DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	93R2	1204

REGISTERED ELECTRICAL ENGINEER 12/19/02 DATE

12-6-04
PLANS APPROVAL DATE

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

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

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Caltrans Metric

REGISTERED PROFESSIONAL ENGINEER S. A. ESTOQUE, JR. No. E-10151 Exp. 12/31/2008 ELECTRICAL STATE OF CALIFORNIA

FOR REVISION ONLY

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
2	02/25/08	CABLE TRAY CHANGES	RG	SE	42S1
1	02/19/08	ELECTRICAL MODIFICATIONS	MP EL	RR	42

REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

TRAFFIC OPERATIONS SYSTEMS (TOS)

AVO	Analog Video Output
CCR	Camera Control Receiver
CCU	Camera Control Unit
CIA	Controller Interface Assembly
COMM	Communication
FDU	Fiber Distribution Unit
F/O	Fiber Optic
FODM	Fiber Optic Data Modem
FDC	Fiber Optic Drop Cable
FPC	Fiber Optic Pigtail Cable
FSC	Fiber Splice Closure
FTC	Fiber Optic Trunkline Cable
IF	Input File
MVDS	Microwave Vehicle Detection Sensor
PDA	Power Distribution Assembly
PL	Preformed Loop Detection Station
SCA	Serial Cable Assembly
SMFO	Single Mode Fiber Optic
TB	Terminal Box
TSC	Trunkline Splice Closure
TVCP	CCTV Camera Control Power Cable
TVC	CCTV Camera Control Cable
TVL	CCTV Camera Video Cable
TVP	CCTV Camera Power Cable
VTDD	Video Transmitter Duplex Data

PROJECT NOTES

1. 27C, 2#12 + #12 G.
2. 27C, 2#10 + #10 G.
3. 27C, 4#10 + #10 G.
4. 27C, 3#10 + #10 G.
5. 27C (Type 4), 2#12 + #12 G.
6. 27C (Type 4), 2#10 + #10 G.
7. 41C, 2-6 pairs #18, IS/OA.
8. 78C, 50 Pairs #18, IS/OA.
9. 27C, 3/C #6 + #8G.
10. 21C, 2-1 pair #18 (for Call Box signal) shielded pairs and overall shield.
11. 21C, 3#12 (for Call Box power).
12. 21C, (4) 1 pair #18 (for Call Box signal). Part of (2) 1-2 pairs #18, shielded pairs and overall shield.
13. 78C, 2#2 + #6 G and 2#10 + #10 G (for CMS Power).
14. 78C, Harness #4 and Harness #5 (for CMS Signal).
15. 41C, Cable type TVP and TVCP (for CCTV Power).
16. 41C, Cable type TVC and TVL (for CCTV Control Signal).
18. 41C, Cable type MVDS DLC (for MVDS Signal).
20. 78C, Cable type 10 DLC (for Preformed Loop Signal).
21. 27C (Flexible Conduit) 6#10 + #10 G.
22. 27C (Flexible Conduit) 3#10 + #10 G.
23. 27C, 7#10 + #10 G.
24. 27C, 6#10 + #10 G.

PROJECT NOTES (Continuation)

25. 27C, 7#10 + #10 G.
26. 41C, 3#6 + #8 G.
27. 41C, 3#8 + #10 G.
28. 21C, PVC coated - 2#10 + #10 G.
29. 21C, PVC coated, 3#12 (for Call Box Power).
30. 500 kcmil Bare Copper Wire.
31. 250 kcmil Bare Copper Wire.
32. #4/0 Bare Copper Wire.
33. #2 Bare Copper Wire.
34. 41C, 3#6 + #8 G, 3#8 + #10 G.
35. 41C, 6#8 + #10 G.
36. 21C, PVC coated, 1-2 pairs #18 (For Call Box signal).
37. Metal clad type cable with PVC overall jacket 3/C #10 (for Bike Path lighting).
38. Metal clad type cable with PVC overall jacket 1-2 pairs #18, shielded pairs and overall shield (for Call Box signal).
39. Metal clad type cable with PVC overall jacket 3/C #12 (for Call Box signal).
40. 78C, Cable Type A Fiber Optic.
41. 21C, (Flexible Conduit) 2#10 + 10 G.
42. 27C, 2#12 + #12G, 2#10 + #10G.
43. 21C, (Flexible conduit) 2#12 + 12 G.
44. 41C, 2#12 + #12 G, 6#10 + #10 G.
45. 27C, 2#12 + #12 G, 4#10 + #10 G.
46. 27C, Liquidtight flexible metal conduit, 4#10 + #10G.
47. 41C, Liquidtight flexible metal conduit, (MVDS DLC).
48. 27C, 3#6 + #8G. Liquidtight flexible metal conduit.

GENERAL NOTES

1. Conduit routing is diagrammatic. Pull box locations shall be located as shown on plan drawings. The Contractor shall provide additional pull boxes as required. Exact locations of equipment and devices may be adjusted depending on field conditions or by the Engineer.
2. Minimum size of conduits shall be 21 mm. Exposed conduits shall be PVC coated rigid galvanized steel, and conduits located inside girder shall be rigid galvanized steel.
3. Conduit fittings for 78 mm conduits and larger shall have a 610 mm minimum bending radius.
4. All conduits, including spares, shall be provided with pull wires prior to cable installations.
5. All equipment and devices shall be provided with nameplate tags per drawings.
6. All feeders and branch circuits shall be provided with ground wire.
7. 15 kV splice boxes shall be installed as shown and permanently marked "DANGER-HIGH VOLTAGE-KEEP OUT". The letters shall be block type and at least 50 mm in height.
8. The Contractor shall label all conductors and cables per wiring diagrams.
9. Padlocks shall be installed on all cabinets located on the platforms to prevent unauthorized access.
10. Call boxes will be State-furnished. (The Contractor shall install and terminate conductors per wiring diagram.
11. Ladder type cable trays shall be installed for each 15 kV and 600 V systems.
12. Solid bottom cable trays shall be installed for each low level signals, CALTRANS communications, fiber optic systems, and for Non-Caltrans utilities.
13. For Strong Motion Detection System general notes, see sheet E-361.
14. All E sheets are accurate for electrical work only.
15. All dimensions are in millimeters unless otherwise shown.
16. All unused conductors inside pull boxes shall be taped and coiled.
17. "Similar" when shown on the plans means this detail is applicable to different structure and conduit sizes.
18. Electrical fixtures shall not be field welded to the box girders or crossbeams. All welding to the box girders and crossbeams shall be shown on the box girder and crossbeam shop drawings for review and approval by the Engineer.
19. All welding of electrical fixtures to the tower shall be shown on the tower shop drawings for review and approval by the Engineer.
20. All connections to steel elements of the self-anchored suspension bridge superstructure of electrical equipment and fixtures, including conduits, pull boxes, lighting fixtures, messenger cables and others, shall be shop welded or bolted. All connection details shall appear on the working drawings for review and approval by the Engineer.
21. Prior to ordering any cable tray support structures, the Contractor shall:
    - Refer to Structural sheets to determine the locations of cable tray support structures.
    - Determine, based upon field conditions, when and where to use cable tray vertical or horizontal bends, horizontal tees or reducers.
    - Refer to AS-sheets to determine the type of cable tray support to use based on field conditions.
    - Cable tray support structures shown on the AS-sheets are generic and may have to be adapted to suit field conditions.
    - All modifications to the cable tray support structures as shown on the AS-sheets shall be approved by the Resident Engineer.
22. All installation of electrical conduit, equipment or pull boxes shall be either shop welded or bolted.
23. All cable trays shall be securely anchored to support. Appropriate type of anchors (hold down brackets, hold down clamps or guides) shall be used to suit the cable tray type, location and supports. For similar attachment details, see TYPE I & II on E-122A and E-205A. (2)

ELECTRICAL NOTES AND ABBREVIATIONS

E-8

DESIGN OVERSIGHT	BEHZAD GOLEMOHAMMADI	
CALCULATED/DESIGNED BY	AB	DATE 08/02
CHECKED BY	JW	09/02
REVISED BY	IAH	3/04
DATE REVISED		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 4/18/2008
TIME PLOTTED => 5:07:53 PM

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

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