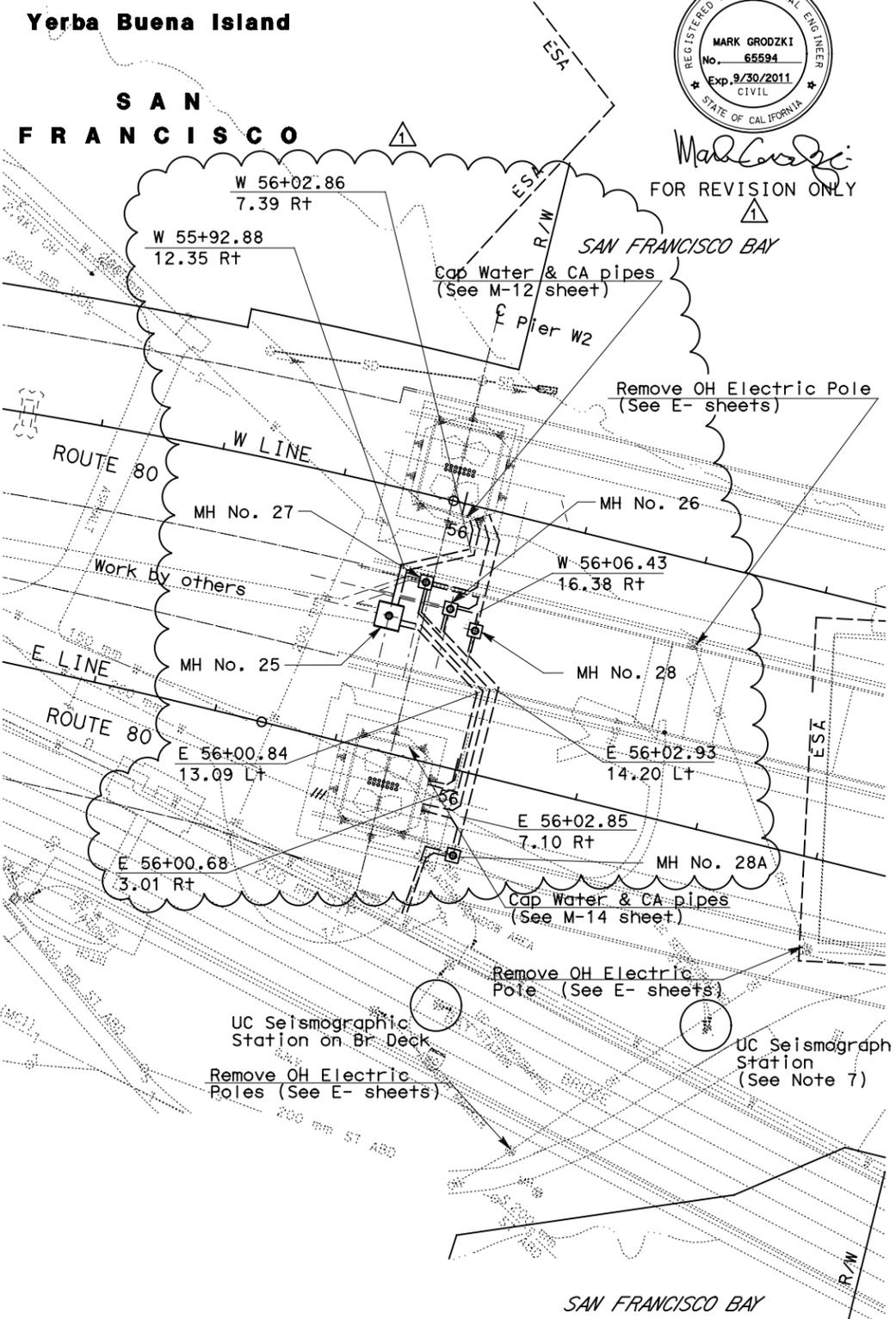


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MARK	DATE	DESCRIPTIONS	BY	CH'D/CCO#
1	08/08/11	W2 DUCT BANKS REINFORCEMENT	MG	RG 205
		REVISIONS		

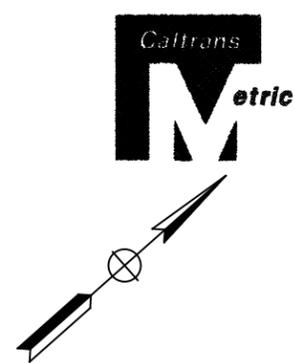
CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_



FOR REVISION ONLY



Existing buried miscellaneous items				
Ref. No.	Station	Offset	Elevation	Description
1	E 55+74.606	34.379 Lt	19.620	Guy Wire Anchor
2	E 55+82.741	33.894 Lt	19.744	Guy Wire Anchor
3	E 55+92.631	32.741 Lt	19.881	Guy Wire Anchor
4	E 55+95.582	32.510 Lt	19.914	Guy Wire Anchor
5	E 55+74.951	12.560 Lt	20.417	Guy Wire Anchor
6	E 55+77.404	12.011 Lt	20.394	Guy Wire Anchor
7	E 56+01.638	7.525 Lt	20.704	Guy Wire Anchor
8	E 56+06.946	9.497 Lt	20.595	Guy Wire Anchor
9	E 56+03.665	7.181 Lt	20.712	South Tie-Back Anchor
10	E 56+02.966	7.161 Lt	20.695	South Tie-Back Anchor
11	E 55+89.163	7.646 Lt	20.420	South Tower Deadman
12	E 55+83.101	8.683 Lt	20.481	South Tie-Back Anchor
13	E 55+81.420	8.631 Lt	20.302	South Tie-Back Anchor
14	E 55+77.338	8.877 Lt	20.341	South Tie-Back Anchor
15	E 55+77.156	8.300 Lt	20.335	South Tie-Back Anchor
16	E 55+76.685	9.622 Lt	20.286	South Tie-Back Anchor
17	E 55+77.027	10.606 Lt	20.361	South Tie-Back Anchor
18	E 55+99.702	31.990 Lt	20.073	North Tie-Back Anchor
19	E 56+01.415	32.569 Lt	19.869	North Tie-Back Anchor
20	E 55+96.130	31.842 Lt	20.044	North Tie-Back Anchor
21	E 55+96.843	21.157 Rt	21.247	Guy Wire Anchor
22	E 55+81.770	18.677 Rt	20.689	Guy Wire Anchor
23	E 55+93.617	15.117 Rt	20.882	Guy Wire Anchor
24	E 55+77.764	12.157 Rt	20.319	Guy Wire Anchor
25	E 56+00.651	2.143 Lt	20.601	Guy Wire Anchor
26	E 55+84.798	5.103 Lt	20.32	Guy Wire Anchor
27	E 55+99.407	25.467 Rt	21.495	Guy Wire Anchor
28	E 55+95.401	18.967 Rt	21.084	Guy Wire Anchor
29	E 55+77.944	21.947 Rt	20.71	Guy Wire Anchor
30	E 55+73.947	15.437 Rt	20.341	Guy Wire Anchor
31	E 56+03.978	5.423 Lt	20.552	Guy Wire Anchor
32	E 56+00.472	11.933 Lt	20.491	Guy Wire Anchor
33	E 55+79.008	15.413 Lt	20.338	Guy Wire Anchor
34	E 55+93.822	20.677 Rt	21.107	Guy Wire Anchor
35	E 55+98.497	15.117 Rt	21.019	Guy Wire Anchor
36	E 55+76.029	16.767 Rt	20.452	Guy Wire Anchor
37	E 55+79.104	11.287 Rt	20.322	Guy Wire Anchor
38	E 55+99.312	0.773 Lt	20.62	Guy Wire Anchor
39	E 55+79.918	5.103 Lt	20.265	Guy Wire Anchor
40	E 55+84.593	10.663 Lt	20.356	Guy Wire Anchor
41	E 55+96.726	24.787 Rt	21.41	Guy Wire Anchor
42	E 56+00.720	18.277 Rt	21.225	Guy Wire Anchor
43	E 55+71.681	19.297 Rt	20.42	Guy Wire Anchor
44	E 55+75.675	12.777 Rt	20.284	Guy Wire Anchor
45	E 56+02.740	2.763 Lt	20.594	Guy Wire Anchor
46	E 56+06.734	9.283 Lt	20.532	Guy Wire Anchor
47	E 55+81.689	14.773 Lt	20.351	Guy Wire Anchor
48	E 55+79.222	31.188 Lt	20.066	Guy Wire Anchor
49	E 55+93.407	36.398 Lt	18.081	Guy Wire Anchor
50	E 55+99.532	53.198 Lt	4.743	Guy Wire Anchor
51	E 55+96.185	60.298 Lt	1.299	Guy Wire Anchor
52	E 55+85.007	57.638 Lt	2.953	Guy Wire Anchor
53	E 55+80.521	64.858 Lt	2.644	Guy Wire Anchor
54	E 55+78.155	40.558 Lt	15.18	Guy Wire Anchor
55	E 55+99.483	53.198 Lt	4.749	Guy Wire Anchor
56	E 55+99.439	57.098 Lt	2.418	Guy Wire Anchor
57	E 55+84.003	63.028 Lt	1.771	Guy Wire Anchor



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST TOTAL	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		20R1	1204

Gene V. Lusherovich 10/07/04  
REGISTERED CIVIL ENGINEER DATE

12-6-04  
PLANS APPROVAL DATE

PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.  
303 Second St., Suite 700N  
San Francisco, CA 94107-1317

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**NOTES:**

- Locations of utility facilities on these plans are approximate and shall be verified by the Contractor prior to construction.
- Contractor to provide temporary utility connections during staging operations.
- All compressed air lines are steel pipe unless otherwise noted.
- All existing utilities are US Navy owned unless otherwise noted.
- Contractor to protect /monitor existing utilities. Utilities are old and can break from ground vibration during construction.
- US Navy's Electrical Power distributed as noted on the drawings.
- Contractor to protect UC Seismograph Station.
- Contractor to field route electrical duct bank. Excavation for installation of duct bank and manholes will be in the rock. For additional electrical manhole and duct bank information see E- sheets.
- Elevation is based on 1929 National Geodetic Vertical datum (NGVD29).
- Location of Guy Wire Anchors is approximate. Contractor to remove as necessary for construction of duct bank. Guy Wire and Tie-Back Anchors installed battered into the ground.

**ABBREVIATIONS**

ABD	Abandoned
CA	Compressed Air
DIP	Ductile Iron Pipe
E	Electric
FM	Force Main
KV	Kilo Volt
MCI	MCI Telecommunications
PACBELL	Pacific Bell
SFWD	San Francisco Water Department
S	Sanitary Sewer
ST	Steel
U	Utility
V	Volts
W	Water
UC	University of California

**SYMBOLS**

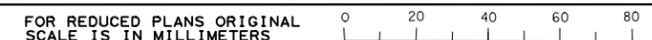
oC	Cable Vault
□E	Electric Handhole
oE	Electric Manhole
*	Electric Pull Box
+H	Fire Hydrant
↓	Light Pole
oS	Sewer Manhole
■	Storm Drain Inlet
oT	Telephone Manhole
oT	Telephone Vault
—●—	Utility Pole
oU	Utility Vault
oW	Water Valve
oW	Water Vault

**LEGEND**

SYMBOL	UTILITY	OWNERSHIP
— SD —	Storm Drainage	Caltrans or US Navy
— CA —	Compressed Air	Caltrans

**UTILITY PLAN**  
SCALE: 1:500

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN



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 CHECKED BY: EPJ  
 CALCULATED/DESIGNED BY: KR  
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DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		2151 R1	1204

07/05/11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 Mark Grodzki  
 No. 65594  
 Exp. 09/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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

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REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

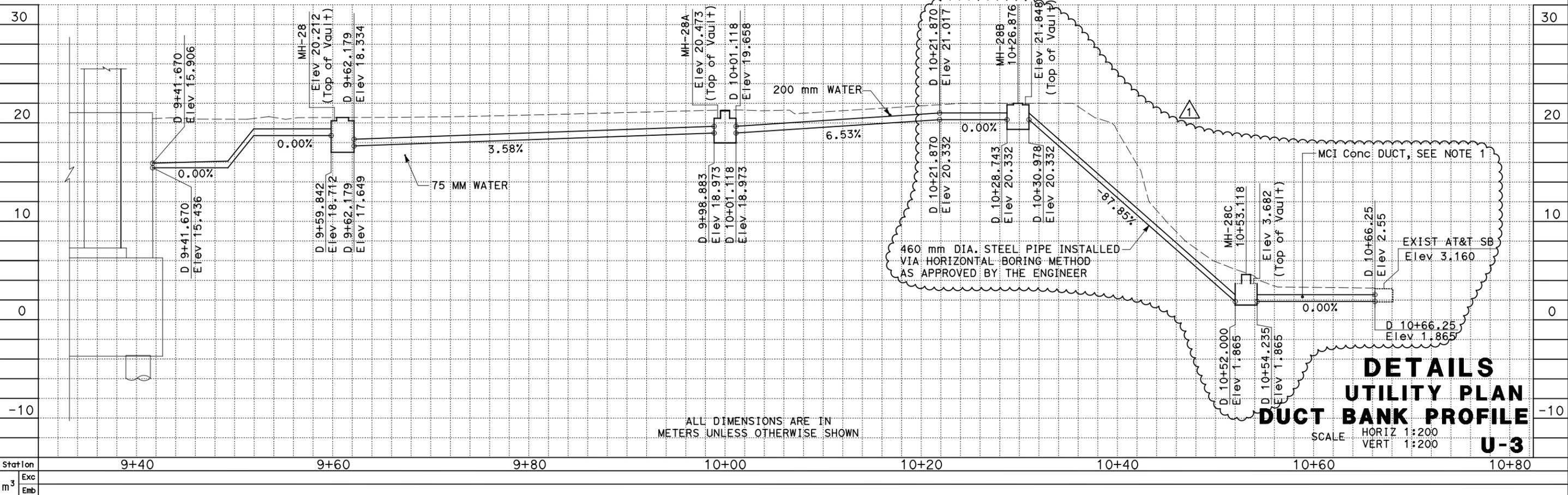
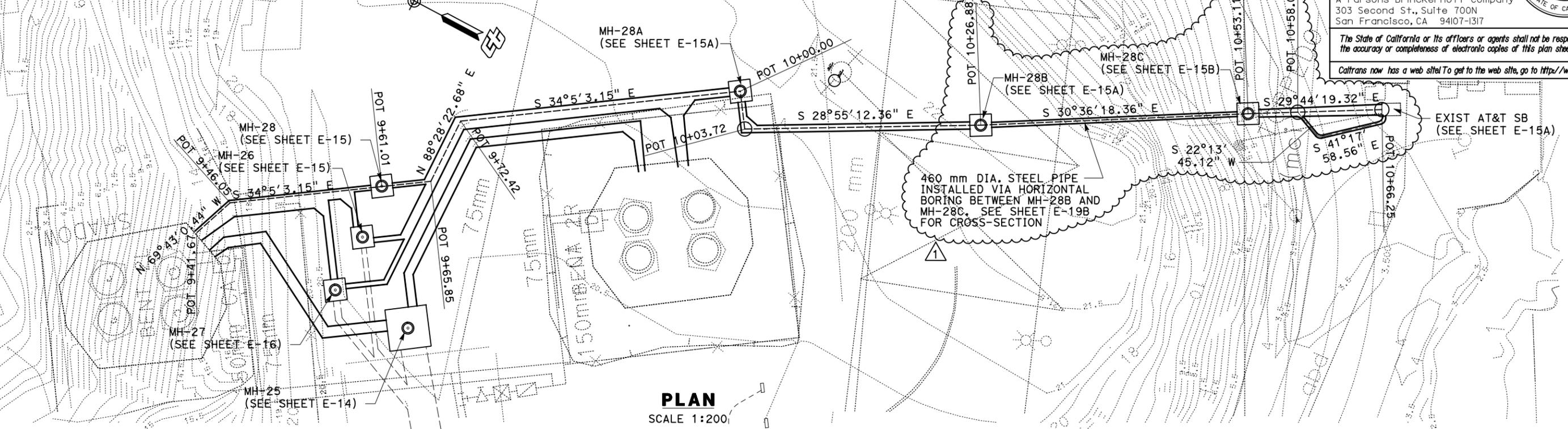
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**NOTES:**

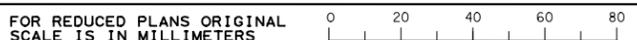
1. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING DUCTS PRIOR TO CONSTRUCTION. IF EXISTING, ABANDONED MCI DUCT BANK IS IN CONFLICT, THE CONFLICTING PORTION MAY BE REMOVED.
2. ALIGNMENT MAY BE ADJUSTED IN THE FIELD AS NECESSARY TO AVOID CONFLICT WITH TEMPORARY CONSTRUCTION FACILITIES AND TO MAINTAIN ACCESS.
3. VEHICULAR ACCESS TO THE TORPEDO BUILDING MUST BE MAINTAINED AT ALL TIMES.



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



ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN



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XX/XX/XX	XX	XX/XX/XX	XX

DESIGN OVERSIGHT  
 BEHZAD GOLEHAMMADI

Station	Exc	Emb
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9+60		
9+80		
10+00		
10+20		
10+40		
10+60		
10+80		

DATE PLOTTED => 06-DEC-2011  
 TIME PLOTTED => 13:37

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04	SF	80	13.2/13.9	2152 R1	1204

07/05/11  
 REGISTERED ELECTRICAL ENGINEER DATE

Mark Grodzki  
 No. 65594  
 Exp. 09/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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

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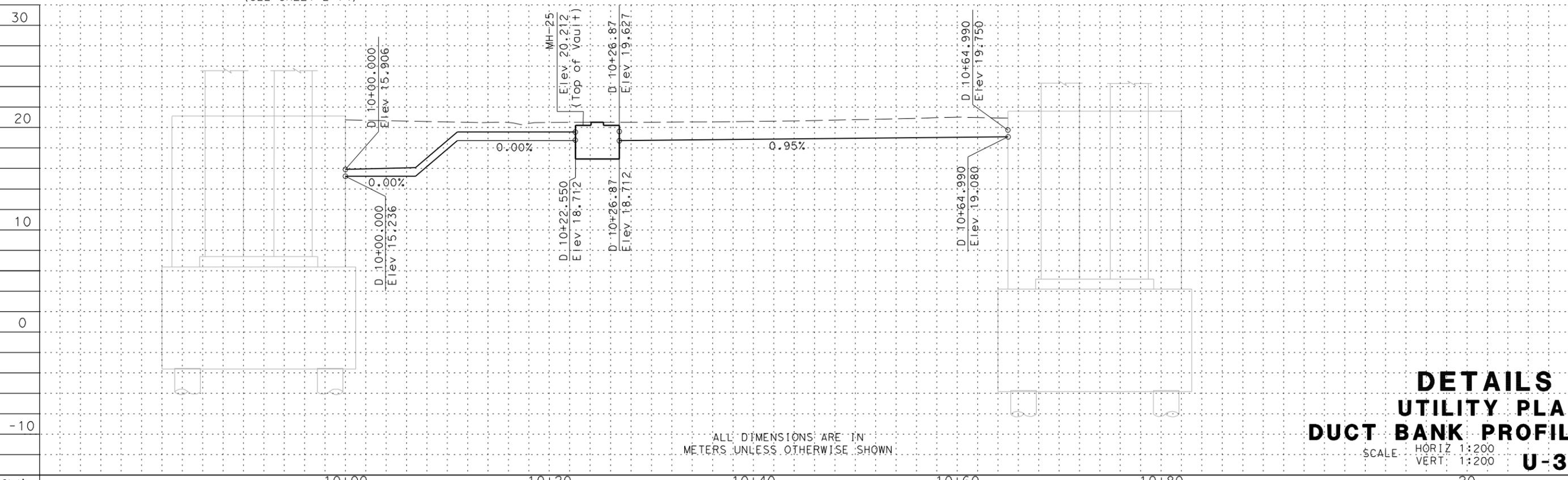
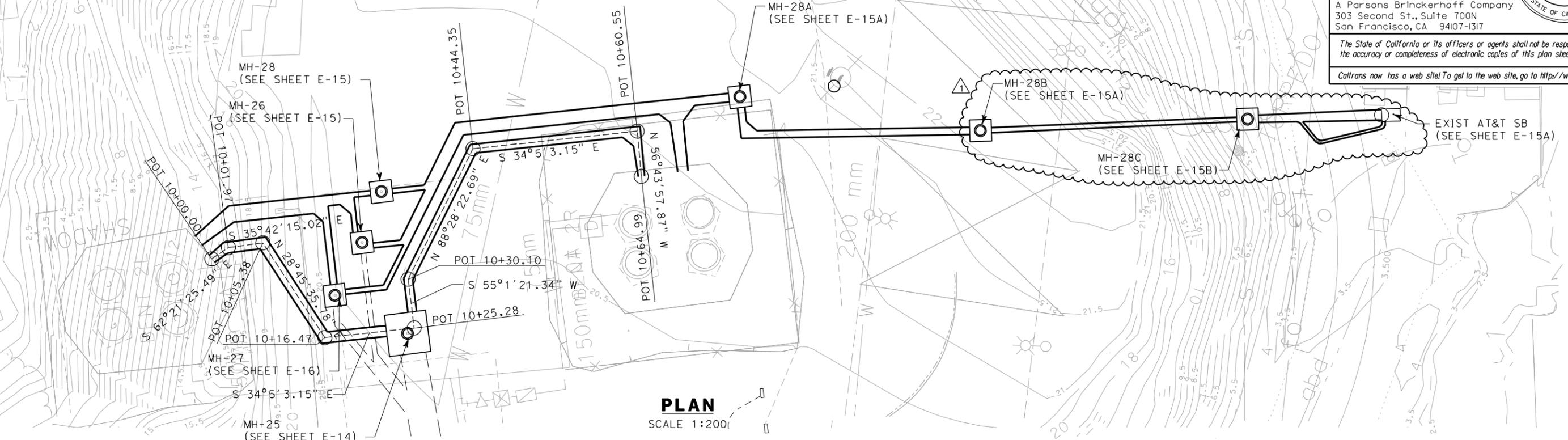
REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

1	12/06/11	W2 DUCT BANKS REINFORCEMENT	MG	RG	205
2	08/08/11	W2 DUCT BANKS REINFORCEMENT	MG	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
		REVISIONS			

**NOTES:**

1. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING DUCTS PRIOR TO CONSTRUCTION. IF EXISTING, ABANDONED MCI DUCT BANK IS IN CONFLICT, THE CONFLICTING PORTION MAY BE REMOVED.
2. FOR CONCRETE DUCT BANK ANCHORS, SEE SHEET U-4.

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



ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DESIGN OVERSIGHT  
 BEHZAD GOLEHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans

Station	10+00	10+20	10+40	10+60	10+80	20
m <sup>3</sup> Exc						
m <sup>3</sup> Emb						

FOR REDUCED PLANS ORIGINAL SCALE 15 IN MILLIMETERS

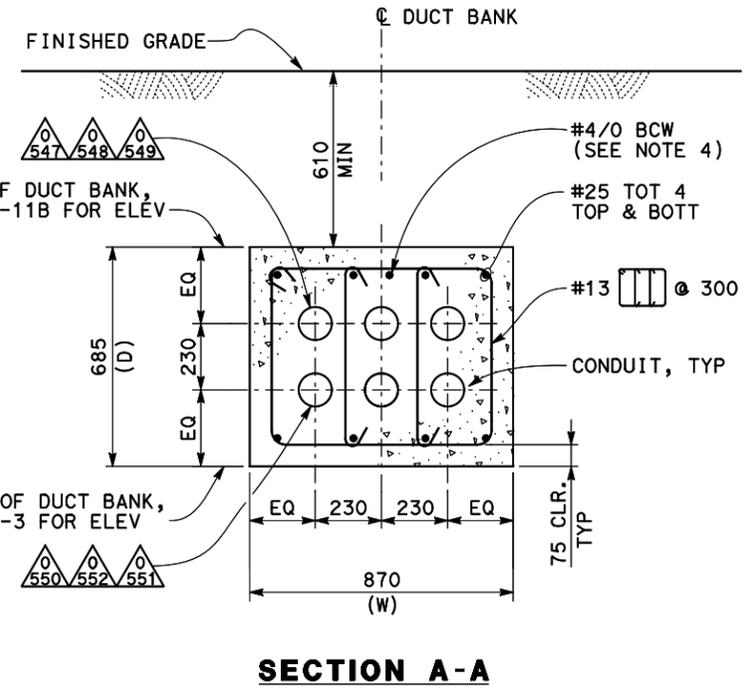
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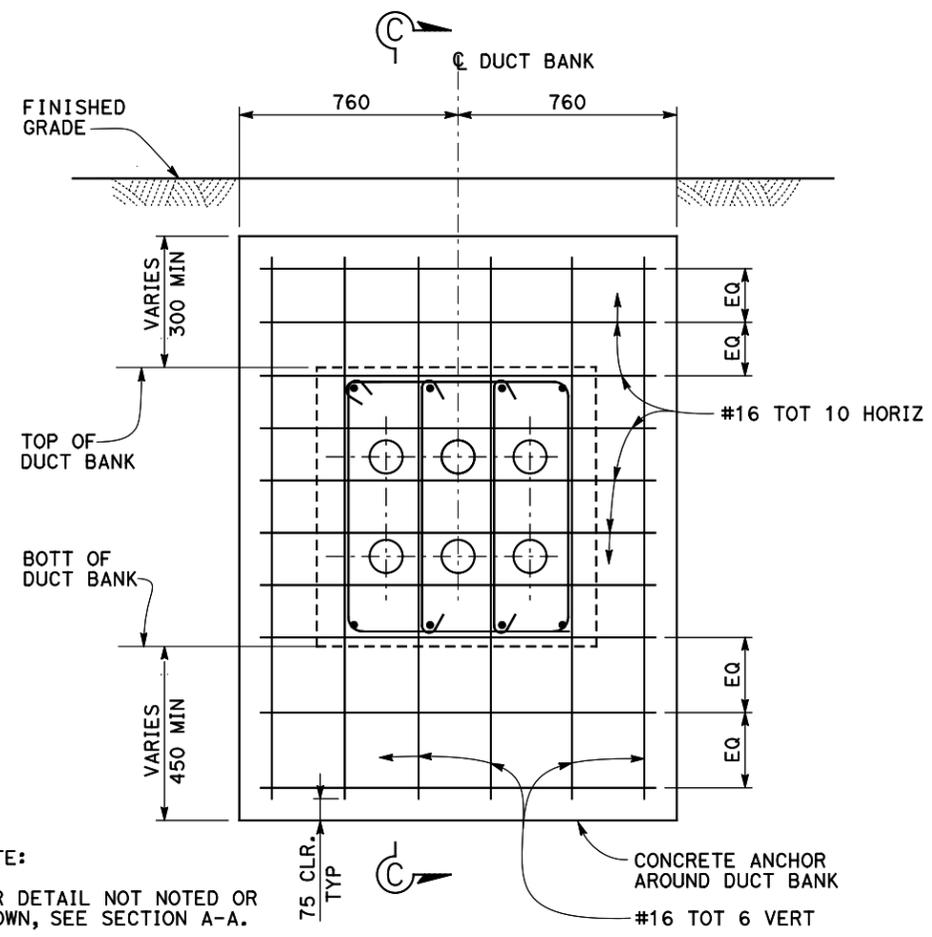
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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REGISTERED ELECTRICAL ENGINEER Mark Grodzki No. 65594 Exp. 09/30/11 CIVIL STATE OF CALIFORNIA			07/05/11 DATE		
PLANS APPROVAL DATE PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317					
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Caltrans now has a web site! To get to the web site, go to <a href="http://www.dot.ca.gov">http://www.dot.ca.gov</a>					

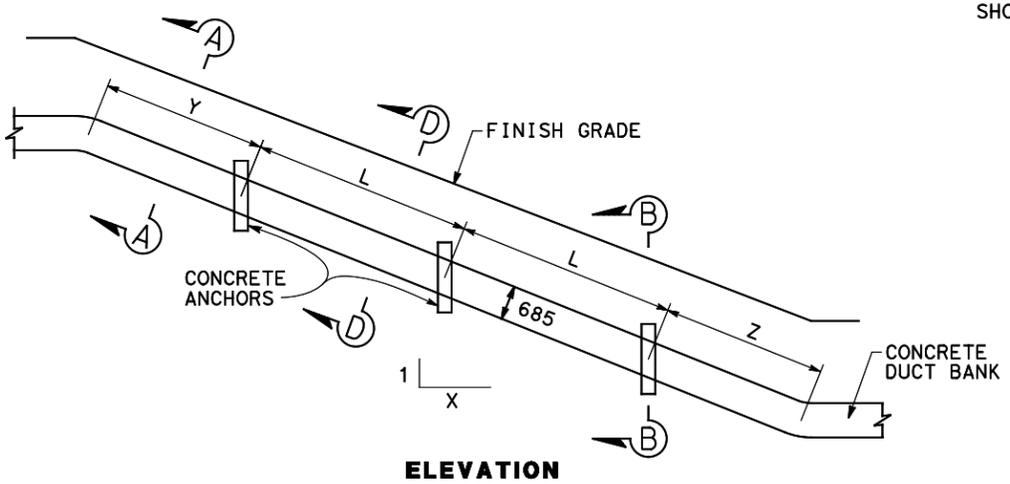


**SECTION A-A**

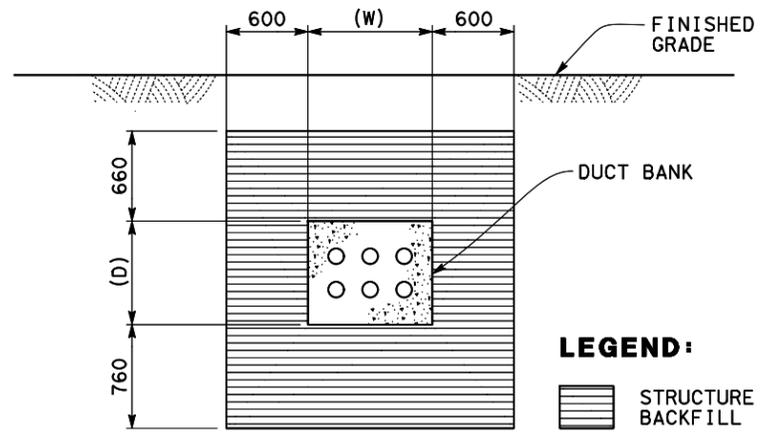


**SECTION B-B**

NOTE:  
FOR DETAIL NOT NOTED OR SHOWN, SEE SECTION A-A.

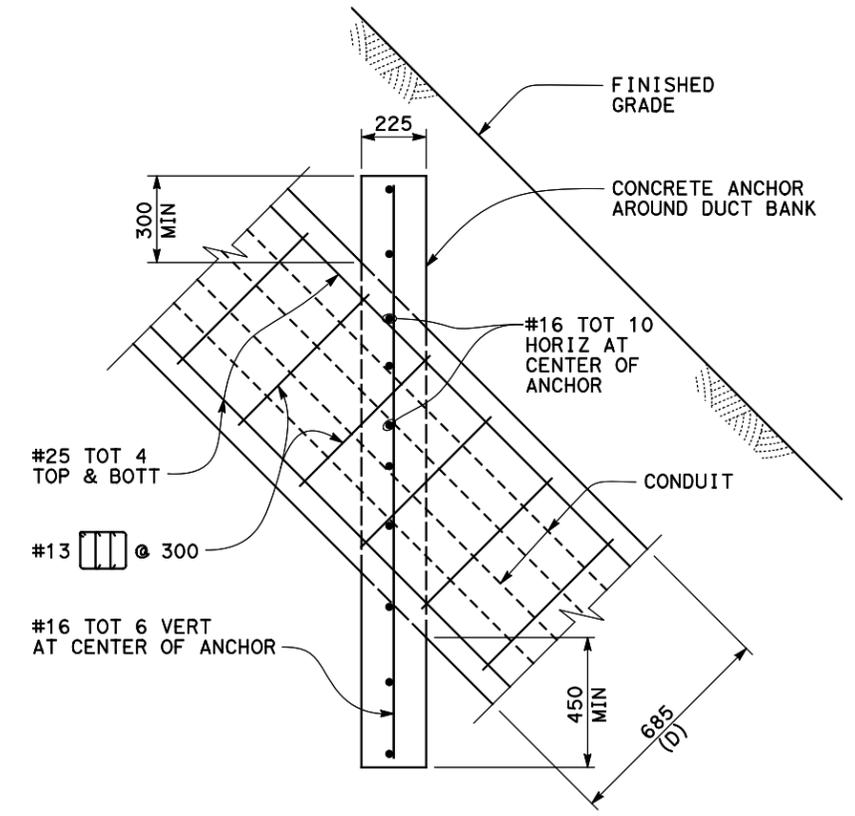


**CONCRETE DUCT BANK ANCHORS (870 mm (W) X 685 mm (D))**



**SECTION D-D**

**LIMITS OF STRUCTURE BACKFILL AT DUCT BANK ON SLOPE (LIMITS AS SHOWN NORMAL TO DUCT BANK)**



**SECTION C-C**

**DETAILS  
UTILITY PLAN  
DUCT BANK STRUCTURAL DETAILS**

NO SCALE

**TABLE A  
(For 870 X 685 DUCT BANK)**

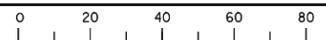
DUCT BANK SLOPE (1:X)	L (Max) (mm)	Z (Max) (mm)	Y (Max) (mm)	LENGTH OF EXCAVATION IN STAGES (Max) (mm)
1:1	4270	1200	2135	4270
1:1.5	5485	1525	2590	5485
1:2	6705	1830	3050	6705
1:2.5	7620	2135	3810	7620
1:3	9145	2440	4570	9145

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
△	08/08/11	W2 DUCT BANKS REINFORCEMENT	MG	LJ	205
REVISIONS					

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

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

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USERNAME => ilorico

CU 04251

EA 0120F1

DATE PLOTTED => 10-AUG-2011  
TIME PLOTTED => 16:21  
LAST REVISION 00-00-00

REVISOR	DATE	REVISION

DESIGN OVERSIGHT  
BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
MARK	DATE	DESCRIPTIONS REVISIONS	BY	CH'D	CCO#
2	08/08/11	W2 DUCTBANKS REINFORCEMENT	MG TW	RG	205
1	01/14/11	BASE INTEGRATION	RSB	WB	150

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

DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
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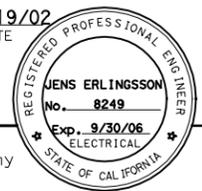
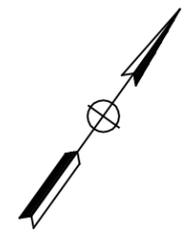
*Jens Erlingsson* 12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04  
 PLANS APPROVAL DATE

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

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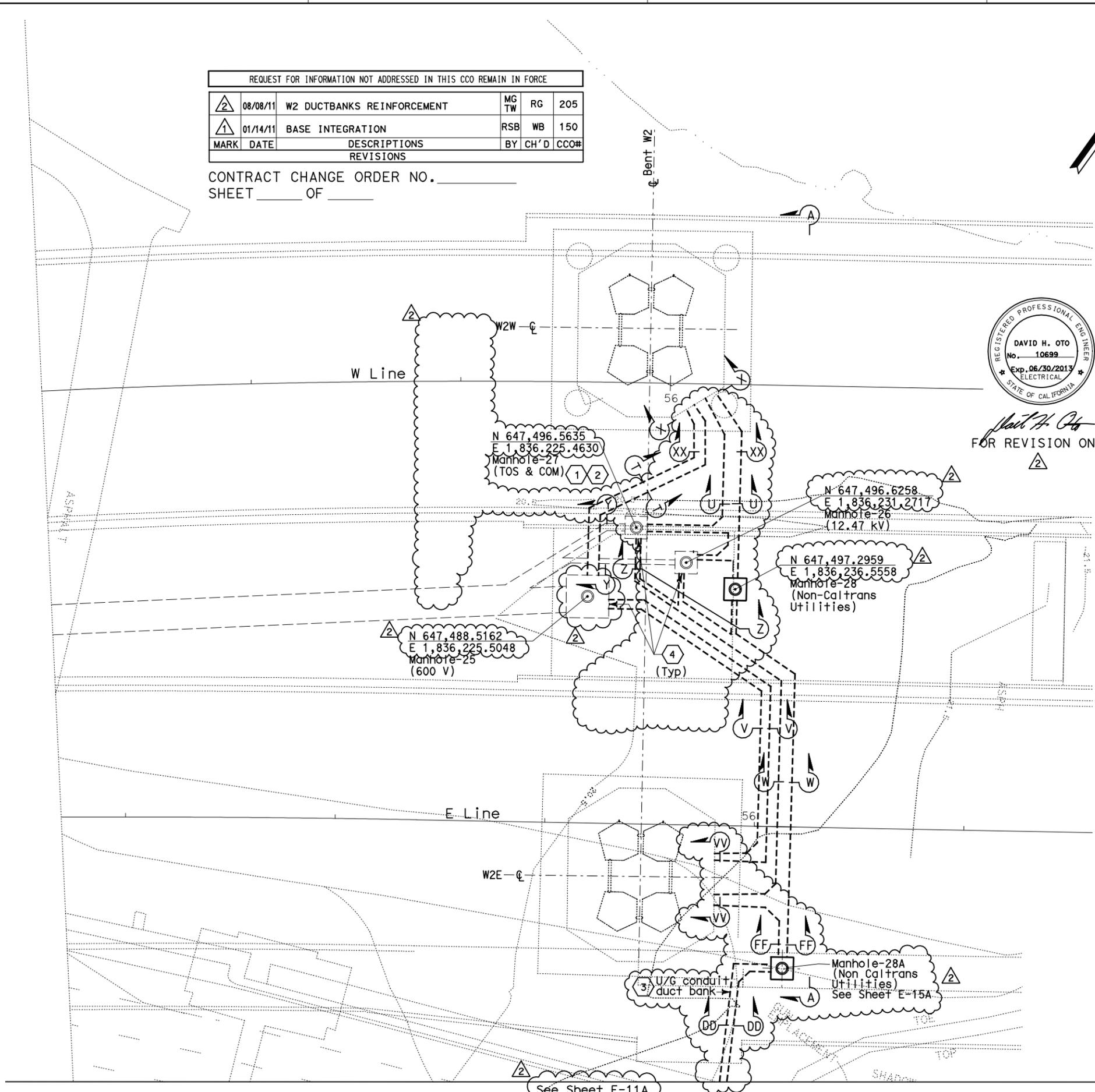
*David H. Oto* FOR REVISION ONLY  
*Syn Yee Chin* FOR REVISION ONLY

**NOTES:**

- References:
  - For manhole plans and sections, see sheets E-14 through E-16.
  - For typical manhole and duct bank details, see sheet E-17.
  - For duct bank sections, see sheets 19, 19A, 19B and E-23.
  - For pier W2W plans and sections, see sheet E-20.
  - For pier W2E plans and sections, see sheet E-21.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- Underground conduit duct bank shall be provided with additional reinforcement. For details, see sheet U-4, E-19C and E-19D.
- For other related work, not shown on this sheet, see Electrical Special Provisions.
- For location of manholes, see utility sheets.
- For duct bank anchors on slopes, see utility sheets.
- Refer to Utility Duct Bank Profile and Details, see sheet E-23.

**SHEET NOTES:**

- Furnish and install 4-25.4 mm innerducts inside TOS/COM conduit (0560) from MH-27 to Bent W2.
- Furnish and install BASE fiber optic cable in innerduct. See sheet E-1100.
- The conduits exiting from the west wall of manhole MH-28A down to (E) AT&T Hut manhole shall be rigid pvc, schedule 40. Conduit 90 degree bends, risers or exposed to grade shall be rigid steel conduit.
- The Contractor shall verify existing and the provisions for conduit entry to manhole. See sheet E-17.



**UNDERGROUND DUCT BANKS AND MANHOLES**  
 SCALE 1:200

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 FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

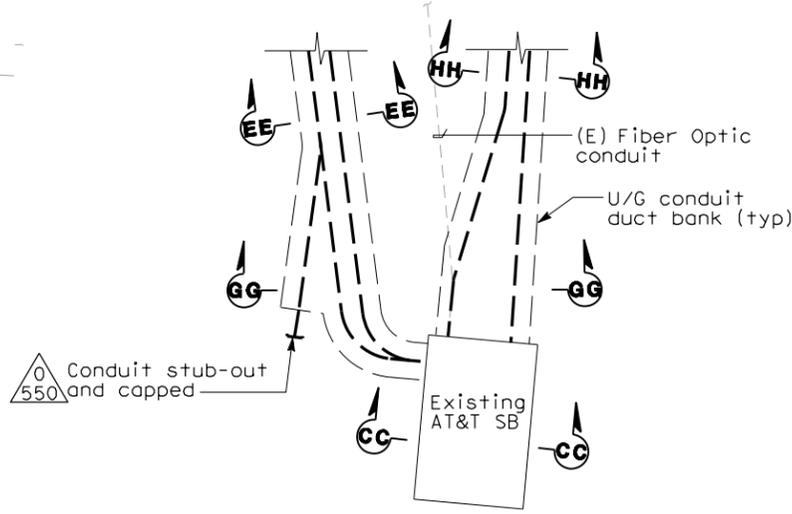
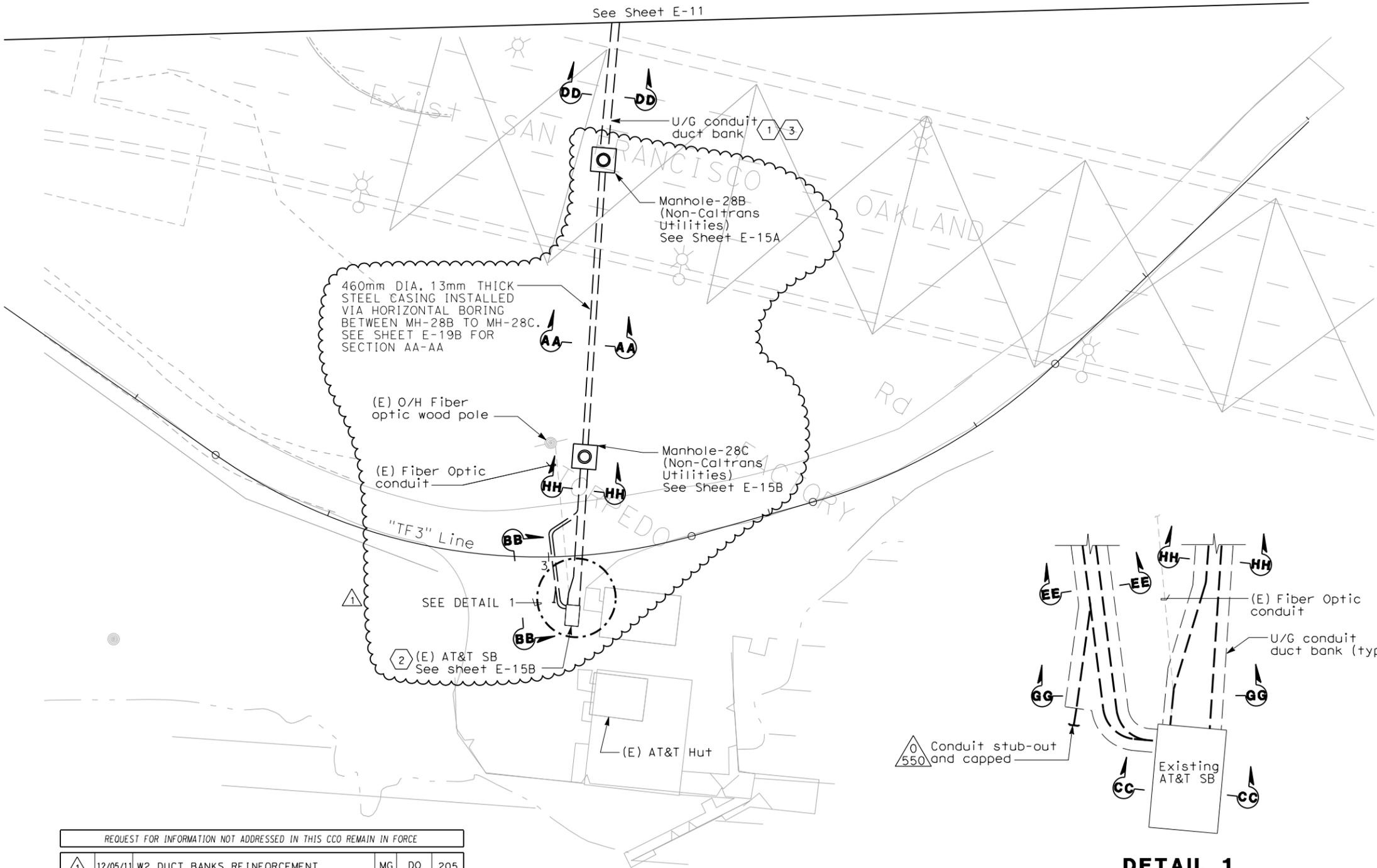
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 TIME PLOTTED => 13:45  
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	96S1 R1	1204
 REGISTERED ELECTRICAL ENGINEER DATE 07/05/11					
PLANS APPROVAL DATE					
PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN OVERSIGHT	DESIGNED BY	CHECKED BY	DATE	REVISOR	DATE
BEHZAD GOLEMOHAMMADI						



- NOTES:**
- References:
    - For typical manhole and duct bank details, see sheet E-17.
    - For duct bank profile and coordinate, see civil sheet U-4.
    - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
  - Minimum compressive strength of concrete  $f'c = 28$  MPa.
  - For location of manholes, see utility sheets.
  - For other related work not shown on this see Electrical Special Provisions.
  - Provide long sweep for conduits inside duct banks whenever feasible.
  - For duct bank sections, see sheets E-19B.

- SHEET NOTES**
- Contractor shall route duct bank with a minimum cover of 610 mm from top of conduit to top of finished grade. The conduit bank shall slope down to manhole. Verify existing to avoid interferences. Connect the ground conductor to the existing grounding grid at the end of duct bank.
  - Contractor to clean and drain (E) AT&T SB. Contractor shall use existing provisions for conduit entries to AT&T SB. Other conduit penetrations are not shown.
  - The conduits from manhole MH-28A to AT&T Hut manhole shall be rigid pvc schedule 40. Conduit 90 degree bends, riser and exposed to grade shall be rigid galvanized steel conduit.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
1	12/05/11	W2 DUCT BANKS REINFORCEMENT	MG	DO	205
2	08/08/11	W2 DUCT BANKS REINFORCEMENT	EJL TW	RG	205

REVISIONS

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

**PLAN**  
 SCALE: 1:200

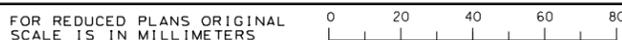
**DETAIL 1**  
 NTS

**UNDERGROUND  
 DUCT BANKS AND MANHOLES**  
 SCALE: 1:200

**E-11A**

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CU 04251

EA 0120F1

DATE PLOTTED => 12/16/2011  
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DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		97R2	1204

JENS ERLINGSSON 12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE  
 12-6-04  
 PLANS APPROVAL DATE  
 PB POWER, Inc.  
 A Parsons Brinckerhoff Company  
 303 Second St., Suite 700N  
 San Francisco, CA 94107-1317

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

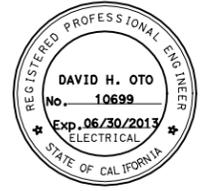
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**NOTES:**

- References:
  - For duct bank and manhole plan, see sheet E-11.
  - For typical manhole and duct bank details, see sheet E-17.
  - For duct bank sections, see sheets E-19, E-19A and E-23.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401
- For other related work, not shown on this sheet, see Electrical Special Provisions.

**SHEET NOTES:**

- Deleted
- Not in contract. (Work included on contract 04-120P4).

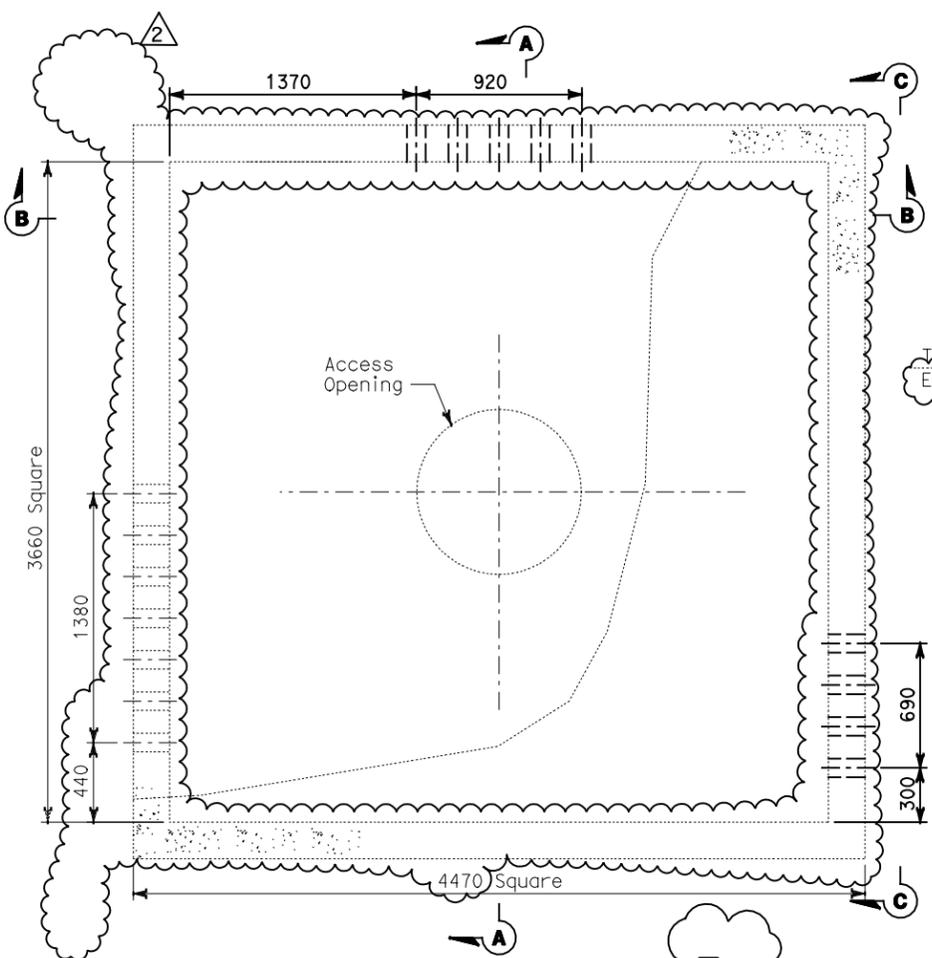


FOR REVISION ONLY

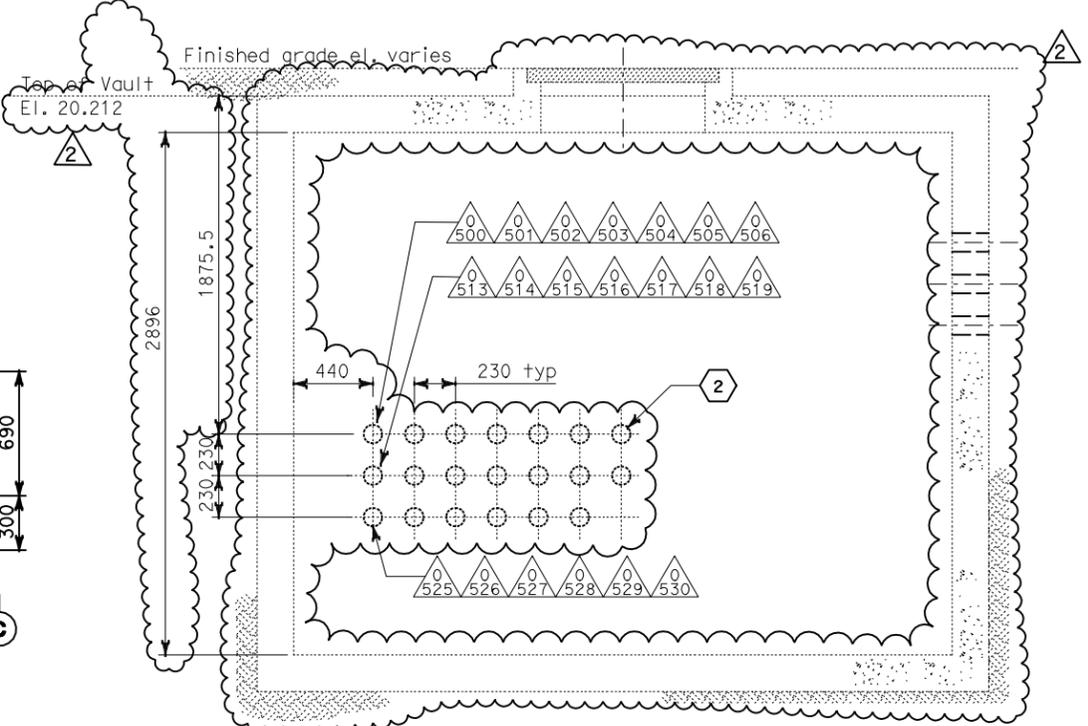
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1	1/10/06	Revised Manhole detail	CR	JE	11

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

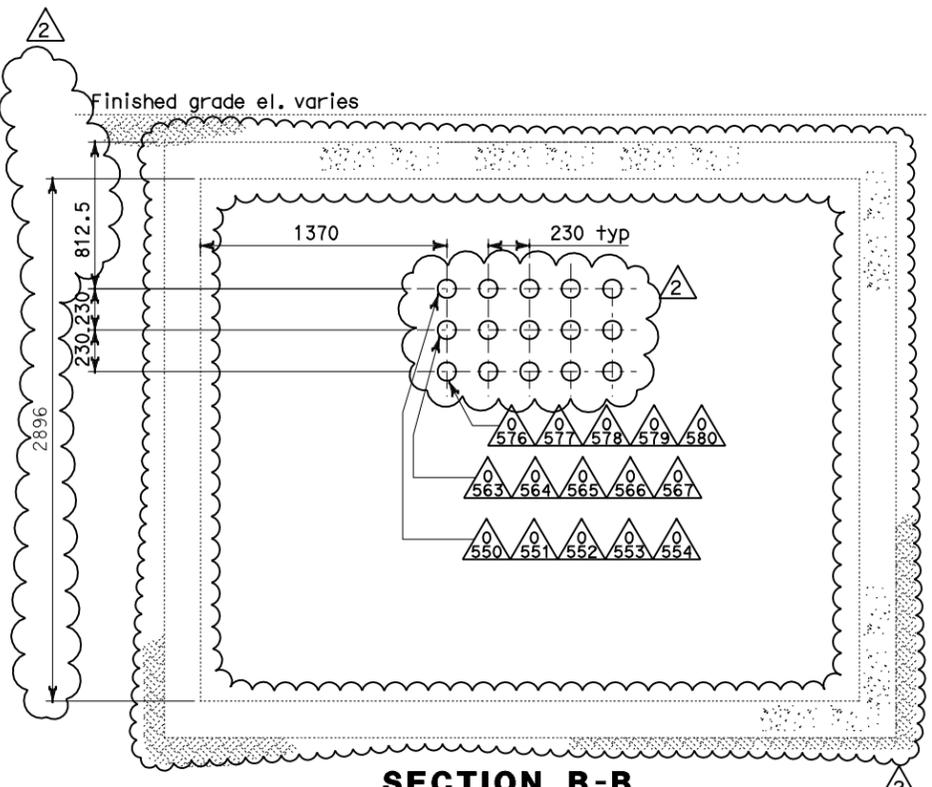
**DETAILS UNDERGROUND MANHOLE PLANS AND SECTIONS**  
SCALE AS NOTED



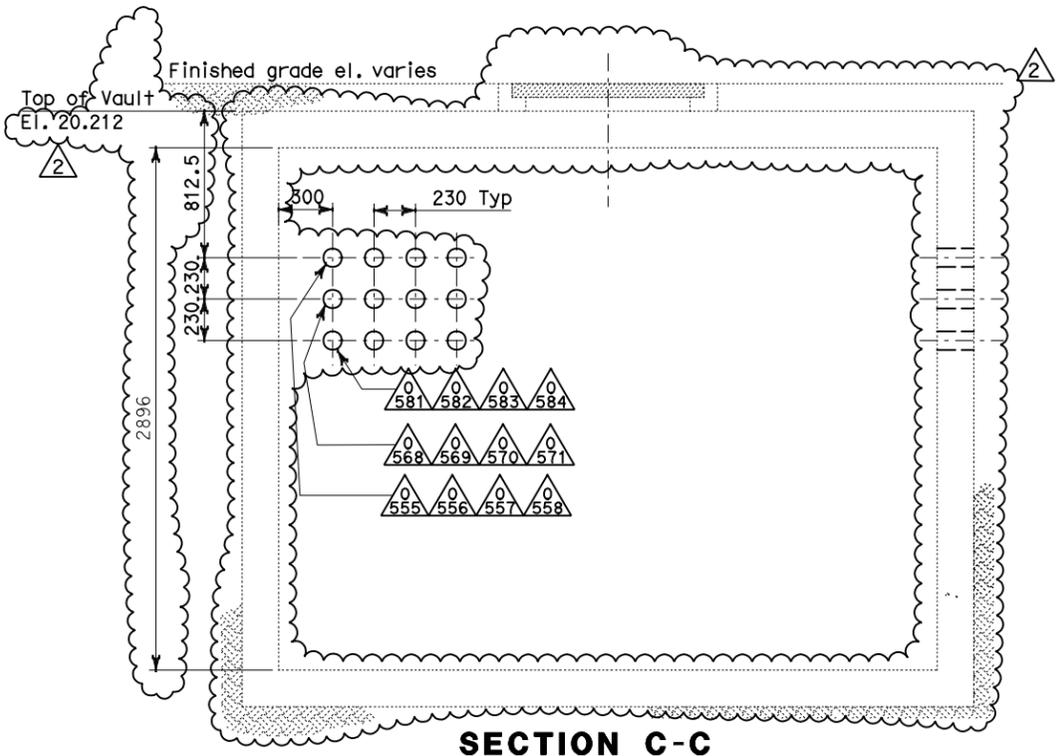
**PLAN-MANHOLE-25**  
SCALE: 1:20 (600 V)



**SECTION A-A**  
SCALE: 1:20

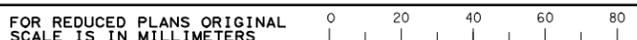


**SECTION B-B**  
SCALE: 1:20



**SECTION C-C**  
SCALE: 1:20

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 DESIGN OVERSIGHT  
 BEHZAD GOLEMOHAMMADI  
 REVISIONS: 1, 2  
 DATE: 11/04  
 DESIGNED BY: AB  
 CHECKED BY: --  
 REVISIONS: 1, 2  
 DATE: --/--  
 DESIGNED BY: --  
 CHECKED BY: --



DATE PLOTTED => 10-AUG-2011  
 TIME PLOTTED => 08:22  
 LAST REVISION 00-00-00





DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	9851 R1	1204
 REGISTERED ELECTRICAL ENGINEER DATE 07/05/11					
PLANS APPROVAL DATE _____ PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317					
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**NOTES:**

- References:
  - For duct banks and manhole plan, see sheet E-11 and E-11A.
  - For typical manhole details, see sheet E-17.
  - For duct bank sections, see sheets U-4 E-19A, E-19B & E-23.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401
- For other related work, not shown on this sheet, see Electrical Special Provisions.

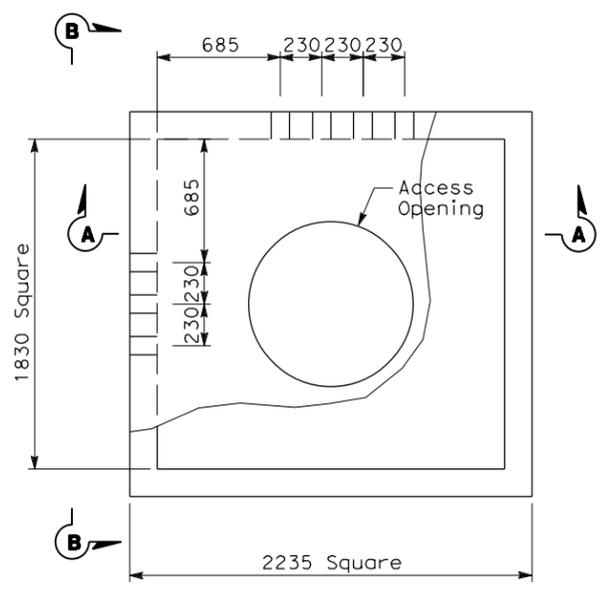
**SHEET NOTES:**

- Approximate distance of manhole necking or riser is from the finished grade and top of manhole. Maximum length of manhole necking or riser shall be 914 mm.

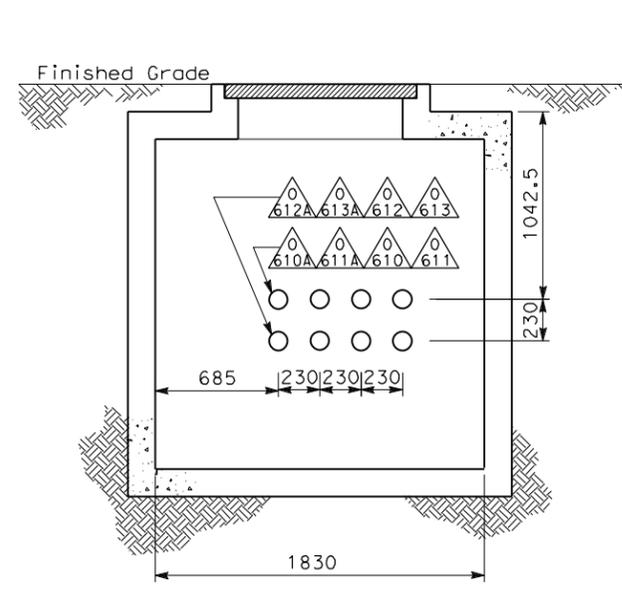
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	12/05/11	W2 DUCT BANKS RE INFORCEMENT	MG	DO	205
	08/08/11	W2 DUCT BANKS RE INFORCEMENT	EJL	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

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

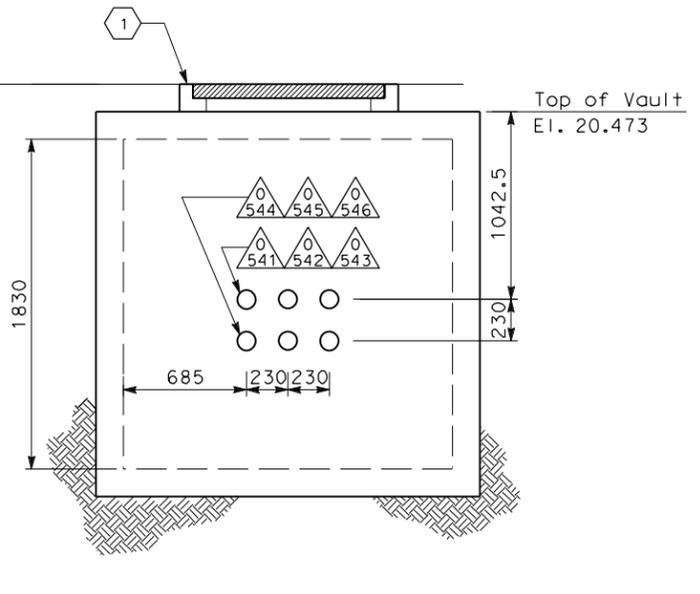
**DETAILS UNDERGROUND MANHOLE PLAN AND SECTIONS**  
 SCALE AS NOTED



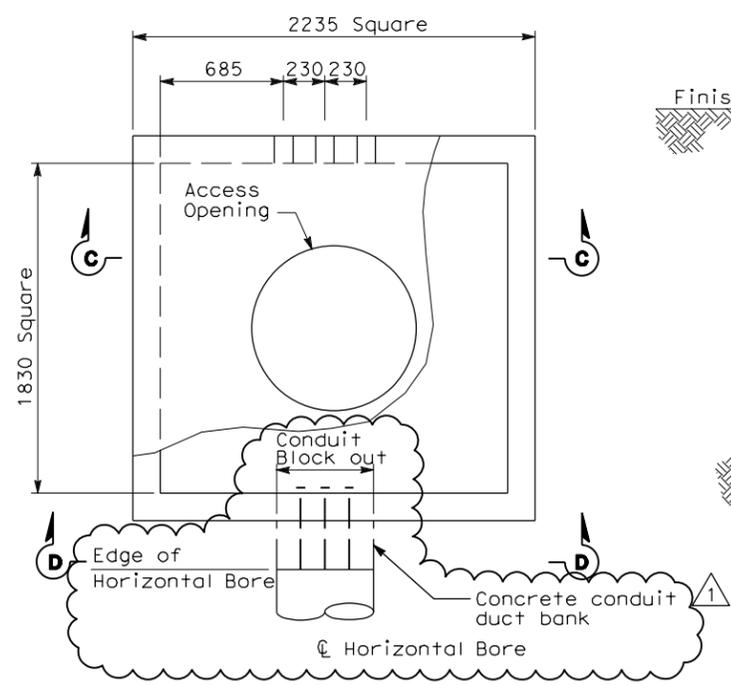
**PLAN-MANHOLE-28A**  
 SCALE: 1:20 (Non-Caltrans Utilities)



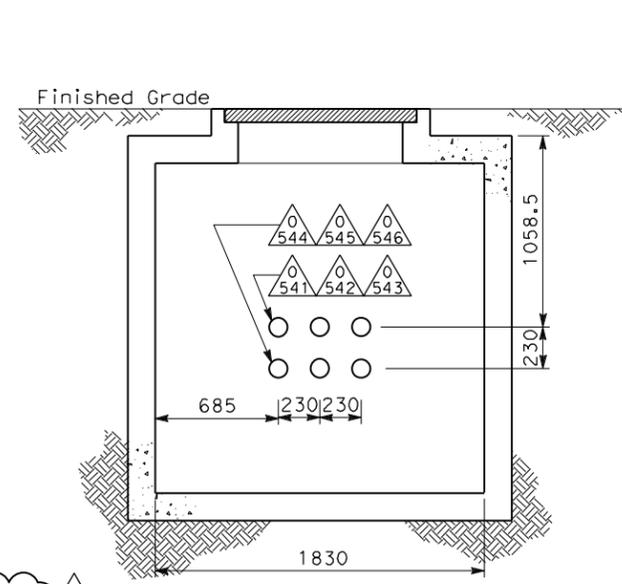
**SECTION A-A**  
 SCALE: 1:20



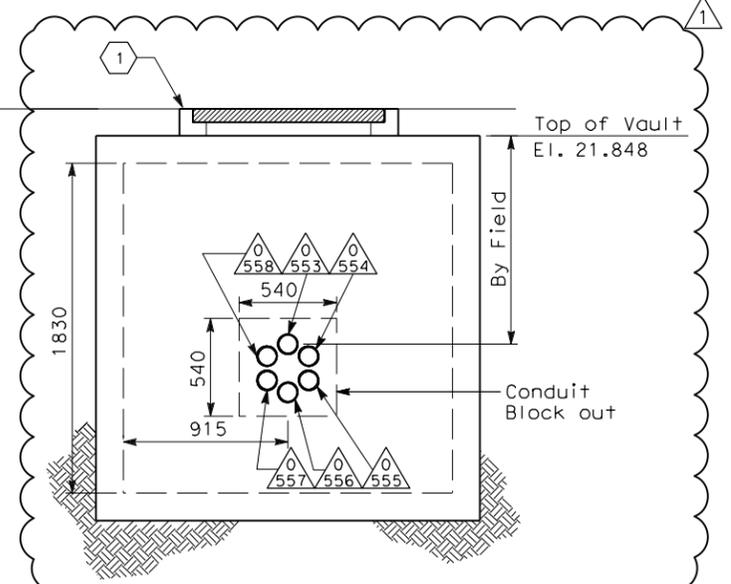
**SECTION B-B**  
 SCALE: 1:20



**PLAN-MANHOLE-28B**  
 SCALE: 1:20 (Non-Caltrans Utilities)



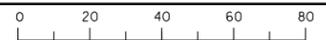
**SECTION C-C**  
 SCALE: 1:20



**SECTION D-D**  
 SCALE: 1:20

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FOR REDUCED PLANS ORIGINAL SCALE 15 IN MILLIMETERS



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DATE	REVISOR	DATE	REVISOR
XX/XX/XX	XX	XX/XX/XX	XX

CHECKED BY	DESIGNED BY
XX	XX

DESIGN OVERSIGHT  
 BEHZAD GOLEMOHAMMADI

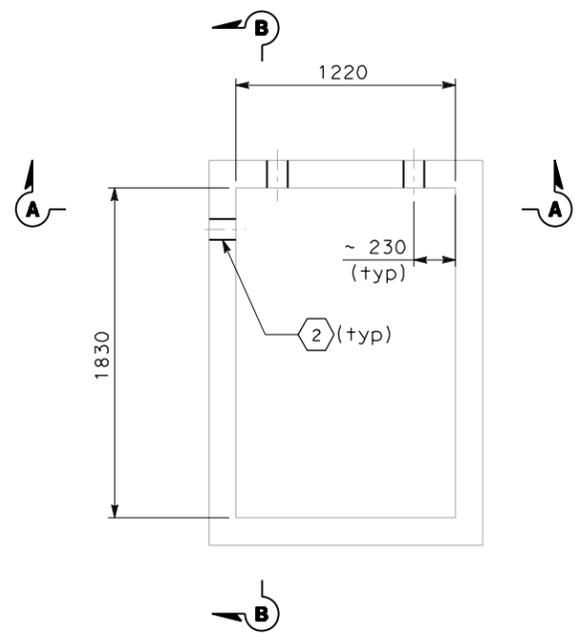
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**

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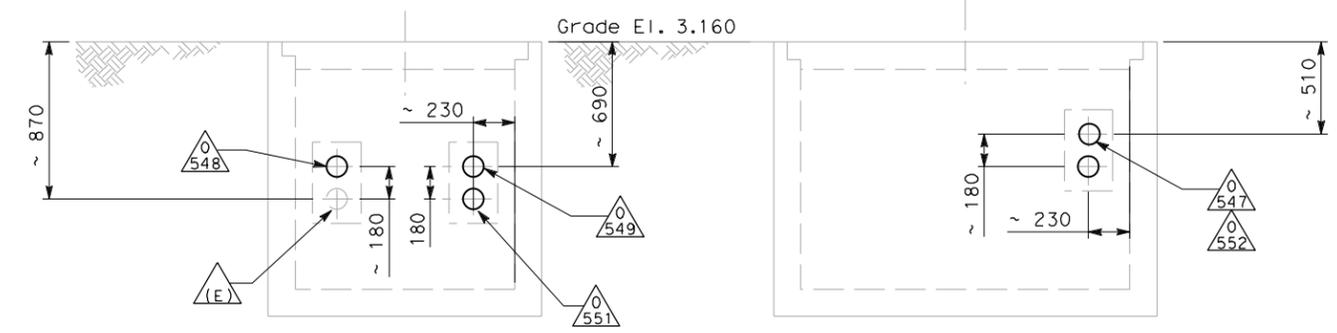
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	9852 R1	1204
 REGISTERED ELECTRICAL ENGINEER DATE 07/05/11					
PLANS APPROVAL DATE					
PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317					
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**PLAN-(E) MANHOLE**  
**ATT SB**



**SECTION A-A**

**SECTION B-B**

**NOTES:**

- References:
  - For duct banks and manhole plan, see sheet E-11A.
  - For typical manhole details, see sheet E-17.
  - For duct bank sections, see sheets U-4 and E-19B.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401
- For other related work, not shown on this sheet, see Electrical Special Provisions.

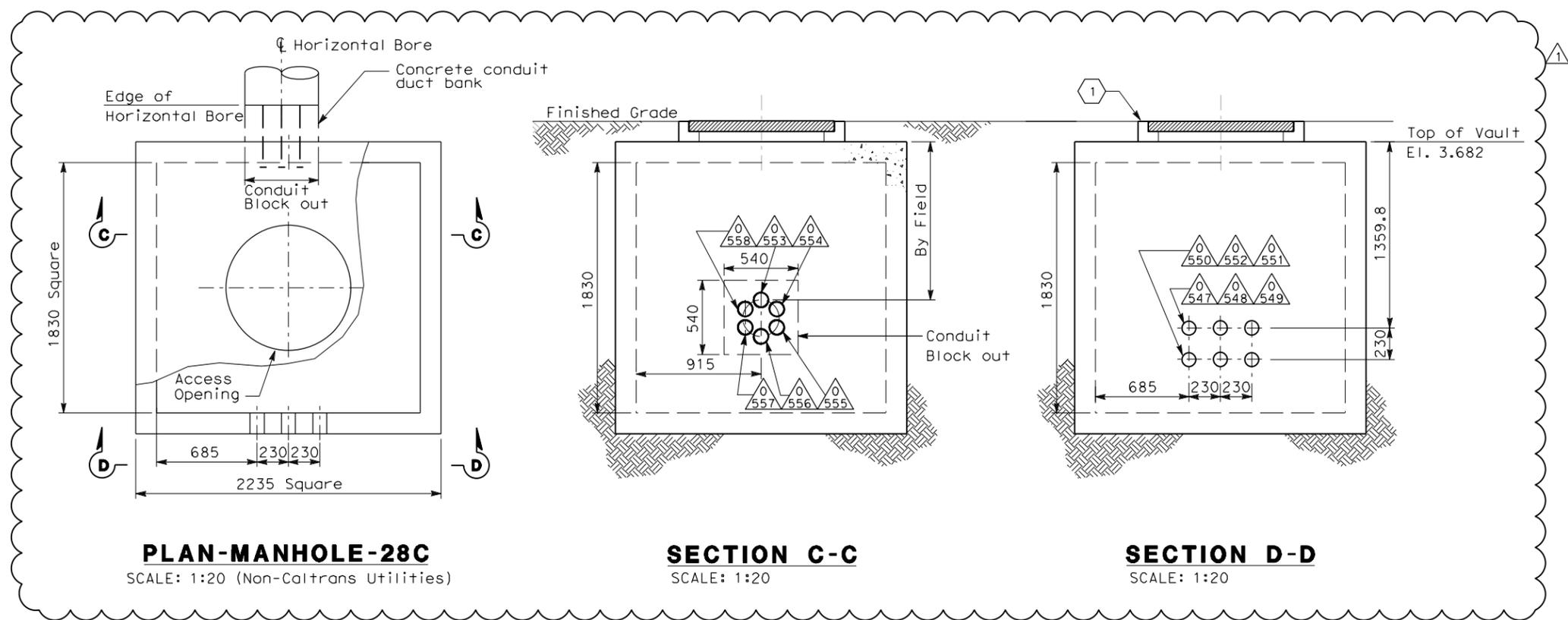
**SHEET NOTES:**

- Dimensions shown (~) are field survey. The Contractor is to verify to ensure the existing conduit is the reference for the actual location of the new conduits.
- Contractor to ensure the conduit entering the (E) Manhole shall be seal watertight.

DATE	REVISOR	DATE	REVISOR
07/11	EL	07/11	RG
CALCULATED/DESIGNED BY	EL	CHECKED BY	RG

DESIGN OVERSIGHT  
BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**



**PLAN-MANHOLE-28C**  
SCALE: 1:20 (Non-Caltrans Utilities)

**SECTION C-C**  
SCALE: 1:20

**SECTION D-D**  
SCALE: 1:20

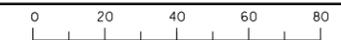
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MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
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0	08/08/11	W2 DUCT BANKS RE INFORCEMENT	EJL TW	RG	205

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

**DETAILS UNDERGROUND**  
**MANHOLE PLAN AND SECTIONS**  
SCALE: NONE

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FOR REDUCED PLANS ORIGINAL SCALE 15 IN MILLIMETERS



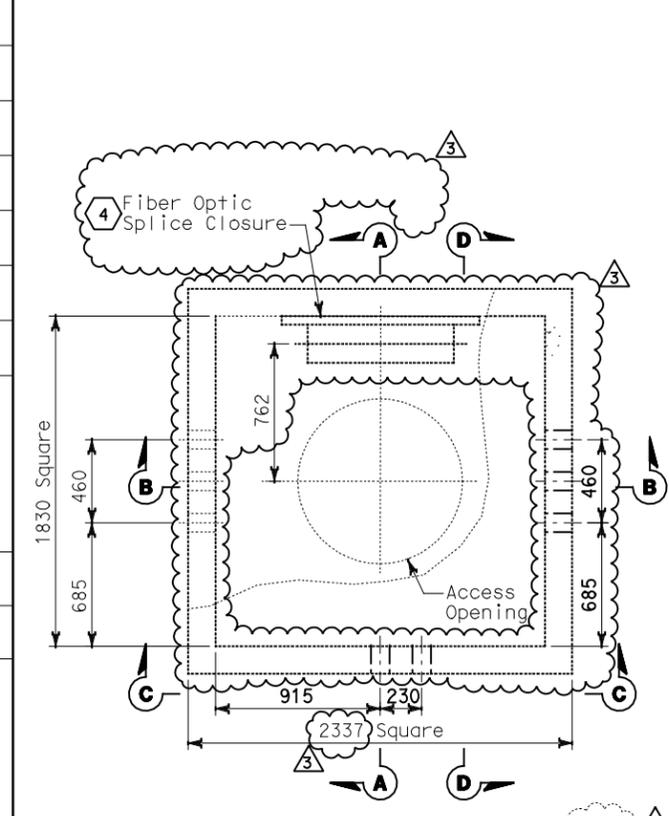
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CU 04251

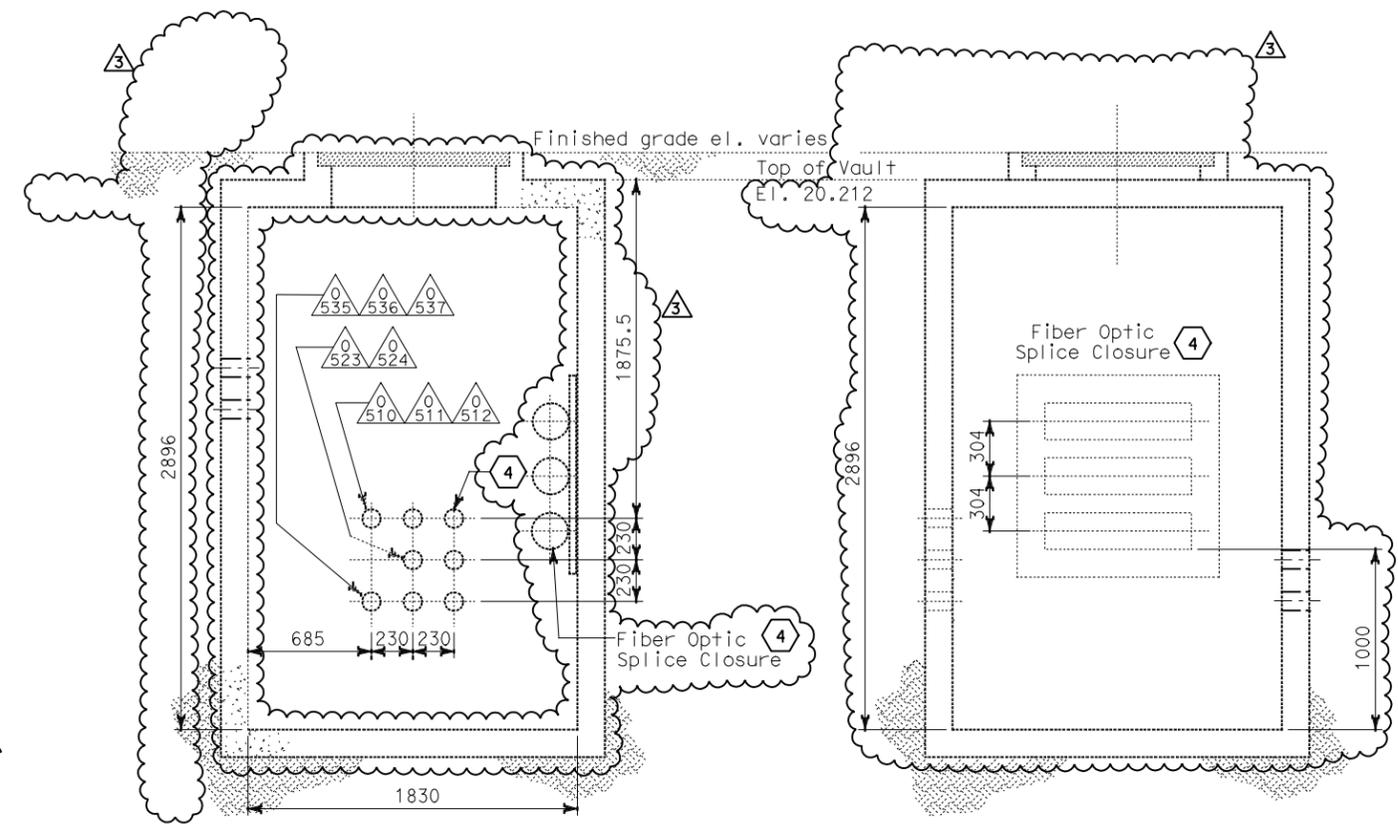
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
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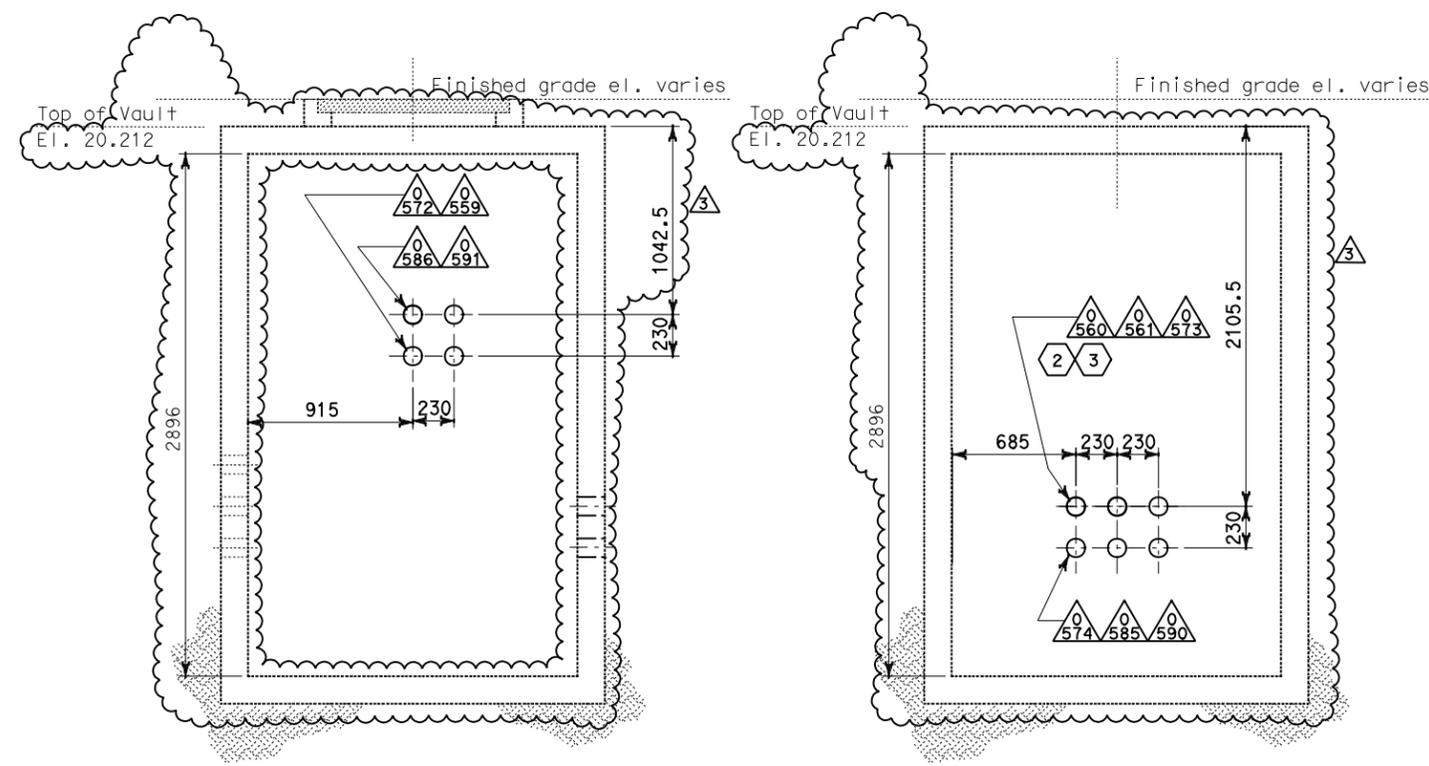


**PLAN-MANHOLE-27**  
 SCALE: 1:20 (TOS & COMMUNICATION)



**SECTION A-A**  
 SCALE: 1:20

**SECTION B-B**  
 SCALE: 1:20



**SECTION C-C**  
 SCALE: 1:20

**SECTION D-D**  
 SCALE: 1:20



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
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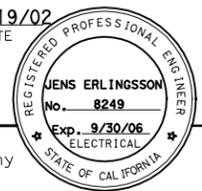
12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04  
 PLANS APPROVAL DATE

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

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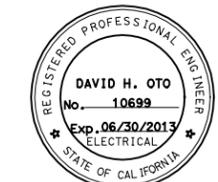


**NOTES:**

- References:
  - For duct bank and manhole plan, see sheet E-11.
  - For typical duct bank and manhole details, see sheet E-17.
  - For duct bank sections, see sheets E-19, & E-19A.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- For other related work, not shown on this sheet, see Electrical Special Provisions.

**SHEET NOTES:**

- Deleted
- Furnish and install 4-25.4 mm innerducts inside TOS/COM conduit (0560).
- Furnish and install BASE fiber optic cable in innerduct. See sheet E-1100.
- Not in contract. (Work included on contract 04-120P4).



*David H. Oto*  
 FOR REVISION ONLY



*Syn Yee Chin*  
 FOR REVISION ONLY

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
3	08/08/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205
2	03/01/11	BASE INTEGRATION	RSB	WB	150
1	1/10/06	Revised Manhole detail	CR	JE	11

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

**DETAILS UNDERGROUND MANHOLE PLAN AND SECTIONS**  
 SCALE AS NOTED

DATE PLOTTED => 10-AUG-2011  
 TIME PLOTTED => 08:22  
 LAST REVISION 00-00-00

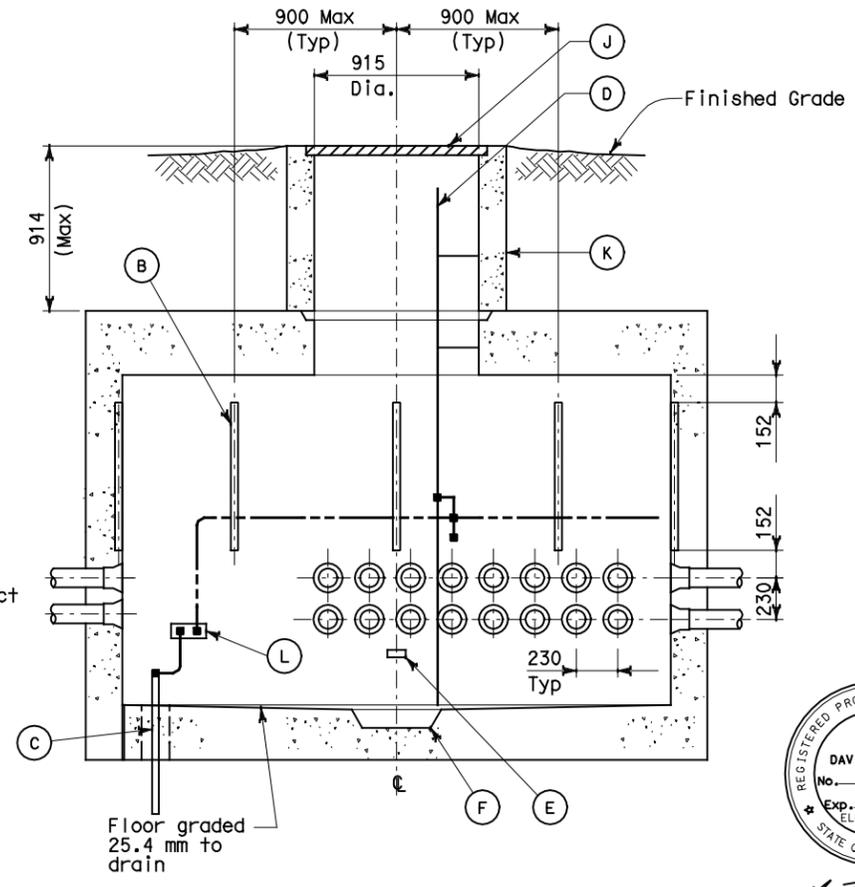
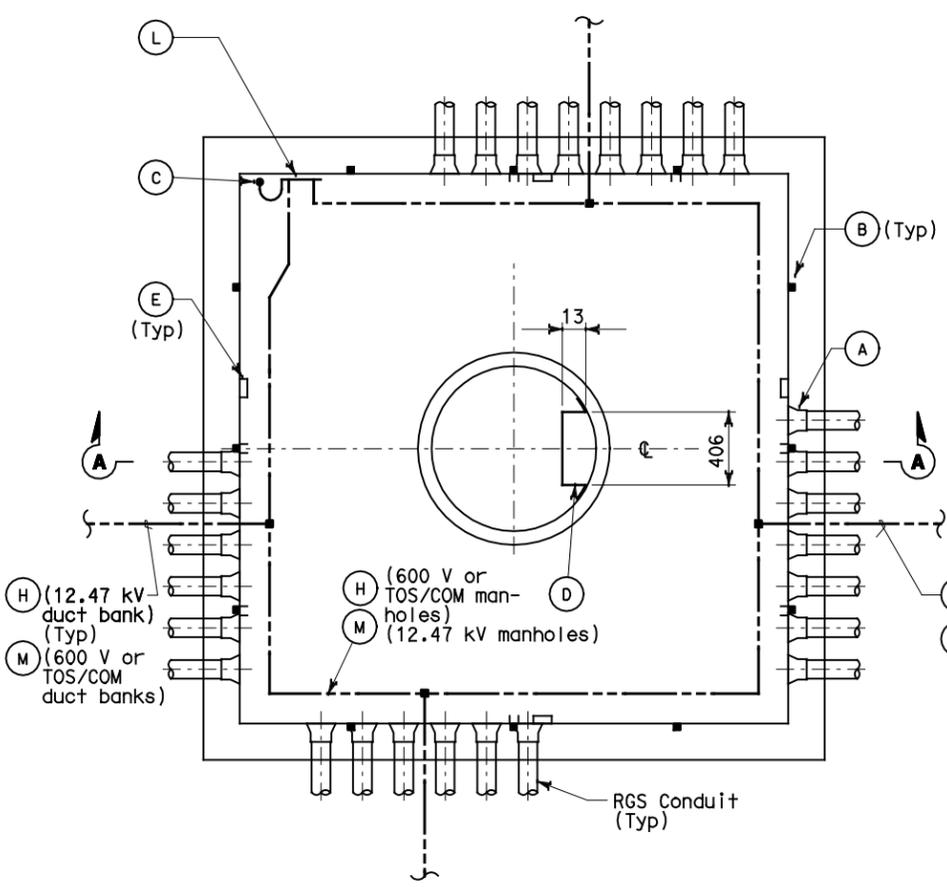


DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		100 R1	1204

12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE  
**Jens Erlingsson**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 8249  
 Exp. 9/30/06  
 ELECTRICAL  
 STATE OF CALIFORNIA

12-6-04  
 PLANS APPROVAL DATE  
**PB POWER, Inc.**  
 A Parsons Brinckerhoff Company  
 303 Second St., Suite 700N  
 San Francisco, CA 94107-1317

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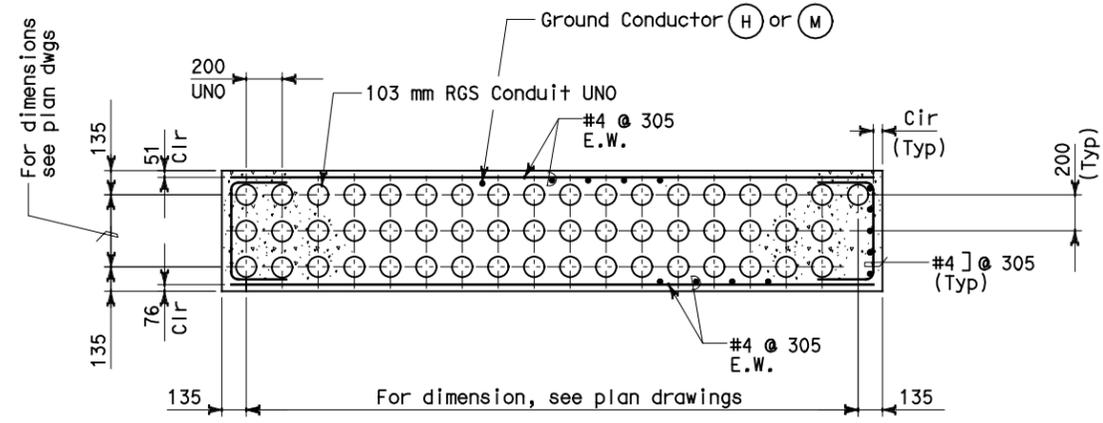
FOR REVISION ONLY

**NOTES:**

- Manhole, cast iron ring and cover shall be designed for HS-20 traffic loading acting on top of and beyond the dimensional plan limits of the manhole. Additionally, the manhole shall be designed for a 1330KN point load distributed over a 1000mm X 1000mm area at the finished grade elevation. This load shall be applied on top of the manhole but outside the manhole cover and riser, and beyond the dimensional plan limits of the manhole.
- Minimum ultimate compressive strength  $f'c = 25$  MPa.
- Steel reinforcement yield strength  $Fy = 414$  MPa.
- All manhole joints shall be primed with joint primer by manhole supplier. In addition, all joints shall be made watertight by using joint sealant.
- Prior to setting the manhole, the contractor shall prepare the site by providing a minimum of 152 mm of sand or other suitable base material. The base material shall be compacted and graded to the required level.
- Manholes shall comply with requirements of ASTM C478 and ASTM C858, as applicable.
- The ladder shall be designed to the specifications in the latest revision of American National Standard Institute's publication A1413, safety requirements for "Fixed Ladder".
- Manhole cover engraved nameplates shall read as follows:
  - Caltrans High Voltage } Manholes No. 1,3,8,11,14,17,20, 23 and 26.
  - Caltrans 600 V } Manholes No. 2,5,7,10,13,16,19, 22 and 25.
  - Caltrans TOS&COMM } Manholes No. 4,6,9,12,15,18,21, 24, 27, 29 and 30.
  - Non-Caltrans Utility } Manhole No. 28.
- For other related work, not shown on this sheet, see Electrical Special Provisions.
- References:
  - For duct banks and manholes, see sheet E11, & E-11A.
  - For manhole plans and sections, see sheets E-14 through E-16.
  - For duct bank sections, see sheet E-19, E-19A, E-19B.
  - For grounding interface, see sheet E-18.
  - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- Manhole cover shall be standard size round steel plate unless noted otherwise.
- All exposed metal shall be grounded.
- For actual duct bank configuration and details see sheets U-4, E-19C and E-19D.

**TYPICAL MANHOLE DETAIL**

LIST OF MATERIAL		
ITEM NO	DESCRIPTION	REMARKS
(A)	End bells. For size & location see manholes plans & sections	
(B)	41 mm X41 mm concrete insert strut channel (flush mounted)	Hot dip galvanized
(C)	Copper clad round rod 19 dia x 3050 long	
(D)	Ladder complete with supports	Hot dip galvanized
(E)	Pull iron-insert type	As required
(F)	305 dia round x 102 deep sump	
(H)	500 kcmil bare copper ground conductor	
(J)	Cast iron manhole cast cover with engraved nameplate	See notes 8 and 11
(K)	Manhole necking or riser	As required
(L)	Ground copper bar, 6 mm thick x 100 mm high x 600 mm long	
(M)	#4/0 AWG bare copper ground	



**TYPICAL DUCT BANK DETAIL**

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
08/08/11	W2 DUCT BANKS REINFORCEMENT	LJ TW	LJ RG	205	
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

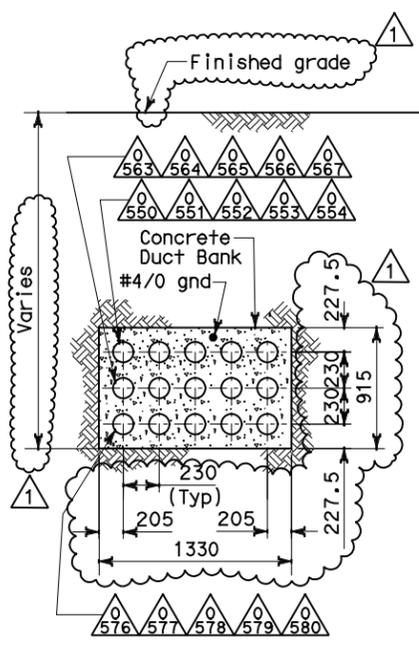
CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

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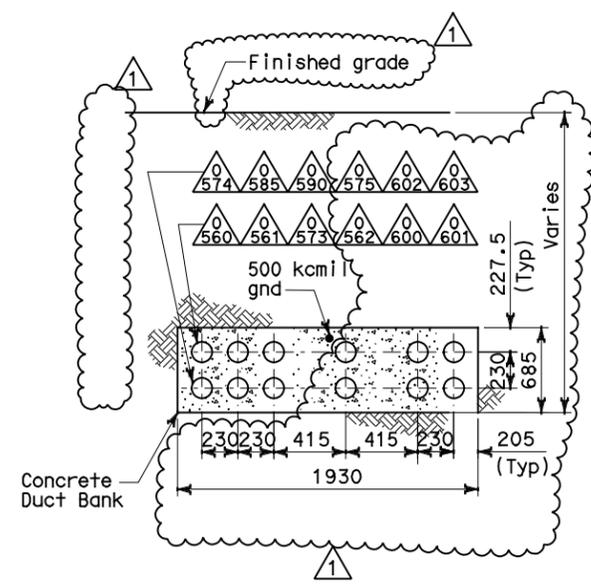
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SCALE AS NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN OVERSIGHT  
 BEHZAD GOLEMOHAMMADI  
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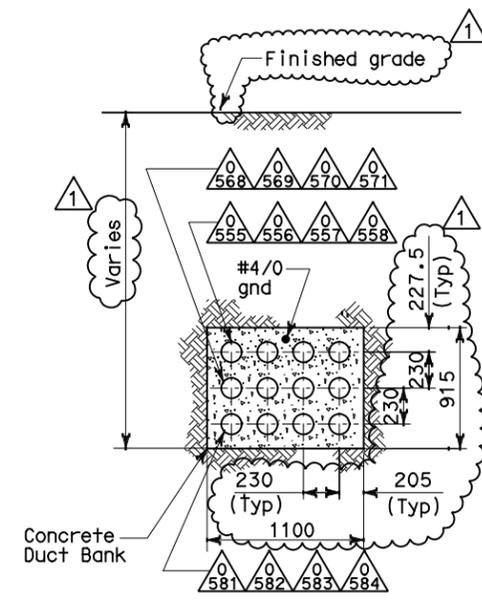
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 DESIGN OVERSIGHT  
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 REVISION NO. DATE REVISION BY DATE REVISOR



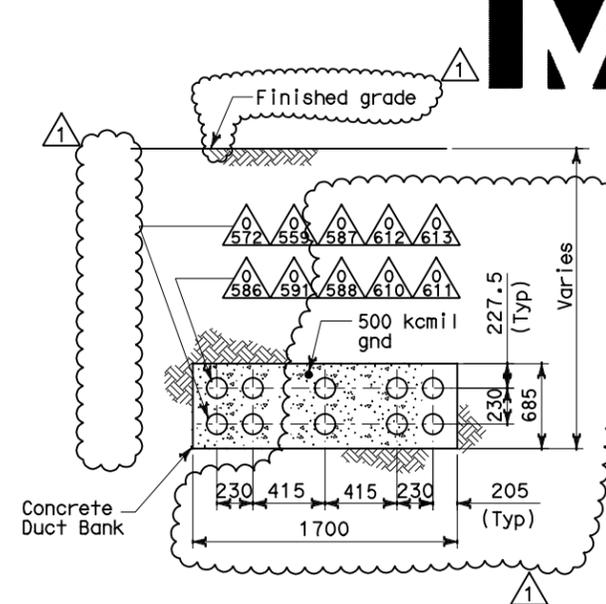
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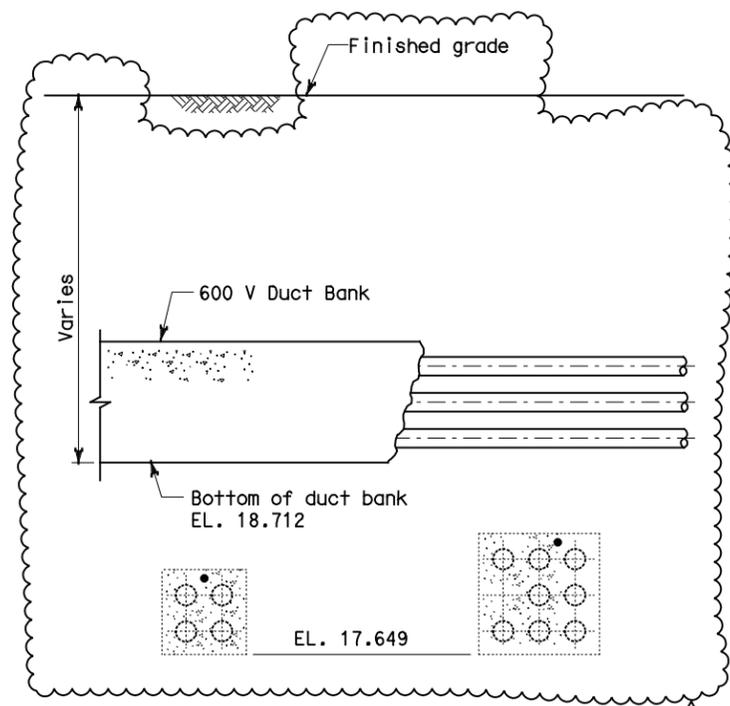
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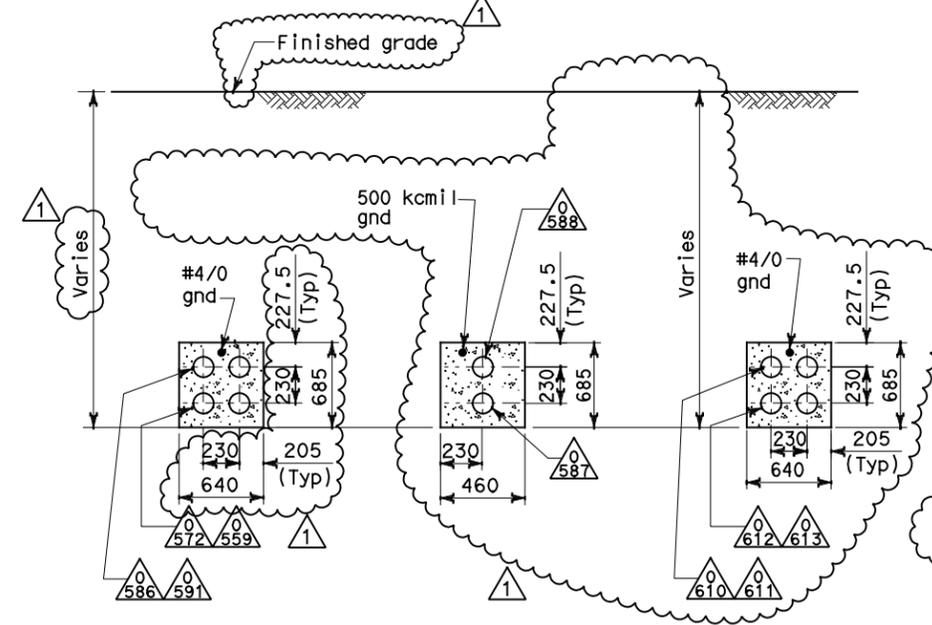
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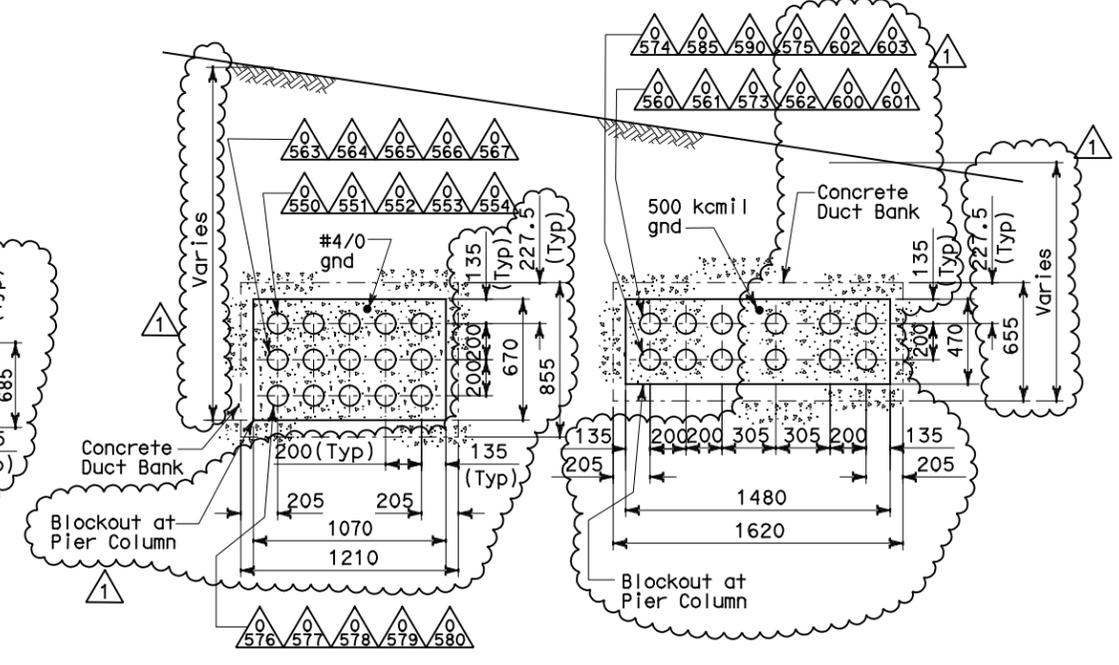
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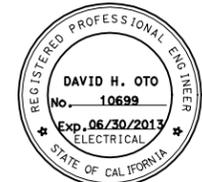
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**SECTION Z-Z**  
SCALE 1:20



**SECTION X-X**  
SCALE 1:20



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REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE				
MARK	DATE	DESCRIPTIONS	BY	CH'D CCO#
1	08/08/11	W2 DUCT BANKS REINFORCEMENT	TW	RG 205
REVISIONS				

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

**DETAILS UNDERGROUND DUCT BANK SECTIONS**  
SCALE AS NOTED

- NOTES:**
- References:
    - For duct bank and manhole plan, see sheet E-11.
    - For manhole plans and sections, see sheets E-14 through E-16.
    - For typical manhole and duct bank details, see sheet E-17.
    - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
    - For underground conduit duct bank reinforcing, see details on sheets E-19C and E-19D.
  - For other related work, not shown on this sheet, see Electrical Special Provisions.

DIST 04 COUNTY SF ROUTE 80 KILOMETER POST TOTAL PROJECT 13.2/13.9 SHEET No 102 R1 TOTAL SHEETS 1204

Caltrans Metro

Jens Erlingsson 12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04  
 PLANS APPROVAL DATE

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

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

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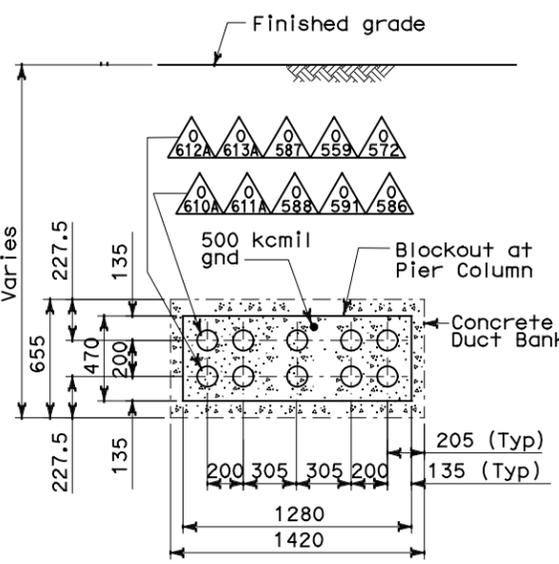
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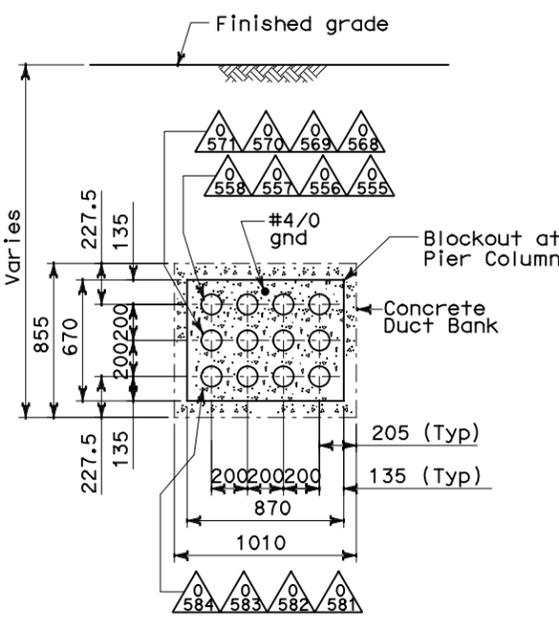
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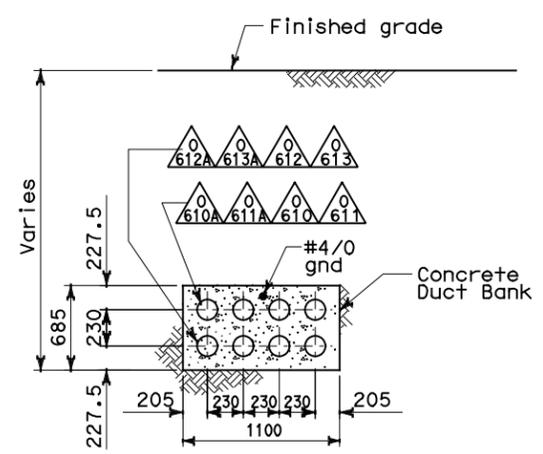
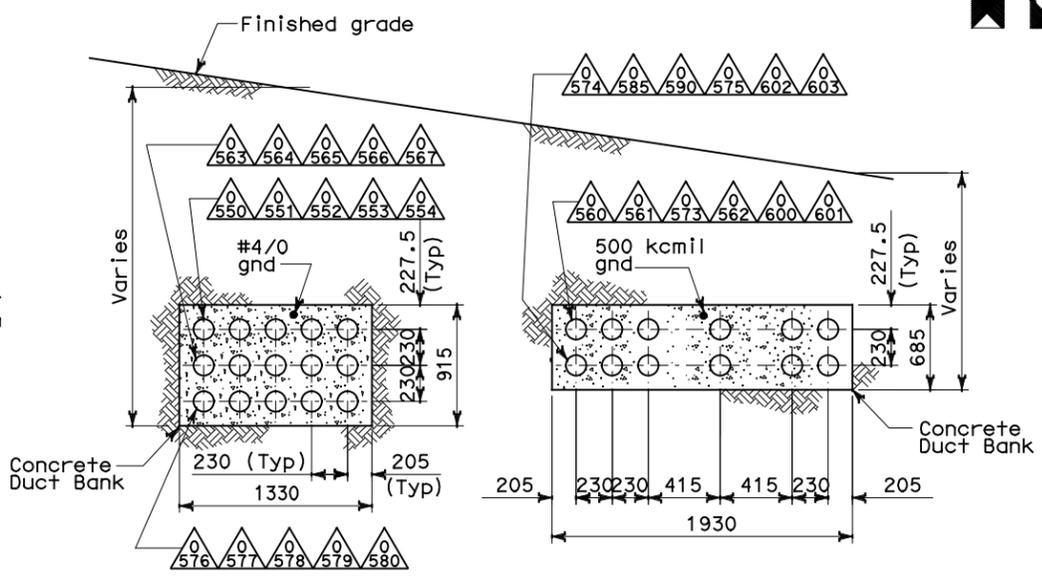
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04	SF	80	13.2/13.9	102 S1	1204
 REGISTERED ELECTRICAL ENGINEER DATE 07/05/11					
PLANS APPROVAL DATE _____					
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**SECTION VV-VV**  
SCALE 1:20



**SECTION XX-XX**  
SCALE 1:20



**SECTION FF-FF**  
SCALE 1:20

- NOTES:**
- References:
    - For duct bank and manhole plan, see sheet E-11.
    - For manhole plans and sections, see sheets E-14 through E-16.
    - For typical manhole and duct bank details, see sheet E-17.
    - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
    - For underground conduit duct bank reinforcing, see details on sheets E-19C and E-19D.
  - For other related work, not shown on this sheet, see Electrical Special Provisions.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE				
△	08/08/11	W2 DUCT BANKS REINFORCEMENT	TW	RG 205
MARK	DATE	DESCRIPTIONS	BY	CH'D CCO#
REVISIONS				

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

**DETAILS  
UNDERGROUND  
DUCT BANK SECTIONS**  
SCALE AS NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN OVERSIGHT  
 BEHZAD GOLEHAMMADI  
 REVISIONS  
 DATE 07/11  
 TW  
 RG  
 REVISOR  
 DATE  
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 DATE 07/11  
 TW  
 RG  
 REVISOR  
 DATE  
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 DESIGNED BY  
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 DATE 07/11  
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 CHECKED BY  
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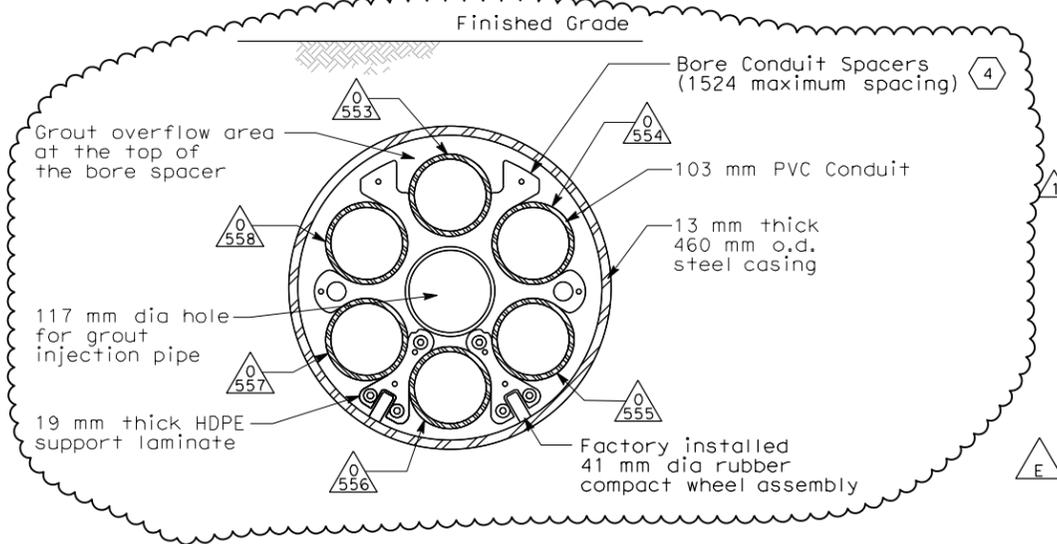


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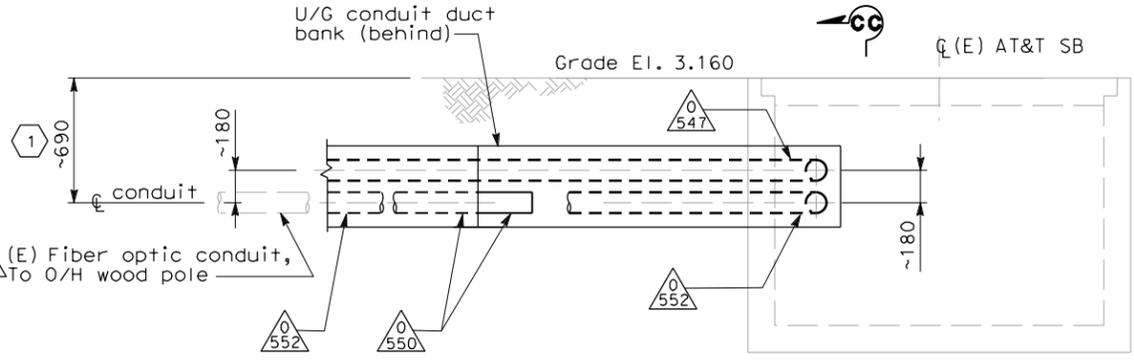
07/05/11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 DAVID H. OTO  
 No. 10699  
 Exp. 06/30/2013  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

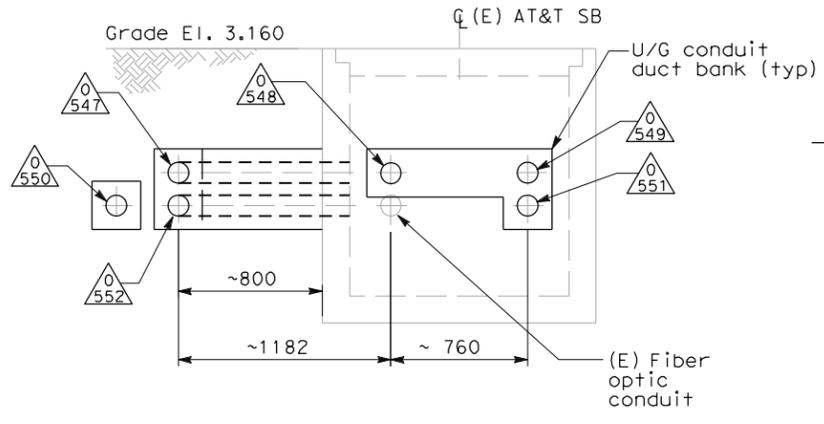
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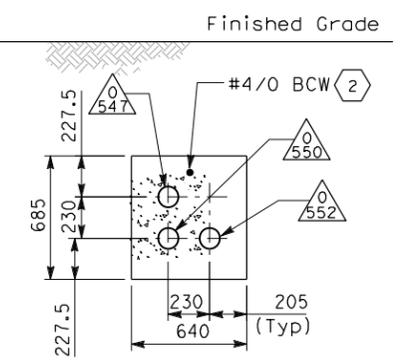
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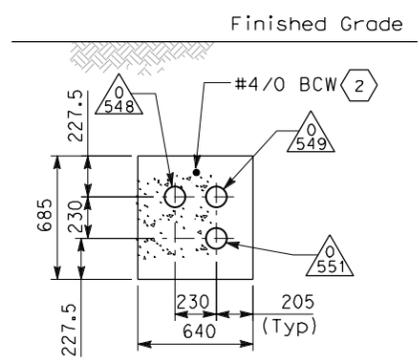
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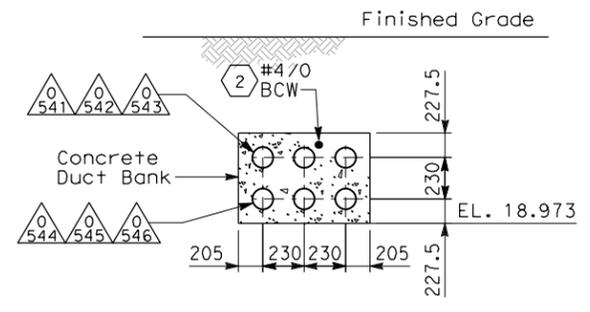
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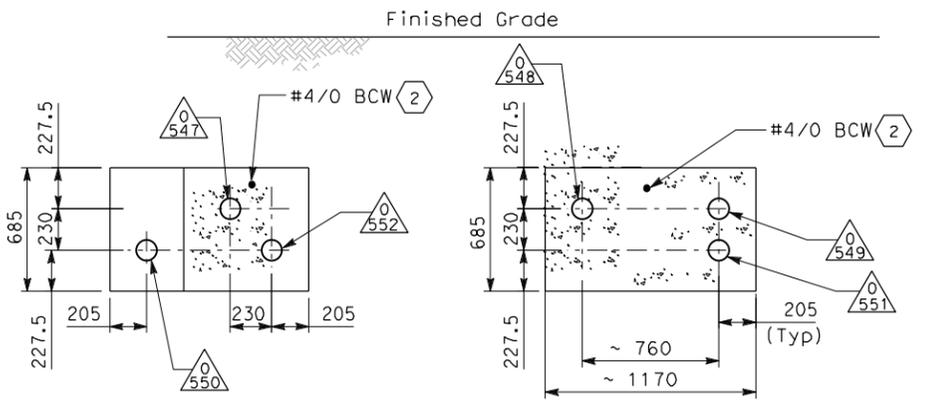
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**SECTION HH-HH**  
 SCALE: 1:20



**SECTION DD-DD**  
 SCALE: 1:20



**SECTION GG-GG**  
 SCALE: 1:20

- NOTES:**
- References:
    - For duct banks and manhole plan, see sheets E-11 and E-11A.
    - For typical manhole details, see sheet E-17.
    - For underground conduit duct bank reinforcing, see details on sheets U-4 and E-19D.
    - For circuit and conduit/cable tray schedules, see sheets starting at E-401
  - For other related work, not shown on this sheet, see Electrical Special Provisions.

- SHEET NOTES:**
- Dimensions shown (~) are field surveyed. The Contractor is to verify to ensure the existing conduit is the reference for the actual location of the new conduits.
  - Connect ground conductor to ground bar inside manhole.
  - Refer to Sheet E-19D for structural details.
  - For additional installation requirement not shown on this plan, refer to Underground Devices Inc. Cat. # BS355W2 or approved equal.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

1	12/06/11	W2 DUCT BANKS REINFORCEMENT	MG	DO	205
2	08/17/11	W2 DUCT BANKS REINFORCEMENT	EJL	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

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

**DETAILS UNDERGROUND DUCT BANK SECTIONS**  
 SCALE: AS NOTED

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

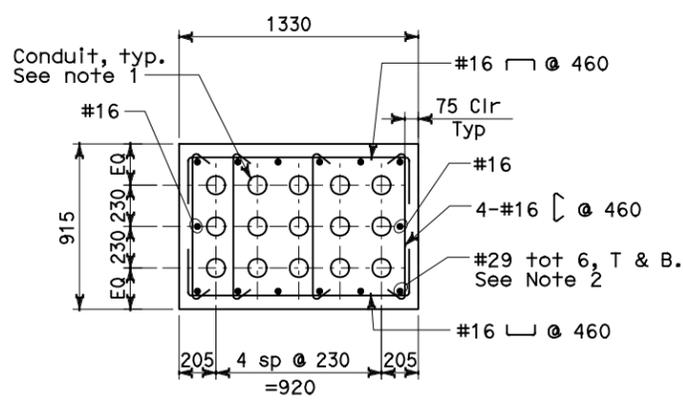
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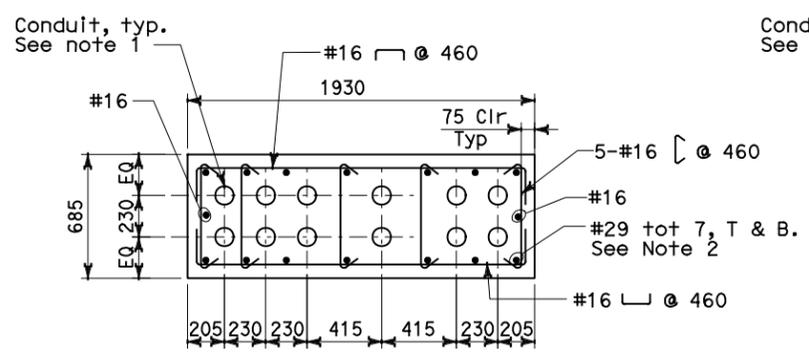


DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
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07/20/11 REGISTERED ELECTRICAL ENGINEER DATE						
PLANS APPROVAL DATE _____						
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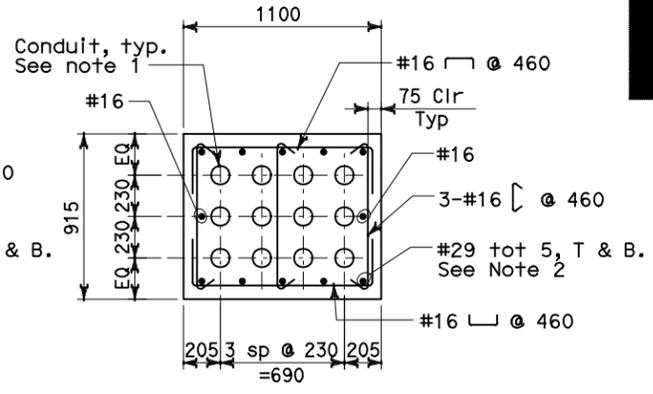
**DETAIL 1**  
SCALE: 1:20

Note:  
For Detail not noted or shown see Section T-T on sheet E-19



**DETAIL 2**  
SCALE: 1:20

Note:  
For Detail not noted or shown see Section U-U on sheet E-19

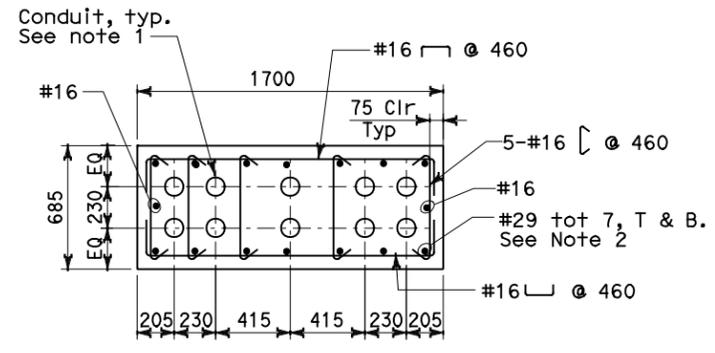


**DETAIL 3**  
SCALE: 1:20

Note:  
For Detail not noted or shown see Section V-V on sheet E-19

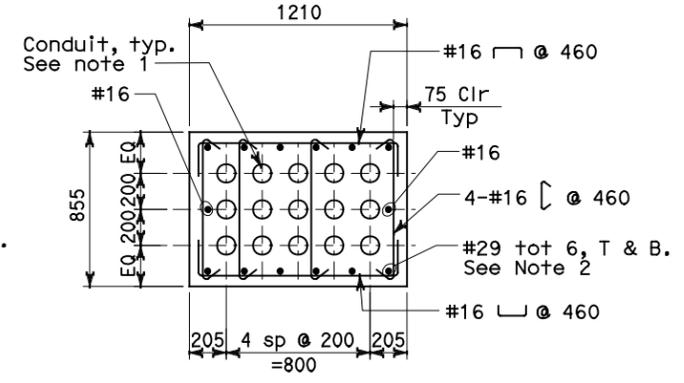
**NOTES:**

1. For conduit duct bank sections, see sheet E-19, E-19A, E-19B and E-19C.
2. Where duct banks intersect, develop #29 top and bottom reinforcing a minimum distance of 1525 mm into adjacent duct bank.
3. The duct bank concrete compression strength at 28 days:  $f'c = 25$  MPa.
4. The duct bank reinforcing bar yield strength:  $Fy = 414$  MPa.
5. The duct banks have been designed for a maximum point load of 1330 kN distributed over a 1000mm x 1000mm area at the finished grade elevation.



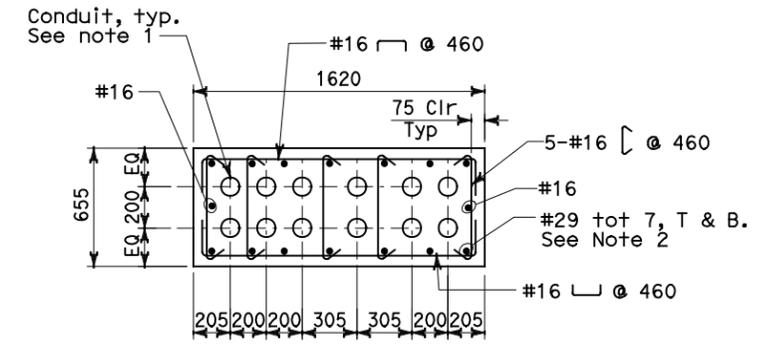
**DETAIL 4**  
SCALE: 1:20

Note:  
For Detail not noted or shown see Section W-W on sheet E-19



**DETAIL 5**  
SCALE: 1:20

Notes:  
A. For Detail not noted or shown see Section X-X on sheet E-19  
B. Locate 1st stirrup 75mm from face of pier.



**DETAIL 6**  
SCALE: 1:20

Notes:  
A. For Detail not noted or shown see Section X-X on sheet E-19  
B. Locate 1st stirrup 75mm from face of pier.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
	08/08/11	W2 DUCT BANKS REINFORCEMENT	LJ	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

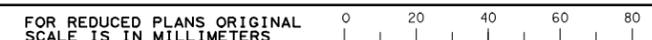
CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

**DETAILS UNDERGROUND DUCT BANK SECTIONS**  
SCALE AS NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 BEHZAD GOLEMOHAMMADI  
 DESIGN OVERSIGHT  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 DATE 07/11  
 REVISOR  
 DATE REVISOR

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CU 04251

EA 0120F1

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 BEHZAD GOLEMOHAMMADI  
 REVISIONS  
 DATE 11/01 12/01  
 REVISOR KG PF  
 CHECKED BY  
 DESIGNED BY  
 CALCULATED BY



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		105 R2	1204

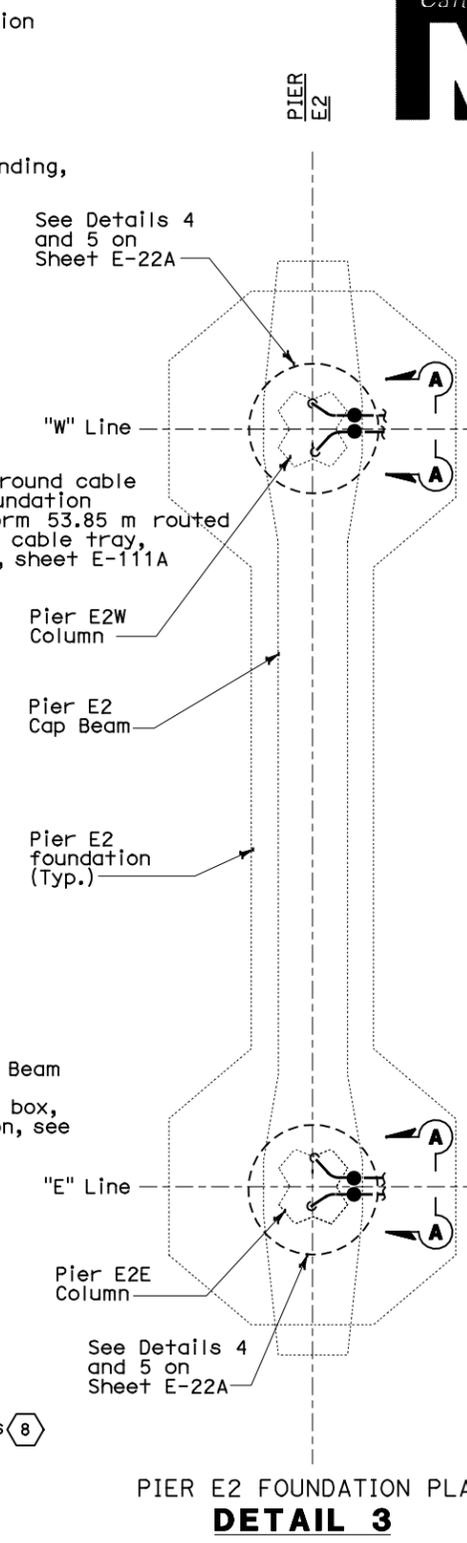
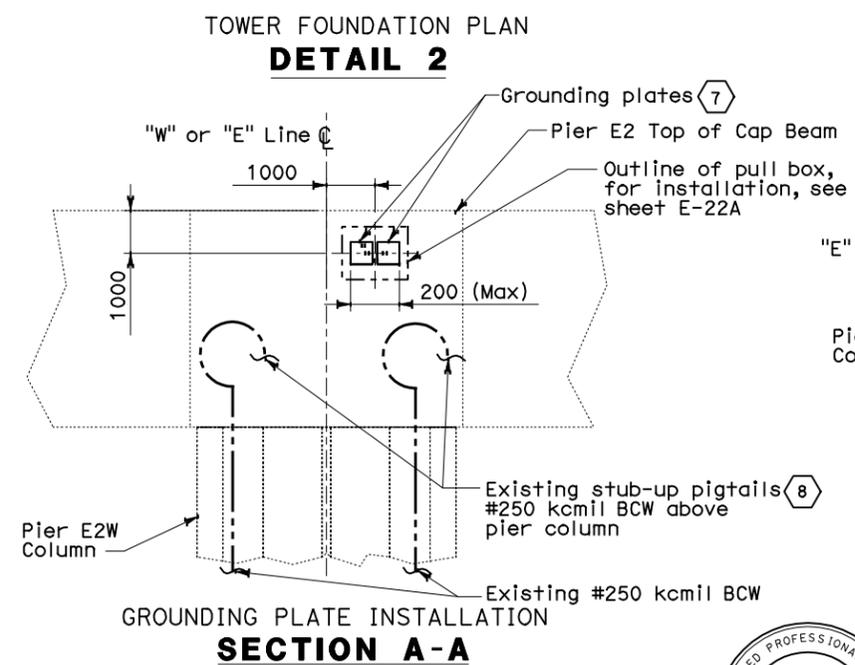
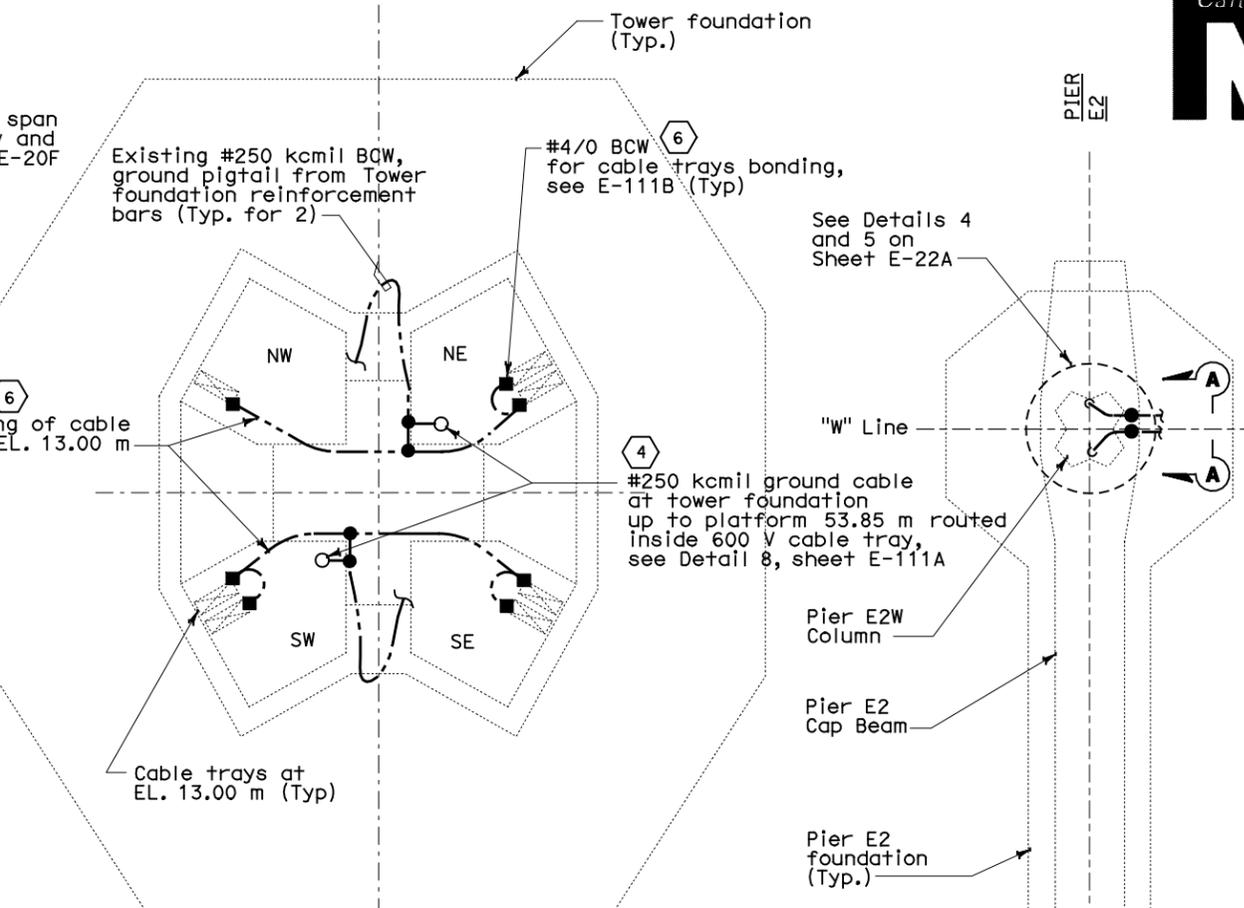
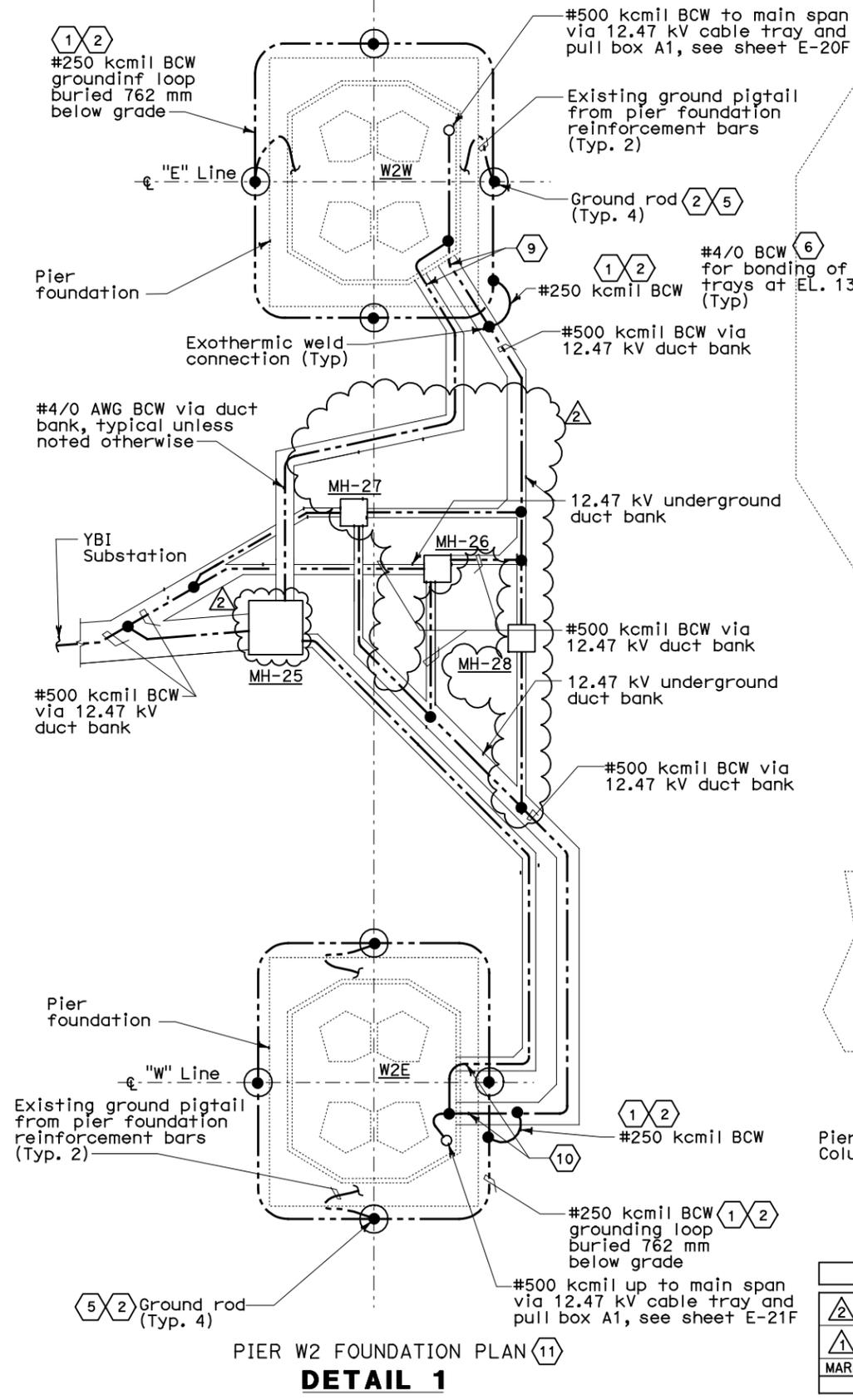
REGISTERED ELECTRICAL ENGINEER  
 JENS ERLINGSSON  
 No. 8249  
 Exp. 9/30/06  
 ELECTRICAL  
 STATE OF CALIFORNIA

12-6-04  
 PLANS APPROVAL DATE

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

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- 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#
2	08/08/11	W2 DUCT BANKS REINFORCEMENT	TW	RG 205
1	11/20/09	ELECTRICAL GROUNDING	RR AWG	RG FE 75

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

REGISTERED PROFESSIONAL ENGINEER  
 FADI WALIEDDINE  
 No. 11465  
 Exp. 12/31/2009  
 ELECTRICAL  
 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER  
 DAVID H. OTO  
 No. 10699  
 Exp. 06/30/2013  
 ELECTRICAL  
 STATE OF CALIFORNIA

FOR REVISION ONLY FOR REVISION ONLY

ORIGINAL SHEET SUPERCEDED

**DETAILS UNDERGROUND FOUNDATION GROUNDING**  
 NO SCALE

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

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 TIME PLOTTED => 13:46  
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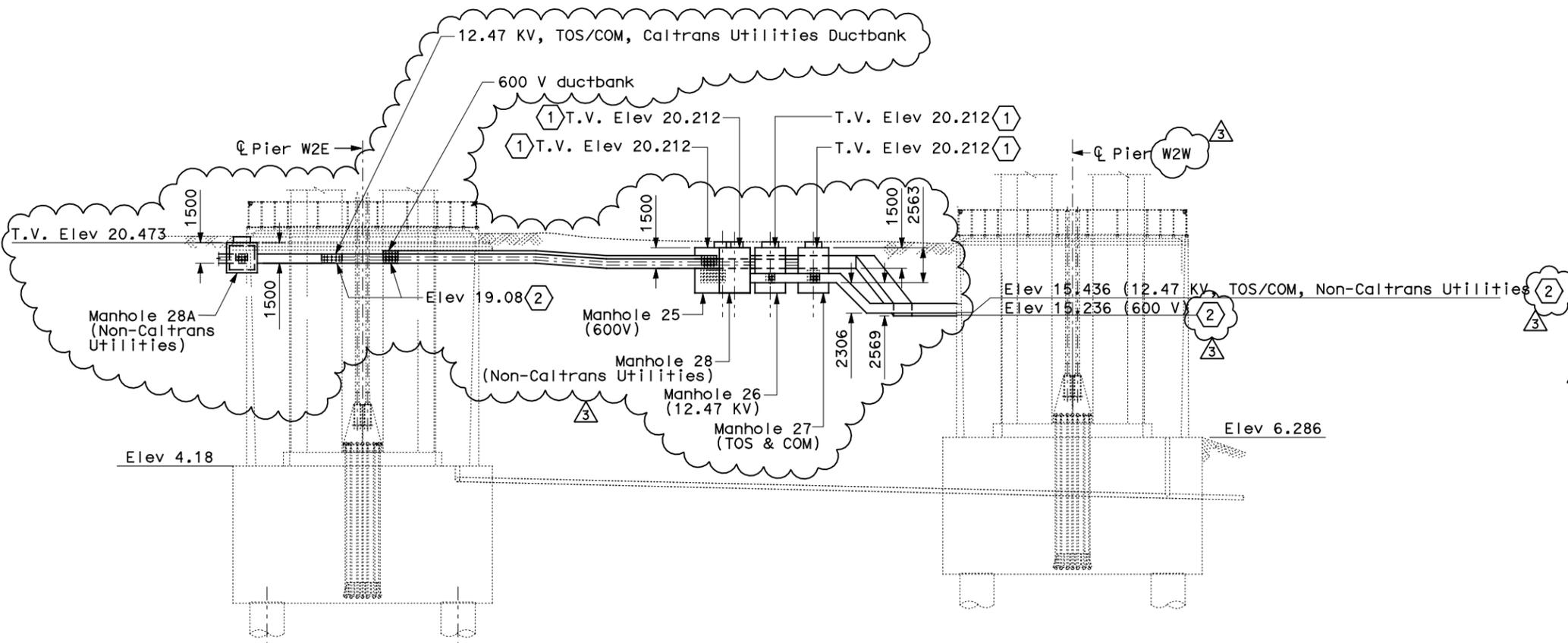
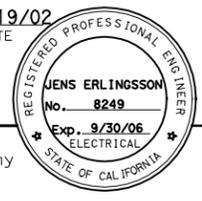
DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		106 R3	1204

JENS ERLINGSSON 12/19/02  
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04  
 PLANS APPROVAL DATE

**PB POWER, Inc.**  
 A Parsons Brinckerhoff Company  
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 San Francisco, CA 94107-1317

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**SECTION A-A**  
(Reference E-11)  
SCALE 1:200

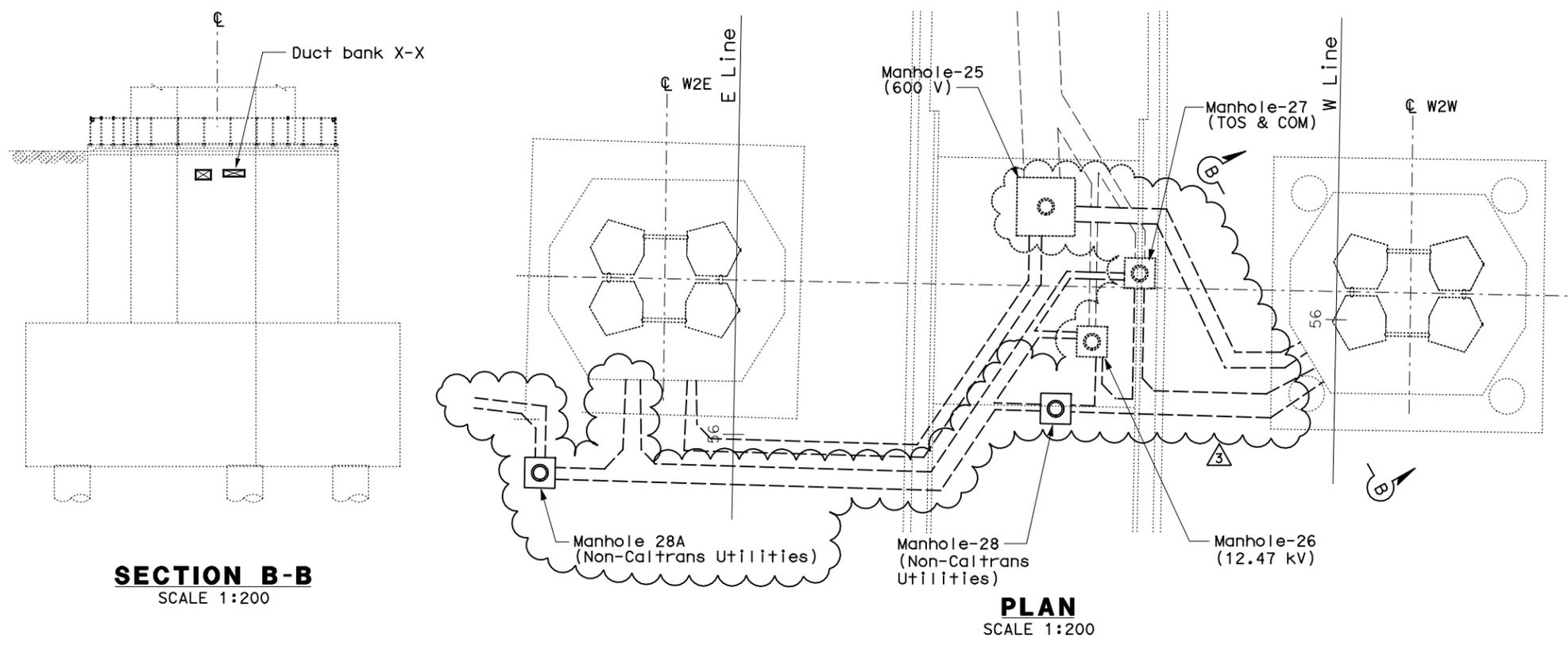
- SHEET NOTES:**
- Contractor to verify finished grade and may make necessary adjustment to the specified top of manhole elevations and ductbanks to suit field condition.
  - Specified elevations are for breakout openings on Pier columns. See structure plan sheets.

- NOTES:**
- References:
    - For duct banks and sections, see sheet E-11.
    - For typical manhole and duct bank details, see sheet E-17
    - For duct bank sections see sheet E-19
    - For pier W2W sections and plans, see sheet E-20F
    - For pier W2E sections and plans, see sheet E-21F
    - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
  - For other related work, not shown on this sheet, see Electrical Special Provisions.

**ABBREVIATION:**

T.V. - Top of Vault

 FOR REVISION ONLY 3	 FOR REVISION ONLY 1	 FOR REVISION ONLY 2
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**SECTION B-B**  
SCALE 1:200

**PLAN**  
SCALE 1:200

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
3	08/08/11	W2 DUCT BANKS REINFORCEMENT	RR	RG	205
2	11/20/09	ELECTRICAL GROUNDING	RR	RG FW	75
1	02/25/08	CABLE TRAY CHANGES	TW	SE	42S1

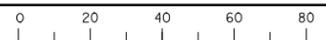
REVISIONS

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

**DETAILS UNDERGROUND DUCT BANK SECTIONS**  
SCALE 1:200

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN OVERSIGHT: BEHZAD GOLEMOHAMMADI  
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DATE PLOTTED => 09-AUG-2011  
 TIME PLOTTED => 13:46  
 LAST REVISION 00-00-00

CONDUIT DATA							
Conduit No	Reference	Size	Type	Total Fill (mm <sup>2</sup> )	Allowable Fill (mm <sup>2</sup> )	Included Cable No.	Conductor Type
0541	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0542	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0543	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0544	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0545	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0546	E-11,-11A,-15A E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0547	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0548	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0549	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0550	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0551	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0552	E-11A,-15A,-15B E-19B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0610A	E-11,-15A,-19A	103	RGS Conduit		3324.51	Pull rope	Soft-fiber Polyester
0611A	E-11,-15A,-19A	103	RGS Conduit		3324.51	Pull rope	Soft-fiber Polyester
0612A	E-11,-15A,-19A	103	RGS Conduit		3324.51	Pull rope	Soft-fiber Polyester
0613A	E-11,-15A,-19A	103	RGS Conduit		3324.51	Pull rope	Soft-fiber Polyester

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE						
12/06/11	W2 DUCT BANKS REINFORCEMENT	EJL	RG	205		
08/08/11	W2 DUCT BANKS REINFORCEMENT	EJL	RG	205		
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#	
		REVISIONS				



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		407 S17R1	1204

07/05/11  
REGISTERED ELECTRICAL ENGINEER DATE

DAVID H. OTO  
No. 10699  
Exp. 06/30/2013  
ELECTRICAL  
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

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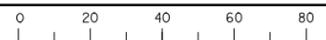
CONTRACT CHANGE ORDER NO. \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

CONDUIT DATA							
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0553	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0554	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0555	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0556	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0557	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester
0558	E-15A,-15B	103	Schedule 40 PVC Conduit		3324.51	Pull rope	Soft-fiber Polyester

## CONDUIT AND TRAY SCHEDULE

### E-449DN

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CU 04251

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