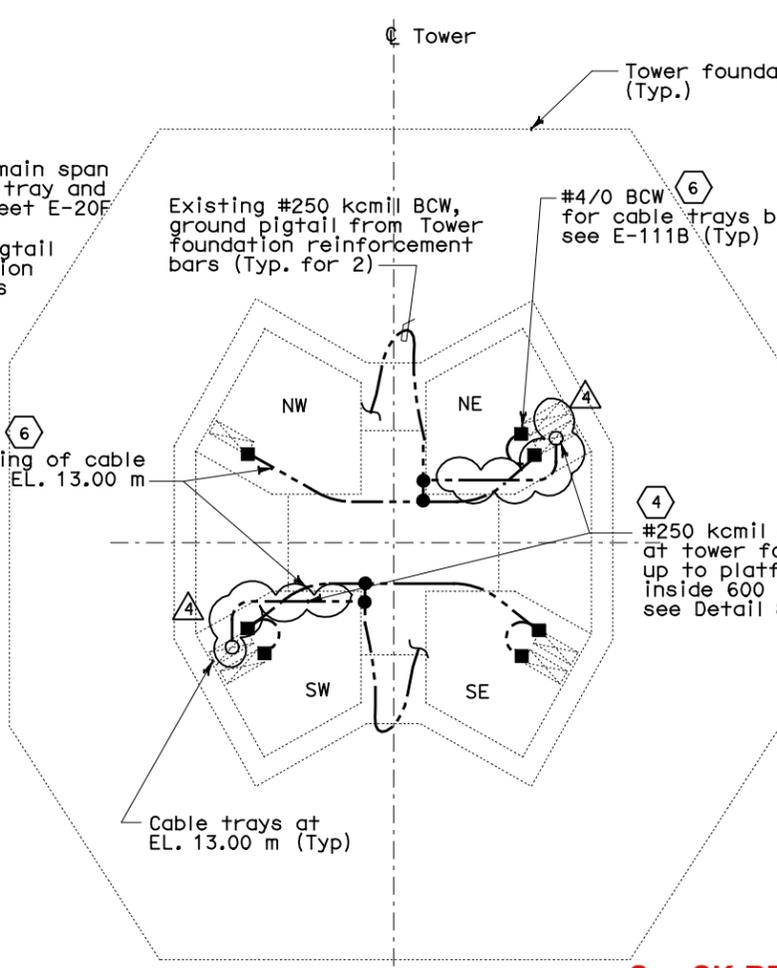
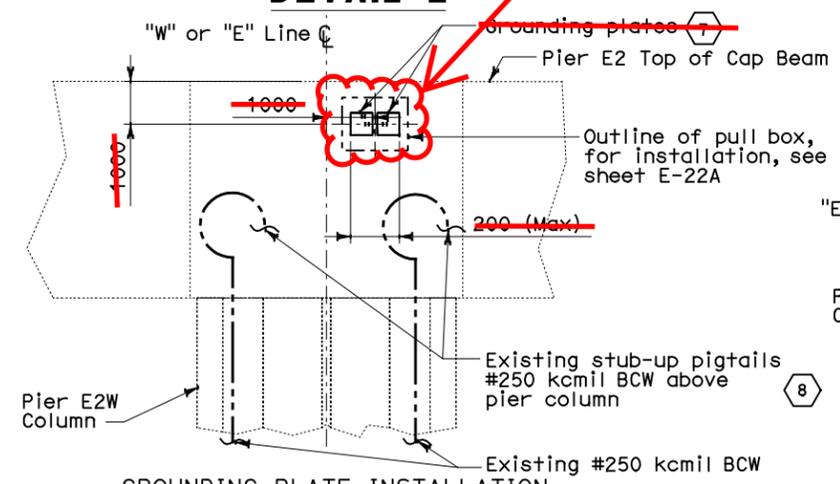


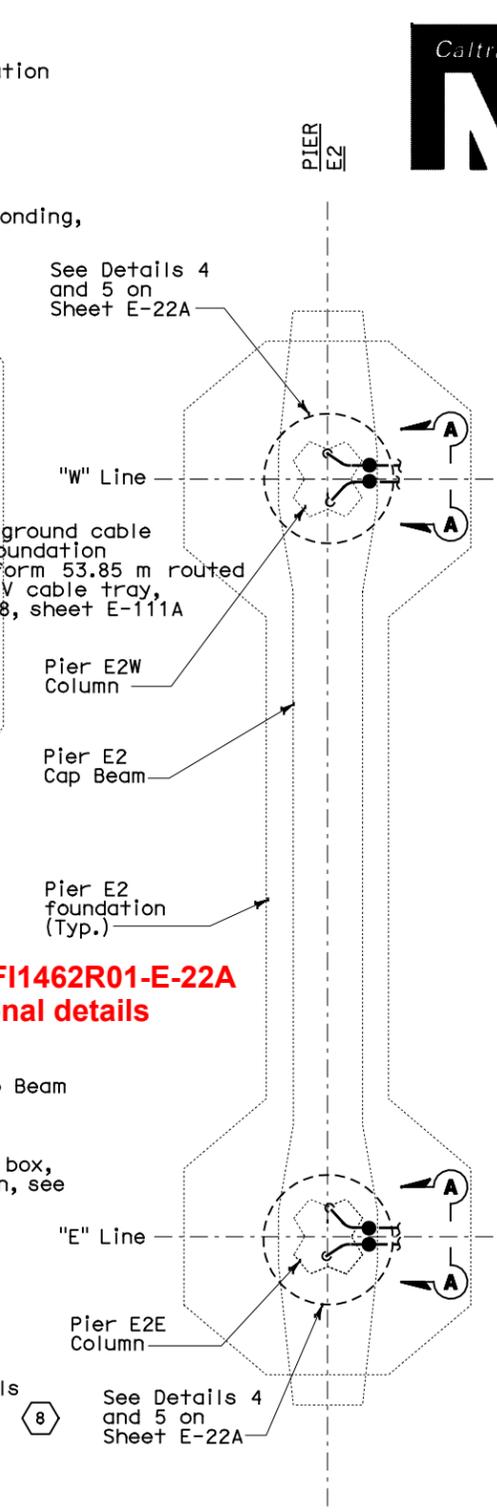
PIER W2 FOUNDATION PLAN (11)  
**DETAIL 1**



TOWER FOUNDATION PLAN  
**DETAIL 2**



**SECTION A-A**



PIER E2 FOUNDATION PLAN  
**DETAIL 3**

**SHEET NOTES:**

- 1 Tie the underground duct bank #500 kcmil Bare Copper Wire (BCW) system grounding conductor to the W2E and W2W pier foundations. See W2 contract 04-0120C4 for limited scope of work.
- 2 Route the #250 kcmil grounding conductors around the W2W and connect to the new grounding rods. This grounding loop shall be exothermically connected to the #500 kcmil main ground conductor at the pier. This is typical for pier W2E.
- 3 Not used.
- 4 Main tower foundation ground conductors shall be routed vertically up to platform 53.85 m via 600V cable trays inside SW and NE tower quadrants and tied exothermically to the #500 kcmil main ground conductor.
- 5 Ground rod shall be copper clad, 19 mm diameter and 3048 mm long.
- 6 Bond all the cable trays to the ground loop at Tower elevation 13 m.
- 7 Install two grounding plates, Thermoweld Type CR-27 Cat. #38-4533-6B or equal (sized for #250 kcmil BCW with 305mm pigtail). Grounding plates shall be embedded at east face side of the pier E2 cap beam.
- 8 For connection of stub-up #250 kcmil BCW to grounding plates, see sheet E-22A.
- 9 See Detail 1, sheet E-22B for grounding installation through pier pit wall.
- 10 See Detail 2, sheet E-22B for grounding installation through pier pit wall.
- 11 Pier grounding system must be verified and tested for ground resistance prior to tie-in to #500 kcmil main ground conductor. Perform tests, by the fall-of-potential method according to IEEE-81. Contractor shall submit a test plan and procedure for Engineer's approval. Test results shall be submitted to the Engineer for evaluation and approval.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
4	04/27/12	ELECTRICAL GROUNDING	RSB	RG	75
3	12/12/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205
2	08/08/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205
1	11/20/09	ELECTRICAL GROUNDING	RR	RG	75

CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_



FOR REVISION ONLY FOR REVISION ONLY  
① ② ③ ④

ORIGINAL SHEET SUPERCEDED

**SK-RFI1462R01-E-22**

**DETAILS UNDERGROUND FOUNDATION GROUNDING**  
NO SCALE

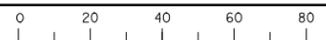
**E-22**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans  
DESIGN OVERSIGHT: BEHZAD GOLEHAMMADI  
DESIGNED BY: BEHZAD GOLEHAMMADI  
CHECKED BY: \_\_\_\_\_  
REVISIONS: \_\_\_\_\_  
DATE: 11/20/09  
REVISED BY: \_\_\_\_\_  
DATE: 04/27/12

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS



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USERNAME => ilorico

CU 04251

EA 0120F1

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TIME PLOTTED => 16:58  
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REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE						
△	11/20/09	ELECTRICAL GROUNDING	RR	RG	75	
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REVISIONS						

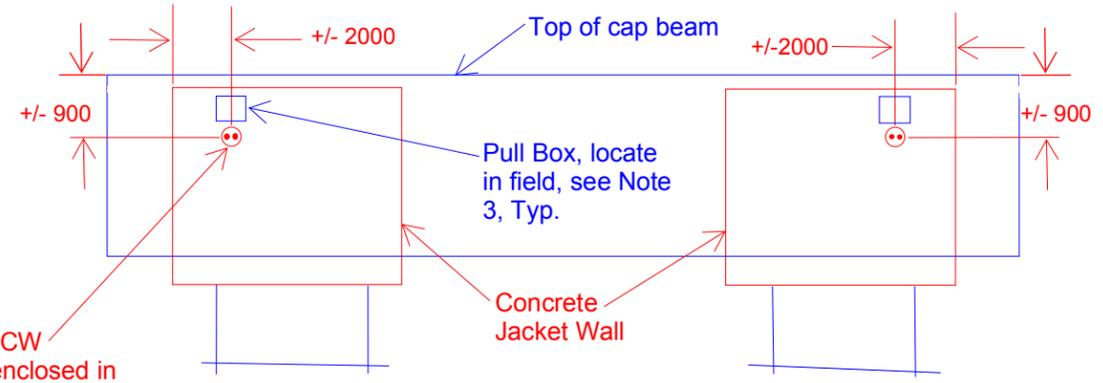
CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

**Cut-off existing ground plates and exothermically connect #250 kcmil BCW pigtail cables (2 per column)**

**avoiding any interference with E2 Shear Key Saddle assembly or PT ducts.**

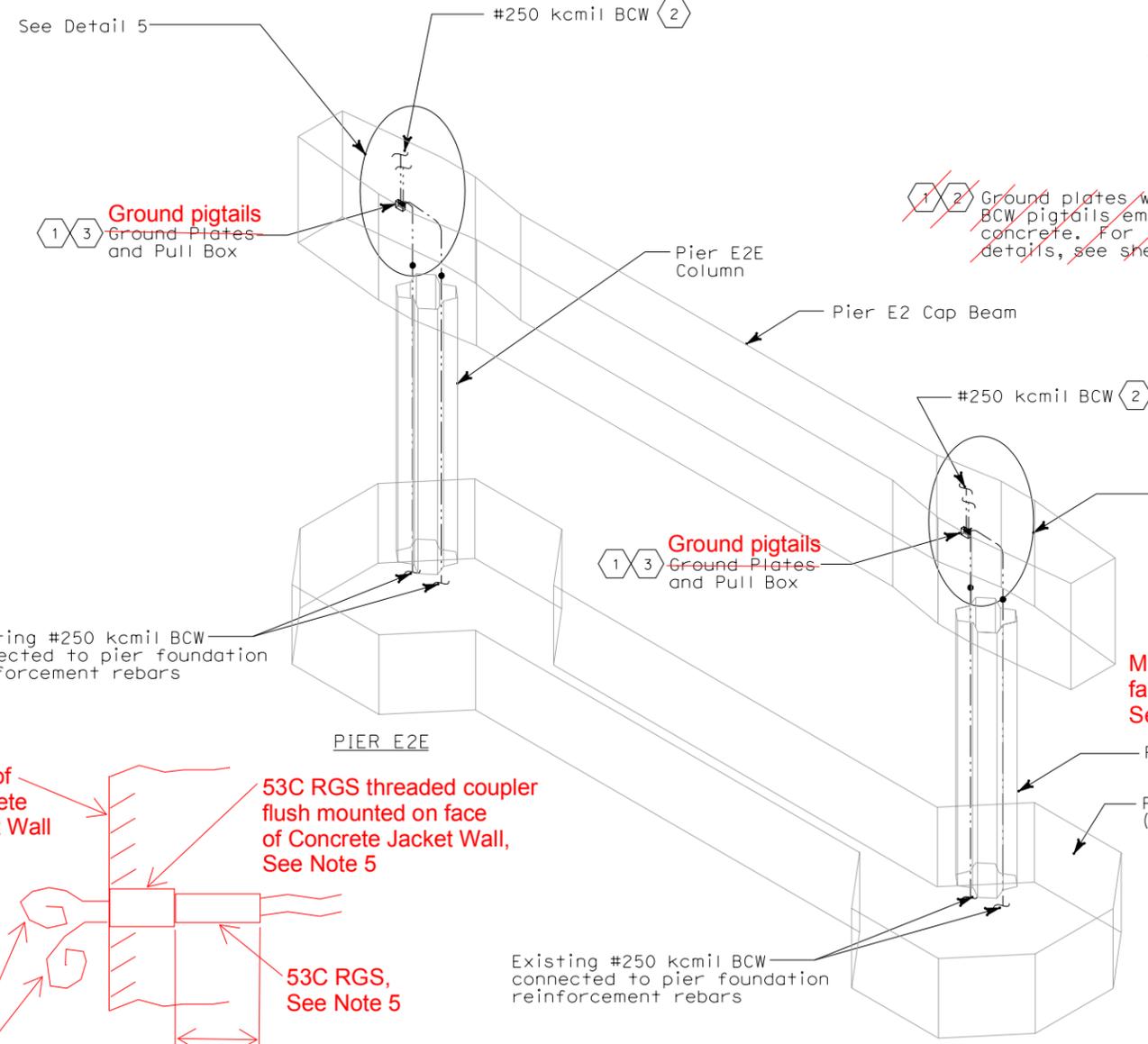
**NOTES:**

- 1 ~~Install and exothermically connect #250 kcmil insulated ground cable (2 per column) to the embedded ground plate pigtail located on the east face of cap beam and connect the other end to the existing #250 kcmil BCW that are stub-up above the pier column. Route the insulated ground cable within the cap beam. Use green trace tape if green insulation not available. Secure cable to inside of vertical rebar cage. Contractor to verify insulated ground cable length to suit field condition.~~
- 2 ~~Connect each #250 kcmil BCW to ground plates using heavy duty NEMA Type 2 hole copper compression terminal lugs bolted to the plates. Exothermic connection without the lug is also acceptable in lieu of bolt connection. Enclose the #250 kcmil BCW in liquidtight flexible metal conduit when routing up to OBG for connection to #500 kcmil main ground conductor. Typical for Westbound and Eastbound, see sheets E-111 and E-196 respectively.~~
- 3 ~~Pull box shall be 305 x 244 x 154 stainless steel NEMA 4X enclosure with cutout in back to protect grounding plates and connections. Box shall be mounted to face of Cap Beam with expansion bolts. Place Neoprene gasket between box and concrete face to inhibit moisture encroasion.~~
- 4 ~~Seal exposed bare copper wire (BCW) and exothermic connections with heavy duty splicing tape and vinyl electrical tape.~~
- 5 ~~Conduit and Threaded coupler shall be located to avoid any interference with PT ducts, Jacket Wall reinforcement or other embedded structural elements.~~



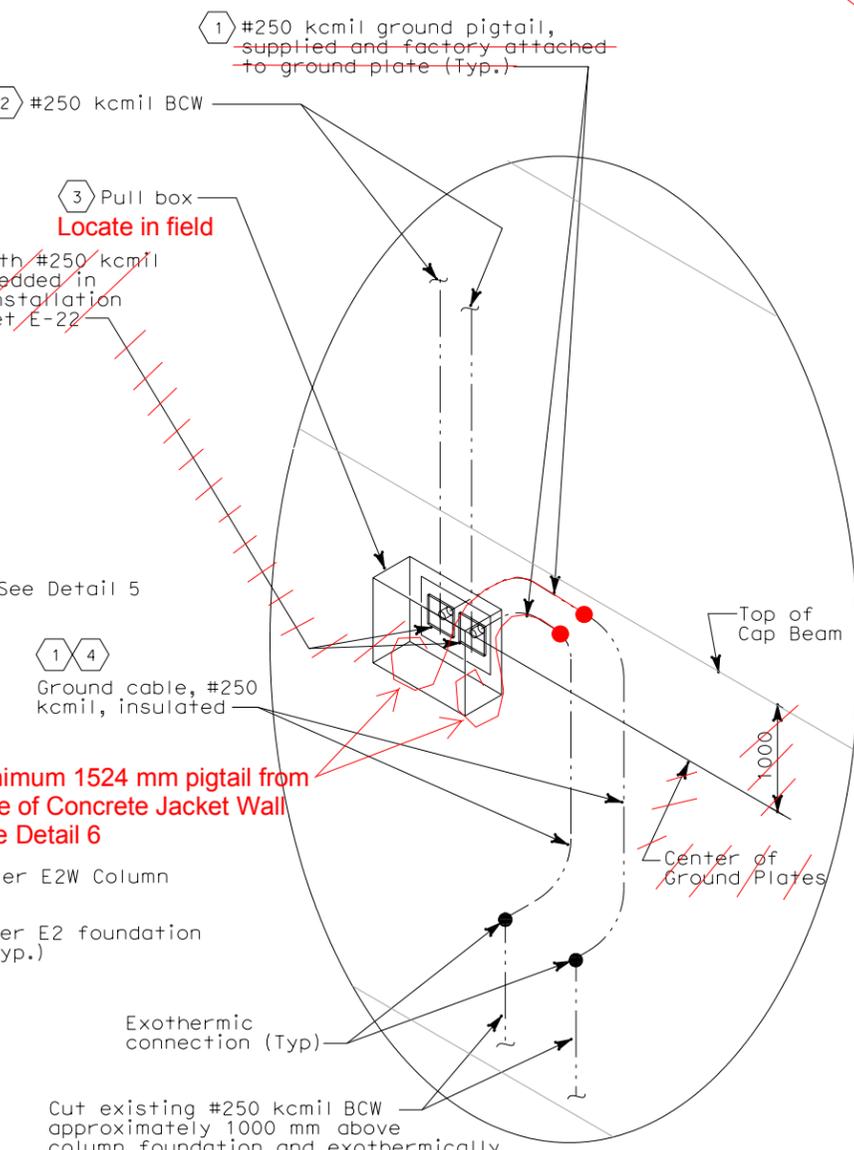
**PIER E2 CAP BEAM - EAST FACE (NTS)**

**(2) #250 kcmil BCW ground pigtails enclosed in 53C RGS, See Detail 6, typ.**



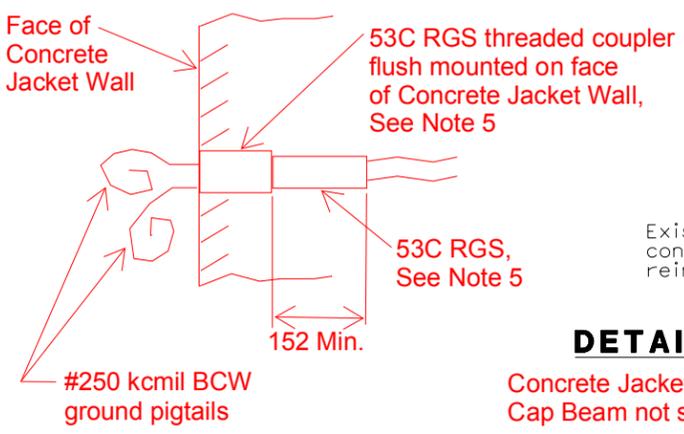
**DETAIL 4**

**Concrete Jacket Wall around Cap Beam not shown for clarity**



**DETAIL 5**

**Concrete Jacket Wall around Cap Beam not shown for clarity.**



**DETAIL 6 NTS**

**Minimum 1524 mm pigtail from face of Concrete Jacket Wall See Detail 6**

**Concrete Jacket Wall per response to RFI 3351R00**

**Hoffman #A-1212CHNFSS6 or equal.**

**SK-RFI1462R01-E22AR1**  
**R. GARCIA**

**DETAILS UNDERGROUND FOUNDATION GROUNDING**  
NO SCALE

**E-22A**

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

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CU 04251 EA 0120F1

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