	Date
BBoal	Brian Boal for Gary Pursell, Sup.TE	11/30/09

Approval Recommended by

Signature	Supervising Bridge Engineer	Date
	Richard Morrow, Sup. BE	11/30/09

Engineer Approval by

Signature	Supervising Transportation Engineer	Date
Gary Pursell	Gary Pursell, Sup. TE	12/1/09

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 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
NOT REQUIRED		

History copy

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONTRACT CHANGE ORDER MEMORANDUM

DATE: 7/10/2009 Page 1 of 1

TO: Pete Siegenthaler, Prin. TE / Gary Pursell, P.E., Sup T.E.

FROM: Gary Pursell, Sup.TE

FILE: E.A. 04 - 0120F4

CO-RTE-PM SF-80-13.2/13.9

FED. NO.

CCO#: 106 | SUPPLEMENT#: 0 | Category Code: AWZZ

CONTINGENCY BALANCE (incl. this change) $67,098,129.40

COST: $500,000.00 INCREASE ☑ DECREASE ☐

HEADQUARTERS APPROVAL REQUIRED? ☐ YES ☑ NO

SUPPLEMENTAL FUNDS PROVIDED: $500,000.00

IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? ☑ YES ☐ NO

CCO DESCRIPTION:
Skyway OBG Lowering near Hinge A

PROJECT DESCRIPTION:
CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE

Original Contract Time:	Time Adj. This Change:	Previously Approved CCO Time Adjustments:	Percentage Time Adjusted: (including this change)	Total # of Unreconciled Deferred Time CCO(s): (including this change)
2490 Day(s)	0 Day(s)	30 Day(s)	1 %	6

THIS CHANGE ORDER PROVIDES FOR:

Modifying existing lateral supports (shear keys) and the shim stack/blocking supports on the existing temporary towers near Hinge A of the existing Skyway structures and performing additional measurements at Hinge A.

The existing temporary box girder, supporting the Skyway OBG cantilever sections, was constructed under the Skyway contract. These temporary supports do not allow for lowering of the cantilever sections to the profile grade, which is required under the SAS contract. The Department will authorize the Contractor to obtain the services of SMG, designers of a similar Skyway project lowering system, to redesign the temporary towers box girder supports to allow for the required lowering operation. Cantilever sections will be surveyed to verify geometry and support reactions needed for SAS project design calculations.

It is estimated that this work will cost $500,000.00, which will be paid for as Extra Work at Force Account. There is a total of $2,152,000.00 in supplemental funds available for this work. A cost analysis is on file.

No time adjustment is warranted, as this change order does not affect the controlling operation.

This change order received concurrences from Gary Pursell (Resident Engineer), Rick Morrow (Structure Rep.), Ken Terpstra (Project Manager), Rich Foley (HQ Const. Coord) and Pete Siegenthaler (Principal Engineer). Design and Maintenance concurrence is not needed for this change order.

CONCURRED BY:			
Construction Engineer:	Res. Eng., Gary Pursell, Sup. TE	Date	1/14/09
Bridge Engineer:	Struct Rep, Rick Morrow, Sup TE	Date	1/14/09
Project Engineer:		Date	
Project Manager:	Proj Manager, Ken Terpstra	Date	1/15/09
FHWA Rep.:		Date	
Environmental:		Date	
Other (specify):	PCE, Michael Forner	Date	1/26/09
Other (specify):	HQ, Rich Foley	Date	1/14/09
District Prior Approval By:		Date	
HQ (Issue Approve) By:		Date	
Resident Engineer's Signature: Gary Pursell		Date	7/13/09

ESTIMATE OF COST

	THIS REQUEST	TOTAL TO DATE
ITEMS	$0.00	$0.00
FORCE ACCOUNT	$500,000.00	$500,000.00
AGREED PRICE	$0.00	$0.00
ADJUSTMENT	$0.00	$0.00
TOTAL	$500,000.00	$500,000.00

FEDERAL PARTICIPATION

☐ PARTICIPATING ☐ PARTICIPATING IN PART ☑ NONE
☐ NON-PARTICIPATING (MAINTENANCE) ☐ NON-PARTICIPATING

FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)
☐ CCO FUNDED PER CONTRACT ☐ CCO FUNDED AS FOLLOWS

FEDERAL FUNDING SOURCE	PERCENT

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO: 106 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.***

De ɹption 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 Force Account:

In addition to lowering and measuring Hinge A reaction as required under Section 10-1.59, "STEEL STRUCTURES," subsection, "ERECTION PLAN," of the Special Provisions and Contract plan Sheet 982 (of 1204), perform extra work per the attached supplemental plan sheets 860S1, 860S2, 860S3, 860S4, 860S5 and 860S6 (of 1204) and as directed by the Engineer. Extra work includes, but is not limited to the following:

- Modifying existing lateral supports (shear keys) and the shim stack/blocking supports on the existing temporary towers near Hinge A of the existing Skyway structures.
- Performing additional measurements at Hinge A.

Labor, equipment and material approved by the Engineer, as necessary will be paid in accordance with the provisions of Section 4-1.03D, "Extra Work" of the Standard Specifications and Section 5-1.24, "Force Account Payment" of the Special Provisions.

ɹtimated cost of Extra Work at Force Account $500,000.00

Estimated Cost: Increase ☒ Decrease ☐ **$500,000.00**

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

Submitted by

Signature _____ Resident Engineer Brian Boal for Gary Pursell, Sup.T.E Date 6/30/09

Approval Recommended by

Signature _____ Supervising Bridge Engineer Richard Morrow, Sup.T.E. Date 6/30/09

Engineer Approval by

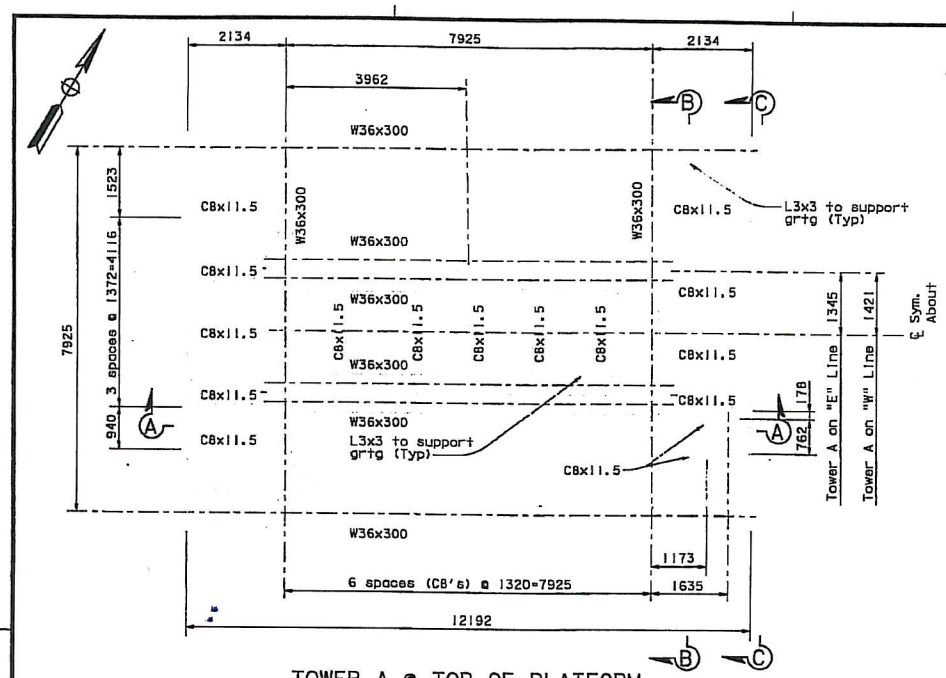
Signature _____ Supervising Transportation Engineer Gary Pursell for Peter Siegenthaler, Prin.T.E. Date 7/13/09

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.

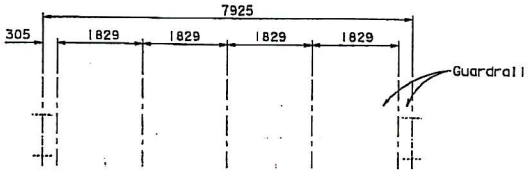
NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by

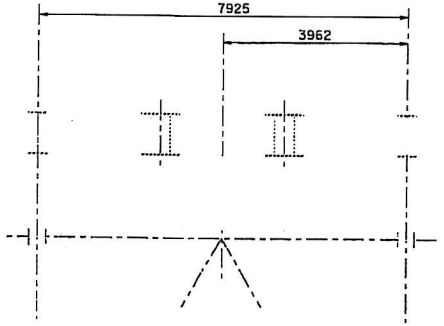
Signature _____ (Print name and title) Michael D. Flowers Project Director Date 7-9-09



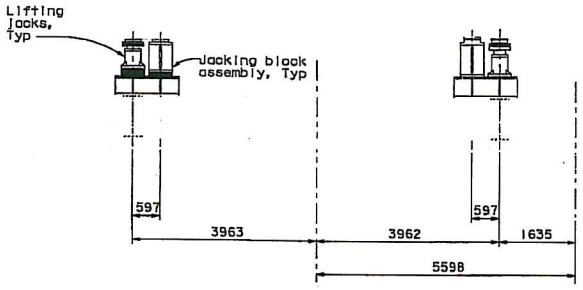
TOWER A @ TOP OF PLATFORM
1:50



SECTION C-C
1:50



SECTION B-B
1:50



SECTION A-A
1:50

NOTES:

1. Westbound shown; Eastbound similar.
2. All dimensions are approximate and shall be verified in the field.
3. All steel shall be ASTM A36 or better unless otherwise approved by the Engineer.

CONTRACT CHANGE ORDER NO. 106
SHEET 2 OF 7

REQUESTS FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	86051	1204

REGISTERED ENGINEER - CIVIL
06-19-09
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER Brian Maroney No. 39754 Exp. 12/31/09 CIVIL STATE OF CALIFORNIA

T.Y. LIN / MOFFATT & NICHOL
825 BATTERY STREET
SAN FRANCISCO, CA 94111

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R. Valizadeh/V. Toan/Y.L./N.L./F.C.
DESIGN OVERSIGHT
SIGN OFF DATE 06/19/09
Rev. Date: 5-18-08

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
0	06/18/09	SKYWAY OBG LOWERING NEAR HINGE A	JAD	AA	106

REVISIONS

DESIGN BY J. Denis CHECKED A. Akinsanya
DETAILS BY J. Denis CHECKED A. Akinsanya
QUANTITIES BY J. Duxbury CHECKED A. Akinsanya

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

B. Maroney
PROJECT ENGINEER

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

CU 04
EA 0120F1

DISREGARD PRINTS BEARING EARLIER REVISION DATES 06/15/09

REVISION DATES (PRELIMINARY STAGE ONLY)

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

SKYWAY OBG LOWERING NEAR HINGE A NO. 1

SHEET 443S1 OF

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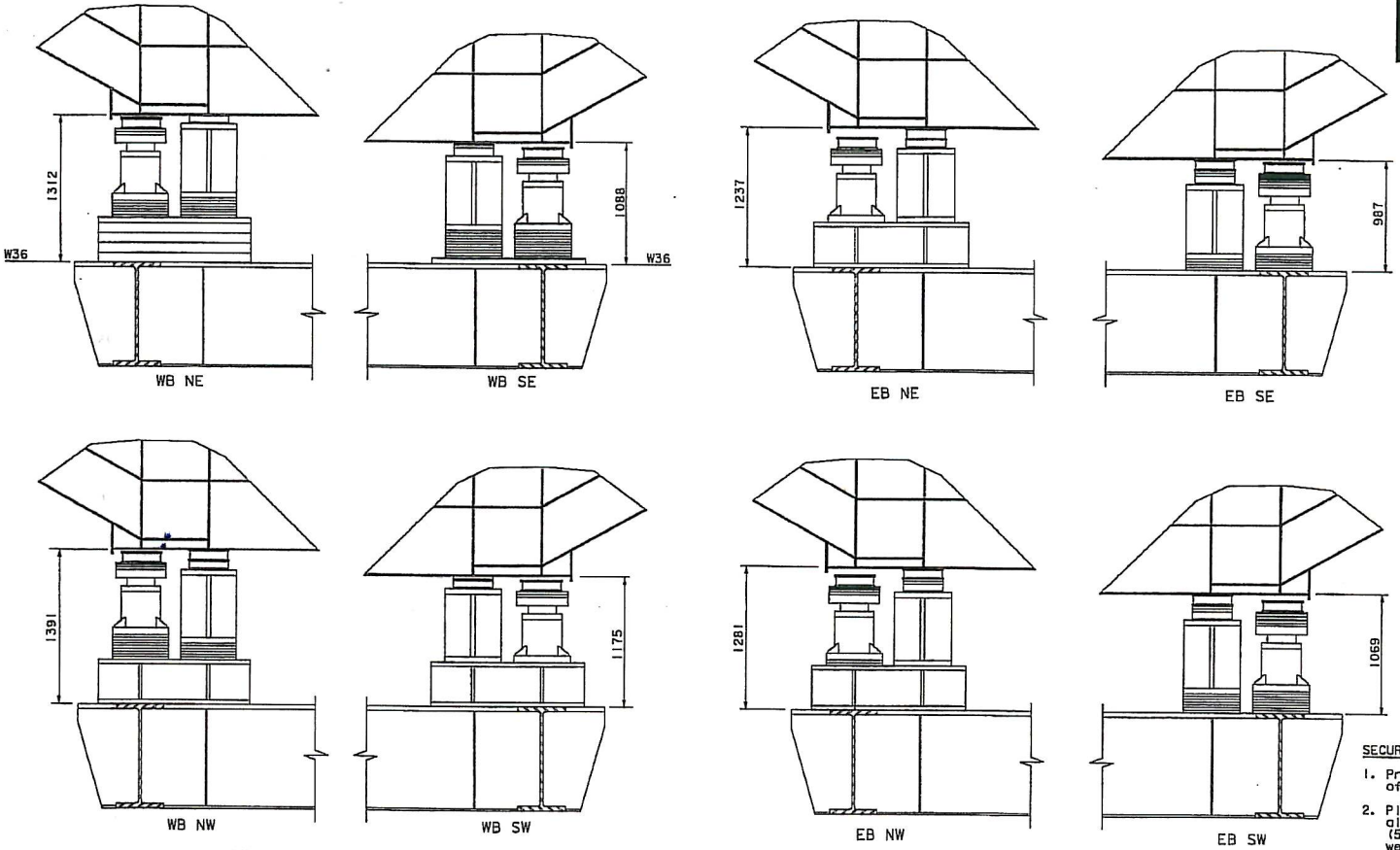


WESTBOUND

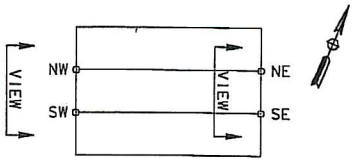
EXISTING CONDITIONS (Looking East)

1:20

EASTBOUND

EXISTING CONDITIONS (Looking East)

1:20



KEY PLAN

SECURING OF TRANSITION STRUCTURES VERTICALLY:

1. Prior to performing any work, determine the location of the longitudinal web plates and mark deck plate.
2. Place timber cribbing and locate concrete weights along the two web plates above jack locations (50 Tonnes total, each WB & EB). For concrete weight placing limits, see "Skyway OBG Lowering Near Hinge A No. 6" sheet.
3. Remove any miscellaneous items that may interfere with lowering operation, i.e. handrails, etc.

NOTES:

1. All dimensions are approximate and shall be verified in the field.
2. Existing jacks shall be re-calibrated prior to using.

SURVEY OF AS-BUILT TRANSITION STRUCTURES PRIOR TO THE LOWERING OPERATION:

1. Survey, record and provide the Engineer the existing position (longitudinal, transverse and vertical) at the locations indicated on "Skyway OBG Lowering Near Hinge A No. 6" sheet.
2. Survey, summarize, record and provide the Engineer both longitudinal and cross slope of the Transition Structure.
3. Provide elevations and coordinates in the State Grid System for all surveyed points.

CONTRACT CHANGE ORDER NO. 106
SHEET 3 OF 7

REQUESTS FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	860S2	1204

REGISTERED ENGINEER - CIVIL

06-19-09

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER Brian Maroney No. 39754 Exp. 12/31/09 CIVIL STATE OF CALIFORNIA

T.Y. LIN / MOFFATT & NICHOL
825 BATTERY STREET
SAN FRANCISCO, CA 94111

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R. Valizadeh/V. Toan/Y.L./W.L./F.C.
DESIGN OVERSIGHT

SIGN OFF DATE 06/19/09

Rev. Date: 8-18-98

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
0	06/19/09	SKYWAY OBG LOWERING NEAR HINGE A	JAD	AA	106

REVISIONS

DESIGN	BY J. Denis	CHECKED	A. Akinsanya
DETAILS	BY J. Denis	CHECKED	A. Akinsanya
QUANTITIES	BY J. Duxbury	CHECKED	A. Akinsanya

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

B. Maroney
PROJECT ENGINEER

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

CU 04
EA 0120F1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 06/19/09

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

SKYWAY OBG LOWERING NEAR HINGE A NO. 2

SHEET 443S2 OF

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MODIFICATION OF EXISTING SUPPORTS:

1. Secure the Hinge A Pipe Beams against lateral and longitudinal movement.
2. Activate three jacks and raise Transition Structure by 25 mm.
3. Switch out and reconfigure the jack and shim stack at the fourth location. Activate lock rings on the jack when re-configuring the support.
4. Lower the box girder back on the shim stacks.
5. Raise the fourth jack and lower one of the other three (not diagonal).
6. Repeat Steps (2) to (5) at the remaining locations. Do not re-configure a support diagonal from the previously completed.
7. The OBG (location Northing, Easting and Elevation) shall be surveyed at each jacking step and recorded.
8. The jack loads shall be recorded at each jacking step.

Lowering Procedure:

1. Jack the Transition Structure up by 25 mm clear of the shim packs, using the four jacks, pressurized equally; note the pressure at which each jack "lifts-off" the corresponding shim pack. Record the "lift-off" pressure in the jacks.
2. Remove one 100 mm support pan at each support.
3. Lower the Transition Structure very slowly, avoiding any impact, and set down onto supports. Resurvey the Transition Structure (at the locations indicated on "Skyway OBG Lowering Near Hinge A No.6" sheet) to determine elevations, longitudinal and cross slopes.
4. Compress jacks and remove one 100 mm jack pan at each jack.
5. Repeat Steps 1 thru 4 until Transition Structure is at PGL.

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	86053	1204

REGISTERED ENGINEER - CIVIL

06-19-09

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER Brian Maroney No. 39754 Exp. 12/31/09 CIVIL STATE OF CALIFORNIA

T.Y. LIN / MOFFATT & NICHOL
825 BATTERY STREET
SAN FRANCISCO, CA 94111

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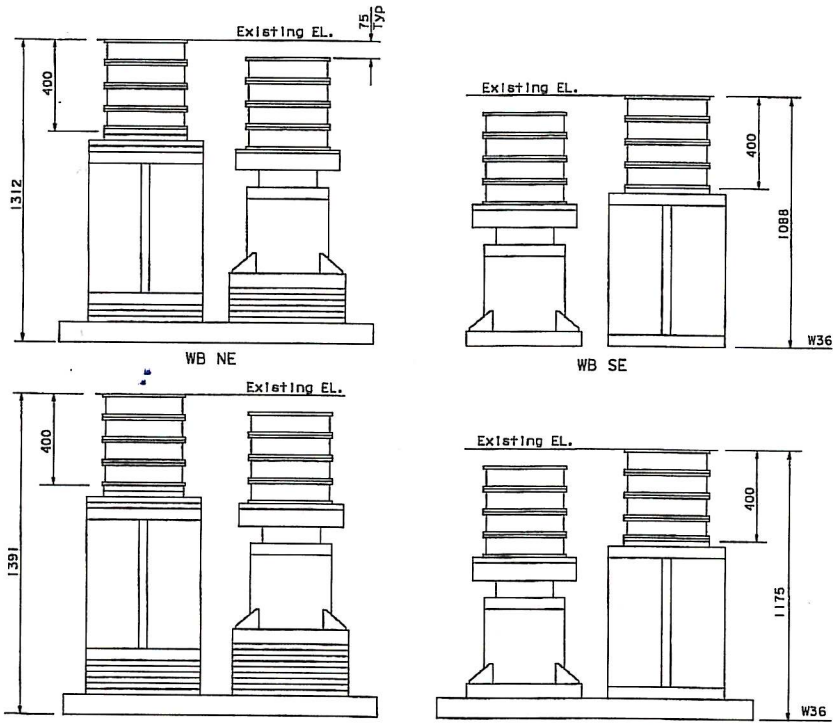
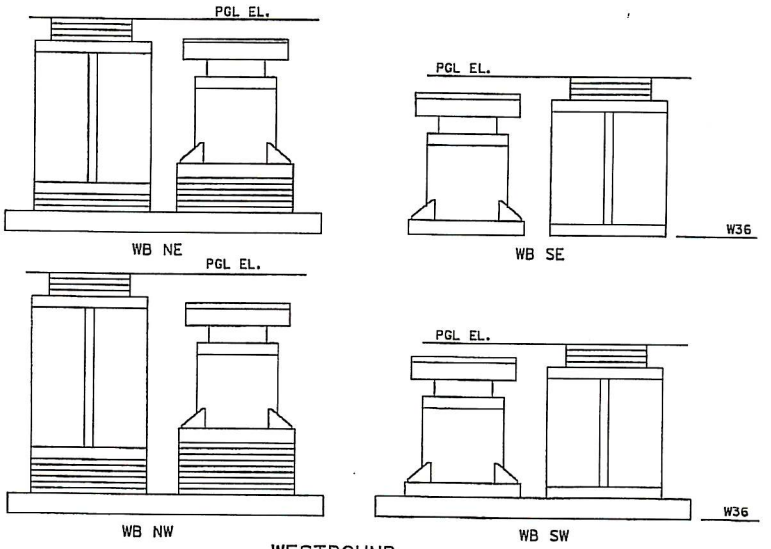


WESTBOUND
BEFORE LOWERING CONDITION (Looking East)
1:10



WESTBOUND
AFTER LOWERING CONDITION (Looking East)
1:10

NOTES:

1. All dimensions are approximate and shall be verified in the field.
2. To the extent possible, remove all equipment on the span at the time of the jacking operation, including trucks or other vehicles, construction materials, containers, etc. Note the presence or absence of railings, bike path, barriers, wearing surface, utilities, etc. Note the position of the secured pipe beams. Provide the Engineer with the location and magnitude of any such loads that cannot be removed.
3. The survey and jacking shall be completed before dawn, when structures are at uniform ambient temperature. Note the ambient and gradient temperatures in the Transition Structures when the lowering operations are performed. Note the wind speed.

CONTRACT CHANGE ORDER NO. 106
SHEET 4 OF 7

REQUESTS FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

R. Valizadeh/V. Toan/Y.L./W.L./F.C.
DESIGN OVERSIGHT
SIGN OFF DATE 06/19/09
Rev. Date: 8-18-08

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
0	06/19/09	SKYWAY OBG LOWERING NEAR HINGE A	JAD	AA	106

REVISIONS

DESIGN BY J. Denis CHECKED A. Akinsanya
DETAILS BY J. Denis CHECKED A. Akinsanya
QUANTITIES BY J. Duxbury CHECKED A. Akinsanya

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

B. Maroney
PROJECT ENGINEER

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

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

SKYWAY OBG LOWERING NEAR HINGE A NO.3

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 04
EA 0120F1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 06/19/09

SHEET 44353 OF

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MODIFICATION OF EXISTING SUPPORTS:

1. Secure the Hinge A Pipe Beams against lateral and longitudinal movement.
2. Activate three jacks and raise Transition Structure by 25 mm.
3. Switch out and reconfigure the jack and shim stack at the fourth location. Activate lock rings on the jack when re-configuring the support.
4. Lower the box girder back on the shim stacks.
5. Raise the fourth jack and lower one of the other three (not diagonal).
6. Repeat Steps (2) to (5) at the remaining locations. Do not re-configure a support diagonal from the previously completed.
7. The OBG (location Northing, Easting and Elevation) shall be surveyed at each jacking step and recorded.
8. The jack loads shall be recorded at each jacking step.

Lowering Procedure:

1. Jack the Transition Structure up by 25 mm clear of the shim packs, using the four jacks, pressurized equally; note the pressure at which each jack "lifts-off" the corresponding shim pack. Record the "lift-off" pressure in the jacks.
2. Remove one 100 mm support pan at each support.
3. Lower the Transition Structure very slowly, avoiding any impact, and set down onto supports. Resurvey the Transition Structure (at the locations indicated on "Skyway OBG Lowering Near Hinge A No.6" sheet) to determine elevations, longitudinal and cross slopes.
4. Compress jacks and remove one 100 mm jack pan at each jack.
5. Repeat Steps 1 thru 4 until Transition Structure is at PGL.

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	860S4	1204

REGISTERED ENGINEER - CIVIL

06-19-09

PLANS APPROVAL DATE

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Brian Maroney No. 39754 Exp. 12/31/09 CIVIL

T.Y. LIN / MOFFATT & NICHOL
825 BATTERY STREET
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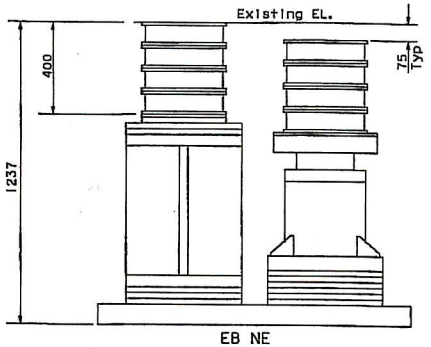

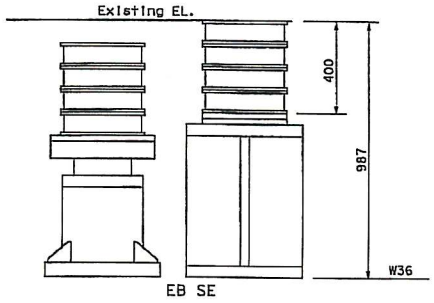

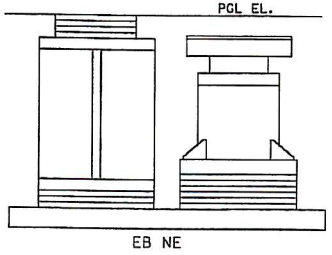

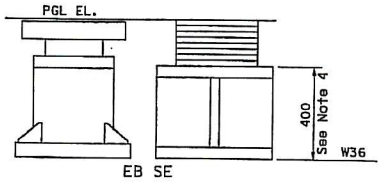

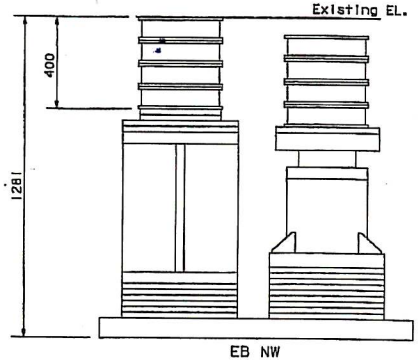

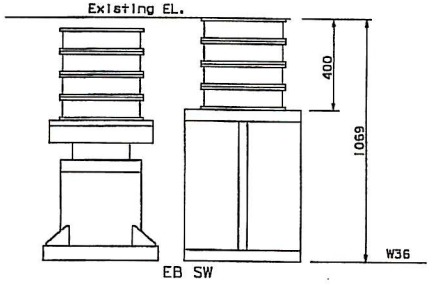

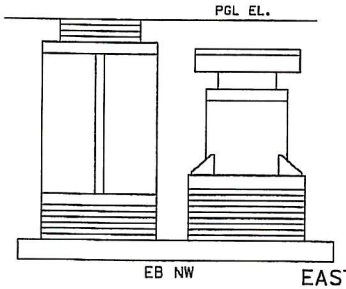

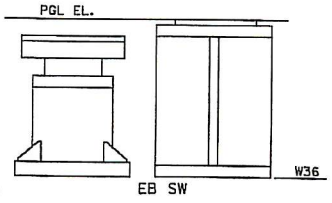

EASTBOUND
BEFORE LOWERING CONDITION (Looking East)
1:10

EASTBOUND
AFTER LOWERING CONDITION (Looking East)
1:10

NOTES:

1. All dimensions are approximate and shall be verified in the field.
2. To the extent possible, remove all equipment on the span at the time of the jacking operation, including trucks or other vehicles, construction materials, containers, etc. Note the presence or absence of railings, bike path, barriers, wearing surface, utilities, etc. Note the position of the secured pipe beams. Provide the Engineer with the location and magnitude of any such loads that cannot be removed.
3. The survey and jacking shall be completed before dawn, when structures are at uniform ambient temperature. Note the ambient and gradient temperatures in the Transition Structures when the lowering operations are performed. Note the wind speed.
4. An existing beam may be cut and re-welded to become a 400 mm beam. Alternatively, an existing W16 beam may be used.

CONTRACT CHANGE ORDER NO. 106
SHEET 5 OF 7

REQUESTS FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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MARK	DATE	REVISIONS	BY	CH'D	CCO#
1	06/19/09	SKYWAY OBG LOWERING NEAR HINGE A	JAD	AA	106

	BY	CHECKED
DESIGN	J. Dennis	A. Akinsanya
DETAILS	J. Dennis	A. Akinsanya
QUANTITIES	J. Duxbury	A. Akinsanya

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

B. Maroney
PROJECT ENGINEER

CU 04
EA 0120F1

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

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

SKYWAY OBG LOWERING NEAR HINGE A NO. 4

R. Vallizadeh/V. Tam/Y. L. /N. L. /F. C.
DESIGN OVERSIGHT
SIGN OFF DATE 06/19/09

Rev. Date 6-18-08

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	86055	1204

REGISTERED ENGINEER / CIVIL

06-19-09

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER Brian Maroney No. 39754 Exp. 12/31/09 CIVIL STATE OF CALIFORNIA

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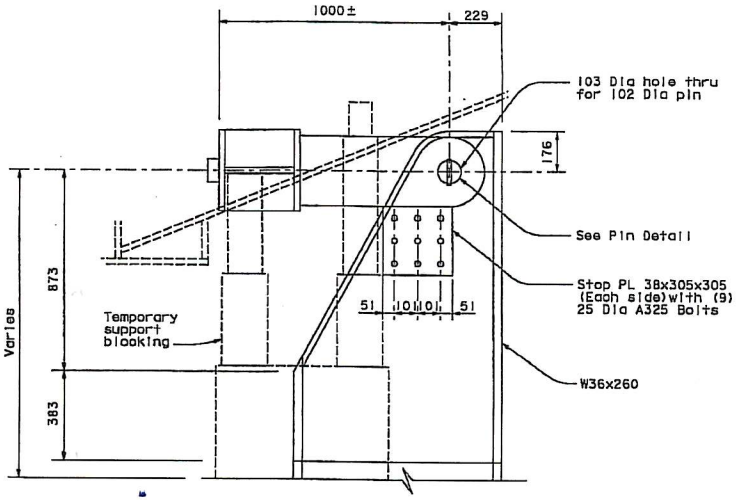

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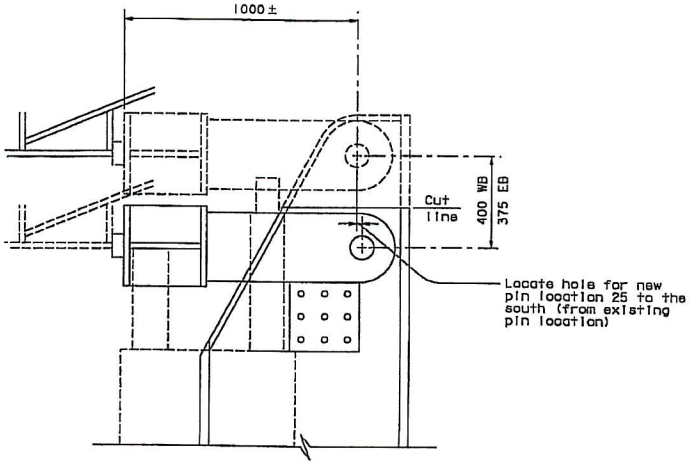

RETROFIT

SHEAR KEY MODIFICATIONS

1:20

RETROFIT EXISTING SHEAR KEY PROCEDURE:

1. The shear key shall be modified immediately prior to lowering.
2. Temporarily support horizontal brace on blocking and remove stop plates.
3. Drill new 103 Dia hole at location shown.
4. Drill new holes for stop plate bolts.
5. Re-install stop plates at new location.
6. Lower horizontal brace to new location and install 102 Dia pin.
7. Cut-off upper section of existing shear key as shown.
8. OBG may now be lowered.

NOTES:

1. All dimensions are approximate and shall be verified in the field.

CONTRACT CHANGE ORDER NO. 106
SHEET 6 OF 7

REQUESTS FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

R. Valizadeh/V. Toan/Y.L./W.L./F.C.
DESIGN OVERSIGHT

SIGN OFF DATE 06/19/09
Rev. Date: 5-18-98

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
0	06/19/09	SKYWAY OBG LOWERING NEAR HINGE A	JAD	AA	106

REVISIONS

DESIGN	BY J. Denis	CHECKED	A. Akinsanya
DETAILS	BY J. Denis	CHECKED	A. Akinsanya
QUANTITIES	BY J. Duxbury	CHECKED	A. Akinsanya

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

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B. Maroney
PROJECT ENGINEER

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

CU 04
EA 0120F1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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

SKYWAY OBG LOWERING NEAR HINGE A NO. 5

SHEET 44355 OF

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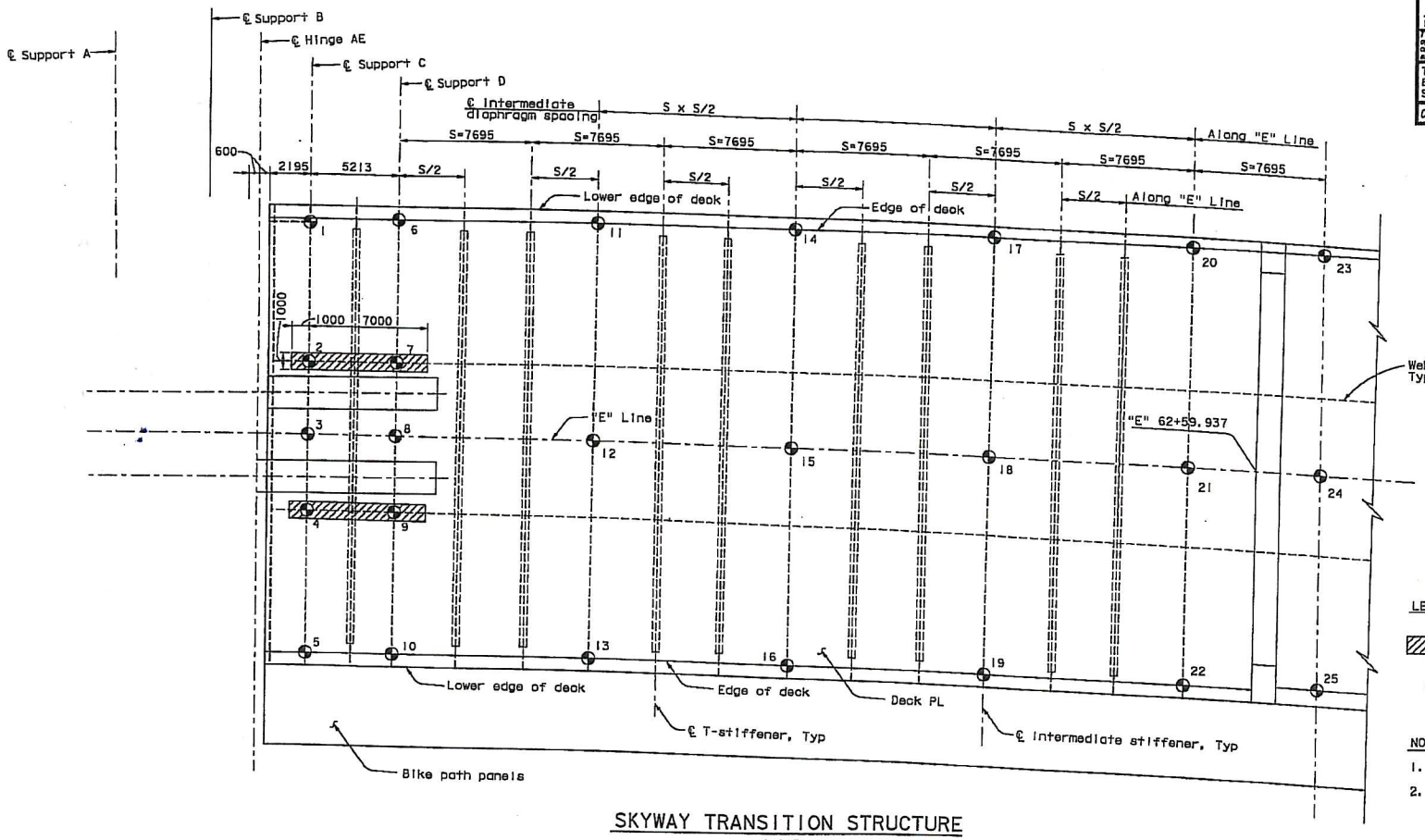

SKYWAY TRANSITION STRUCTURE

1:125

LEGEND:

Concrete weight placing limits

Survey Point

NOTES:

1. Eastbound shown; Westbound similar.
2. All dimensions are approximate and shall be verified in the field.

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	86056	1204

REGISTERED ENGINEER - CIVIL

Brian Maroney
No. 39754
Exp. 12/31/09
CIVIL
STATE OF CALIFORNIA

06-19-09
PLANS APPROVAL DATE

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CONTRACT CHANGE ORDER NO. 106
SHEET 7 OF 7

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DESIGN OVERSIGHT

SIGN OFF DATE 06/19/09

Rev. Date 8-15-08

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	BY	CHECKED
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QUANTITIES	J. Duxbury	A. Akinsanya

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STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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PROJECT ENGINEER

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ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

BRIDGE NO.	34-0006L/R
KILOMETER POST	13.2/13.9
	CU 04
	EA 0120F1

DISREGARD PRINTS BEARING EARLIER REVISION DATES: 05/11/23

REVISION DATES (PRELIMINARY STAGE ONLY)

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

SKYWAY OBG LOWERING NEAR HINGE A NO. 6

SHEET 443S6 OF

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