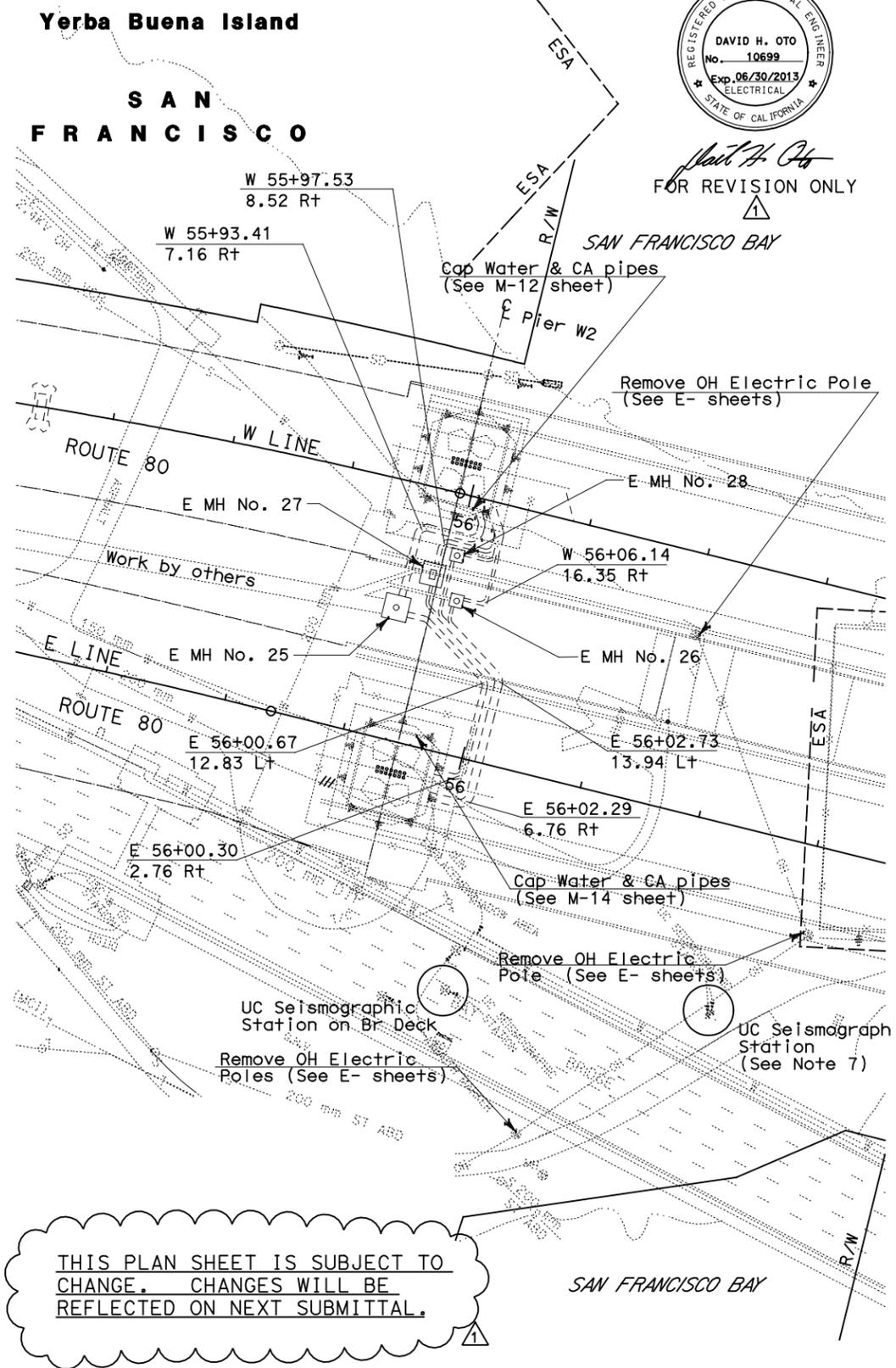


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		REVISIONS	CH'D CCO#

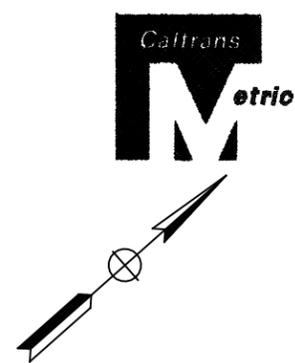
CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____



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 PROJECT	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

State of California Professional Engineer Seal: Gene V. Lusherovich, No. C 54338, Exp. 12/31/05, CIVIL.

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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

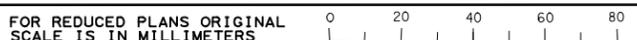
SYMBOL	UTILITY	OWNERSHIP
— SD —	Storm Drainage	Caltrans or US Navy
— CA —	Compressed Air	Caltrans

UTILITY PLAN
SCALE: 1:500

THIS PLAN SHEET IS SUBJECT TO CHANGE. CHANGES WILL BE REFLECTED ON NEXT SUBMITTAL.

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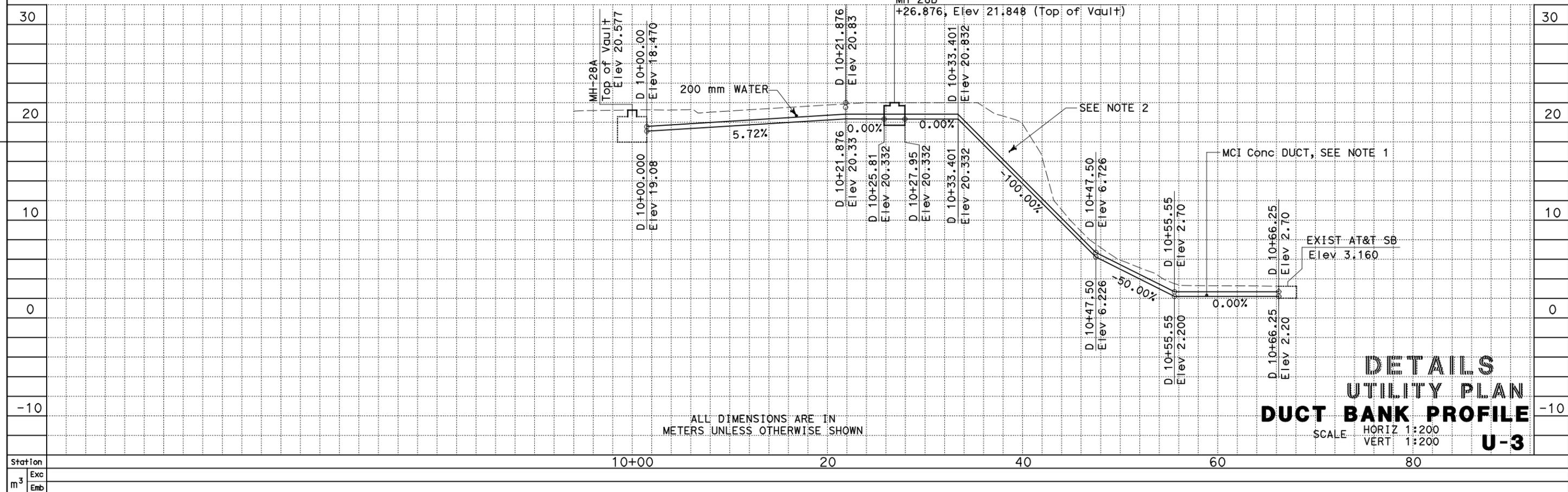
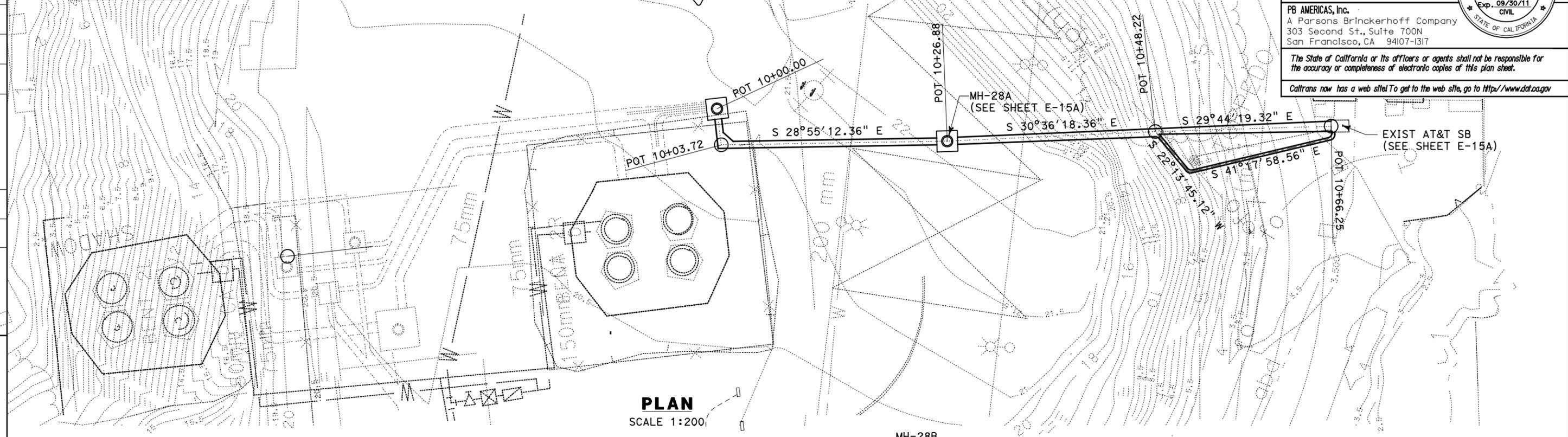
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REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
MARK	DATE	DESCRIPTIONS	MG	RG	205
		REVISIONS	BY	CH'D	CCO#

CONTRACT CHANGE ORDER NO. _____
 SHEET _____ OF _____



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.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	21S1	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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FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

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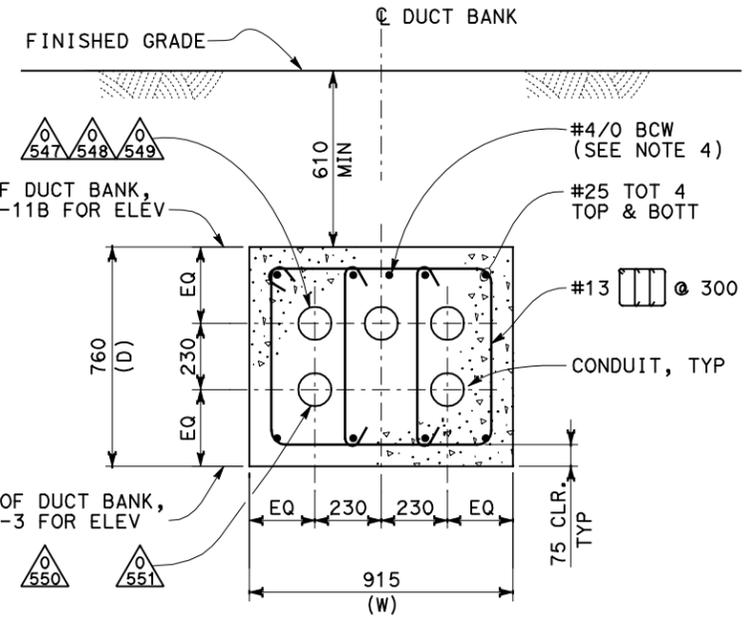
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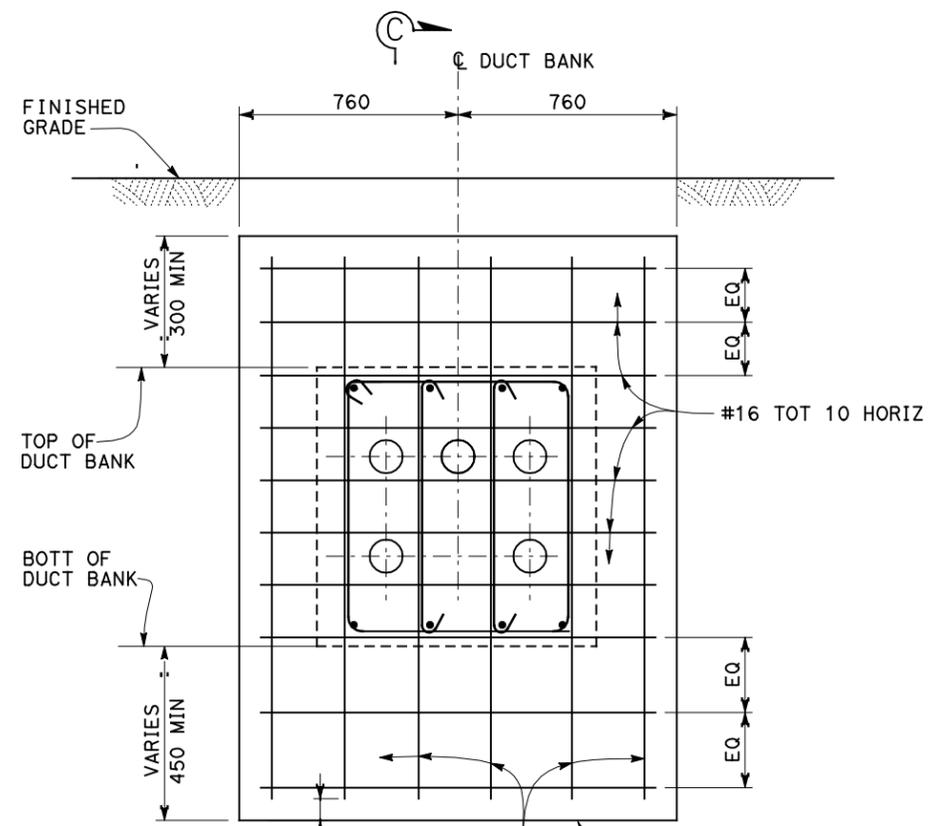


DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		21S2	1204

07/05/11
 REGISTERED ELECTRICAL ENGINEER DATE
 Mark Grodzki
 No. 65594
 Exp. 09/30/11
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 PB AMERICAS, Inc.
 A Parsons Brinckerhoff Company
 303 Second St., Suite 700N
 San Francisco, CA 94107-1317
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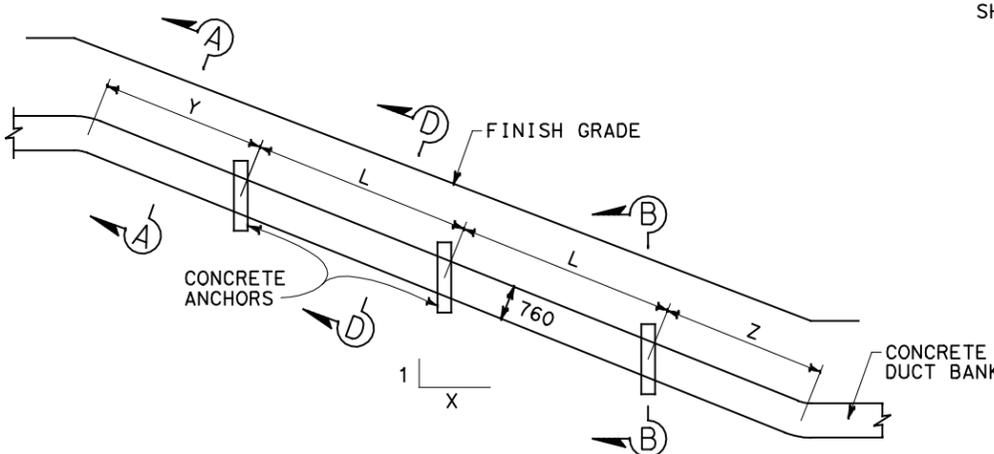


SECTION A-A

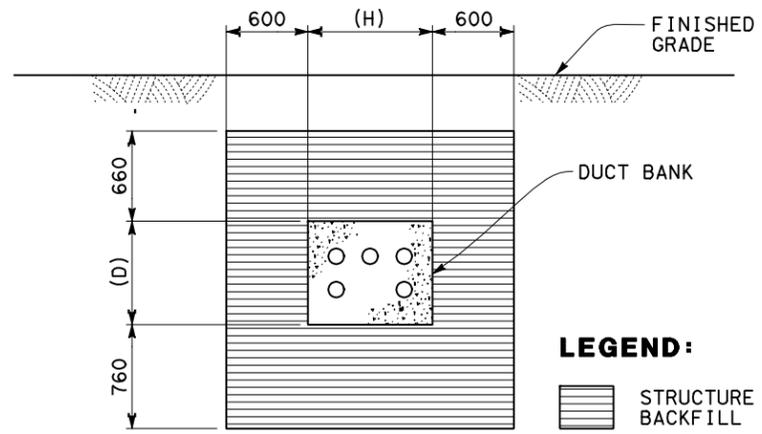


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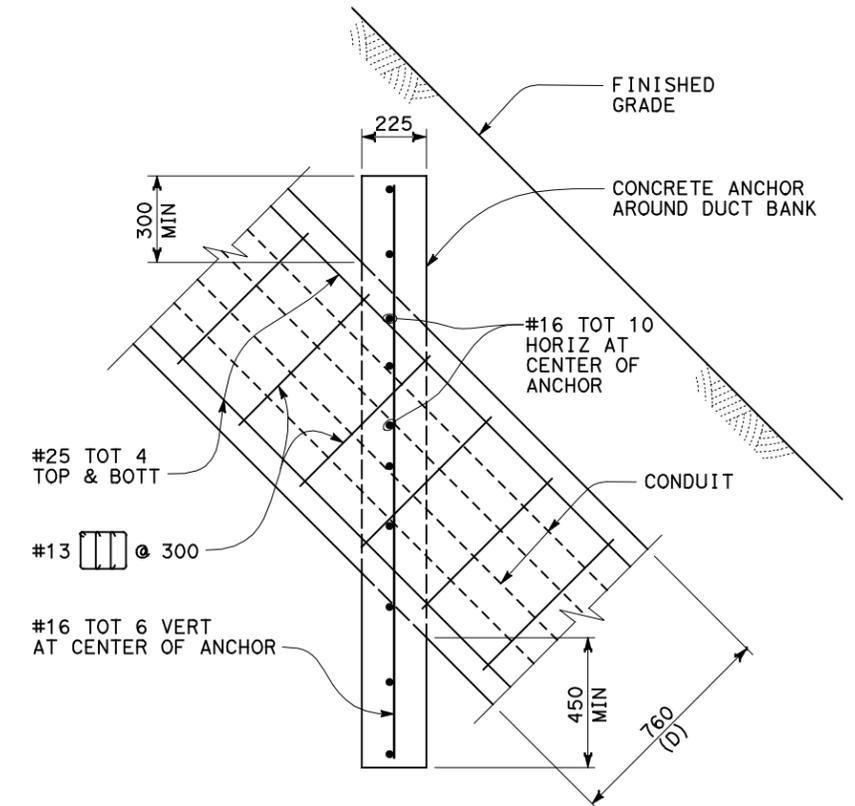
NOTE:
FOR DETAIL NOT NOTED OR SHOWN, SEE SECTION A-A.



**CONCRETE DUCT BANK ANCHORS
(915 mm (W) X 760 mm (D))**



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



SECTION C-C

**TABLE A
(For 915 X 760 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					
07/05/11	W2 DUCT BANKS REINFORCEMENT	MG	LJ	81	
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
		REVISIONS			

CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

**DETAILS
UTILITY PLAN
DUCT BANK STRUCTURAL DETAILS**

NO SCALE

U-4

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

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REVISOR	DATE	REVISION

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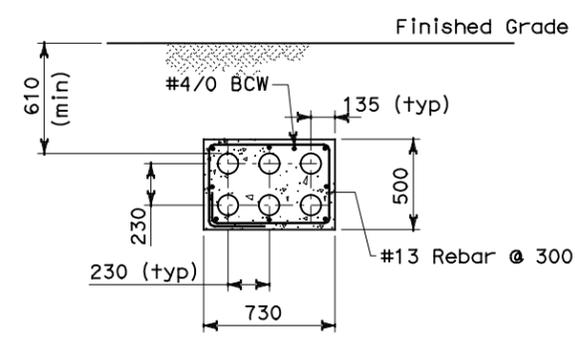
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 DATE



SECTION D-D
 SCALE: 1:20



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Mark Grodzki: 07/05/11
 REGISTERED ELECTRICAL ENGINEER DATE

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NOTES:

- References:
 - For duct banks and manhole plan, see sheets E-11 and E-11A.
 - For conduit and circuit information see sheet E-15B.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
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MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

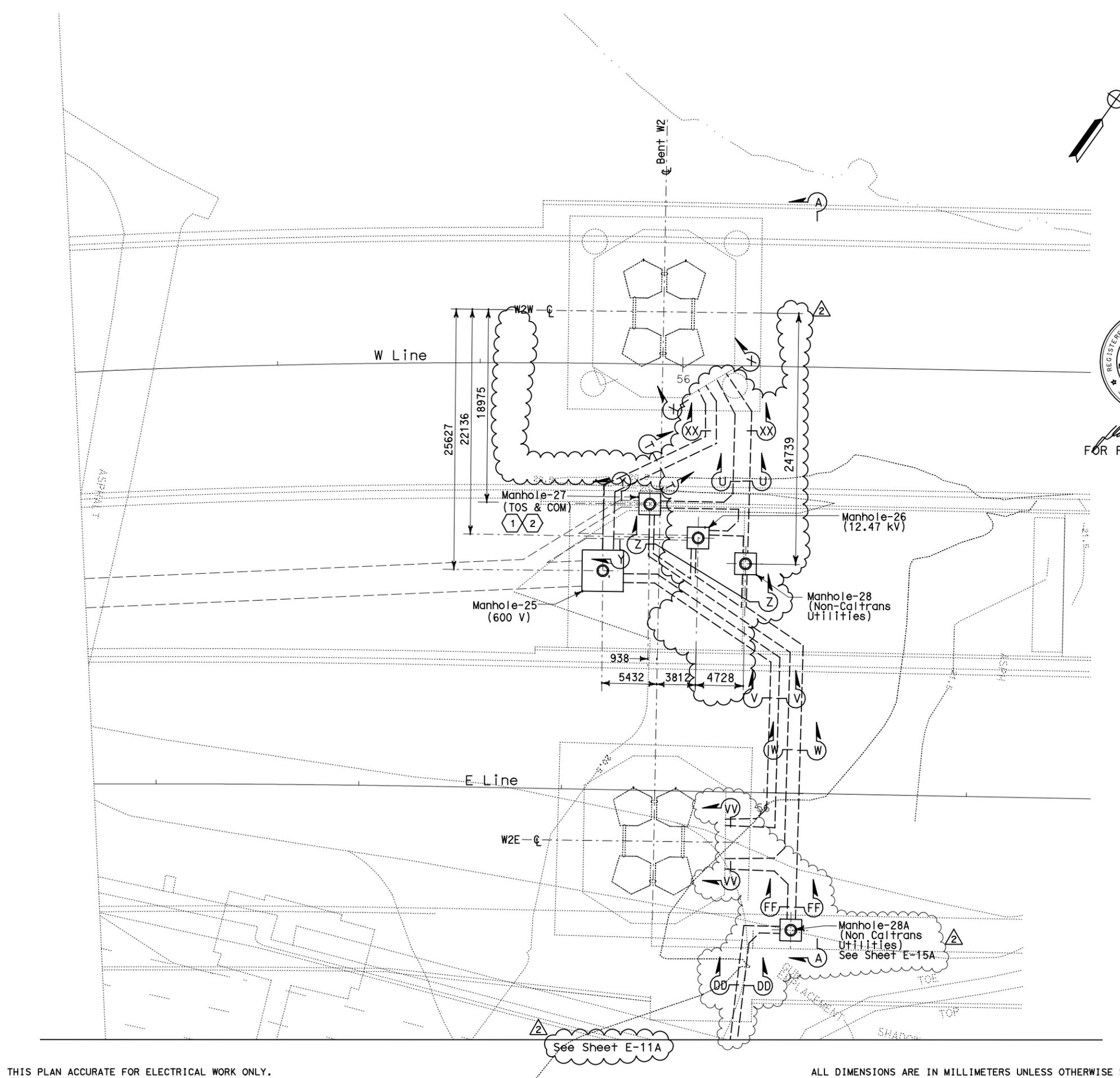
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 SHEET _____ OF _____

DETAILS
UTILITY PLAN
DUCT BANK STRUCTURAL DETAILS
 SCALE: AS NOTED

U-5

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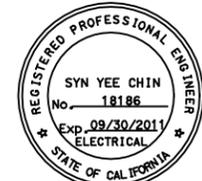
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04	SF	80	13.2/13.9		96R2	1204

Jens Erlingsson 12/19/02
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04
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Syn Yee Chin
 FOR REVISION ONLY



David H. Oto
 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.
- 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.

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.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
2	07/05/11	W2 DUCT BANKS REINFORCEMENT	MG TW	RG	205
1	01/14/11	BASE INTEGRATION	RSB	WB	150

CONTRACT CHANGE ORDER NO. _____
 SHEET _____ OF _____

UNDERGROUND DUCT BANKS AND MANHOLES
 SCALE 1:200

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

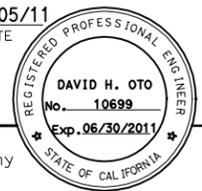
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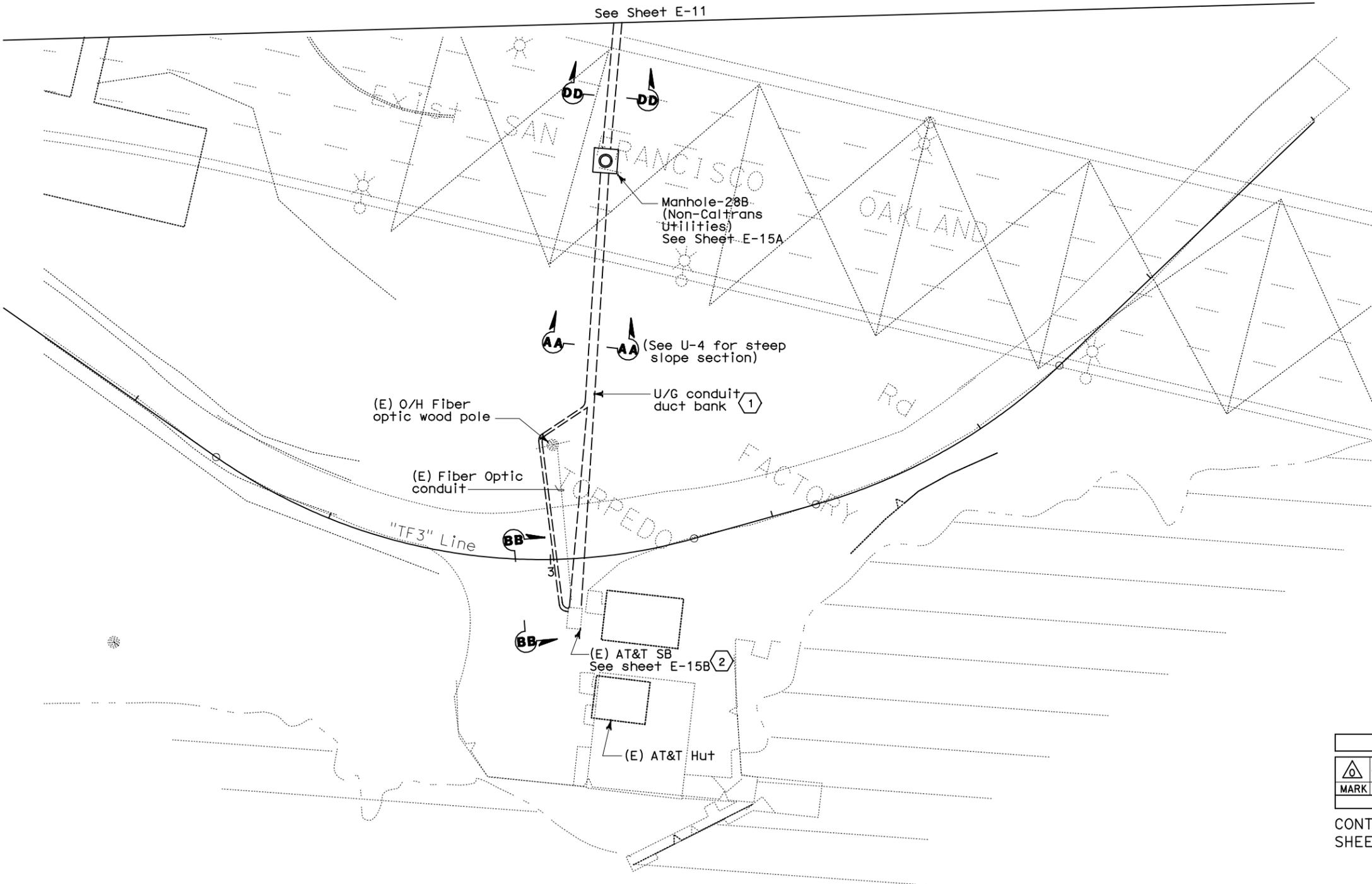
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			07/05/11	REGISTERED ELECTRICAL ENGINEER DATE	
			PLANS APPROVAL DATE		
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EL	RG	07/11	
CHECKED BY	DATE	REVISION	
BEHZAD GOLEMOHAMMADI	07/11		
DESIGN OVERSIGHT			
BEHZAD GOLEMOHAMMADI			
DEPARTMENT OF TRANSPORTATION			
STATE OF CALIFORNIA			



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.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE				
07/05/11	W2 DUCT BANKS REINFORCEMENT	EJL	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D CCO#
		REVISIONS		

CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

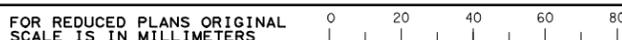
PLAN
SCALE: 1:200

UNDERGROUND DUCT BANKS AND MANHOLES
SCALE: 1:200

E-11A

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

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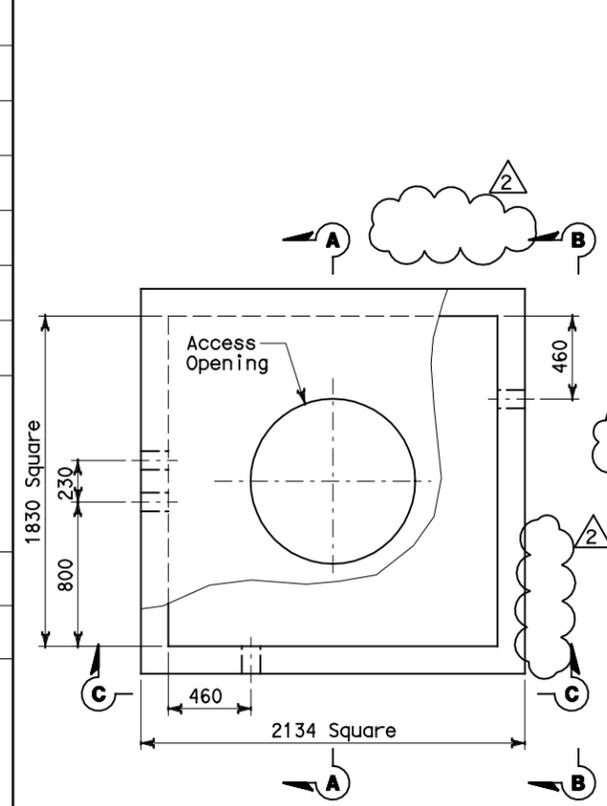
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CU 04251

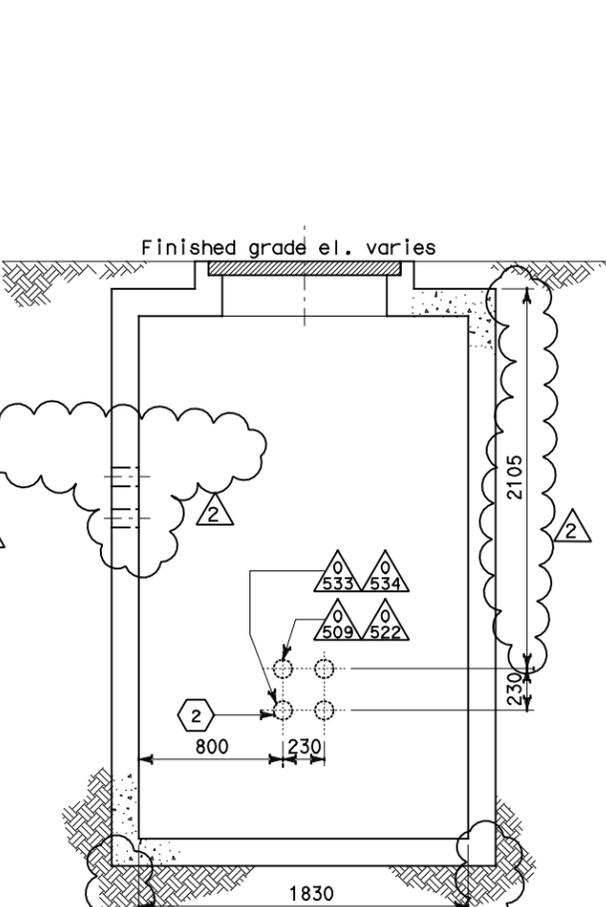
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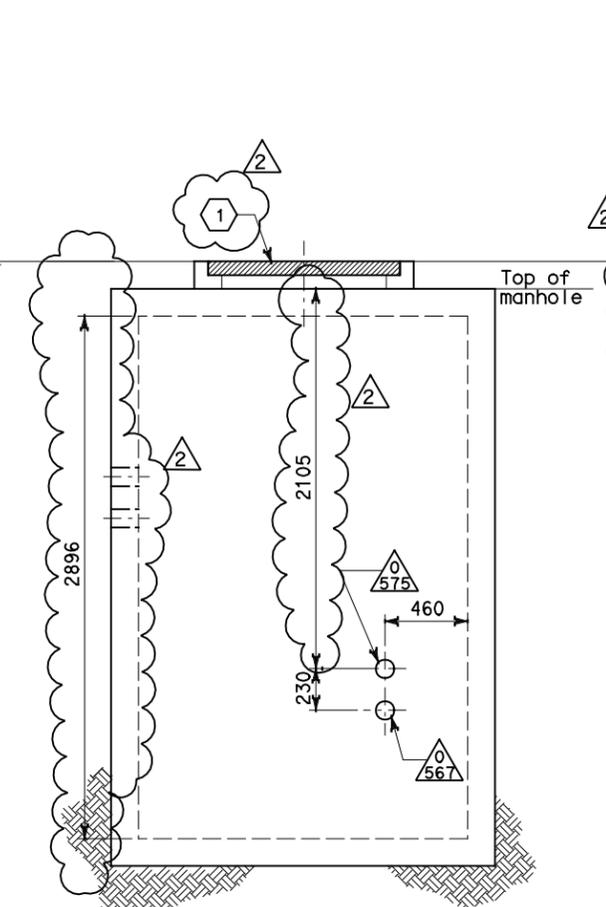
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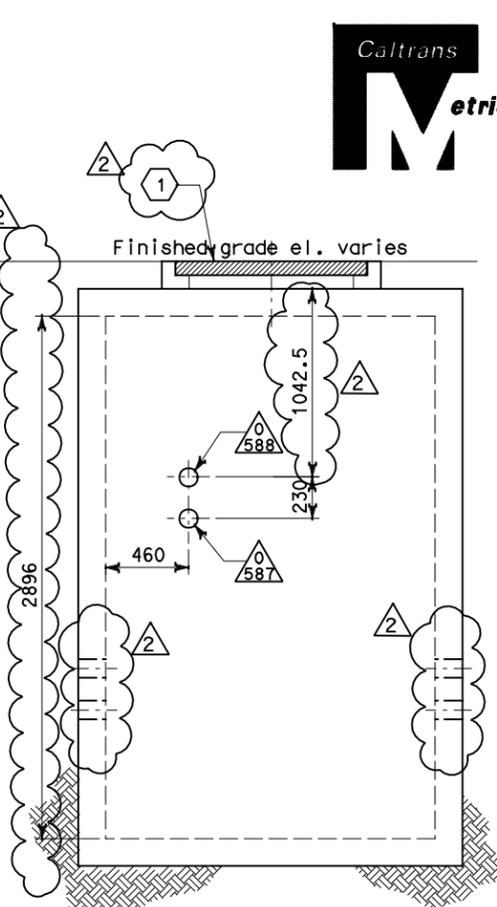
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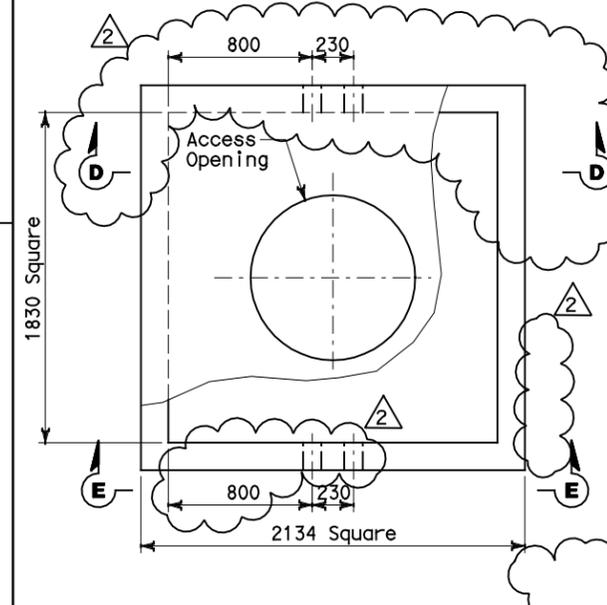
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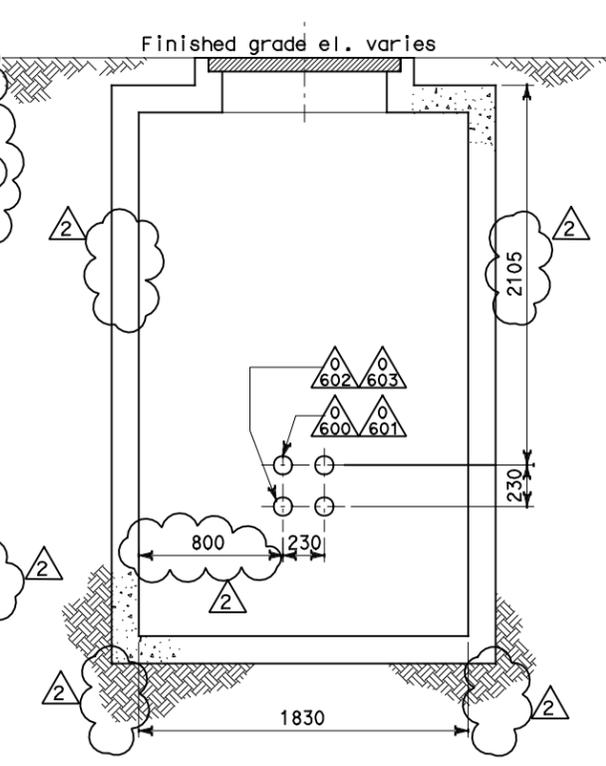
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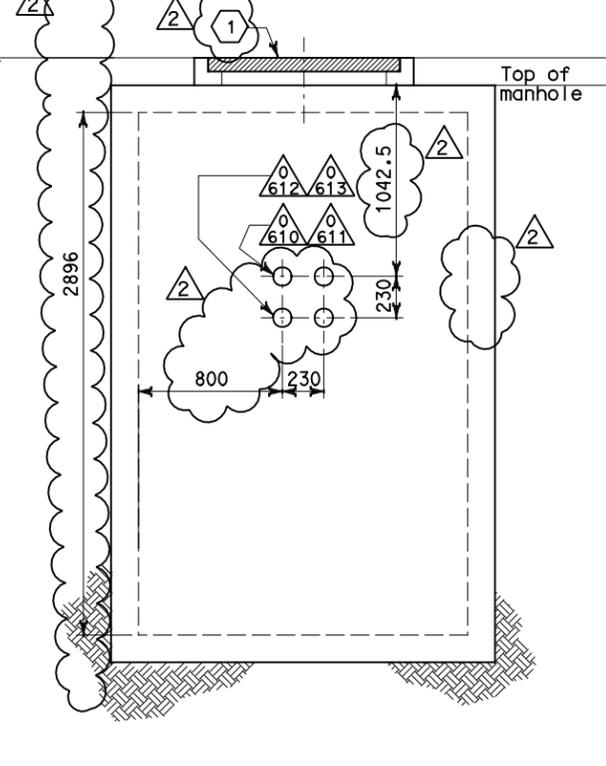
SECTION C-C
 SCALE: 1:20



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



SECTION D-D
 SCALE: 1:20



SECTION E-E
 SCALE: 1:20



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		98R2	1204

REGISTERED ELECTRICAL ENGINEER DATE 12/19/02
 JENS ERLINGSSON No. 8249 Exp. 9/30/06 ELECTRICAL STATE OF CALIFORNIA

12-6-04
 PLANS APPROVAL DATE

PB POWER, Inc.
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 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.
 - For typical manhole and duct bank details, see sheet E-17.
 - For duct bank sections, see sheets E-19 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:

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



FOR REVISION ONLY

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
2	07/05/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205
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

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => 04-0120f1_0098R02.dgn
 USERNAME => ilorico

CU 04251

EA 0120F1

DATE PLOTTED => 05-JUL-2011
 TIME PLOTTED => 14:10
 LAST REVISION 00-00-00



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	98S1	1204
Syn Yee Chin REGISTERED ELECTRICAL ENGINEER DATE 04/01/11					
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-11A.
 - For typical manhole details, see sheet E-17.
 - For duct bank details, see Utility sheets.
 - 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:

- Contractor to ensure the conduit entering the (E) Manhole shall be seal watertight.
- 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.

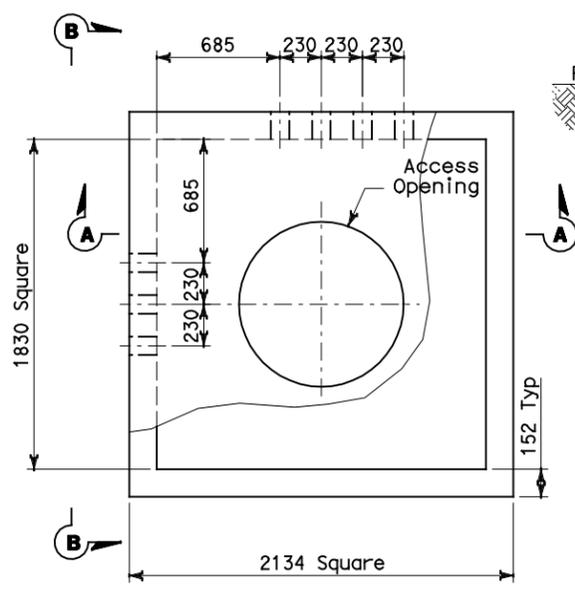
REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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REVISIONS					

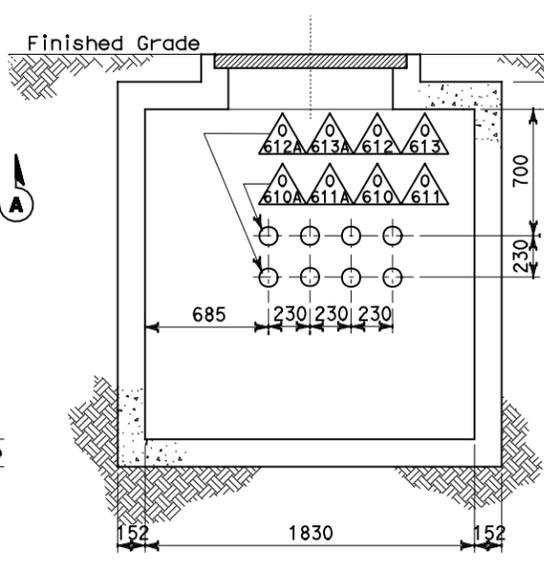
CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

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

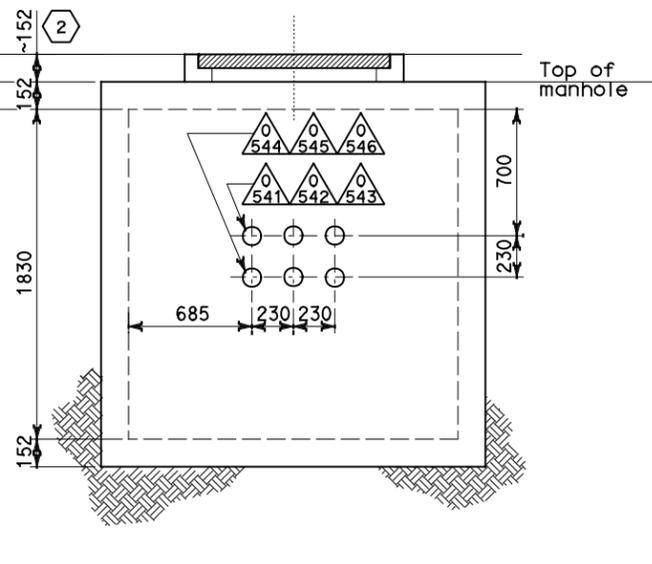
E-15A



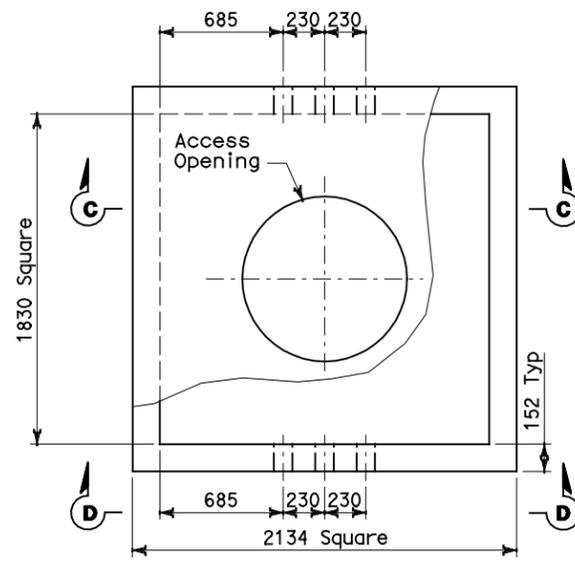
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SCALE: 1:20 (Non-Caltrans Utilities)



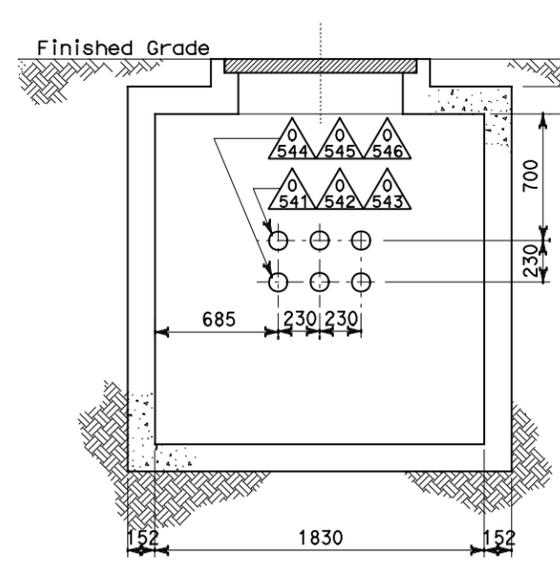
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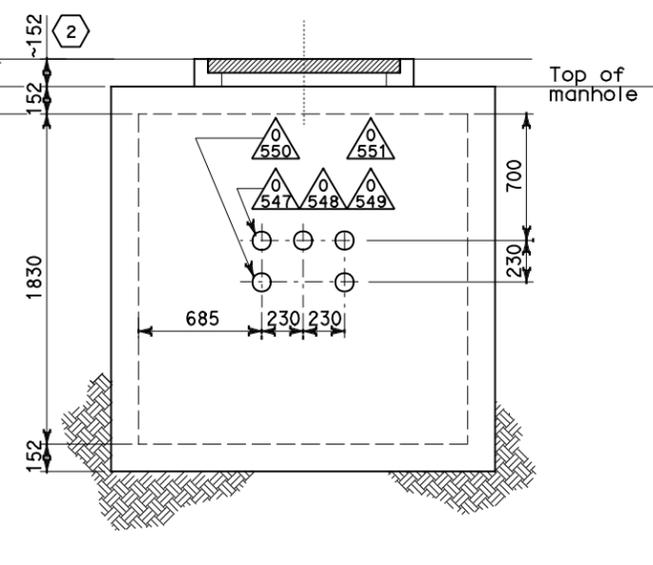
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PLAN-MANHOLE-28B
SCALE: 1:20 (Non-Caltrans Utilities)



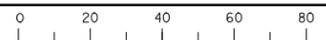
SECTION C-C
SCALE: 1:20



SECTION D-D
SCALE: 1:20

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USERNAME => ilorico

CU 04251

EA 0120F1

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGNED BY	REVISOR
BEHZAD GOLEMOHAMMADI	

CHECKED BY	DATE

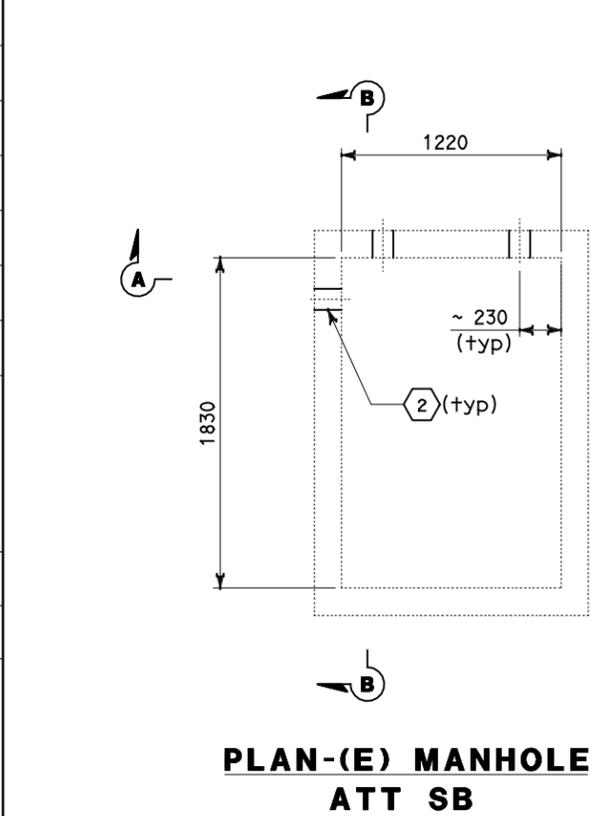
DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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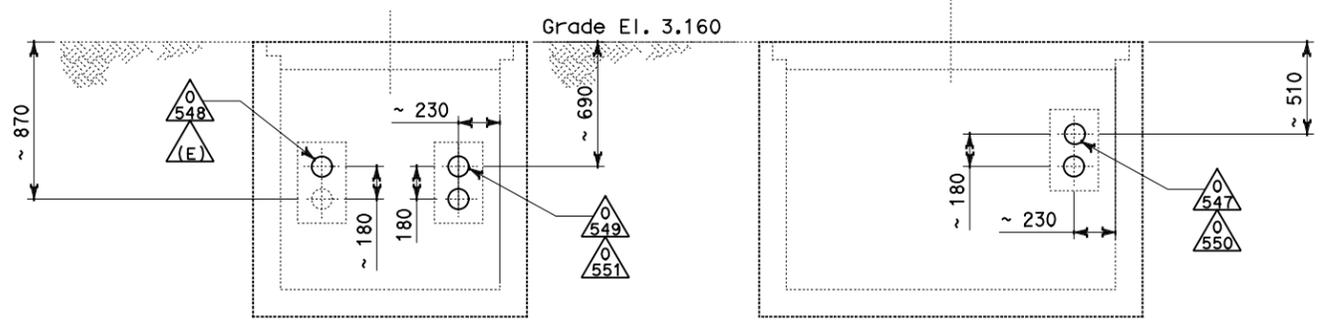


DATE PLOTTED => 05-JUL-2011
TIME PLOTTED => 14:10
LAST REVISION 00-00-00

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



PLAN-(E) MANHOLE
ATT SB ①



SECTION A-A

SECTION B-B



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	98S2	1204

07/05/11
 REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 DAVID H. OTO
 No. 10699
 Exp. 06/30/2011
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES:

- References:
 - For duct banks and manhole plan, see sheet E-11A.
 - For typical manhole details, see sheet E-17.
 - For duct bank details, see Utility sheets.
 - 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:

- ① 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.
- ② Contractor to ensure the conduit entering the (E) Manhole shall be seal watertight.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

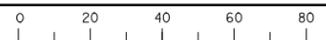
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REVISIONS					

CONTRACT CHANGE ORDER NO. _____
 SHEET _____ OF _____

DETAILS
UNDERGROUND
MANHOLE PLAN AND SECTIONS
 SCALE: NONE

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS



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 USERNAME => ilorico

CU 04251

EA 0120F1

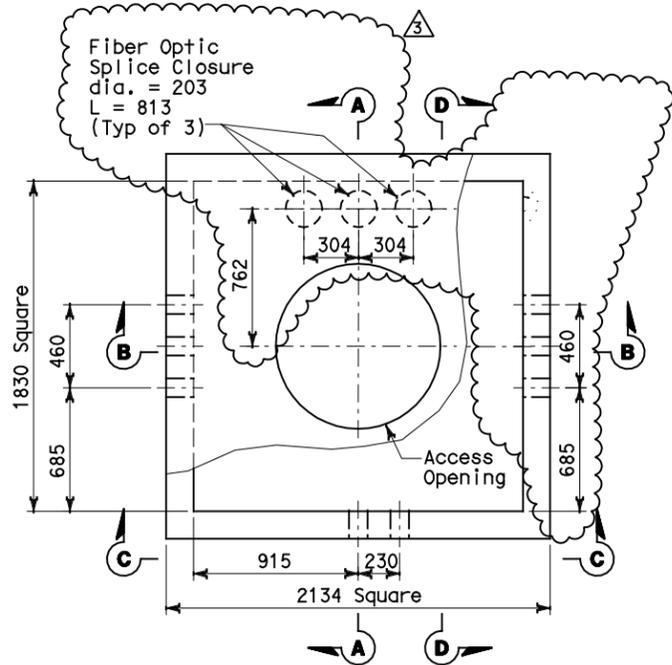
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 TIME PLOTTED => 14:10
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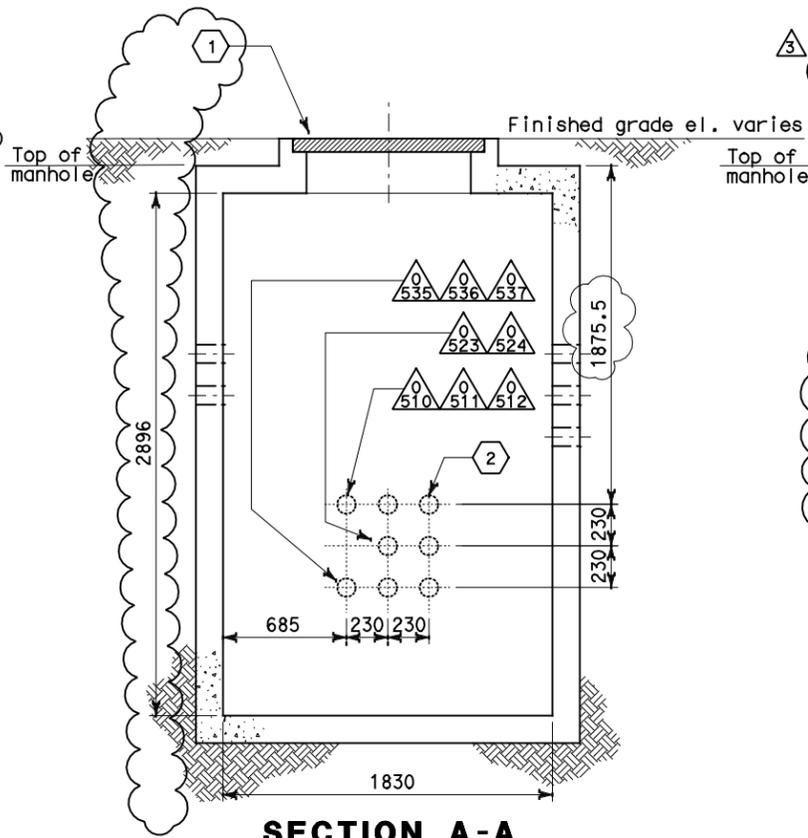
CALCULATED/DESIGNED BY	AB	DATE	II/04
CHECKED BY	--	REVISOR	II/04

REVISOR	DATE
AB	II/04

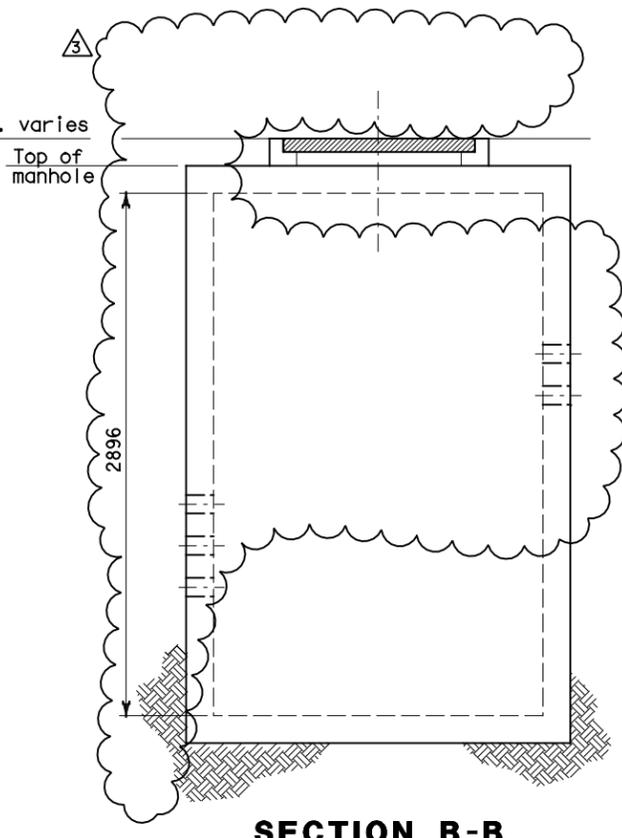
REVISOR	DATE
AB	II/04



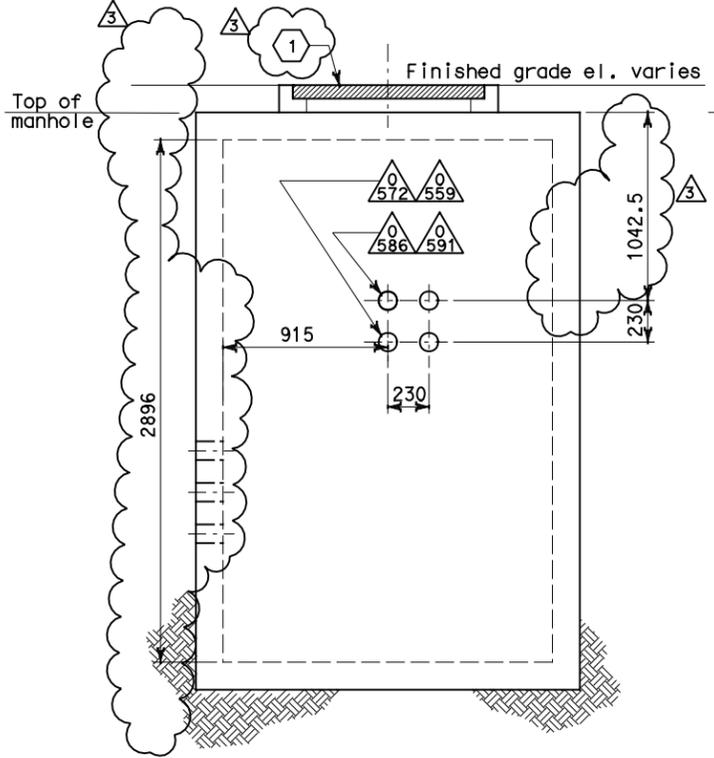
PLAN-MANHOLE-27
SCALE: 1:20 (TOS & COMMUNICATION)



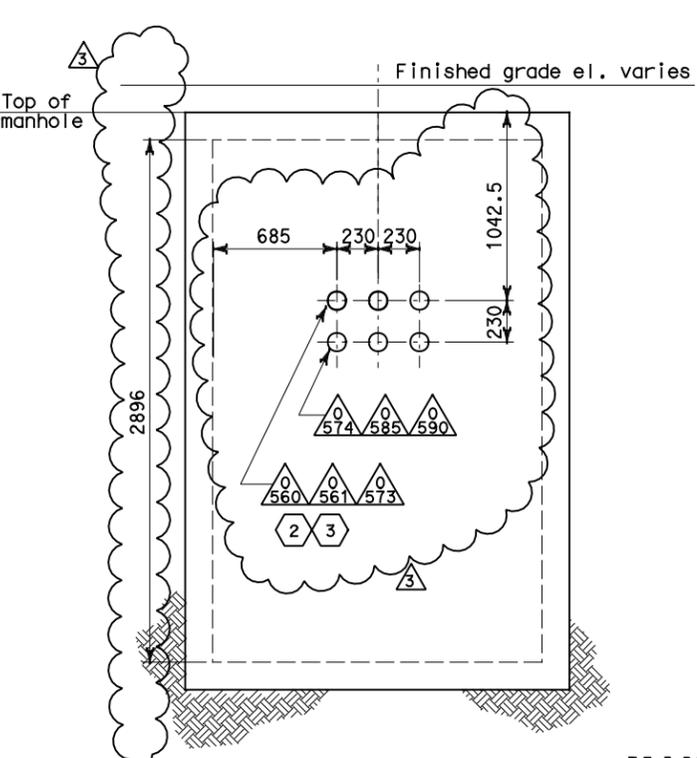
SECTION A-A
SCALE: 1:20



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 TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	99R3	1024	

REGISTERED ELECTRICAL ENGINEER
 JENS ERLINGSSON
 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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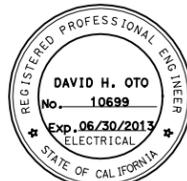
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NOTES:

- 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 sheet E-19.
 - 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.
- 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.



FOR REVISION ONLY



FOR REVISION ONLY

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
3	07/05/11	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

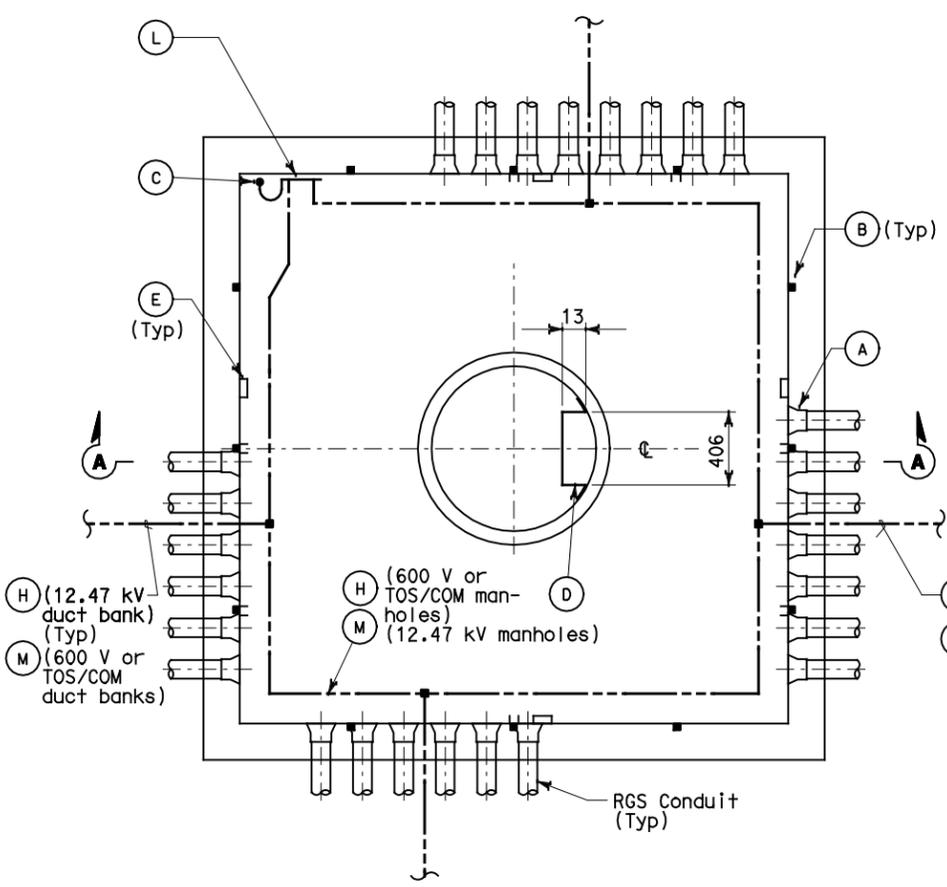
CONTRACT CHANGE ORDER NO. _____
 SHEET _____ OF _____

DETAILS UNDERGROUND MANHOLE PLAN AND SECTIONS
 SCALE AS NOTED

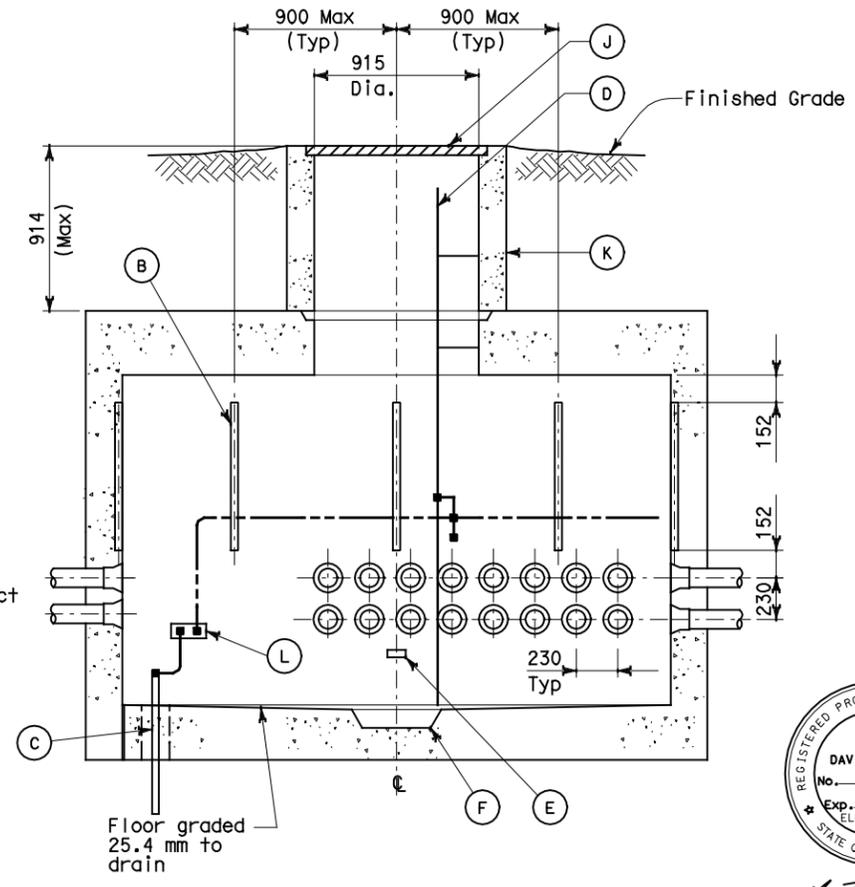


DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9		100 R1	1204

REGISTERED ELECTRICAL ENGINEER DATE 12/19/02
 JENS ERLINGSSON No. 8249 Exp. 9/30/06 ELECTRICAL STATE OF CALIFORNIA
 12-6-04 PLANS APPROVAL DATE
 PB POWER, Inc.
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 303 Second St., Suite 700N
 San Francisco, CA 94107-1317
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PLAN
SCALE 1:20



SECTION A-A
SCALE 1:20

TYPICAL MANHOLE DETAIL

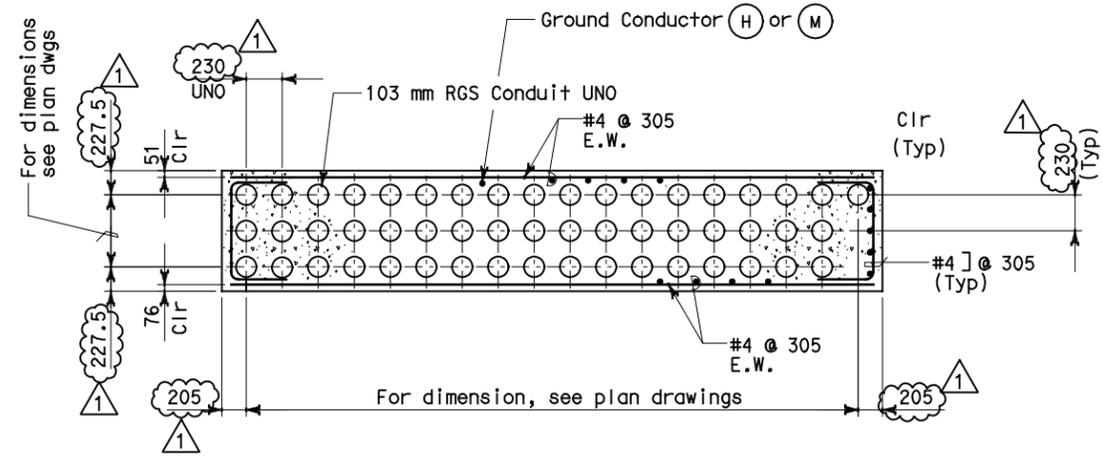


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NOTES:

- Manhole, cast iron ring and cover shall be designed for H-20 traffic loading.
- 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 } Manholes No. 1,3,8,11,14,17,20, High Voltage } 23 and 26.
 - Caltrans } Manholes No. 2,5,7,10,13,16,19, 600 V } 22 and 25.
 - Caltrans } Manholes No. 4,6,9,12,15,18,21, TOS&COMM } 24, 27, 29 and 30.
 - Non-Caltrans } Manhole No. 28. Utility }
- For other related work, not shown on this sheet, see Electrical Special Provisions.
- References:
 - For duct banks and manholes, see sheet E11.
 - For manhole plans and sections, see sheets E-14 through E-16.
 - For duct bank sections, see sheet E-19.
 - For grounding interface, see sheet E-18.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- Covers for manholes 9 and 27 shall be 915 x 915 x 8 steel plate. (To accommodate TOS fiber optic splice cabinets).
- All exposed metal shall be grounded.

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
SCALE 1:20

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE				
07/05/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205
MARK	DATE	DESCRIPTIONS	BY	CH'D CCO#
		REVISIONS		

CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

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DETAILS UNDERGROUND TYPICAL MANHOLE AND DUCT BANK
SCALE AS NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN OVERSIGHT
 BEHZAD GOLEMOHAMMADI
 REVISIONS: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

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 TIME PLOTTED => 14:11
 LAST REVISION 00-00-00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN OVERSIGHT
 BEHZAD GOLEHAMMADI
 REVISIONS
 DATE REVISION BY DATE REVISOR
 CALCULATED/DESIGNED BY CHECKED BY
 DATE



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

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

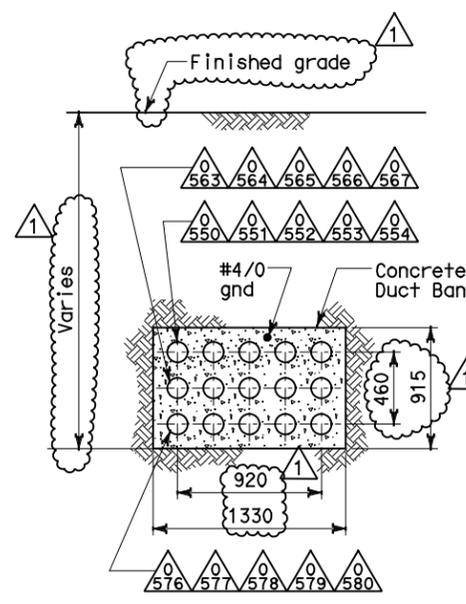
12/19/02
 REGISTERED ELECTRICAL ENGINEER DATE

12-6-04
 PLANS APPROVAL DATE

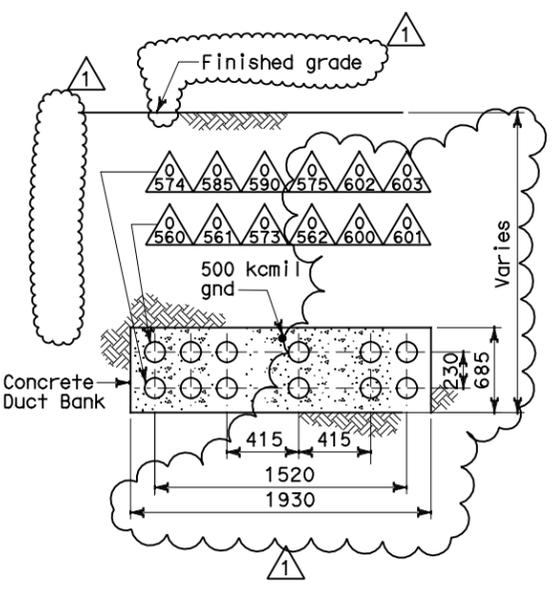
PB POWER, Inc.
 A Parsons Brinckerhoff Company
 303 Second St., Suite 700N
 San Francisco, CA 94107-1317

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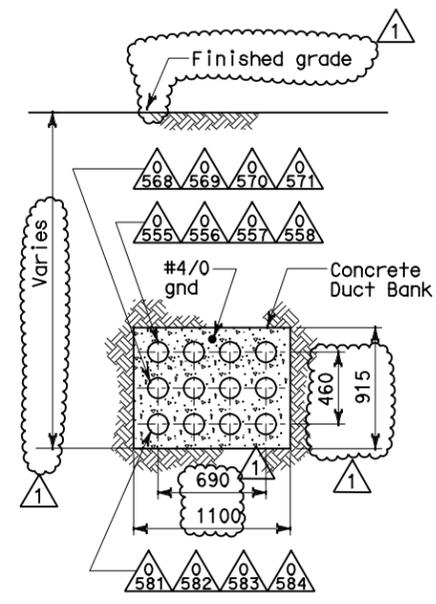
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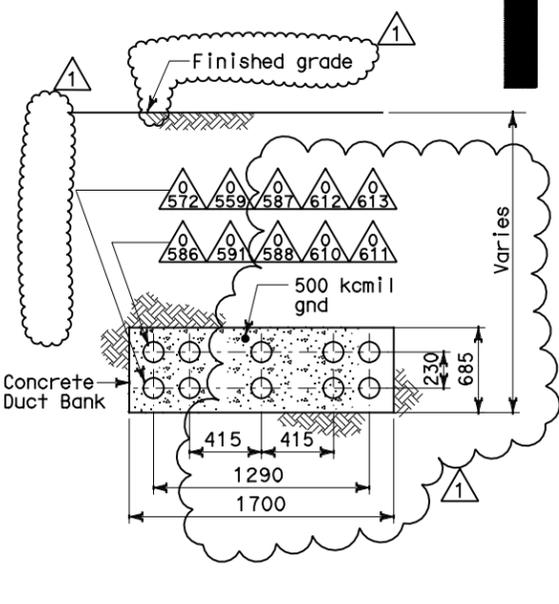
SECTION T-T
SCALE 1:20



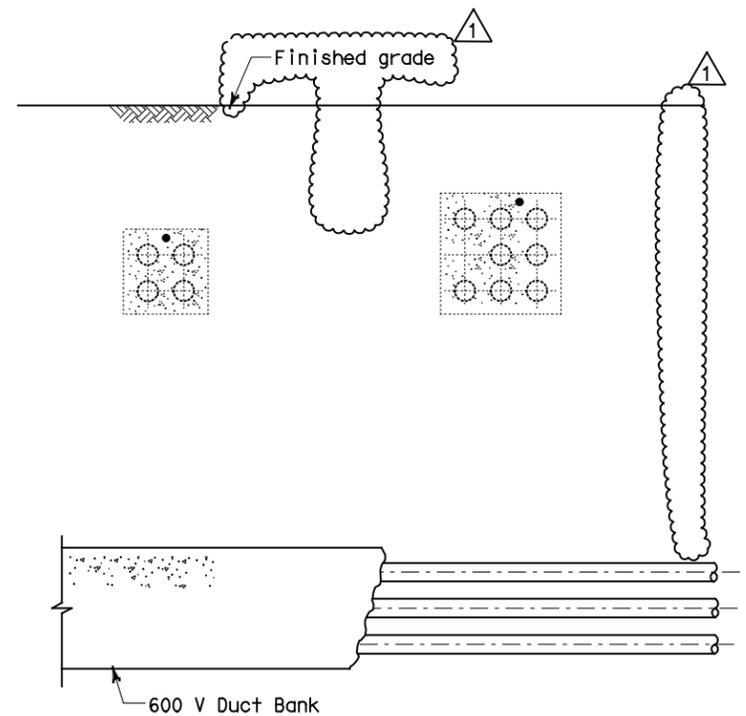
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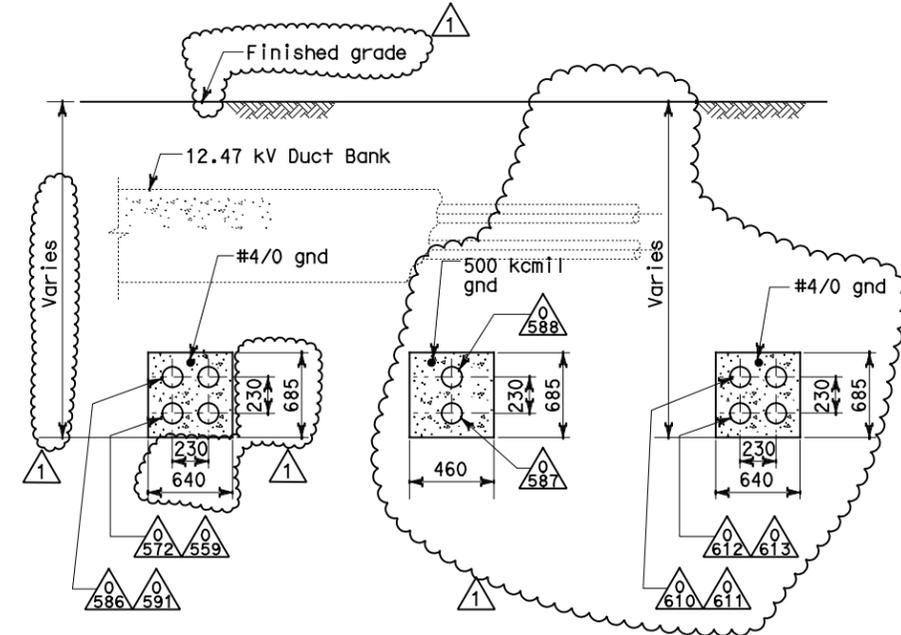
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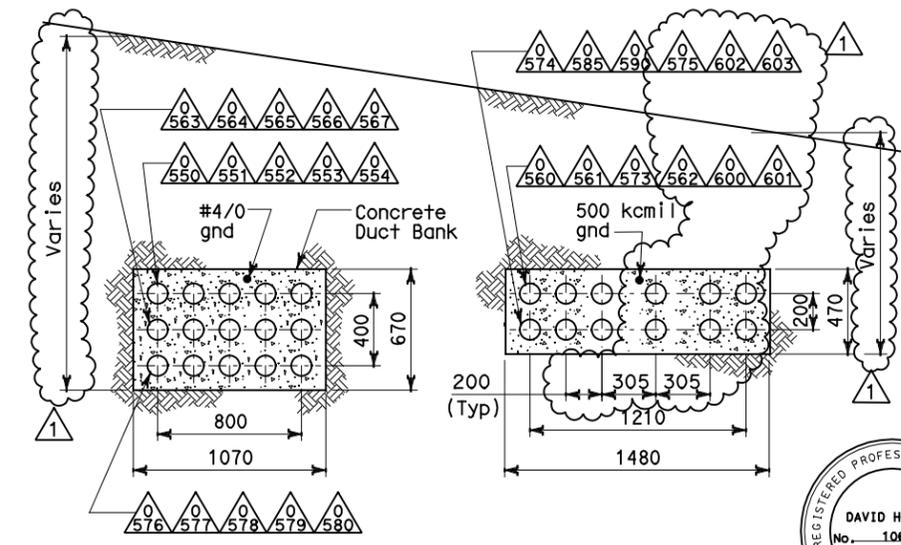
SECTION W-W
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SECTION Y-Y
SCALE 1:20



SECTION Z-Z
SCALE 1:20



SECTION X-X
SCALE 1:20



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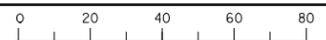
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△	07/05/11	W2 DUCT BANKS REINFORCEMENT	TW	RG	205	
MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#	
REVISIONS						

CONTRACT CHANGE ORDER NO. _____
 SHEET _____ OF _____

DETAILS UNDERGROUND DUCT BANK SECTIONS
SCALE AS NOTED

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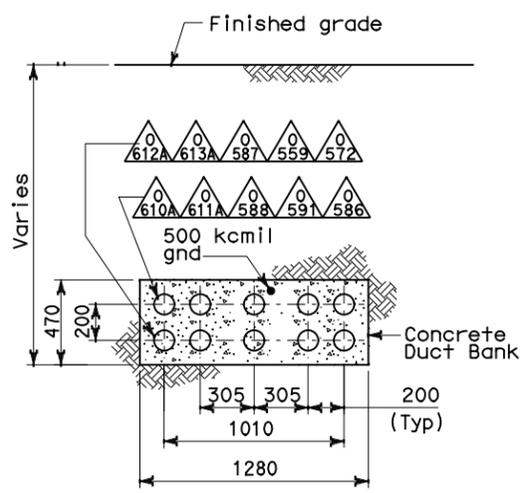
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EA 0120F1

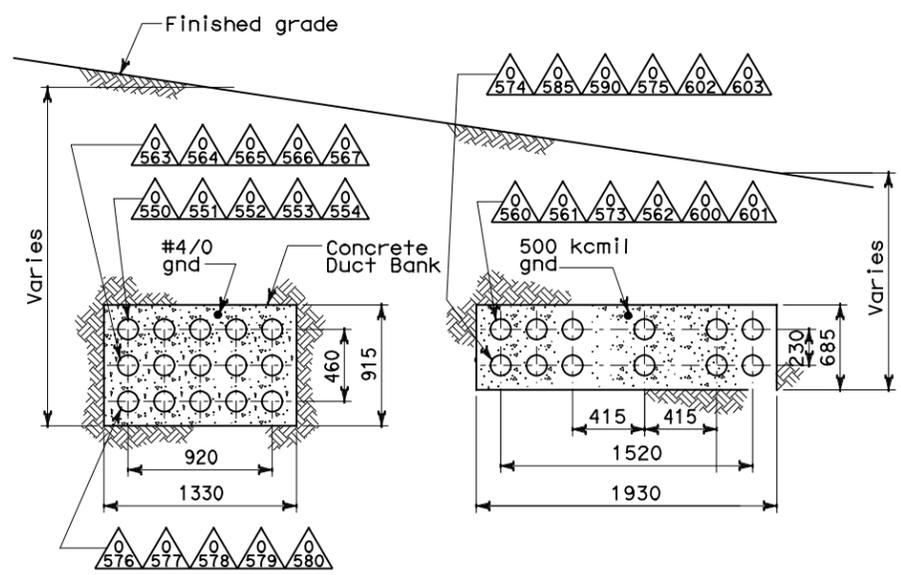
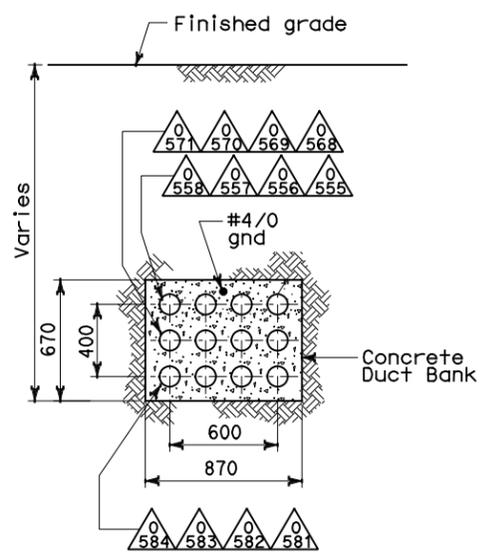
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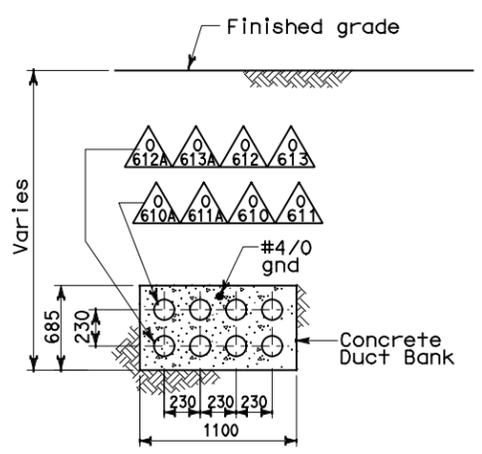
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 REGISTERED ELECTRICAL ENGINEER DATE 07/05/11						
PLANS APPROVAL DATE _____						
PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317						
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SECTION 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 other related work, not shown on this sheet, see Electrical Special Provisions.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
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MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

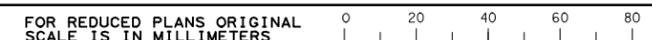
CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

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

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

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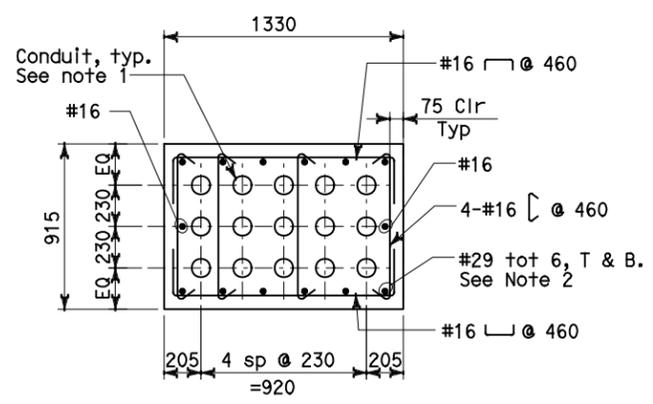


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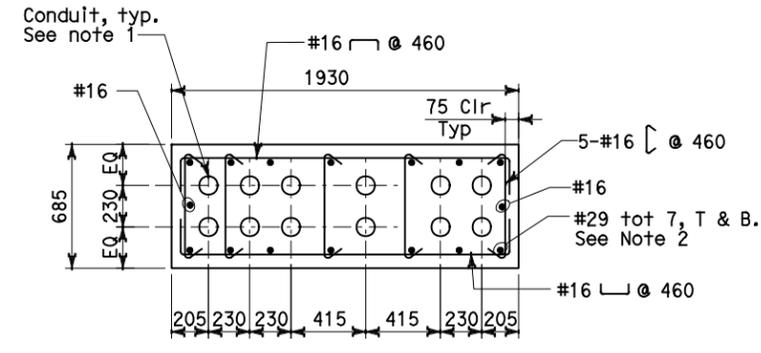
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07/05/11 REGISTERED ELECTRICAL ENGINEER DATE						
PLANS APPROVAL DATE _____						
PB AMERICAS, Inc. A Parsons Brinckerhoff Company 303 Second St., Suite 700N San Francisco, CA 94107-1317						
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DETAIL 1

SCALE: 1:20

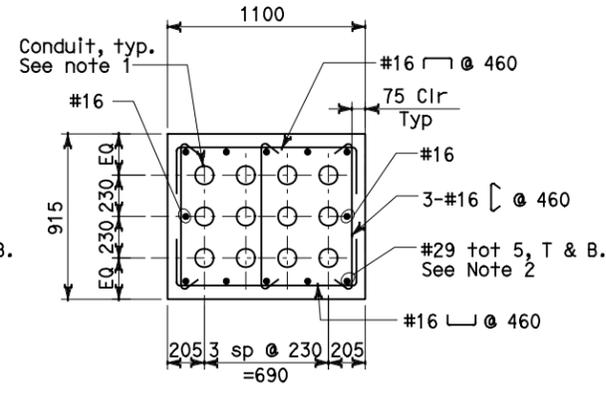
Note: For Detail not noted or shown see Section T-T on sheet E-19



DETAIL 2

SCALE: 1:20

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



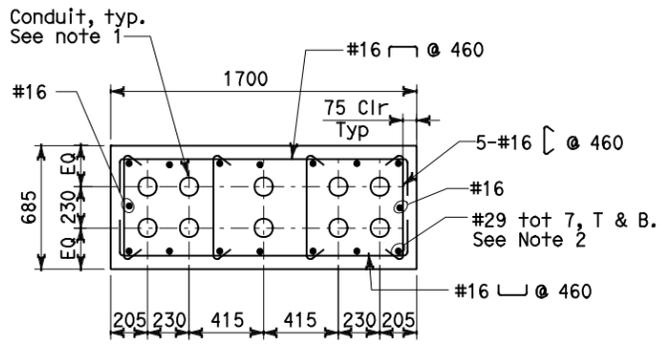
DETAIL 3

SCALE: 1:20

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

NOTES:

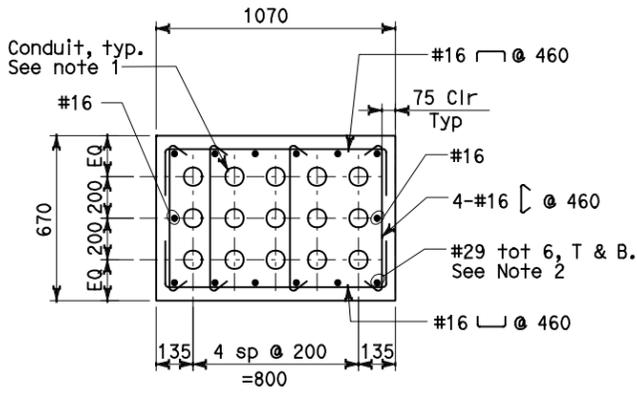
1. For conduit duct bank sections, see sheet E-19, E-19A, E-19B and E-19C.
2. Where duct banks intersect, develop #29 top and bottom reinforcing a minimum distance of 1525 mm into adjacent duct bank.
3. The duct bank concrete compression strength at 28 days: $f'c = 25$ MPa.
4. The duct bank reinforcing bar yield strength: $F_y = 414$ MPa.



DETAIL 4

SCALE: 1:20

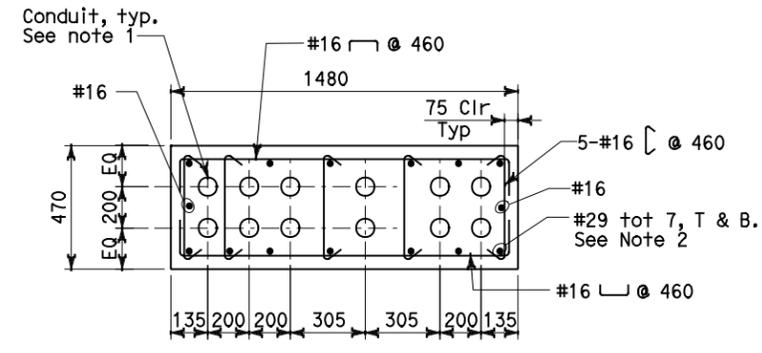
Note: For Detail not noted or shown see Section W-W on sheet E-19



DETAIL 5

SCALE: 1:20

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



DETAIL 6

SCALE: 1:20

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

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE					
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MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
REVISIONS					

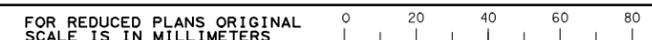
CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

DETAILS UNDERGROUND DUCT BANK SECTIONS
SCALE AS NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 BEHZAD GOLEMOHAMMADI
 DESIGN OVERSIGHT
 REVISIONS: XX/XX/XX, XX/XX/XX
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]

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CU 04251

EA 0120F1

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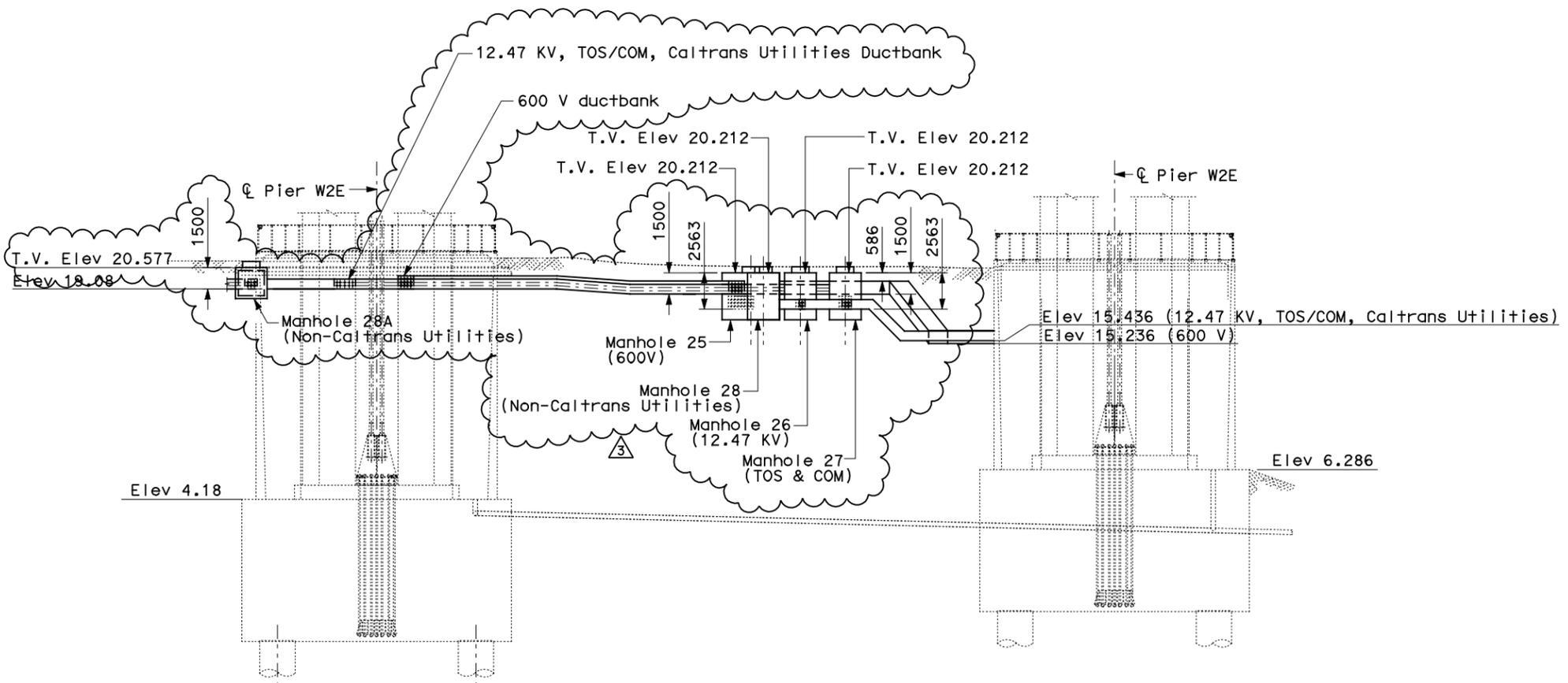
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04	SF	80	13.2/13.9		106 R3	1204

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

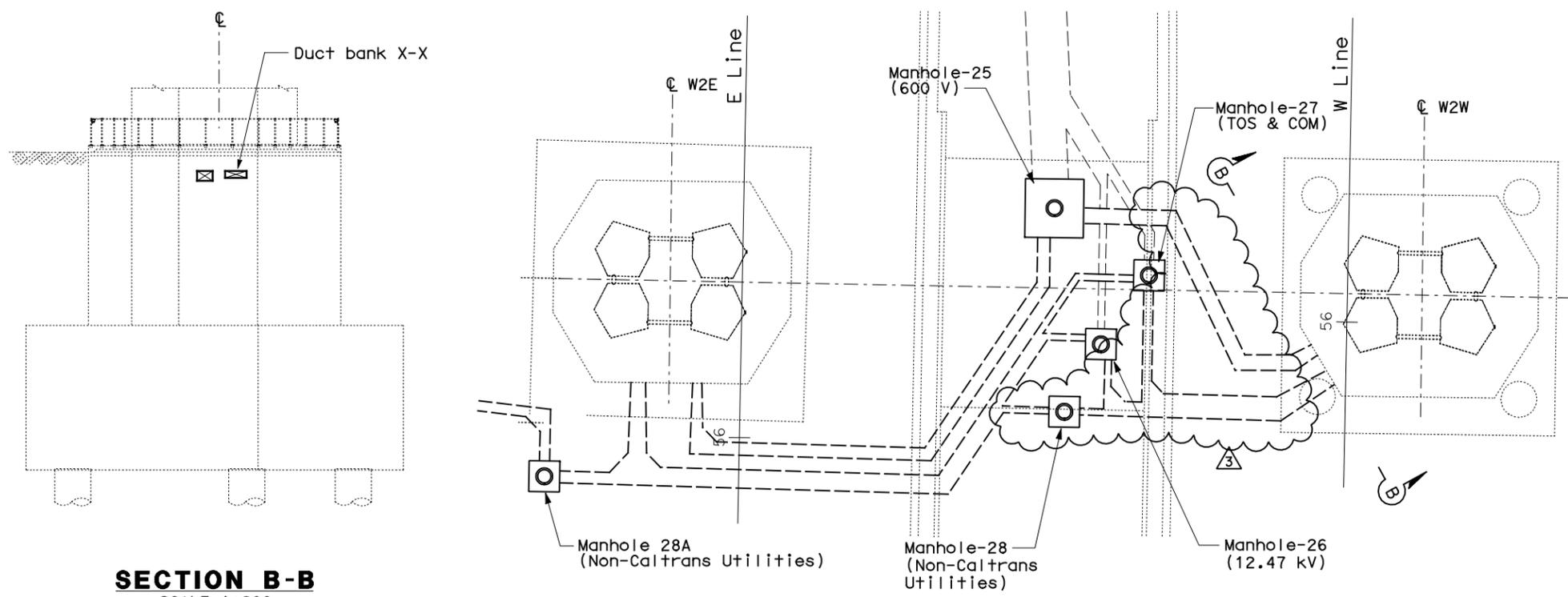
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 PLANS APPROVAL DATE
PB POWER, Inc.
 A Parsons Brinckerhoff Company
 303 Second St., Suite 700N
 San Francisco, CA 94107-1317

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



SECTION B-B
SCALE 1:200

PLAN
SCALE 1:200

SHEET NOTES:

- 1 Contractor to verify finished grade and may make necessary adjustment to the specified top of manhole elevations and ductbanks to suit field condition.

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



David H. Oto
FOR REVISION ONLY
3



S. A. Estoque, Jr.
FOR REVISION ONLY
1



Fadi Walieddine
FOR REVISION ONLY
2

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE			
MARK	DATE	DESCRIPTIONS	BY CH'D CCO#
3	07/05/11	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

CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

DETAILS UNDERGROUND DUCT BANK SECTIONS
SCALE 1:200

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