STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

ENGINEER'S DAILY REPORT

LAN Engineering Consultant

REPORT NO. 632 {7-day}

DATE: September 05, 2008 M T W T F S S (DAY)

NORMAL WORK HOUR: START: 6:00AM STOP: 3:30PM

WEATHER: SUNNY/ CLEAR

LOCATION :

Construction Field Office : 333 Burma Road, Oakland 94607
Working Drawing Campus Office : 375 Burma Road, Oakland 94607

04-SF-80-13.2/13.9
Contract No. 04-0120F4
{SAS Superstructure}

Caltrans Supervisor:
GL 9-19-08 **Gary Lai**
Senior Bridge Engineer

Field Work:

Assistant Structures Representative

CONTRACTOR – ABFJV

Michael F. Travis

Sub-Contractor – Bleyco Electric

EQUIPMENT AND/OR LABOR:

See Below

Equip. #	NO. MEN	DESCRIPTION (Of Equipment or Labor)	HOURS - ITEM NO. Item 103	Item 105	CCO 75						IDLE OR DOWN	REMARKS Name	Contractor
	1	Electrical – Foreman	2	2	1							Rick Reuetta	Bleyco
	2	Electrical – Journeyman	2	2	1							Jay Micheo	Bleyco
	-	Exothermic Weld Mold	X	X									
	-	4-Exothermic Shots	2	2									
	-	Splicing Tape			X								
	-	Electrical Tape			X								
	-	Electrical insulating coating			X								
	-	100' #250 MCM Insulated Ground Cable			P								

REC'D '08 SEP-22 #006650

❖ **E2 Cap Beam grounding cable extension work:**

- Bleyco Electric crew: Rick Revetta & Jay Micheo.
- Tasks performed:
  - Exothermic weld a 250 mcm insulated ground cable to the existing ground cables at top of the columns @ pier E2. (Typ-4)
  - Seal exposed weld and copper cable with insulating tape, electrical tape and coat with sealer.
  - Loop extended cable and secure on column steel cage.
  - Approximate length of each extended cables is 25 foot (8 M).
- Tasks completed :
  - Crew was finished with the tasks at approximately 11:00 AM.
  - Returned to Pier 07 by boat.
- Inspection :
  - The work was inspected by Michael Travis and Sandy Michelotti (Caltrans).
  - All welds were inspected and where acceptable.
  - The exposed welds and copper cables was properly taped and sealed.

Office Work:

❖ **MEP CCO Weekly Meeting:**

Unable to attend due to a construction site work by the electrical contractor.

Any questions or comments you can reach me at (916) 919-7158. My E-Mail address is Mike.Travis@LANEngineering.com or Michael_Travis@dot.ca.gov

END OF REPORT

ATTACHMENTS:

1. Construction Photos.
2. CCO Meeting Minutes.
3. Contract Plan Sheet showing work performed.
4. RFI 1462 Reference.
5. Draft Plan sheet showing work performed.

SIGNATURE

Name: Michael F. Travis

TITLE: Electrical Engineer – LAN Engineering

ATTACHMENT #1 (1/8)

Construction Field Photos

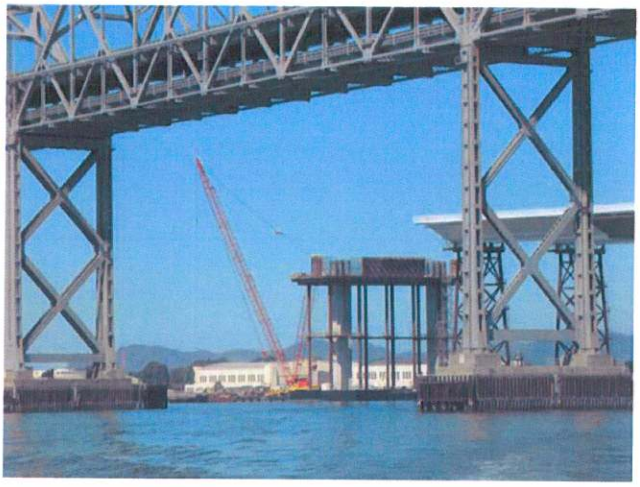
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

ENGINEER'S DAILY CONSTRUCTION FIELD PHOTOS

REPORT NO.		DATE	
632	{7-day}	September 05, 2008	M T W T F S S (DAY)

04-SF-80-13.2/13.9
Contract No. 04-0120F4
{SAS Superstructure}

Caltrans Supervisor:
Gary Lai
Senior Bridge Engineer

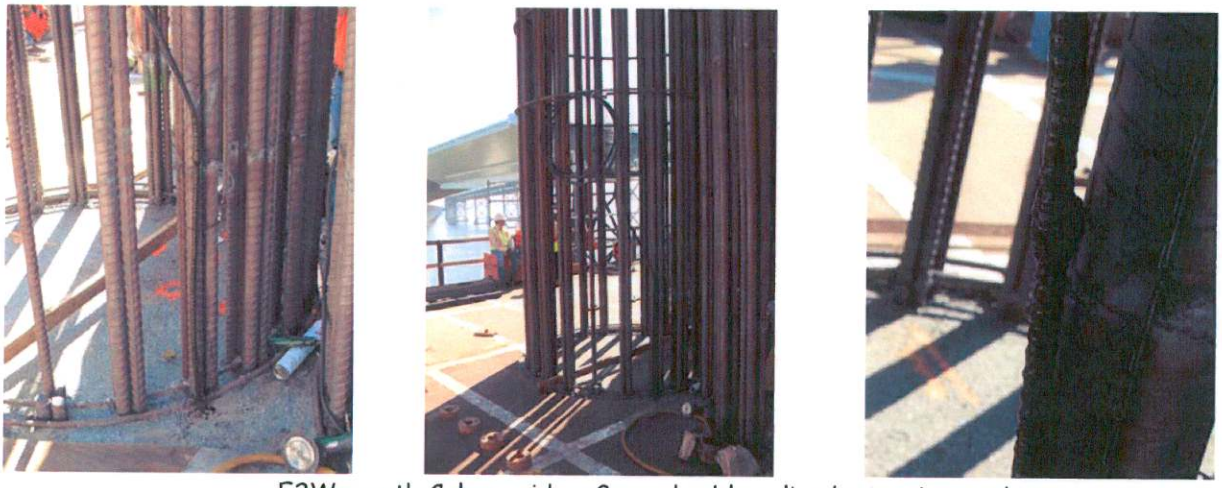


SAS Project E2 Pier Structure Construction Site

E2Wnorth Column side - Ground cable splice/extension work

Construction Field Photos

E2W- north Column side - Ground cable splice/extension work



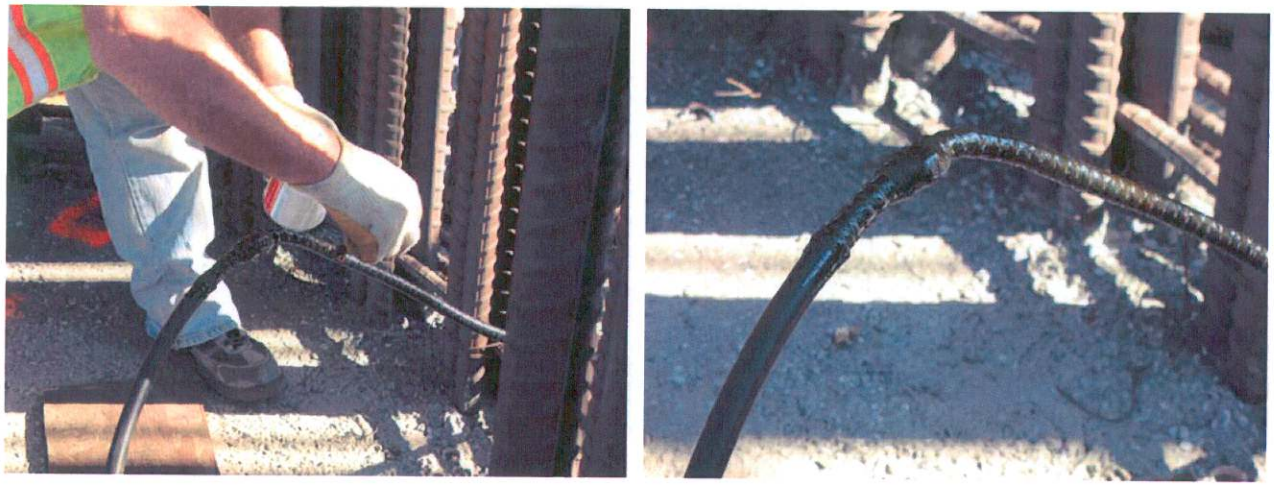
E2W- north Column side - Ground cable splice/extension work

E2W- south Column side - Ground cable splice/extension work

Construction Field Photos

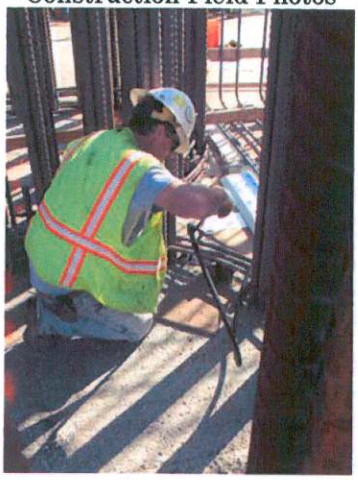
E2W- south Column side - Ground cable splice/extension work

E2W- south Column side - Ground cable splice/extension work



E2W- south Column side - Ground cable splice/extension work

Construction Field Photos

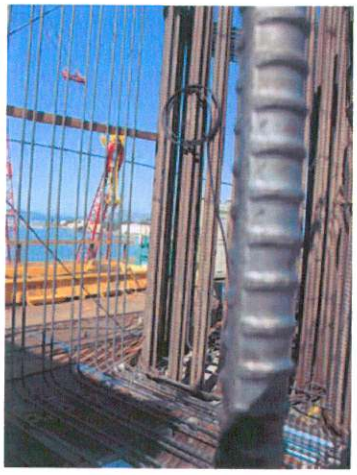


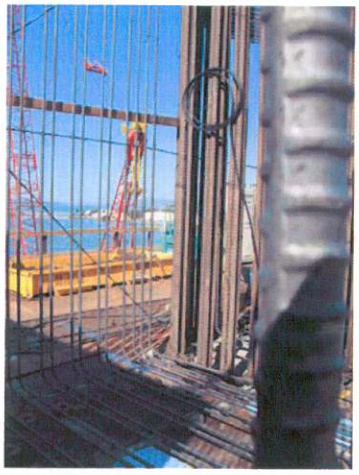
E2W- south Column side - Ground cable splice/extension work

E2E- north Column side - Ground cable splice/extension work

E2W- south Column side - Ground cable splice/extension work

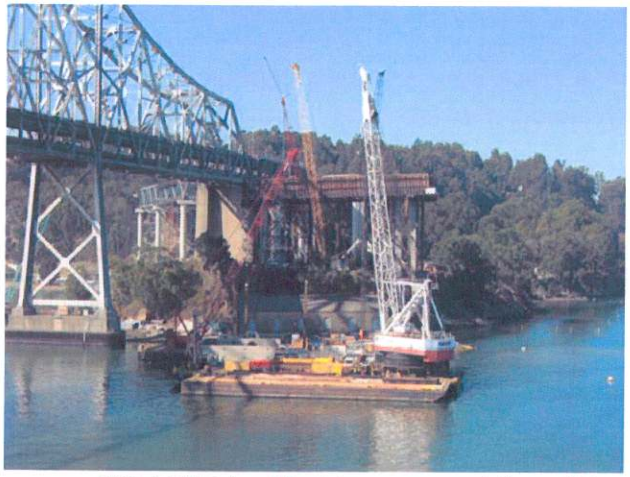
Construction Field Photos



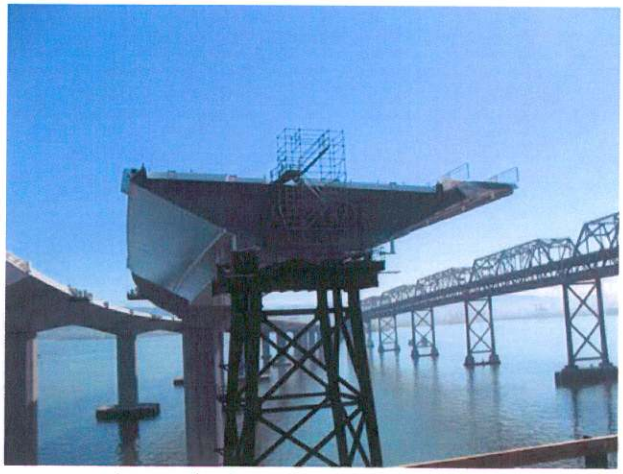


E2E- south column side - Ground cable splice/extension work

E2- Cap Beam - Tools and Paperwork

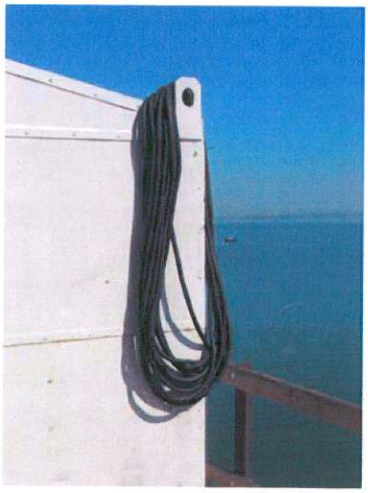


W2 / T1 Island looking westward from E2



Skyway looking Eastward from E2

Construction Field Photos



Lighting and power cables on E2 cap beam area

Damaged Insulation

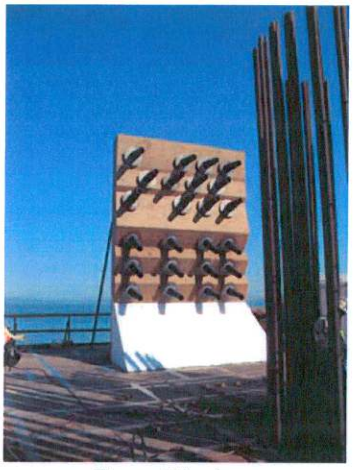
Standby Generator on E2 Cap Beam

Standby Generator on E2 Cap Beam

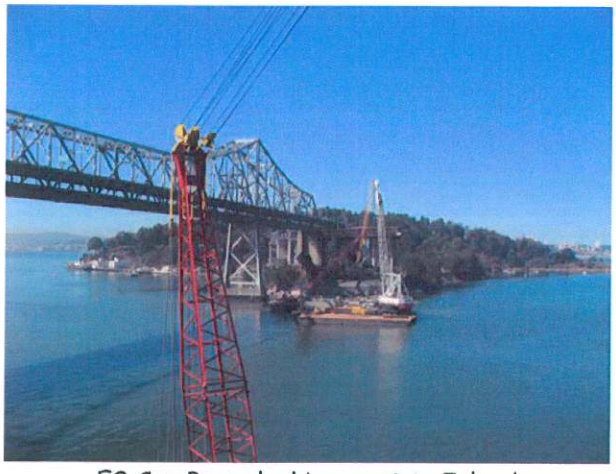
Construction Field Photos

Caltrans Inspectors - Mike & Sandy

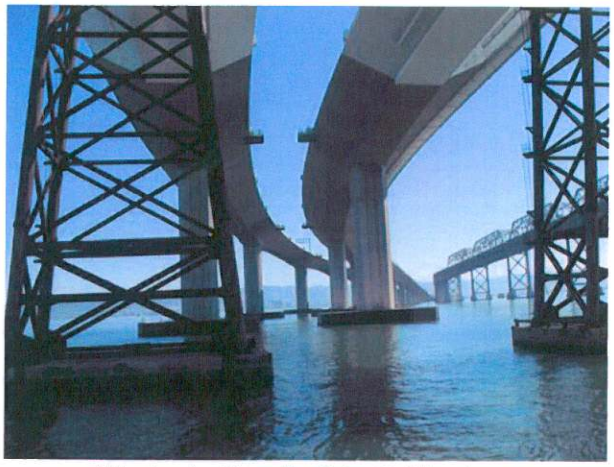
Local Resident Observer



Form Work

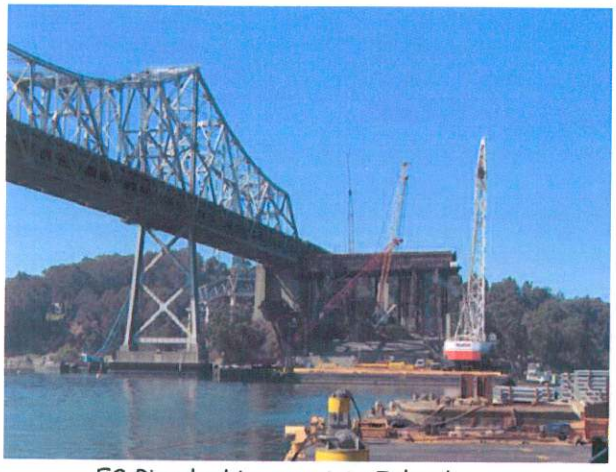


E2 Cap Beam looking west to Island

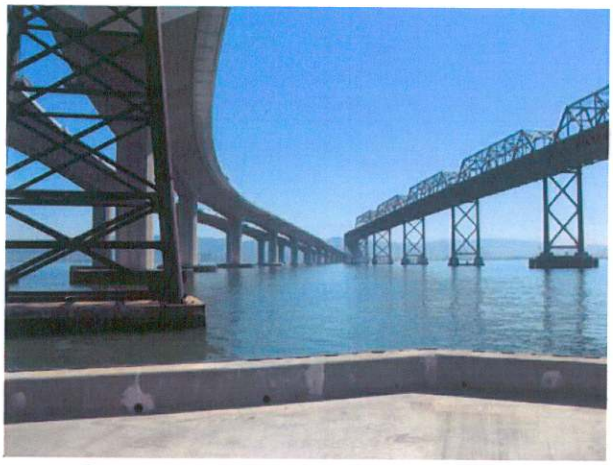


E2 pier looking East to Oakland

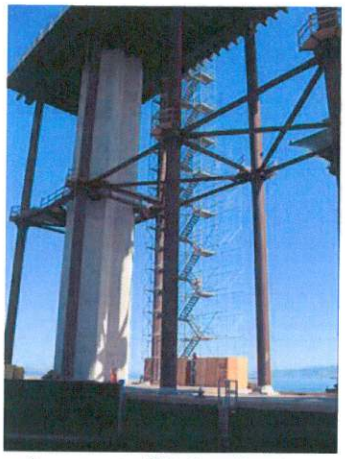
Construction Field Photos



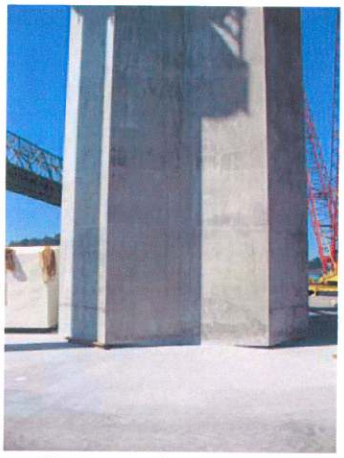
E2 Pier looking west to Island



E2 pier looking East to Oakland

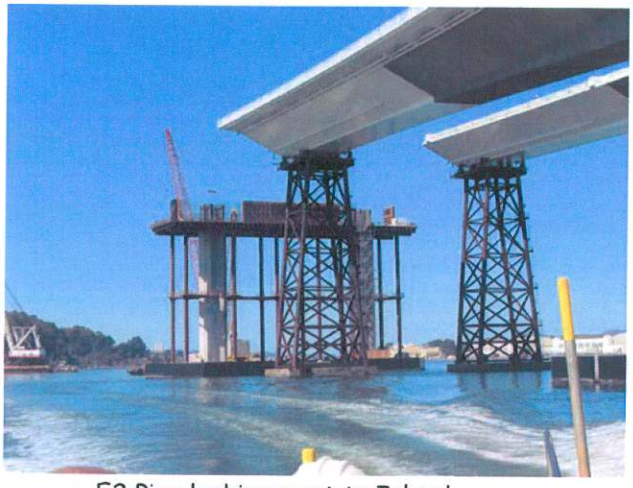


Access to E2 Cap Beam

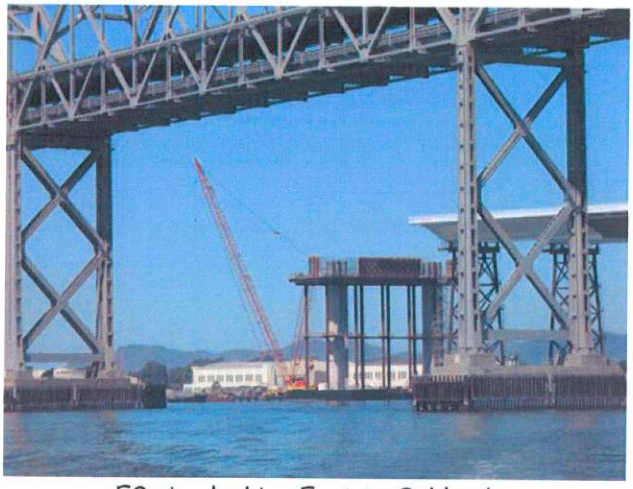


E2 pier Column Base

Skyway from E2 Pier



E2 Pier looking west to Island



E2 pier looking East to Oakland

MEP CCO WEEKLY STATUS MEETING NO. 051

August 29, 2008 - 9:00 a.m.

Attendees:

X	George Bou-Ghosn (CT)	X	Andrew Baumberger (TYLin)	X	Sandra Michelotti (CT)		Tom Ho (TYLin)
X	Bill Shedd (CT)	X	Scott Fabel (CT)	X	April Smith (CT) - Author	X	Rachel Liu (CT)
X	Grady Hart (CT)		James Duxbury (TYLin)	X	Martin Chandrawinata (CT)	X	Sharad (Sam) Patel (CT)
X	Michael Travis (CT)	X	Saeed Shahmirzai (PB)	X	Nick King (PB)		Trish Stoops (BATA)
	Mike Forner (CT)		Gary Pursell (CT)		Rob Feather (CT)	X	Alex Binai (BATA)

New Business:

Date		Issue	Action	Resolution
3/28	6	CT's TARGET ISSUE SEQUENCE		New sequence of CCOs in following order: 72, 43, 74, 55, 61, 75, 70 & 90. Unsequenced include: 73, 79 & 81.
7/18	16	Clash Detection - 3D modeling performed by TYLin	Tom to inform Saeed if PB is affected by any of the design changes.	PB to detail conduit routing for emergency access ramp/gate for bike path.

CCO STATUS

CCO / CCR NO.	DESCRIPTION	MTG DATE	ACTIONS	PRIORITY	DUE DATE	BIC
42S1	**Cable Tray Changes**					
		8/29/08	ATP issued 8/28 in 05.03.01-002623	A		CLOSED
43	**Lighting Revisions**					
	CCR 31 & RFI 159R0, R1, 464R0, 465R0, 466R0, 467R0, 1100R0, R1, Spec. Change	8/1/08	CT returned comments 7/31, PB to incorporate and resubmit.	C	9/1/08	PB CT
		8/8/08	RFI Hopper meeting scheduled for 8/18 with PB, TYLin and CT.		8/18/08	
		8/14/08	RFI Hopper meeting scheduled for 8/18 with PB, TYLin and CT. Draft due date is 9/5.		9/5/08	
	CCR 31 - State Furnished East Span Light Poles.	8/22/08	Draft due date is 9/5/08.		9/5/08	
		8/29/08	TYLin package submitted 8/28. PB draft due date is 10/1/08.		10/1/08	
55	**Service Platform Electrical Changes**					
	CCR 53 & RFIs 317R0, R1, R2, R3, 451R1, 474R0, 726R0, 1225R0 & SUBs 614, 608, Spec. Change	8/1/08	ATP was submitted 7/30 for 4 sheets (handrail)	B	9/1/08	PB
		8/8/08	PB to submit draft package on 9/1/08.		9/1/08	
		8/14/08	Draft due date is 10/1/08.		10/1/08	
	CCR 53 - TOS changes related to RFI 451 (Conduit routing)					

CCO / CCR NO.	DESCRIPTION	MTG DATE	ACTIONS	PRIORITY	DUE DATE	BIC
59	**Additional OBG Penetrations**					
	RFIs 834R0, R1	8/22/08	Update sent 8/11/08 in 05.03.01-002538.	A		
61	**Electrical Warning Systems**					
	CCRs 32, 46 & RFI 873R0 & SUB 171, Spec. Change	8/1/08	USCG has provided location for channel marker lights. Tom (TYLin) to provide a detail of the nav. light extension & PB to submit package by 8/20.	B	8/20/08	PB
	CCR 32 - USCG Requirements for Lighting. Changes in NAV Lights NV-1	8/8/08	TYLin provided Nav. Light extension detail on 8/1. PB to submit package by 8/20/08.		8/20/08	
		8/14/08	Draft due date is 9/5/08.		9/5/08	
	CCR 46 - Additional Fog Detection System, Fog, Bell, Horn per USCG	8/29/08	Draft due date is 10/15/08. Mike T. to meet with Rocky to discuss relocation of fog horn cabinet.		10/15/08	
68	**Additional Tower Penetrations**					
	RFI 1029R0, R2, R3	8/22/08	Update sent 8/18/08 in 05.03.01-002563.	A		
70	**Tower Utility Panels**					
	CCR 42 & RFI 1134R0 & SUBs 174-176, Spec. Change	7/25/08	CCO Package due date is 9/1/08.	A	9/1/08	PB
	CCR 42 - Tower Utility Panel changes, including panels, transformers, circuit breakers	8/14/08	Draft due date is 9/5/08.		9/5/08	
72	**Cable Electrical**					
	CCRs 45, 49, 66 & RFIs 270R0, 941R0, 942R0, 1189R0, 1244R0, Spec. Change	8/22/08	TYLin has been provided with an anchor bolt detail. PB to submit a draft revision today which CT will submit to CDMG.	A	8/22/08	PB
	CCR 45 - FAA Aviation Lights CCR 49 - Main Cable Lighting CCR 66 - Tower Marker Lights	8/29/08	An issue was identified in CT informal review. PB to re-design brackets to allow for straps. Draft Due date is 9/9/08.		9/9/08	
73	**Bike Path Handrail and Conduit**					
	RFI 969R0, R1, Spec. Change	8/1/08	Bill to invite Clive to look at mock-up.	C	8/6/08	CT PB TYLin
	Unsightly conduit on Skyway & SAS	8/8/08	Bill to invite Clive to look at mock-up.		8/11/08	
		8/14/08	Clive inspected the mock-up on 8/13. A minor modification list was developed and modified details will be sent to Clive and TYLin by 8/18.		8/18/08	
		8/29/08	Mock-up Meeting scheduled for 9/3/08 to discuss (2) retrofit alternatives (flex or rigid conduit) and new bridge fix..			

ATTACHMENT # 2 (2/4)

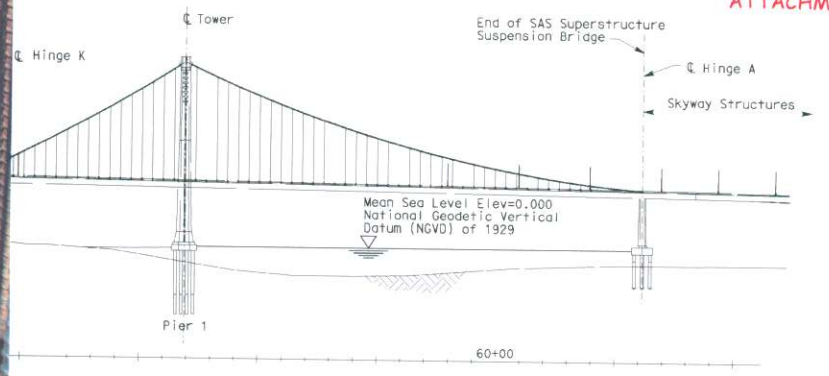
CCO / CCR NO.	DESCRIPTION	MTG DATE	ACTIONS	PRIORITY	DUE DATE	BIC
74	**Strong Motion System**					
	CCR 50	8/14/08	Draft due date is 10/1/08.	B	10/1/08	PB
		8/29/08	CT to send CDMG comments to PB. Draft due date is 10/1/08.		10/1/08	CT
75	**Electrical Grounding**					
	CCR 58, RFI 1462R0	8/22/08	Package is under CT review. Due date is 9/5/08.	C	9/5/08	CT
79	**Tower Base MEP**					
	CCR 43	8/29/08	PB Draft Due Date is 10/1/08.	C	10/1/08	PB
	CCR 43 - Tower interior design issued at 3-9m, lighting illumination deficiency & grating for sump pump					
81	**TOS Modification**					
	RFI 1133R0	5/30/08	Grady to develop RFI list to be included in CCO 81.	C		PB
	Relocation of TOS cameras at 144.165m to include new locations and new camera.	6/27/08	RFI 1133 has been incorporated into CCO 81.			CT
85	**Elevator Details**					
	RFIs 536, 734R1, R2, 1161R0 & SUB 235R0, Spec. Change	8/1/08	DOSH has stated that the elevator contract design does not comply with CA code. Capacity is higher than that permitted by ASME. Will schedule a meeting between Moffit Nichol and DOSH to work out criteria.	B		CT
	RFI 536 - Options of SP 10-4.05	8/8/08	RFI 734R2 was responded to on 7/31. TYLin and Moffit Nichol are working on new details which will address changes in size & capacity. Bill and Tom to plan a variance request by 8/15.		8/15/08	TYLin
	SUB 235R0 - Elevator Layouts, Electrical Schematics, and Hoist Calculations	8/14/08	CT Construction, Project Management and Design will work on obtaining the variance.			
		8/22/08	Steve Husselbus scheduled a meeting for 9/11/08.		9/11/08	
90	**Architectural Enhancements @ Tower Elev. 53m**					
	RFIs 706R0, 707R0	6/27/08	RFI 1404 over-ridden by CCO 90. RFI 1404 is no-change due to CCO 90. PB & TYLin to coordinate on the design due to cable trays, mechanical, floor, hatches, etc..	B	8/1/08	PB
		7/11/08	Saeed sent email to Bill/Gary P. with two (2) options for the "Refinery." Gary selected option 2 which entails leaving conduit "as-is." Fabrication will not be impacted, but a new design layout of conduit is required. PB to submit plans by 10/1/08. Meeting is scheduled 7/16 to discuss the "Refinery."		10/1/08	TYLin
		7/25/08	PB proceeding with option 2.		10/1/08	
		8/22/08	Draft Due Date is 10/1/08.		10/1/08	

ATTACHMENT # 2 (3/4)

CCO / CCR NO.	DESCRIPTION	MTG DATE	ACTIONS	PRIORITY	DUE DATE	BIC
94	**Bridge Painting & Misc.**					
	RFIs 226R0, 447R1, 775R0, 1364R0, Spec. Change	7/11/08	Working on Concurrence Memo	C		CT
	Railings, cable handrails, platforms & misc. visible items	7/25/08	Darryl is reviewing Concurrence Memo.			
		8/8/08	CT to prepare a cost estimate and discuss with designer.			
		8/14/08	Action plan has been developed and a cost estimate will be produced by 9/30. CT is working on draft Specs.		9/30/08	
99	**Bike Path Details**					
CCR STATUS						

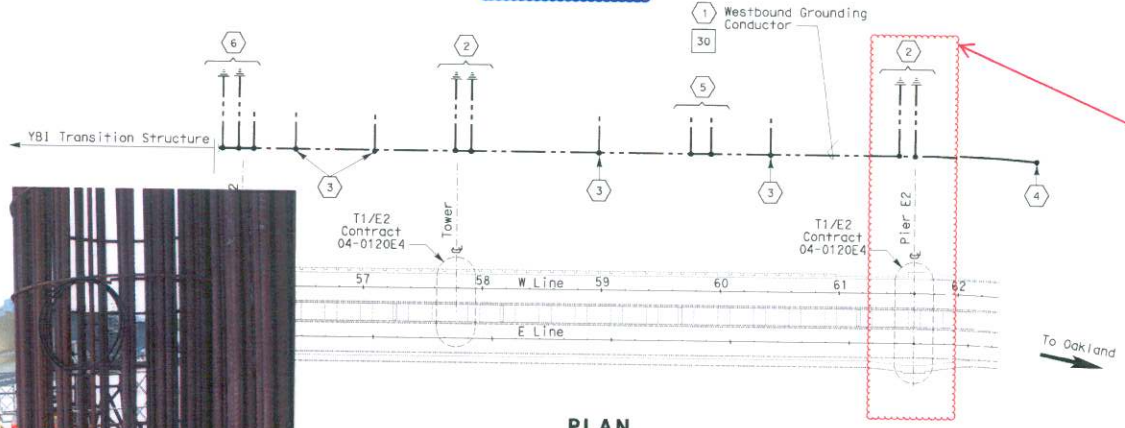
ATTACHMENT # 2 (4/4)

ATTACHMENT #3 (1/2)



ELEVATION

E2W South



PLAN

Work performed from contract Plan Sheet , RFI # 1462 and Future CCO #75

E2W North

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	165	1204

12/19/02
REGISTERED ELECTRICAL ENGINEER DATE

12-6-04
PLANS APPROVAL DATE

JENS ERLINGSSON No. 8249 EXP. 9/30/06 ELECTRICAL REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

PB POWER, Inc.
A Parsons Brinckerhoff Company
303 Second St., Suite 700N
San Francisco, CA 94107-1317

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.

Caltrans now has a web site! To get to the web site, go to http://www.dot.ca.gov

SHEET NOTES:

1. Install one separate 500 kcmil bare copper system grounding conductor in westbound girder, spanning the entire SAS Superstructure. The system grounding conductor shall be physically attached to the 15 kV cable tray and 15 kV conduits (flexible and rigid) routed through the pipe beams in hinges.
2. At pier E2 and tower install, two 250 kcmil bare copper ground conductors and shall be exothermically welded to the 500 kcmil system grounding conductor, run embedded down the pier and tower columns, T1/E2 see contract 04-0120E4 for limited of work.
3. Approximately 1/3 the distance between piers and tower, two #4/0 bare copper ground conductors shall be exothermically welded to the 500 kcmil system grounding conductor and bonded to all the cable trays.
4. Exothermically weld the 500 kcmil system grounding conductor, at SAS Superstructure and Skyway Structure girder interface, to the adjoining 500 kcmil system grounding conductor located at the Skyway Structure.
5. Provide two ground bars in the girder. These ground bars shall provide a ground point of connection for platform equipment.
6. For continuation see W2 contract 04-0120C4. For limited of work.

NOTES:

1. References:
   - For SAS Superstructure Girder Eastbound grounding, see sheet E-196.
   - For grounding at service platforms, see platform sheets E-114 through E-118.

DETAILS
SAS SUPERSTRUCTURE GIRDER WESTBOUND GROUNDING PLAN
SCALE 1:2000

E-111

CALCULATED/ DESIGNED BY	CHECKED BY
FK	IAH

DATE	REVISED BY
08/02	EJL
08/02	DATE REVISED
	2/04

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

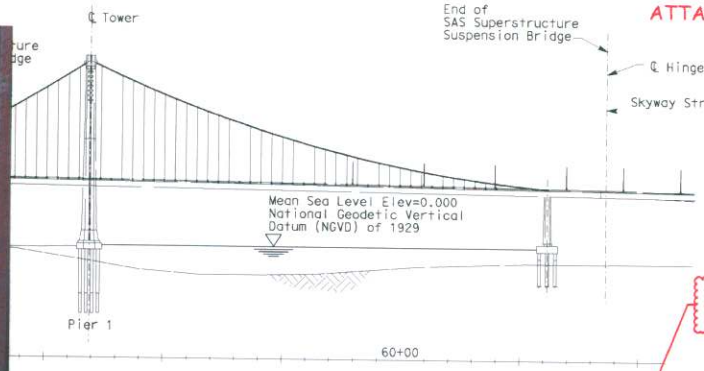
FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

DGN FILE =>40120fig111.dgn
USERNAME =>lr enard

CU 04251 EA 0120F1

LAST REVISION 00-00-00 DATE PLOTTED = 09-JAN-2004 TIME PLOTTED = 11:40

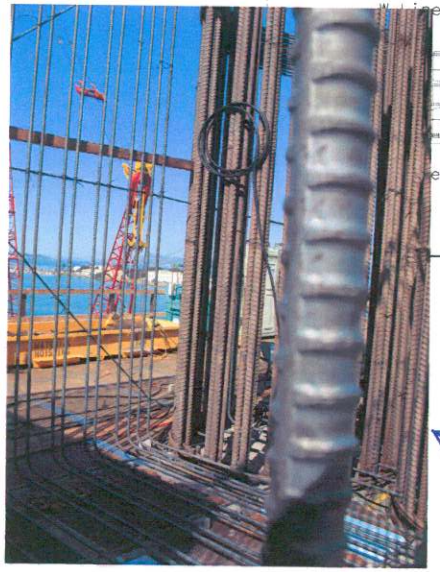
ATTACHMENT #3 (2/2)

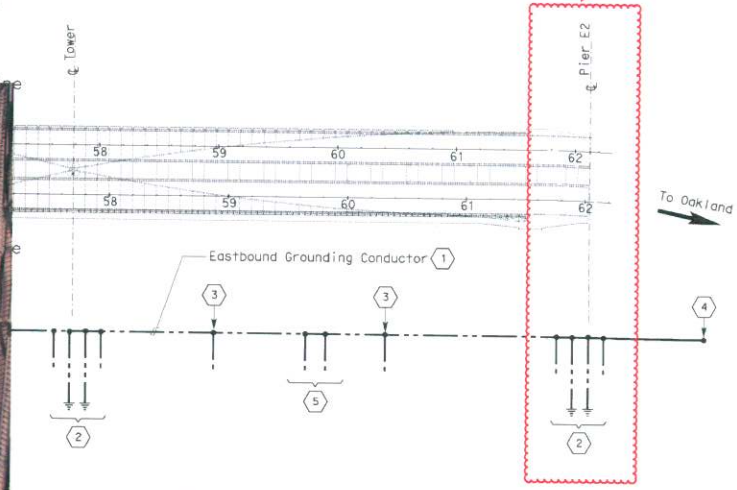


ELEVATION
SCALE 1:2000

E2E North

Work performed from contract Plan Sheet , RFI # 1462 and Future CCO #75





PLAN
SCALE 1:2000

E2E South

SHEET NOTES:

1. Install one separate 500 kcmil bare copper system grounding conductor in eastbound girder, spanning the entire SAS Superstructure. The system grounding conductor shall be physically attached to the 15 kV cable tray.
2. At pier E2 and tower install, two 250 kcmil bare copper ground conductors and shall be exothermically welded to the 500 kcmil system grounding conductor, run embedded down the pier and tower columns, and shall be exothermically welded to the footing collars. At each pier and tower, the 500 kcmil bare copper system grounding conductor shall be connected to two ground bars located in the girder, one on each side of the pier. These ground bars shall provide a ground point of connection for cable trays and equipment located near the pier in girder or on the platform.
3. Approximately 1/3 the distance between piers and tower, two #4/0 bare copper ground conductors shall be exothermically welded to the 500 kcmil system grounding conductor and bonded to all the cable trays.
4. Exothermically weld the 500 kcmil system grounding conductor, at SAS Superstructure and Skyway Structure girder interface, to the adjoining 500 kcmil system grounding conductor, located at the Skyway Structure.
5. Provide two ground bars in the girder. These ground bars shall provide a ground point of connection for platform equipment.
6. For continuation YB1 Structures Contract 04-0120H4.
7. For continuation see W2 contract 04-0120C4 for limited of work.

NOTES:

1. References:
   - For SAS Superstructure Girder Westbound grounding, see sheet E-111.
   - For grounding at service platforms, see platform sheets E-114 through E-118.

DETAILS
SAS SUPERSTRUCTURE GIRDER EASTBOUND GROUNDING PLAN
SCALE 1:2000

E-196

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	225	1204

REGISTERED ELECTRICAL ENGINEER — DATE 12/19/02
12-6-04
PLANS APPROVAL DATE

JENS ERLINGSSON No. 8249 Exp. 9/30/06 ELECTRICAL STATE OF CALIFORNIA

PB POWER, Inc.
A Parsons Brinckerhoff Company
303 Second St., Suite 700N
San Francisco, CA 94107-1317

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DATE	BY	REVISED	DATE REVISED
08/02	EDC	CTF	08/02

CALCULATED/DESIGNED BY
CHECKED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

DGN FILE =>40120fun196.dgn
USERNAME =>jr enard

CU 04251 EA 0120F1

LAST REVISION: 00-00-00 DATE PLOTTED => 19-JAN-2004 TIME PLOTTED => 13:38

ATTACHMENT #4 (1/4)

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

REQUEST FOR INFORMATION (RFI)

RFI No.: ABF-RFI-001462R00 Submitted By: Bausone, Chris Pages: 1
Pages Attached: 0

RFI Date: 30-July-2008 Contact Name: Bausone, Chris Phone No. (510) 808-4566

Subject: Existing Ground Cables at Pier E2
References:
Sub/Sup: ABF Sub RFI #:
Response Required by: 08-August-2008 Response affects critical path activity?

Description:

Plan sheets 165 and 225 note that 250 kcmil ground cables shall run embedded down the pier columns and attach to 500 kcmil ground cables inside the OBG. However, Contract Plans do not detail or describe what to do at the Pier E2 Cap Beam.

Recently, ABFJV has informally discussed requirements and possibilities with the Engineer, with the intent to expedite design that is being coordinated for forthcoming CCO 75, which ABFJV has been notified will cover all changes to the electrical grounding system. The main points of discussion have been as follows:

1) Routing of ground cable through cap beam reinforcement and other embedded material

2) Unknown length of existing ground cable coils and whether or not they must be extended by "cadwelding" additional cable

3) Exit points for ground cables through cap beam

4) Protection (i.e. conduit) against physical damage for ground cables through cap beam

ABFJV intends to continue discussions regarding what to do with existing ground cables at Pier E2 , which must be coordinated with Pier E2 Cap Beam construction currently in progress. When a mutually agreeable design is achieved, please memorialize it with written direction in response to this RFI.

Contractor Disposition:

This RFI is being submitted for:

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

Response: **Agreed Ext. Due Date:**

Pages: 4
Pages Attached: 2

The attached sketches RFI-1462-SK-E-22 and RFI-1462-SK-E-22A covers discussion topics 1 - 4:

1. Please see the attached sketches for routing of the ground cables through the cap beam reinforcement.

2. The existing ground cables should be extended to reach the ground plate locations shown on the sketches. Additional cables should be insulated cables and exothermically welded to the existing cables.

3. The termination points (exit points) of the ground cables shall be located at the ground plates as shown on the sketches.

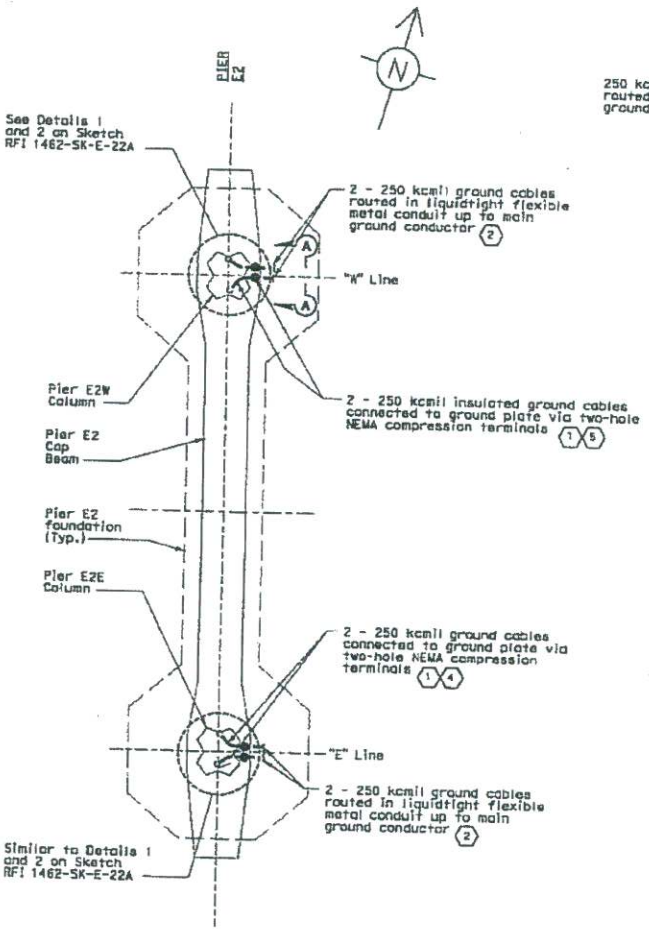
REQUEST FOR INFORMATION (RFI)

4. Protection of the ground cables in the cap beam should be provided by the following methods:
A. Use insulated cables for additional ground cables and exothermically weld the connections.
B. Seal exposed bare copper cables and exothermic connections with heavy duty splicing tape and vinyl electrical tape.

Administrative Action:

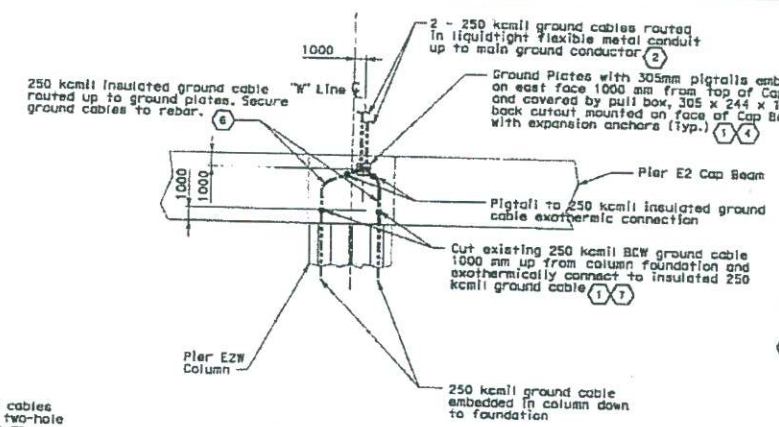
Contract Change Order No. 75 will incorporate this change

Date: 13-August-2008	**Respondent:** Chandrawinata, Martin	**Phone No.:** 510-286-0535



PIER E2 FOUNDATION & CAP BEAM PLAN

PLAN



SECTION A-A

SHEET NOTES:

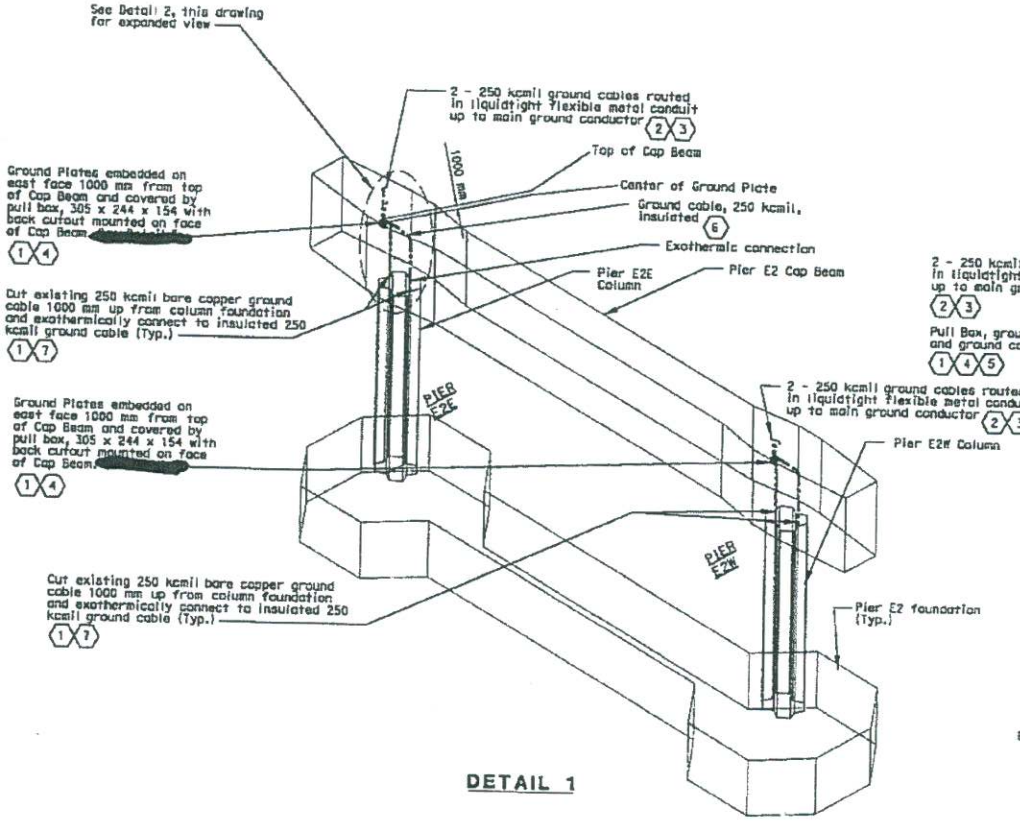
1. Install two grounding plates, Thermoweld Type CA-27 Cat. #38-4533-68 (sized for 250 kcmil with 305mm pigtail). Exothermically connect 250 kcmil insulated ground cable (2 per column) to the embedded ground plate pigtail located on the east face and route to the existing 250 kcmil BCW cut 1000 mm above the cap/column construction joint. Route the cables through the cap beam. See contract 04-0120E4 for limited scope of work.
2. Route 2-250 kcmil ground cables from the embedded ground plates in the cap beam above the E2E & E2W columns in liquidtight flexible metal conduit up to 500 kcmil ground cable run with Eastbound and Westbound 15 kV cable tray.
3. Ground cables routed up to outboard cable tray run of associated roadway and exothermically connecting to 500 kcmil ground cable routed with 15kV cable tray.
4. Pull box shall be 305 x 244 x 154 stainless steel enclosure with cutout in back to protect grounding plates and connections. Box sall be mounted to face of Cap Beam with expansion bolts. Place Neoprene O-Ring gasket around opening between box and concrete face to inhibit moisture encrosion.
5. Ground cable connections to grounding plate shall be with Burndy heavy duty two-hole NEMA pattern compression terminals.
6. Route 250 kcmil insulated ground wire within Cap Beam. Use green trace tape on ends of cable if green insulation not available. Secure to inside of existing vertical perimeter rebar cage and connect to embedded grounding plate on east face of Cap Beam. Contractor to verify insulated ground wire cable length.
7. Seal exposed bare copper wire (BCW) and exothermic connections with heavy duty splicing tape and vinyl electrical tape.

ATTACHMENT #4 (3/4)

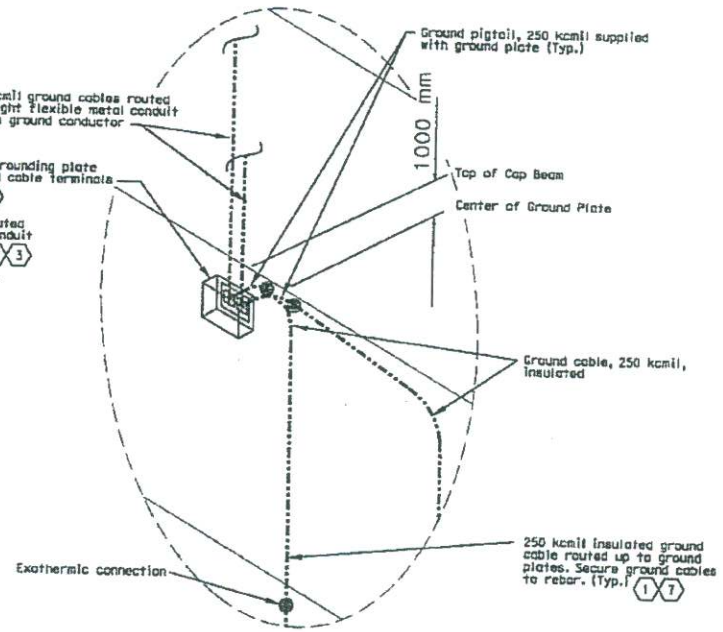
RFI-1462-SK-E-22

NOTES:

1. See sheet RFI 1462-SK-E-22 Sheet Notes.



DETAIL 1



DETAIL 2

ATTACHMENT #4 (4/4)

RFI-1462-SK-E-22A

ATTACHMENT #5 (1/1)

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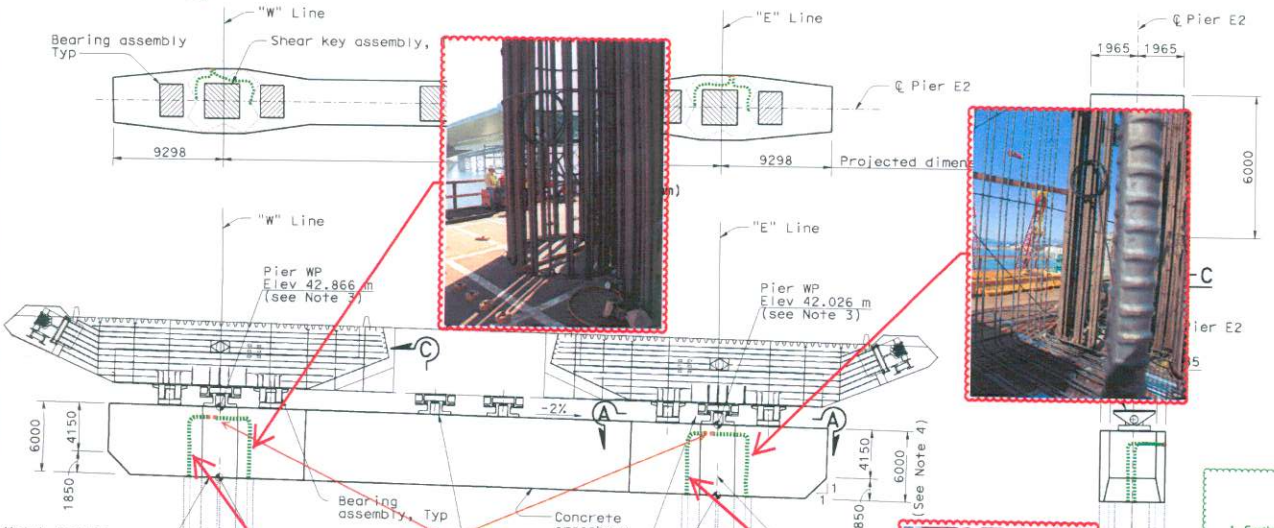
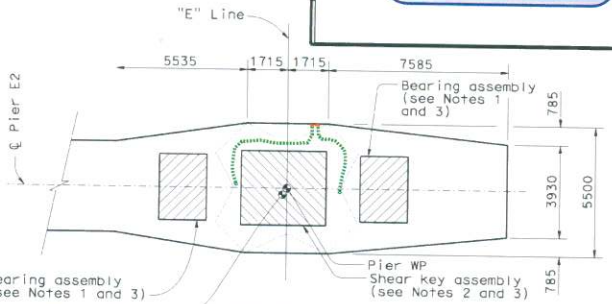
DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	510	1204

5 Caltrans Metric

DRAFT





SECTION A-A (Dimensions along slope surface)
1:100

GROUNDING RECOMMENDATION IN CAP BEAM STRUCTURE
MICHAEL TRAVIS

1. Exothermic Weld a 250 MCM insulated conductor cable to the existing 250 MCM bare copper cable at each location (2-E2E & 2-E2W). Weld approximately 1 meter above the concrete exit point of the existing cable.
2. Seal exposed existing bare copper cable and exothermic weld in splicing tape and electrical tape.
3. Route the insulated 250 cables to a point on the east face of the cap beam as shown on the plan.
4. Exothermic weld a ground plate to the ends of the insulated 250 MCM cables. See Note 2 above.
5. Place the ground plate inside the Cap Beam Structure with the face of the ground plates flush with the cap beam east face.
6. Need Layout of exact location of ground plates to be covered in a junction box.
7. Need to layout other junction boxes layout to finalize the location of the grounding plates/junction box.

Any questions or comments please let me know.

SECTION B-B
1:100

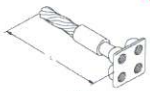
NOTES:

1. For pier E2 bearing details, see "Pier E2 Bearing Details" sheets.
2. For pier E2 shear key details, see "Pier E2 Shear Key Details" sheets.
3. For pier E2 bearing and shear key location, see "Pier E2 Bearing and Shear Key Layout" sheet.
4. Dimensions are normal to the 2% crossbeam slope.
5. For "Pier E2 Details" sheets, the Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

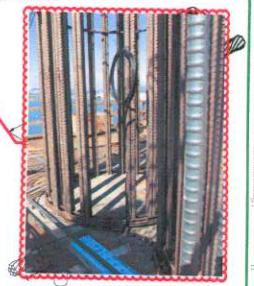
GROUND PLATES

GROUND PLATES

thermOweld® Pre-fabricated Ground Plate Assemblies come ready to splice into your grounding system. Types CR-31 and CR-32 are welded in an inverted position and the resulting riser is used to place the ground plate on top of 1/2" pipe. This helps position the ground plate flush with a floor slab.


CR-27

CR-31


CR-32

38-2864-00	38-4529-IH	38-4524-IH	38-4529-IH	38-4534-IH
38-2909-00	38-4527-IH	38-4526-IH	38-4531-IH	38-4536-IH
38-4051-00	38-4532-IH	38-4527-IH	38-4532-IH	38-4537-IH
38-4178-00	38-4523-IH	38-4528-IH	38-4533-IH	38-4538-IH

For complete part number replace with corresponding number for cable size and corresponding letter for cable length. Contact thermOweld® for cable sizes and lengths not shown.

1 - CABLE SIZE
1 = #4 STR 5 = 400 STR
2 = #2 STR 6 = 250 MCM
3 = 1/0 STR 7 = 350 MCM
4 = 2/0 STR 8 = 500 MCM

H - LENGTH IN INCHES
A = 6" D = 24"
B = 12" E = 36"
C = 18" F = 48"

Example: 38-4532-5F would be a CR-27 type with a 38-4051-00 ground plate and a 4/0 str pigtail, 18" long.

CR-27

GROUND PLATES

GROUND PLATES

Use weld types CC-1 and CC-2 to connect copper cable to ground plates. Contact thermOweld® for mold numbers.

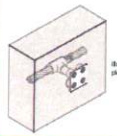
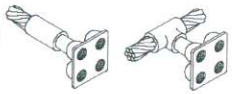


Illustration at left shows 4-ground plate installed in a core wire well.



SIDE ELEVATION (Looking South)
1:200

5 REVISED P

DECEMBER 21, 2005

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

Sanjines	CHECKED J. Chan	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	R. Manzanarez PROJECT ENGINEER
Xu	CHECKED J. Chan		BRIDGE NO. 34-0006L/R
Xu	CHECKED C. Bernardo		KILOMETER POST 13.2/13.9

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

CU 04
EA 0120F1
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DISREGARD PRINTS BEARING EARLIER REVISION DATES

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

PIER E2 DETAILS NO.1

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 93 OF

Rev. Dates 5-8-98

100 % P S & E

USERNAME = tritchard DATE PLOTTED = 15-SEP-2005 TIME PLOTTED = 08:10