

Review Comments
Electrical Recommended Change Order #42
First fifteen plan sheets
{85R1,91R1,93R1,117R1,118R1,119R1,120R1,121R1,122R1,132R1, 133R1,141R1,142R1,154R1,172R1}
Michael Travis

General Comments:

- ❖ **Instead of a single blanket change description with RFI reference the description should only contain the title of the CCO. The present policy is to place the CCO title within the description block of the CCO revision block. The CCO # should be placed in the CCO #/Page Block but leave the page spaces blank - do not place X's in these spaces.**
- ❖ **The contract plan sheets have an engineer stamp by Maxwell Takaki but the CCO Block has the "BY-block" with initials "EL" and "MP" and the "CK-block" with initials "RR". Is the PE Stamp for the complete sheet or for only the changes in the CCO? A note should be placed next to the stamp indicating "for changes only". The present policy is if the engineer of record is not providing the CCO changes then a PE Stamp is required but has a note by the stamp indicating "For Changes Only".**
- ❖ **Do not fill up a page leaving no space for additional CCO work of future stamps to be place on the sheet. Organize the sheet to provide adequate space for future insertions. New details that do not have previous reference from other sheets should be placed on supplemental sheets.**

Plan Sheet CCO Comments:

Sheet 85R1:

NOTE: By placing added details on the sheet reduces area to add any additional information on this sheet in the future if additional changes are required. If new details are added one should consider producing a supplemental sheet for new details.

- ❖ **Added details were placed in this CCO but no sheets in this CCO reference these new details. Need to add the appropriate sheets or remove these details from the CCO.**

Sheet 93R1:

- ❖ **After working with the pole pedestal prototype that was develop to evaluate the routing of the conduit feeds to the light poles Caltrans is requesting to reconsider the response to RFI # 261 with the following exceptions: (1) Provide holes in the pedestal top plate to accommodate 3- 41mm conduit penetrations; (2) Provide three sleeves in the top deck plate in the pole pedestal enclosure; (3) Use flexible metallic conduit to feed from the OBG to the pole mounting area.**

Sheet 117R1:

- ❖ There is a missing clouded area which has deleted junction box, conduit. The other area is clouded. Need to be consistent.
- ❖ After working with the pole pedestal prototype that was develop to evaluate the routing of the conduit feeds to the light poles Caltrans is requesting to reconsider the response to RFI # 261 with the following exceptions: (1) Provide holes in the pedestal top plate to accommodate 3- 41mm conduit penetrations; (2) Provide three sleeves in the top deck plate in the pole pedestal enclosure; (3) Use flexible metallic conduit to feed from the OBG to the pole mounting area.

Sheet 119R1:

- ❖ The branch feed to the barrier rail receptacle has been changed in the CCO but was not clouded and indicated as a change. This changes the conductor feeds from #12's to #10. The conductors feeding this receptacle from the source (Panel board) is #8 conductors.

Sheet 120R1:

- ❖ The branch feed to the barrier rail receptacle has been changed in the CCO. The change is the conductor size from #12 to #10. The conductors feeding this receptacle from the source (Panel board) are #12 and have not been changed in the CCO. The change was not corrected to source. Was the intent to splice #10 conductors to the main feed?

Sheet 132R1:

- ❖ There is an added note #2 on this sheet regarding the barrier rail receptacle but there is no plan view that would indicate this added note. Is this note necessary on this sheet?
- ❖ The plan view has been combined to indicate conduit stub-up plan for both the roadway lighting and the overhead sign. I do not believe that these have similar pole bases and similar base plate openings (200mm for lighting and 150 for sign pole).
- ❖ After working with the pole pedestal prototype that was develop to evaluate the routing of the conduit feeds to the light poles, Caltrans is requesting to reconsider the response to RFI # 261 with the following exceptions: (1) Provide holes in the pedestal top plate to accommodate 3- 41mm conduit penetrations; (2) Provide three sleeves in the top deck plate in the pole pedestal enclosure; (3) Use flexible metallic conduit to feed from the OBG to the pole mounting area.

Sheet 133R1:

- ❖ After working with the pole pedestal prototype that was develop to evaluate the routing of the conduit feeds to the light poles, Caltrans is requesting to reconsider the response to RFI # 261 with the following exceptions: (1) Provide holes in the pedestal top plate to accommodate 3- 41mm conduit penetrations; (2) Provide three sleeves in the top deck plate in the pole pedestal enclosure; (3) Use flexible metallic conduit to feed from the OBG to the pole mounting area.

Sheet 142R1:

- ❖ This sheet has a reference to electrical sheet number E-209. This sheet does not exist and should be changed to sheet E-68.

Sheet 154R1:

- ❖ The cloud should be around all that has been changed. Also the described destination of the feeds should be at the appropriate end of the run.

Sheet 172R1:

- ❖ The section A-A shows Girder center line for "W" westbound but the section cut layout and column numbers are for eastbound structure. Also there is no north arrow on the plan sheet. Need to correct this on the contract plan.

The comments in this document do not constitute a complete review. Since there is no completed Yellow sheet documents set by PB I have to go through all the RFI's that pertain and determine that they have been captured in this CCO document. I am still trying to go through and perform a more comprehensive review but do to time I am sending these review plan sheet. I will be sending the next installment ASAP.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	13.2/13.9	85R1	1204

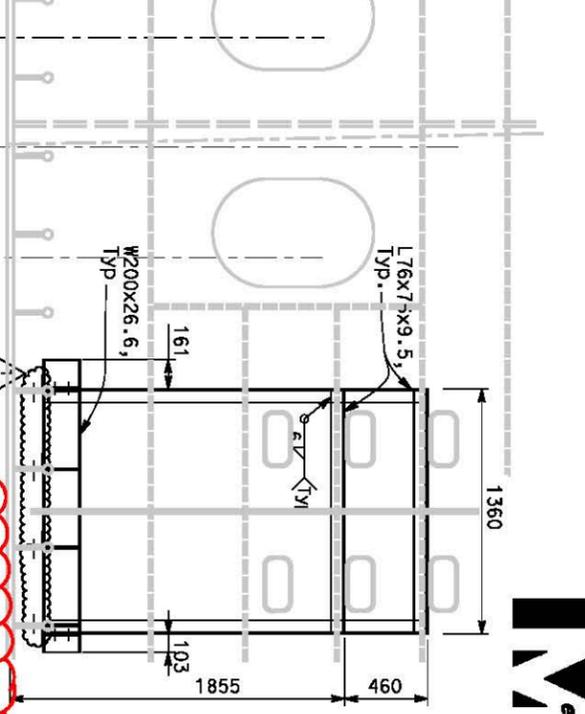
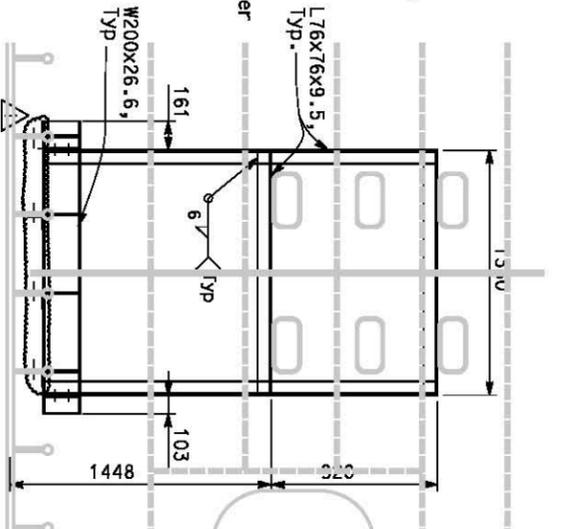
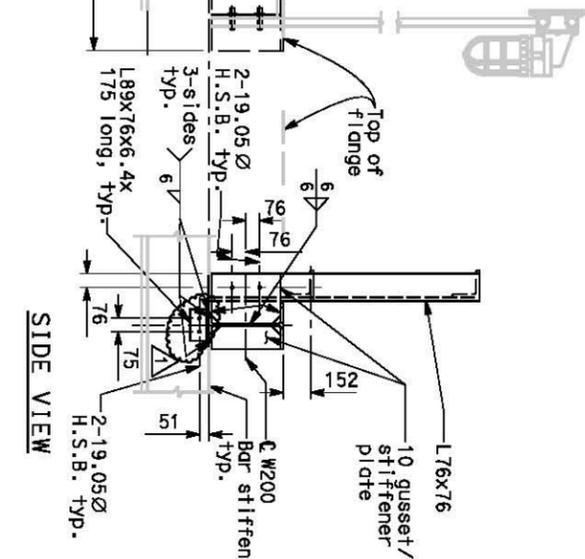
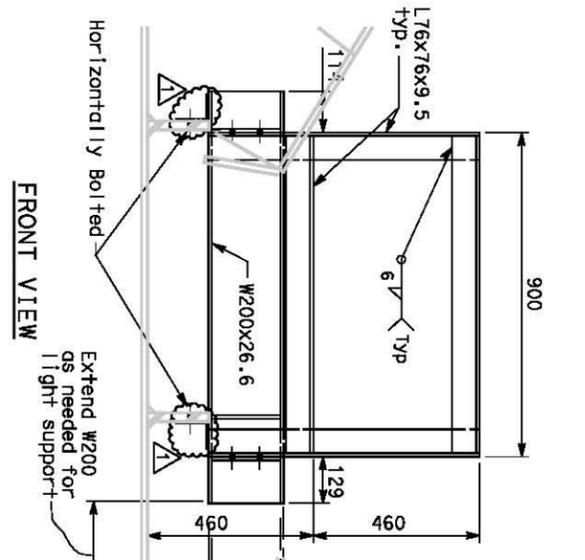


REGISTERED CIVIL ENGINEER 4/22/04
 12-6-04
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Parsons Brinckerhoff Quade & Douglas, Inc.
 303 Second Street, Suite 700N
 San Francisco, CA 94107
 To get to the web site go to <http://www.dcd.ca.gov>



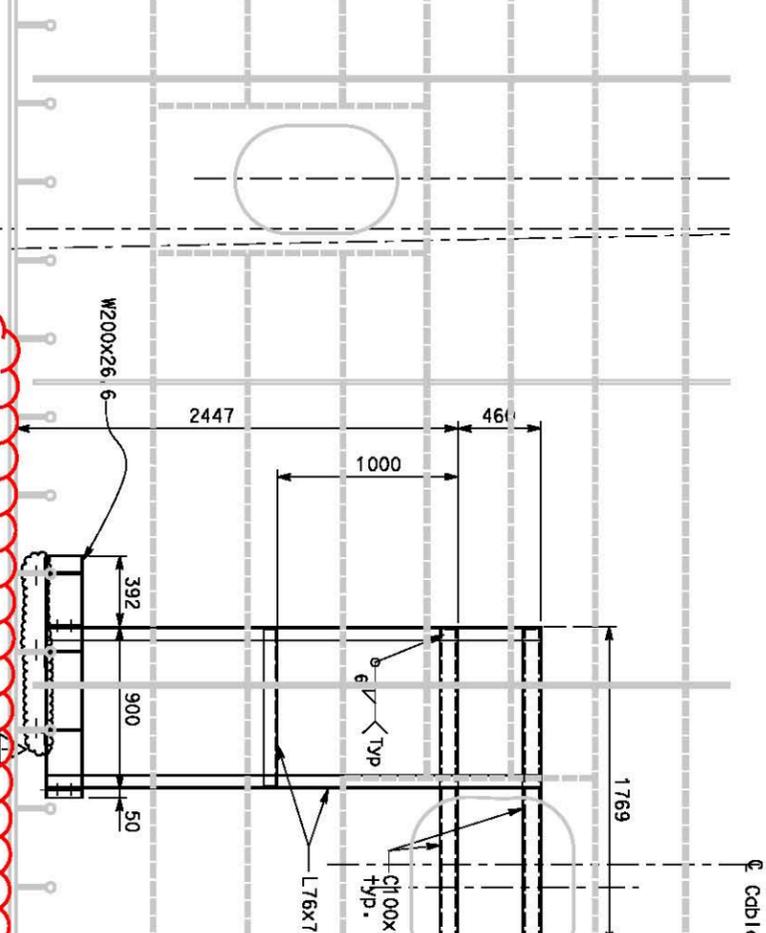
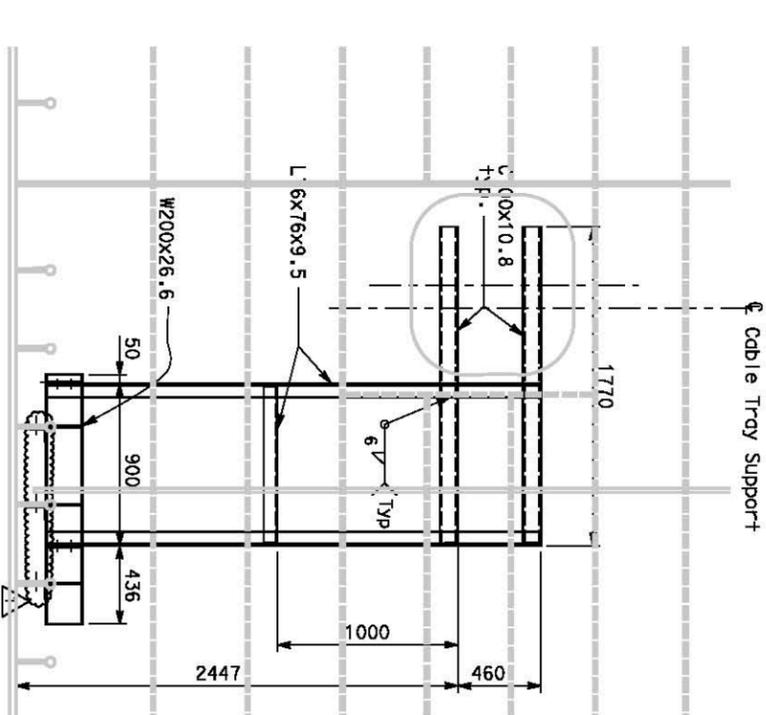
NOTES:

1. The contractor shall verify all controlling field dimensions before ordering of fabricating any material.
2. For structural notes, see sheet AS-1.
3. For cable tray support locations, see electrical plans.
4. For details not shown, see sheet AS-11.



TYPE VII
SCALE: 1:10

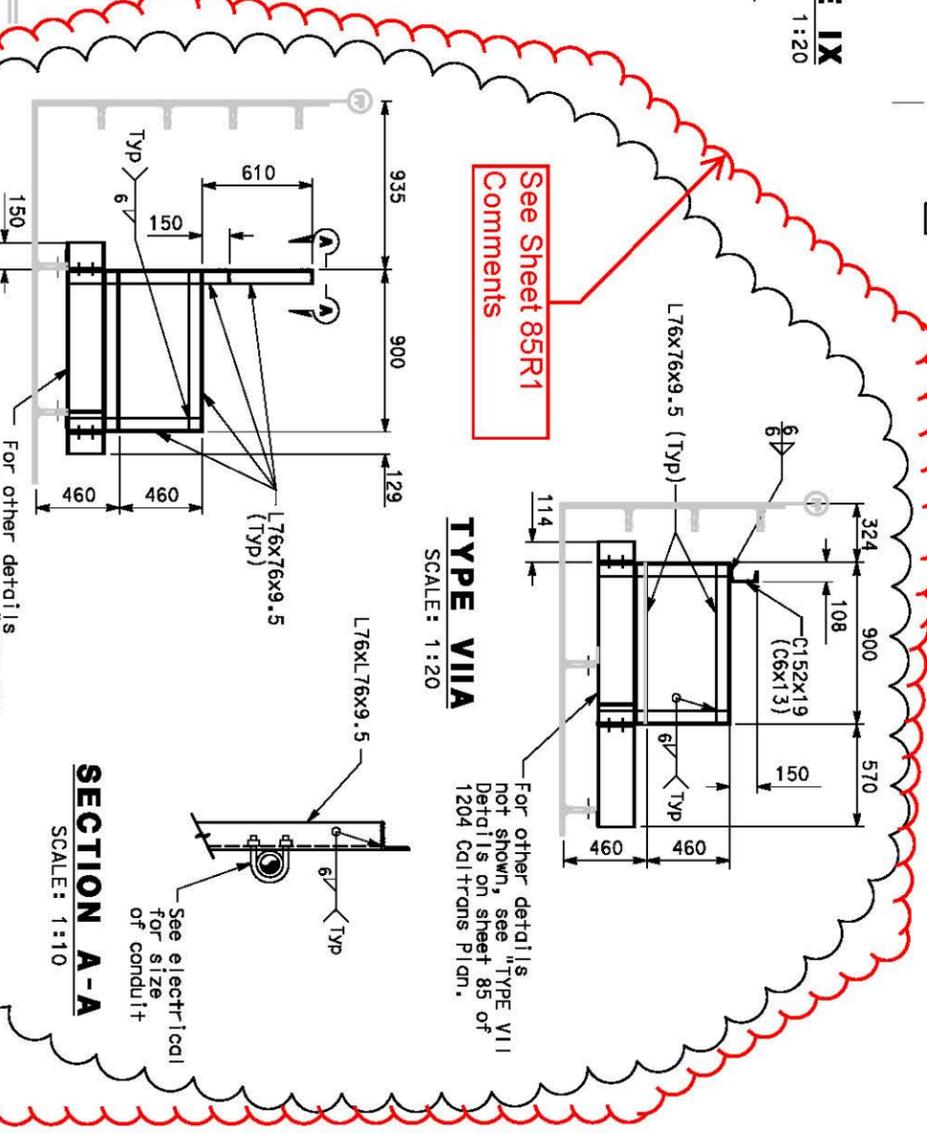
TYPE IX
SCALE: 1:20



TYPE VIII
SCALE: 1:20

TYPE VIIB
SCALE: 1:20

For other details not shown, see "TYPE VII details on sheet 85 of 1204 Caltrans Pln.



TYPE VIIA
SCALE: 1:20

See Sheet 85R1 Comments

See General Comments

CONTRACT CHANGE ORDER NO. 42
SHEET XX OF XX

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO
A	8-06-07	Revision to misc. electric works. Clarity Interface between cable tray and conduit.	MP	EL	SO
		REVISIONS			42

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

SAS SUPERSTRUCTURE

CABLE TRAY SUPPORT DETAIL

AS-15

DESIGN OVERSIGHT
 4-14-04
 DESIGN DETAIL SHEET (METHOD REV. 3/1/98)

DESIGN	BY	CHECKED	QUANTITIES	BY
DETAILS	I. Horton	M. S. Ouyang		I. Horton
	D. Chin	M. S. Ouyang		
	I. Horton	P. McKinnon		

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER
 Gene Lushetovitch

BRIDGE NO.	34-0006
KILOMETER POST	13.2/13.9
DESIGNER'S BEARING	
REVISION DATE (FOLLOWING STATE QM-1)	
SHEET	OF

SYMBOLS

(See ES-1A and ES-1B for Additional Standard Symbols)

LAYOUT PLAN

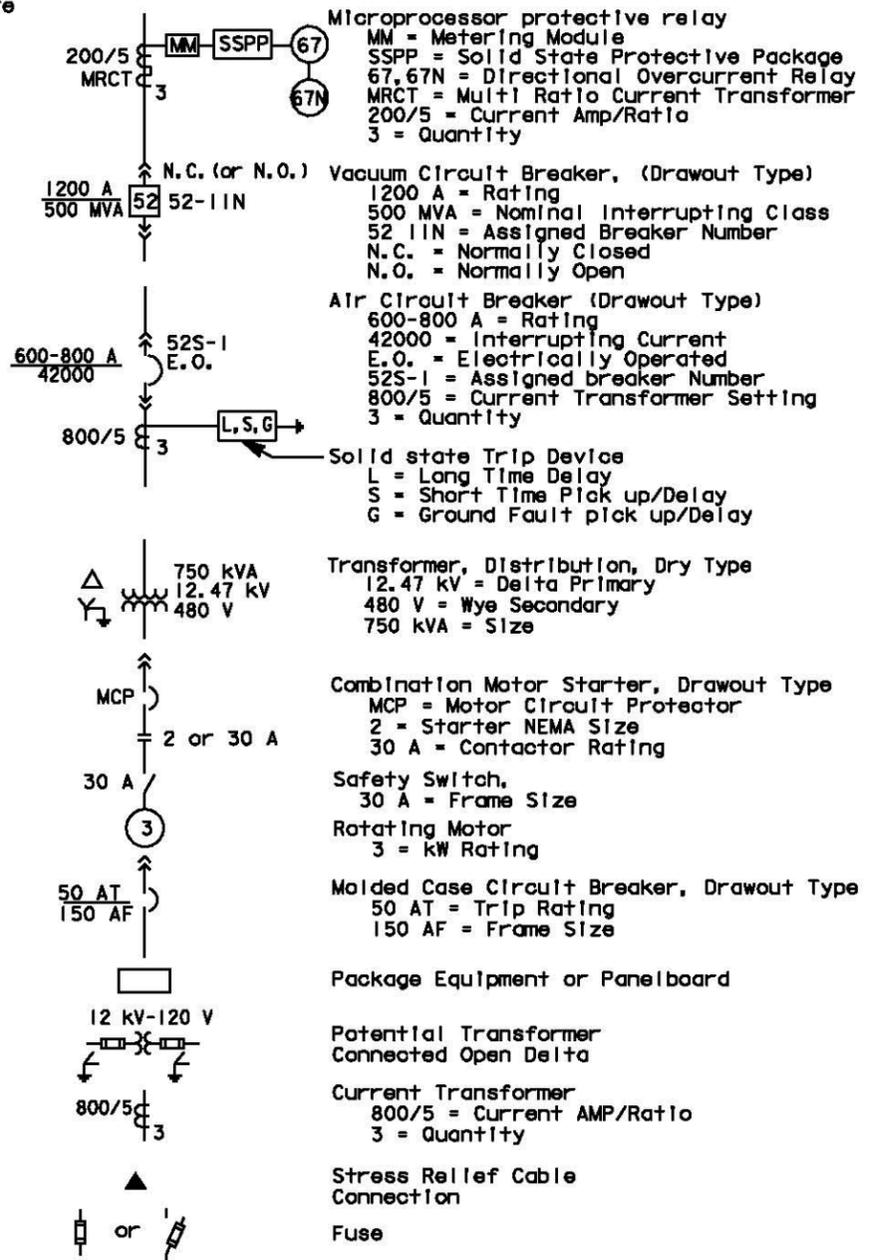
- Barrier Pull Box, for type and size, see Pull Box Schedule
- PB-2A Pull Box
PB-2A for type and size, see Pull Box Schedule
- ▬ Conduit Coupling
- (A) Equipment or Material Designation
A=Sequential description
- (I) Sheet Notes, applicable only to the Drawing
I=Sequential number
- (I) Project Notes, Applicable for all Drawings
I=sequential number
- (J) Junction Box, Conduit Fitting
- Electrical Equipment or Indicated on Plan Drawings
- Pole Mounted Lighting Fixture- See Lighting Pole Schedule for Type and Quantity
- Fluorescent Lighting Fixture
- Compact Fluorescent Lighting Fixture, Ceiling Mounted or main cable and suspender base metal halide lighting fixture
- Compact Fluorescent Lighting Fixture Wall Mounted
- Soffit Lighting Fixture or tower marker light
- Navigation Channel Marker Light - Green Color
- Navigation Pier Marker Light - Red Color
- (A) Aviation Lighting
- (F) Fog Detector
- (F) Fog Horn
- Pole Flood Light
- Single Receptacle, 20 A, 125 V, Straight blade, with deep single gang weatherproof and threaded cap
- GFCI Duplex Receptacle, 125 V, 20 A
MH=450 mm above floor unless noted
GFCI=Ground Fault Circuit Interrupter
WP=Weatherproof
- \$_a Single Pole Switch, 120/277 V, 20 A
a - Indicates Fixtures controlled
WP - Weatherproof Cover
MH - 1400 mm unless noted
- \$_{3a} Three-way switch, 120/277 V, 20 A
a - Indicates Fixtures controlled
WP - Indicates Weatherproof Cover
MH - 1400 mm unless noted
- \$_{4a} Four-way switch, 120/277 V, 20 A
a - Indicates Fixtures controlled
WP - Indicates Weatherproof Cover
MH - 1400 mm unless noted
- _{30 A} Disconnect Switch
30 A-Frame size
- ▬ Conduit turned up
- ▬ Conduit turned down
- ▬ Conduit or Cable run, exposed
- ▬ Conduit run concealed in wall, concrete barrier, slab or routed underground duct bank
- ▬ Combination Expansion - Deflection fittings
- ~ Flexible Conduit
- CT- Cable Tray
- ▬ Cable Tray
- ▬ Cables or Conduit down to Equipment (see plan for conduit number)

- Call Box, State furnished
- ▬ Ground Bare Copper Wire, Stranded
- ▬ Cable To Cable Exothermic Type Ground Connections
- ▬ Cable Ground Connection to Equipment, Compression Type
- ▬ Cable with Pigtail Ground Connections (see plan for length)

TRAFFIC OPERATIONS SYSTEMS (TOS)

- ▬ CCTV Camera (Mounted at Lighting Pole)
- ▬ Changeable Message Sign
- Preformed Loops
- ▬ Microwave Vehicle Detection Sensor (Mounted at Lighting Pole)
- ▬ Ramp Meter Signal

SINGLE LINE DIAGRAM



- Microprocessor protective relay
MM = Metering Module
SSPP = Solid State Protective Package
67, 67N = Directional Overcurrent Relay
MRCT = Multi Ratio Current Transformer
200/5 = Current Amp/Ratio
3 = Quantity
- Vacuum Circuit Breaker, (Drawout Type)
1200 A = Rating
500 MVA = Nominal Interrupting Class
52 11N = Assigned Breaker Number
N.C. = Normally Closed
N.O. = Normally Open
- Air Circuit Breaker (Drawout Type)
600-800 A = Rating
42000 = Interrupting Current
E.O. = Electrically Operated
52S-1 = Assigned breaker Number
800/5 = Current Transformer Setting
3 = Quantity
- Solid state Trip Device
L = Long Time Delay
S = Short Time Pick up/Delay
G = Ground Fault pick up/Delay
- Transformer, Distribution, Dry Type
12.47 kV = Delta Primary
480 V = Wye Secondary
750 kVA = Size
- Combination Motor Starter, Drawout Type
MCP = Motor Circuit Protector
2 = Starter NEMA Size
30 A = Contactor Rating
- Safety Switch,
30 A = Frame Size
- Rotating Motor
3 = kW Rating
- Molded Case Circuit Breaker, Drawout Type
50 AT = Trip Rating
150 AF = Frame Size
- Package Equipment or Panelboard
- Potential Transformer
Connected Open Delta
- Current Transformer
800/5 = Current AMP/Ratio
3 = Quantity
- Stress Relief Cable Connection
- Fuse

See General Comments



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	91R1	1204	

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

CONTRACT CHANGE ORDER NO. 42
SHEET x OF xx

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

ELEMENTARY/CONNECTION DIAGRAMS

- ▬ Signal Cable with Shield
- ▬ Contact, Normally open
- ▬ Contact, Normally Closed
- (M) or ▬ Relay, Mechanical
M = Motor
C = Contactor
42 = Running Circuit Breaker
X or Y = Auxiliary
R = Industrial
TD = Time Delay
PEC = Photo Electric Control
- OL Motor Starter Overload Relay Thermal Bimetallic Element (OL-Overload)
- ON/OFF Switch
- DC Batteries
- AC/DC Inverter (Battery Charger/Rectifier)
- End Resistor and Capacitor
- Photoelectric Sensor
- Communication Cable Noise Suppressor
- Terminal Block
- ▬ Duplex Receptacle
- ▬ Cabinet Fluorescent Light

DEVICE NUMBER DEFINITIONS

- 27B 12.47 kV Bus Undervoltage Relay
- 27D DC Undervoltage Relay
- 27F Feeder Undervoltage Relay
- 27UV 480 V Bus Undervoltage Relay
- 42 Running Circuit Breaker
- 43/R Manual Transfer / Remote
- 43/L Manual Transfer / Local
- 49 Thermal Relay
- 50 Instantaneous Overcurrent Relay
- 51 AC Time Overcurrent Relay
- 51/5IN Phase and Ground Fault Time Overcurrent Relay
- 52 AC Circuit Breaker
- 67 AC Directional Overcurrent Relay
- 67N AC Directional Ground Overcurrent Relay
- 86 Lock-Out Relay
- 88 Auxiliary Motor

ELECTRICAL SYMBOLS

NO SCALE

REVISOR: [blank] DATE: [blank] BY: [blank]
DESIGNED BY: [blank] CHECKED BY: [blank]
DESIGN OVERSIGHT: BEHZAD GOLEHAMMADI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DATE PLOTTED => 29-AUG-2007
TIME PLOTTED => 16:31

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
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 (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.

See 93R1-3 Comment



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL	SHEET NO	TOTAL SHEETS
04	SF	80	13.2/13.9	93R1	1204

REGISTERED ELECTRICAL ENGINEER DATE 12/19/07
 JENS ERLINSSON
 REG. NO. 9249
 STATE OF CALIFORNIA



See General Comments

MARK	DATE	DESCRIPTION	BY	CK	CCO
Δ	8-06-07	Revision to misc. electric work, add conduit and cable trays, revise conduit size per RFI-565. RFI-261 supervised by RFI-565.	EL	RR	42

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

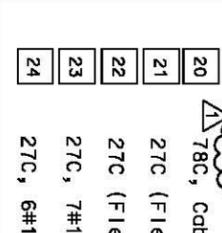
GENERAL NOTES

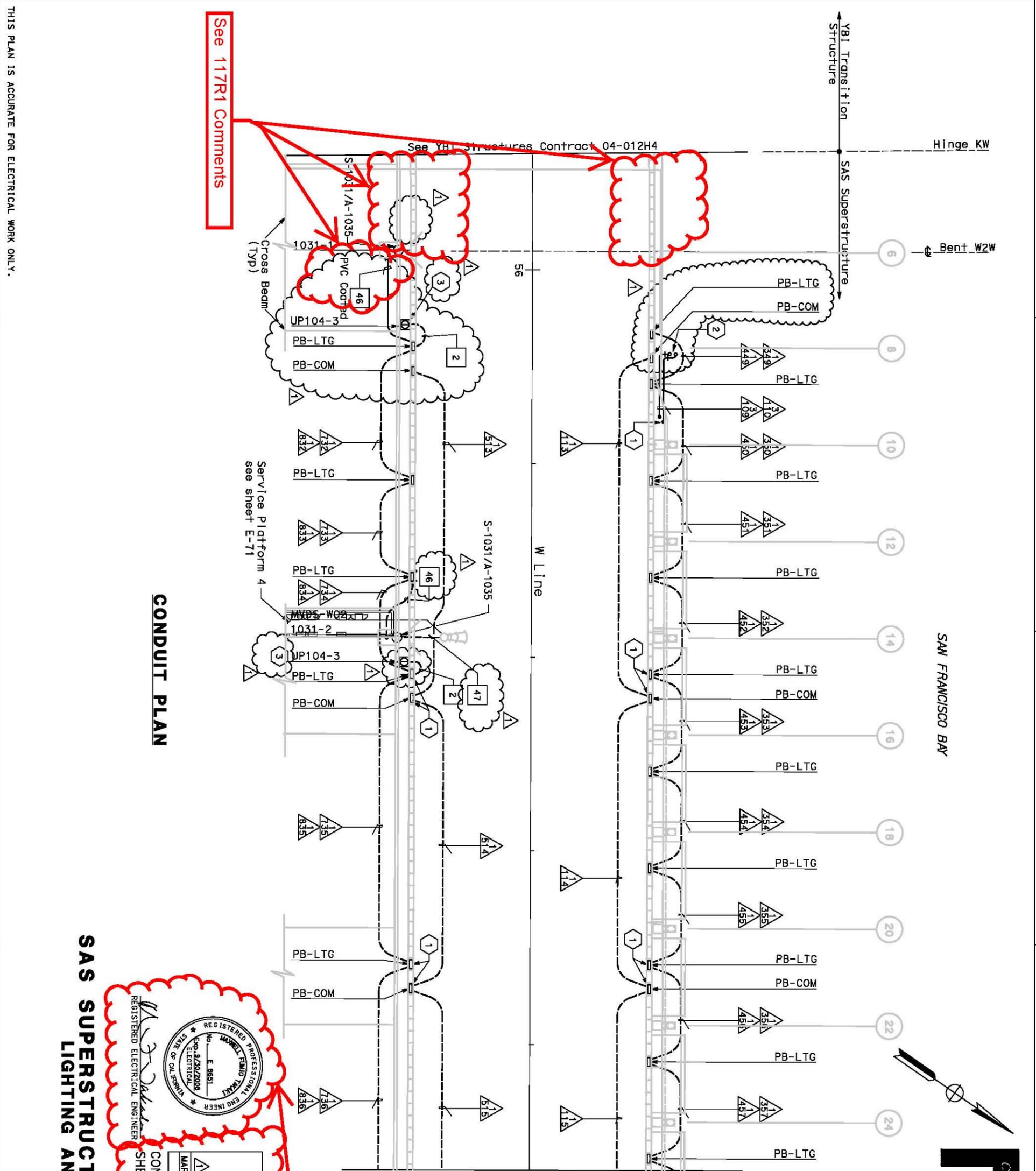
- Conduit routing is diagrammatic. Pull box locations shall be located as shown on plan drawings. The Contractor shall provide additional pull boxes as required. Exact locations of equipment and devices may be adjusted depending on field conditions or by the Engineer.
- Minimum size of conduits shall be 21 mm. Exposed conduits shall be PVC coated rigid galvanized steel, and conduits located inside girder shall be rigid galvanized steel.
- Conduit fittings for 78 mm conduits and larger shall have a 610 mm minimum bending radius.
- All conduits, including spares, shall be provided with pull wires prior to cable installations.
- All equipment and devices shall be provided with nameplate tags per drawings.
- All feeders and branch circuits shall be provided with ground wire.
- 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.
- The Contractor shall label all conductors and cables per wiring diagrams.
- Padlocks shall be installed on all cabinets located on the platforms to prevent unauthorized access.
- Call boxes will be State-furnished. (The Contractor shall install and terminate conductors per wiring diagram.)
- Ladder type cable trays shall be installed for each 15 KV and 600 V systems.
- Solid bottom cable trays shall be installed for each low level signals, CALTRANS communications, fiber optic systems, and for Non-Caltrans Utilities.
- For Strong Motion Detection System general notes, see sheet E-361.
- All E sheets are accurate for electrical work only.
- All dimensions are in millimeters unless otherwise shown.
- All unused conductors inside pull boxes shall be taped and coiled.
- "Similar" when shown on the plans means this detail is applicable to different structure and conduit sizes.
- Electrical fixtures shall not be field welded to the box girders or crossbeams. All welding to the box girder and crossbeam shop drawings for review and approval by the Engineer.
- All welding of electrical fixtures to the tower shall be shown on the tower shop drawings for review and approval by the Engineer.
- 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.
- 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.
- All installation of electrical conduit, equipment or pull boxes shall be either shop welded or bolted.

ELECTRICAL NOTES AND ABBREVIATIONS E-8

PROJECT NOTES

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





CONDUIT PLAN

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => \13103\ms\pse\vsas\struc\cc0\vsas\cc042\04-0120F1_0117r01.dgn
 USERNAME => rvsas

EA 0120F1

CU 04251

SAN FRANCISCO BAY



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILE	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	117R1	1204	

REGISTERED ELECTRICAL ENGINEER DATE 12/19/02
 JENS ERLINGSSON
 No. 8249
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER

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

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Caltrans now has a web site to get to the web site, go to <http://www.dtd.ca.gov>

SHEET NOTES:

- Conduit from barrier pullbox or other equipment down into girder, see sheet E-96.
- For conduit to suspend lighting, see sheet E-226. Typ for all PB-LTG located on the north side of the roadway.
- Roadway Barrier Receptacle, see Detail 1, sheet E-68.

NOTES:

- References:
 - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and MWDs, see sheets E-66, E-67 and E-68.
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheets E-344 through E-357.
 - For types of pullboxes, splice boxes and enclosures, see sheet E-83.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- For Roadway Level Lighting Pole Schedules, see sheet E-82.

See General Comments

REGISTERED PROFESSIONAL ENGINEER
 MAXWELL FRANK
 No. 8881
 Exp. 9/30/2008
 STATE OF CALIFORNIA
 REGISTERED ELECTRICAL ENGINEER

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO
Δ	8-6-07	Revision to misc. electric work. Relocate and delete pull boxes per RFI-561. Change conduit sizes inside light pole and types from MWDs per RFI-565. RFI-261 superseded by RFI-565. Change roadway barrier receptacle type per RFI-242.	MP	RR	42

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-46

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

REGISTERED ELECTRICAL ENGINEER
 MAXWELL E. TANKI
 No. E 8681
 Exp. 9/30/2008
 STATE OF CALIFORNIA
 LICENSED PROFESSIONAL ENGINEER

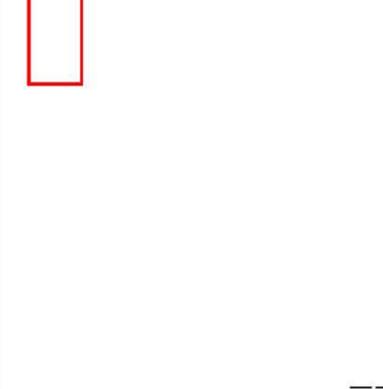
CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX REVISIONS

MARK	DATE	REVISION TO MISC. ELECTRICAL WORK - Change Roadway Barrier Receptacle	MP	EL	RR	42
Δ	06-07	Change Roadway Barrier Receptacle				

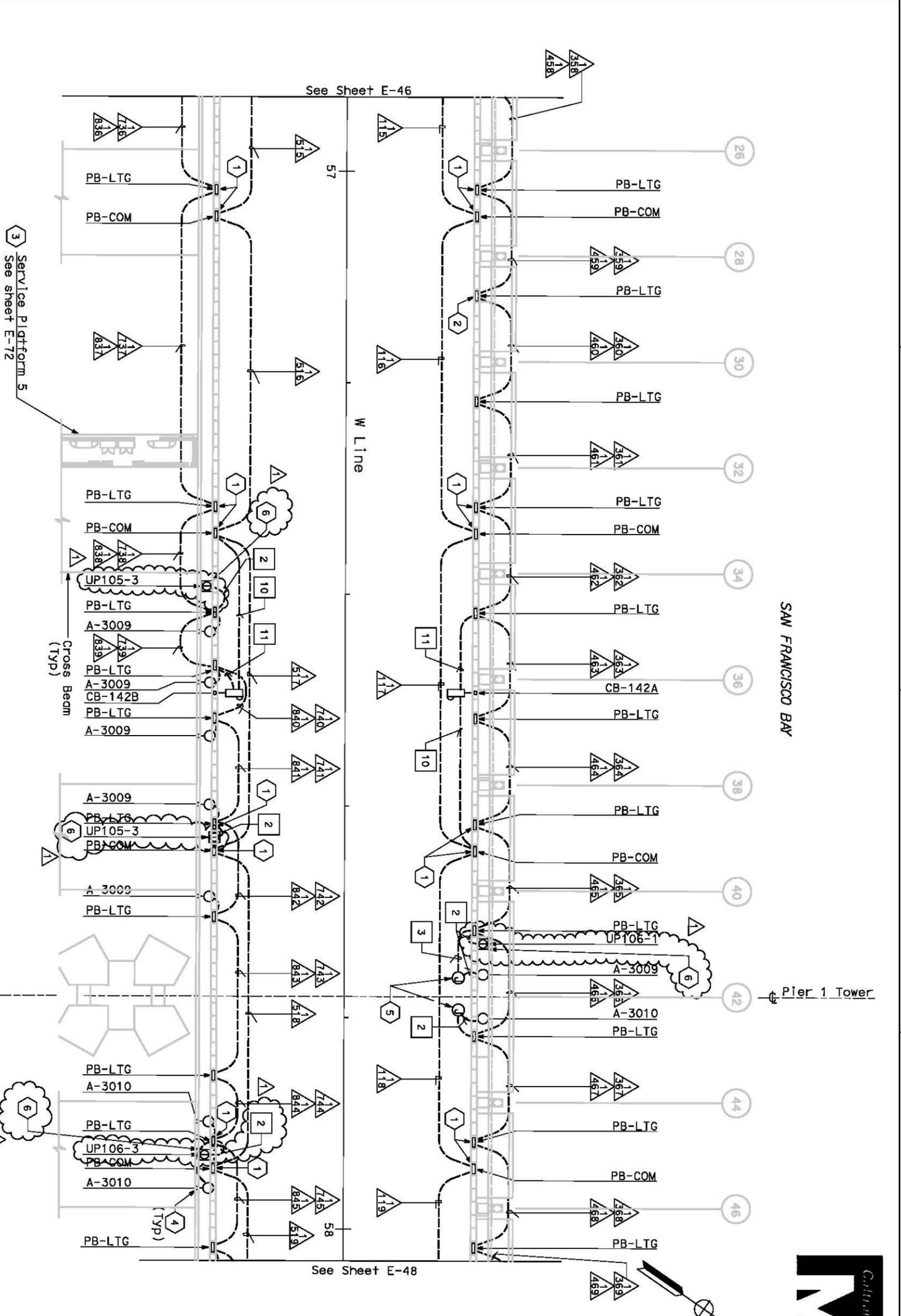
BY: CK
 CCO

CONDUIT PLAN

See General Comments



SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS
 SCALE 1:200
E-47



NOTES:

- References:
 - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and MVDs, see sheets E-67, E-68 and E-68.
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheets E-344 through E-357.
 - For types of pullboxes, splice boxes and enclosures, see sheet E-83.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- For Roadway Call Boxes, refer to sheet E-396.
- For Roadway Level Lighting Pole Schedule, see sheet E-82.
- For Roadway Level Call Box Schedule, see sheet E-397.
- For number of lighting fixtures (main tower lights), see lighting schedule sheets E-271 and E-272.

SHEET NOTES:

- Conduit from barrier pullbox or other equipment down into girder, See sheet E-97.
- For conduit to Suspend Lighting, See sheet E-227. TYP for all PB-LTG located on the north side of the roadway.
- Contractor shall furnish and install UP-105 per sheet E-72. For complete scope of work on platform and other related work not shown on this sheet, see Electrical Special Provisions.
- See sheet E-67 for pylon flood light conduit location.
- Type PB-1C Junction box is used on suspend brackets.
- Roadway Barrier Receptacle, see Detail 1, sheet E-68.

SAN FRANCISCO BAY



REGISTERED ELECTRICAL ENGINEER DATE: 12/19/07
 JENS ERLINSSON
 No. 8249
 Exp. 9/30/08
 STATE OF CALIFORNIA
 LICENSED PROFESSIONAL ENGINEER

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

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Caltrans now has a web site to get to the web site, go to <http://www.dot.ca.gov>

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	13.2713.9	118R1	1204

Caltrans
 REGISTERED ELECTRICAL ENGINEER
 MARELL ELMUND
 No. 84881
 Exp. 8/30/2008
 STATE OF CALIFORNIA
 ELECTRICAL ENGINEER

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

Revision to misc. electric work.
 Change Roadway Barrier receptacle type per RFI-242.
 REVISIONS

MARK	DATE	DESCRIPTION	BY	CHK	CCO
Δ	8-06-07	Change Roadway Barrier receptacle type per RFI-242.	MP	RR	42
			EL	CK	
			BY	CK	
			CCO		

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

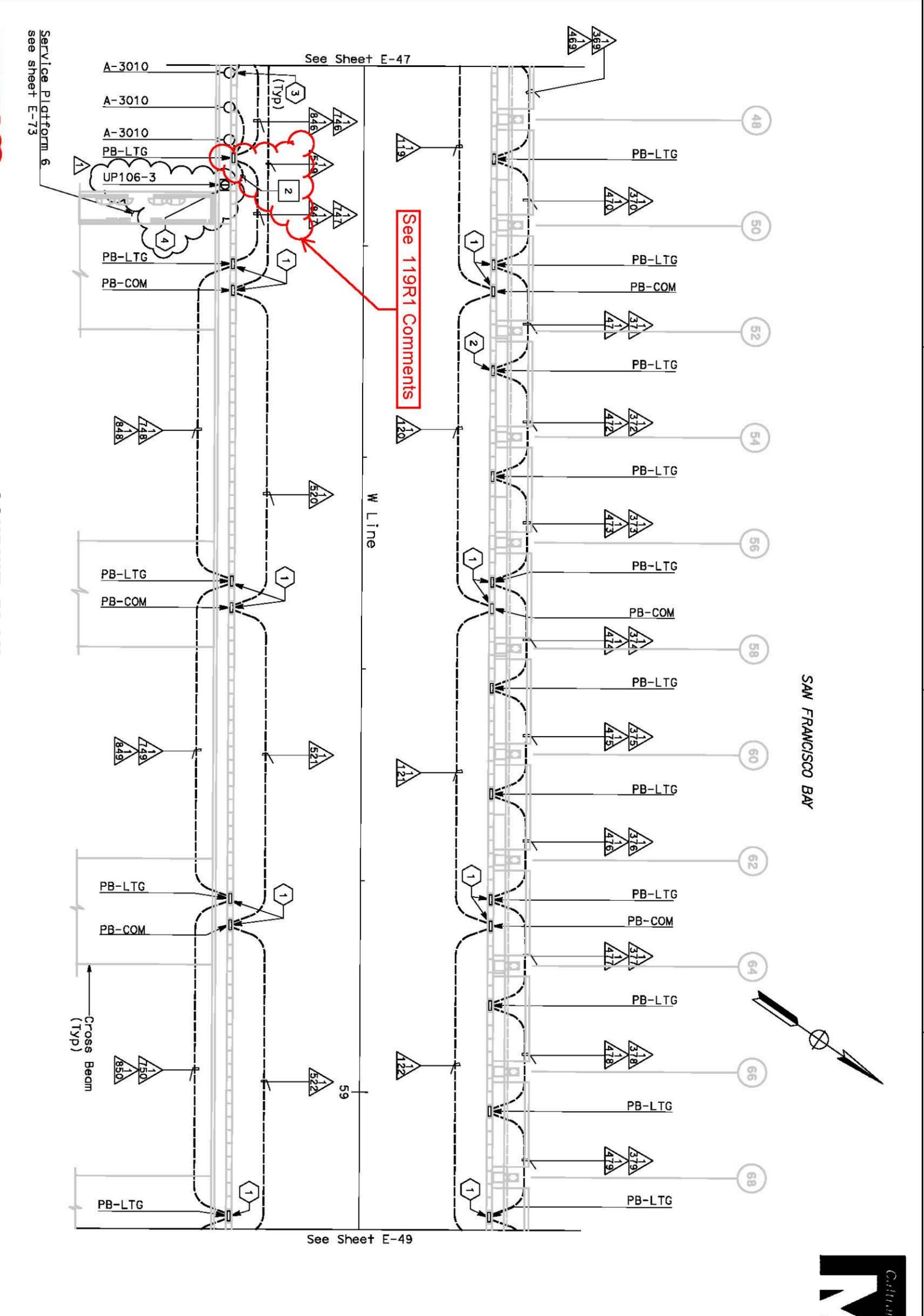
CONDUIT PLAN

See General Comments

SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS
 SCALE 1:200

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => \\13103\ms\pse\vsas\ertruc\ccco\vsas\cc042\04-0120F1_0119-01.dgn
 USERNAME => rveysel
 CU 04251
 EA 0120F1



NOTES:

- References:
 - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and WVDs, see sheets E-65, E-67 and E-68.
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheets E-344 through E-357.
 - For types of pull boxes, splice boxes and enclosures, see sheet E-85.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
- For Roadway Level Light Pole Schedule, see sheet E-82.
- For number of lighting fixtures (main tower lights), see lighting schedule sheets E-271 and E-272.

SHEET NOTES:

- Conduit from barrier pullbox or other equipment down into girder, See sheet E-98.
- For conduit to Suspend Lighting, see sheet E-228. Typ for all PB-LTG located on the north side of the roadway.
- See sheet E-67 pylon floodlight conduit location.
- Roadway Barrier Receptacle, see Detail 1, sheet E-68.

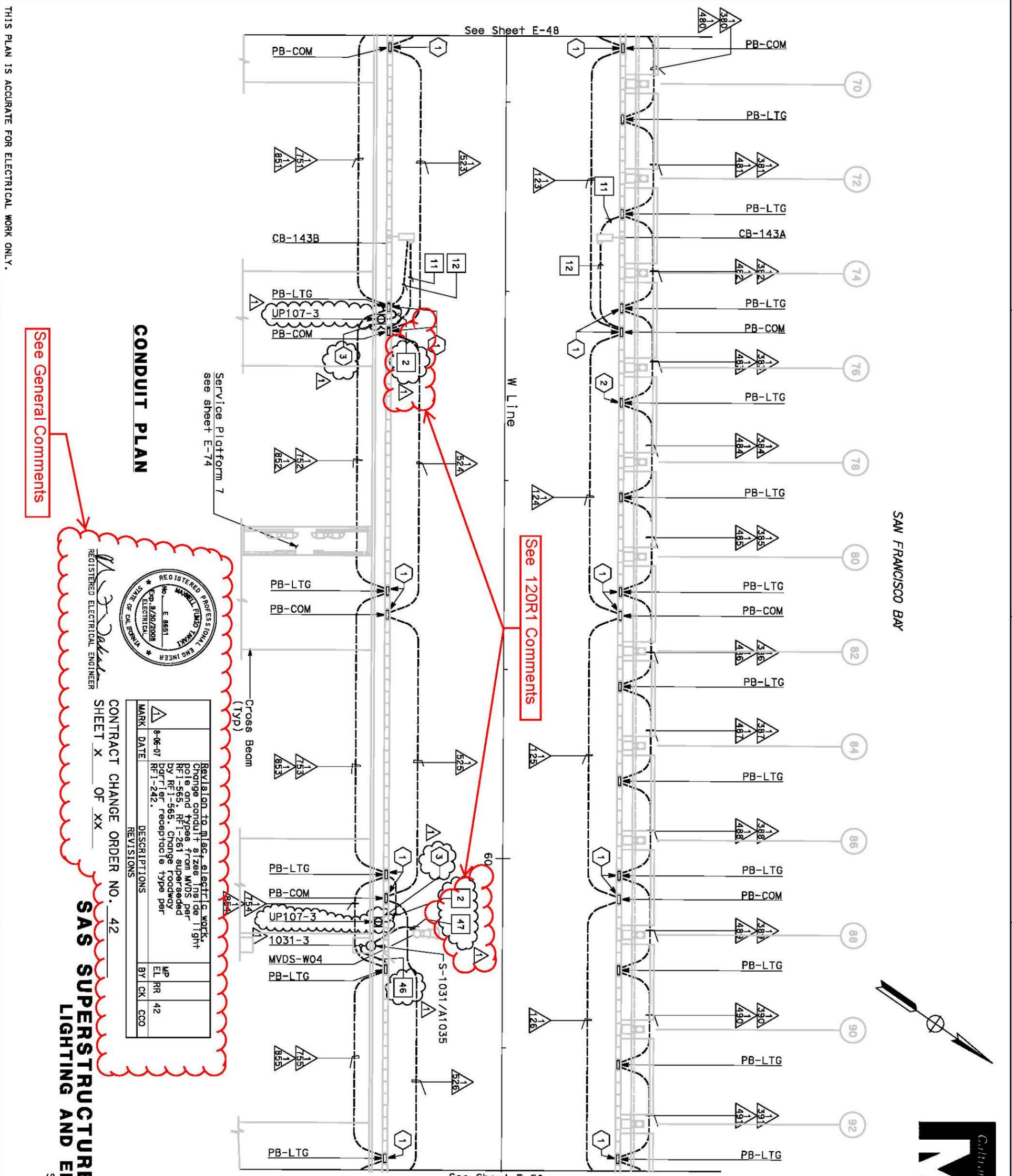
Caltrans now has a web site To get to the web site, go to <http://www.dot.ca.gov>

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

REGISTERED ELECTRICAL ENGINEER DATE: 12/19/02
 JENS ERLINSSON
 No. 8249
 Exp. 8/30/08
 STATE OF CALIFORNIA
 ELECTRICAL ENGINEER

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILE	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	119R1	1204	



SAW FRANCISCO BAY



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	13.2/13.9	120R11	1204

REGISTERED ELECTRICAL ENGINEER DATE: 12/19/02
 JAMES E. ERLINSSON
 REG. NO. 9249
 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

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Caltrans now has a web site to get to the web site, go to <http://www.dot.ca.gov>

SHEET NOTES:

- 1 Conduit from barrier pullbox or other equipment down into girder, See sheet E-99.
- 2 For conduit to Suspend Lighting, See sheet E-229. Typ for all PB-LTG located on the north side of the roadway.
- 3 Roadway Barrier Receptacle, see Detail 1, sheet E-68.

NOTES:

1. References:
 - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and WDS, see E-66, E-67 and E-68.
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheet E-344 through E-357.
 - For types of pullboxes, splice boxes and enclosures, see sheet E-83.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
2. For Roadway Call Boxes refer to sheet E-396.
3. For Roadway Level Lighting Pole Schedules, see sheet E-82.
4. For Roadway Level Call Box Schedule, see sheet E-397.
5. For number of lighting fixtures (main tower lights), see lighting schedule sheets E-271 and E-272.
6. See sheets E-66 thru E-68 for conduit locations.

CONDUIT PLAN



CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO	
△	8-06-07	Revision to misc. electric work. Change conduit sizes inside light pole and types from WDS per RFI-565. RFI-261 superseded by RFI-565. Change roadway barrier receptacle type per RFI-242.	MP	EL	RR	42
				CK	CCO	

SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

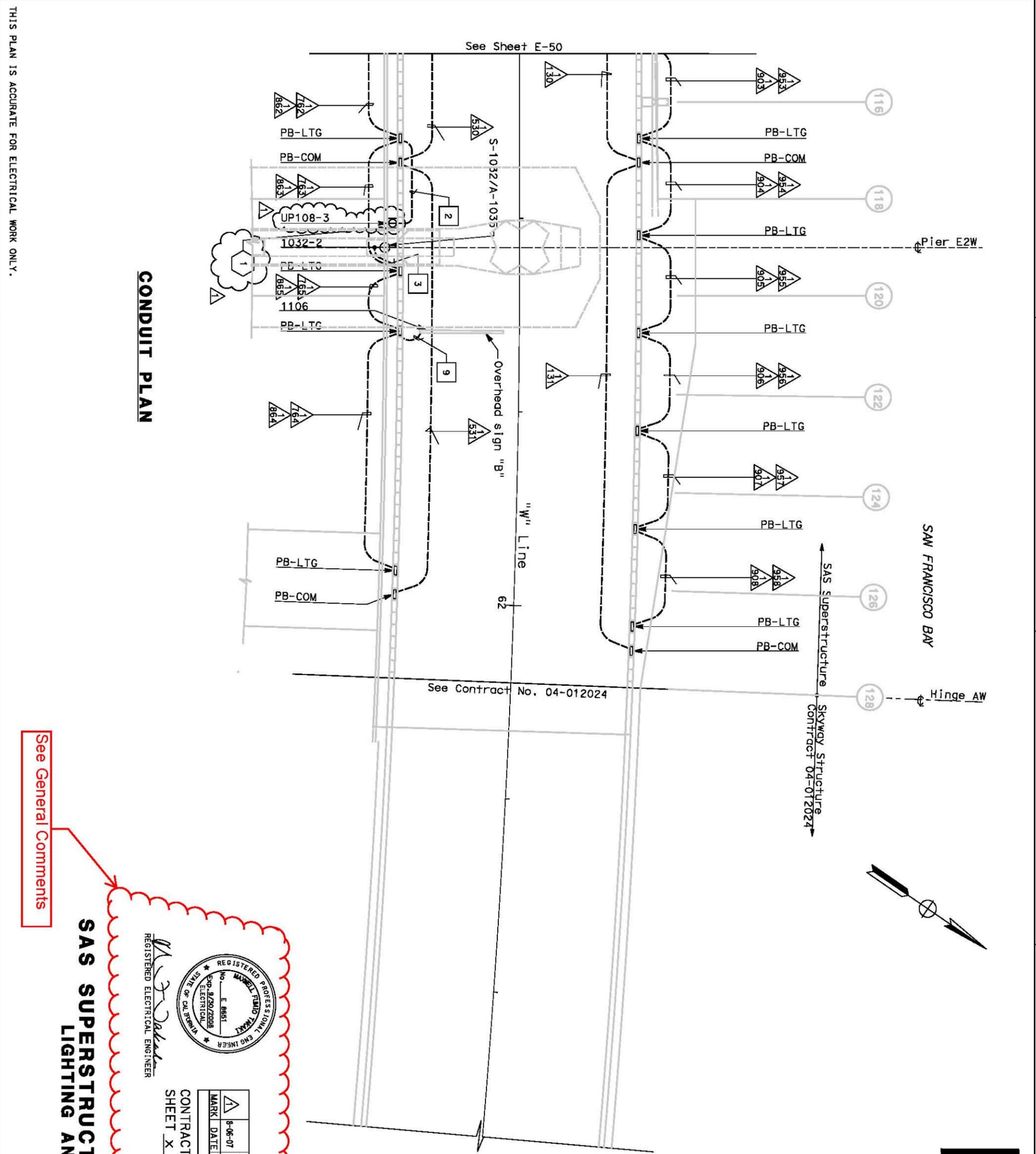
E-49

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => \13103\ms\pse\vsas_e\truc\cco\vsas_cco42\04-0120r1_0120r01.dgn
 USERNAME => rveysal

EA 0120F1



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => \13103\ms\p00\ss\struc\cc0\ss\cc042\04-0120f1_0122r01.dgn
 USERNAME => rjysel
 CU 04251
 EA 0120F1

See General Comments

SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-51



CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO
△	8-06-07	Revision to misc. electric works Change roadway barrier receptacle type per RFI-242.	MP	RR	42
			EL	CK	
			BY	CK	CCO

- NOTES:**
- References:
 - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and WVDs, see sheets E-66, E-67 and E-68.
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheets E-344 through E-357.
 - For types of pullboxes, splice boxes and enclosures, see sheet E-83.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401, see sheet E-82.
 - For roadway level lighting pole schedules, see sheet E-82.

SHEET NOTES:

1 Roadway Barrier Receptacle, see Detail 1, sheet E-68.

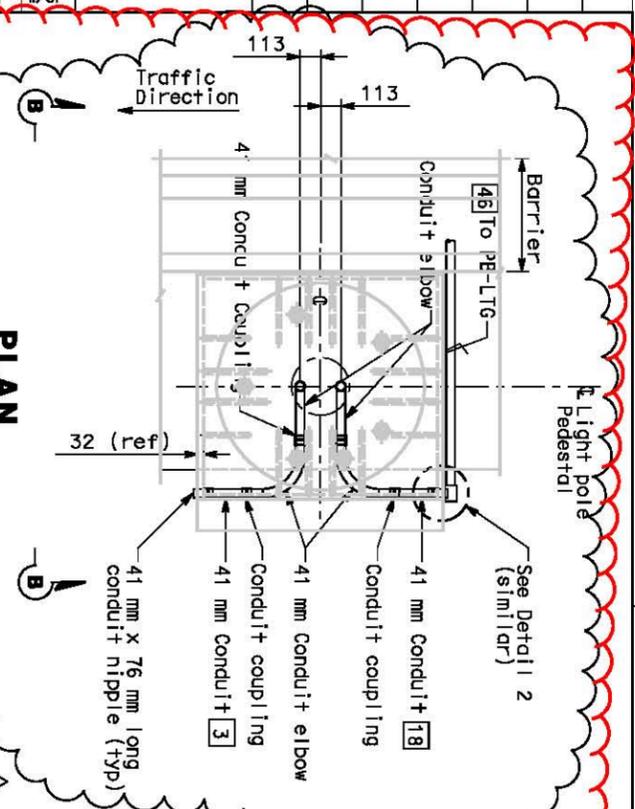
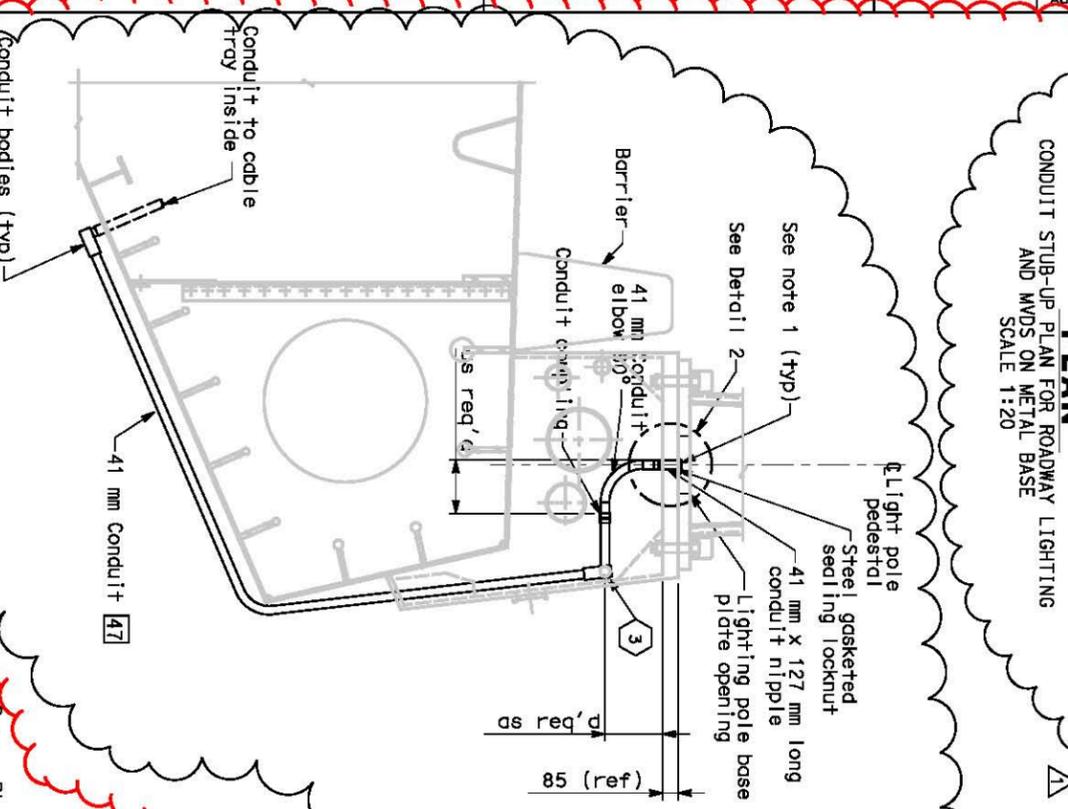
REGISTERED ELECTRICAL ENGINEER DATE 12/19/07
 JENS ERLINGSSON
 NO. 8249
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER

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

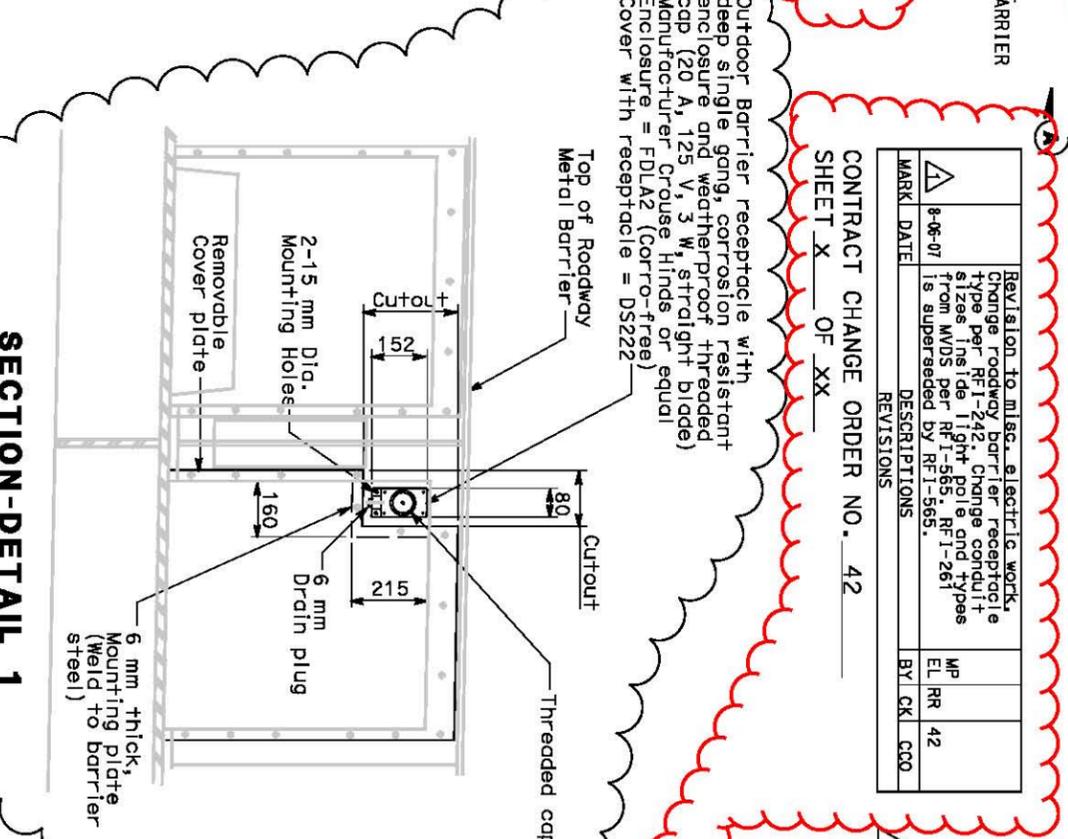
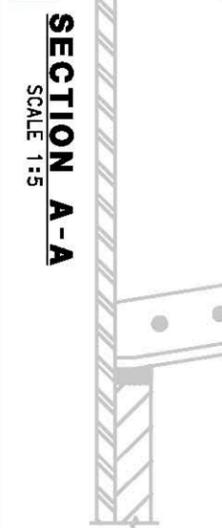
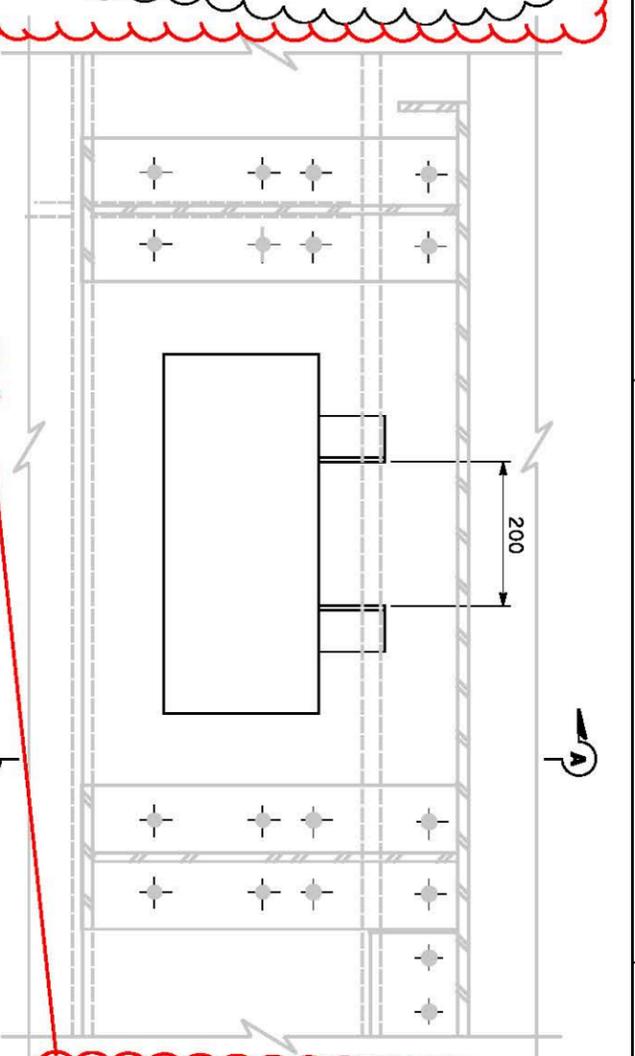
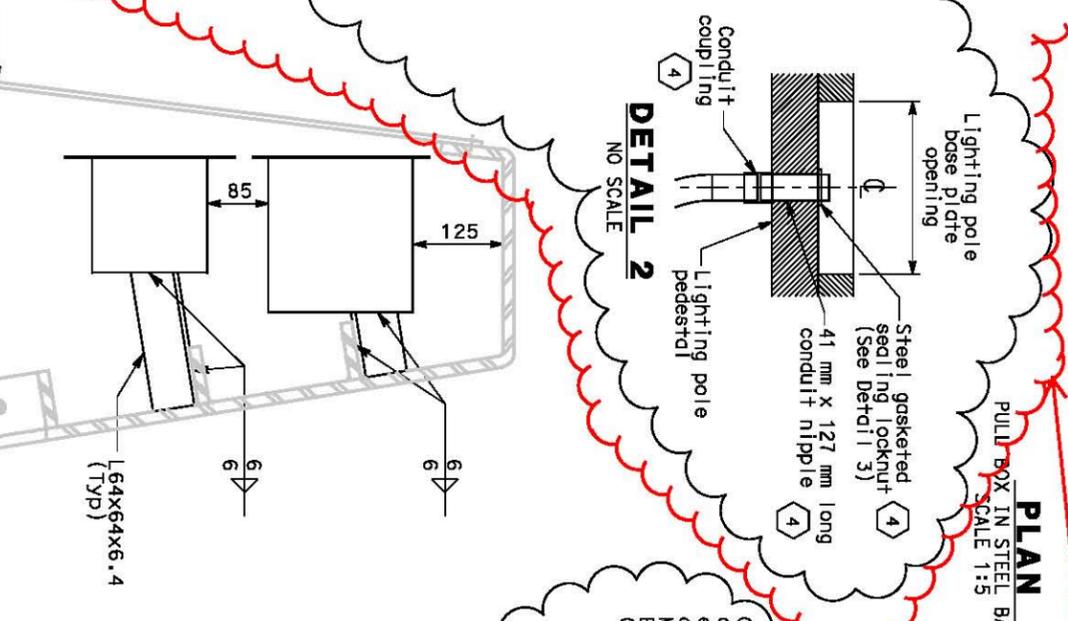
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

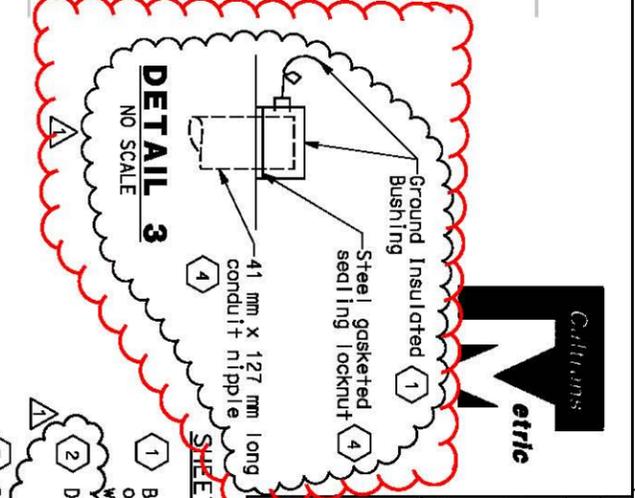
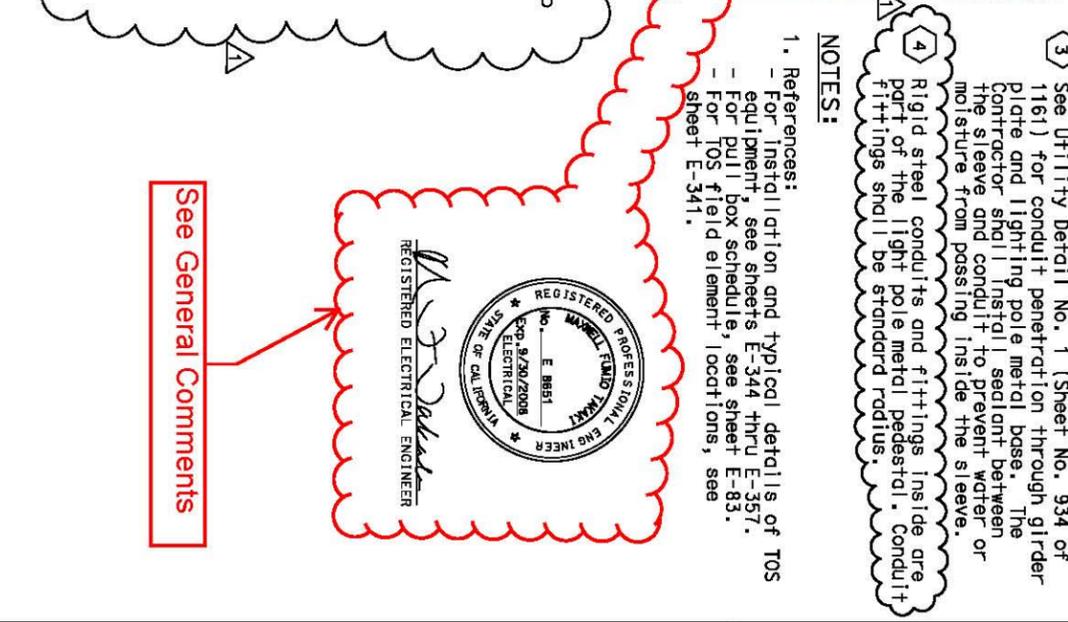
DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILE	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	122R	1204	



SECTION B-B
 SCALE 1:20



SECTION A-A
 SCALE 1:5



DETAILS
 SAS SUPERSTRUCTURE ROADWAY WESTBOUND
 CONDUIT LOCATIONS
 SCALE AS NOTED

E-68

PIER 1 TOWER LIGHTS SCHEDULE (ROADWAY LEVEL)

Circuit Number	Station	Location		Mounting	Ltg. Fixture Type	Number/Wattage	Remarks
		Roadway side	Suspend at Panel Point				
PYLON LIGHTING							
A-3009	57+43	South	PP-35/36	Bridge deck	MAT-1B-D	2-1000 W	With Remote Ballast
A-3009	57+45	South	PP-36	Bridge deck	MAT-1C-D	1-1000 W	With Remote Ballast
A-3009	57+51	South	PP-36/37	Bridge deck	MAT-1A-D	2-1000 W	With Remote Ballast
A-3009	57+64	South	PP-39	Bridge deck	MAT-3-D	2-250 W	With Remote Ballast
A-3009	57+65	South	PP-40	Crossbeam	MAT-3-RC	2-250 W	With Remote Ballast
A-3009	57+75.5	North	West of PP-42	Bridge deck	MAT-1A-D	2-1000 W	With Remote Ballast
A-3010	58+14	South	PP-48/49	Bridge deck	MAT-1B-D	2-1000 W	With Remote Ballast
A-3010	58+12	South	PP-48	Bridge deck	MAT-1C-D	1-1000 W	With Remote Ballast
A-3010	58+06	South	PP-47/48	Bridge deck	MAT-1A-D	2-1000 W	With Remote Ballast
A-3010	57+93	South	PP-45	Bridge deck	MAT-3-D	2-250 W	With Remote Ballast
A-3010	57+88	South	PP-44	Crossbeam	MAT-3-RC	2-250 W	With Remote Ballast
A-3010	57+80.5	North	East of PP-42	Bridge deck	MAT-1A-D	2-1000 W	With Remote Ballast

LIGHTING POLE SCHEDULE

Circuit Number	Pole Number	Station	Location		Mounting Height (M)	Ltg. Fixture Type	Number/Wattage	Remarks (Mounting Provisions)
			Roadway side	Suspend at Panel Point				
S-1031	1031-1	55+98	South	-	20	MSR-2B-L	3-400 W	Pole mounted
A-1035	1031-1	55+98	South	-	20	MAW-3	1-250 W	
S-1031	1031-2	56+38	South	-	20	MSR-2B-L	3-400 W	Pole mounted
A-1035	1031-2	56+38	South	-	20	MAW-3	1-250 W	
S-1031	1031-3	60+08	South	-	20	MSR-2-L	2-400 W	Pole mounted
S-1031	1031-3	60+08	South	-	20	MSR-2B-L	3-400 W	Pole mounted
A-1035	1031-4	60+58	South	-	20	MAW-3	1-250 W	
S-1031	1031-4	60+58	South	-	20	MSR-2-L	2-400 W	Pole mounted
S-1031	1031-4	60+58	South	-	20	MSR-2B-L	2-400 W	Pole mounted
A-1035	1032-1	61+10	South	-	20	MAW-3	1-250 W	
S-1032	1032-1	61+10	South	-	20	MSR-2-L	2-400 W	Pole mounted
S-1032	1032-1	61+10	South	-	20	MSR-2B-L	2-400 W	Pole mounted
A-1035	1032-2	61+63	South	-	20	MAW-3	1-250 W	
S-1032	1032-2	61+63	South	-	20	MSR-2-L	2-400 W	Pole mounted
S-1032	1032-2	61+63	South	-	20	MSR-2B-L	2-400 W	Pole mounted
A-1035	1035					MAW-3	1-250 W	

LIGHTING FIXTURE TYPE DESIGNATION

Example: MSR-2B-C (See Special provisions for additional information)
 MSR = SAS Safety Light
 -2B = 400 Watts
 -C = Beam Angles

Location (Letter)	Function (Letter)	Application (Letter)	Number/Lamp Wattage	Beam Angles (Letter)	Mounting Type (Letter)
M	SAS	A Aesthetic Light	1 1000 W	A	C Main cable
		S Safety Light	2 400 W	B	D Roadway deck
			3 250 W	C	PB Pler Base/Pole mount
			4 175 W		RC Roadway at Cross beam
			5 100 W		P Pole mounted without lower/diiser
			6 50 W		L Pole mounted with lower/diiser
			7 35 W		S Inside Bike path railing
					V Belvedere Light
					L Light pipe

REGISTERED PROFESSIONAL ENGINEER
 MARELL FUMAD TAYAL
 No. E 8661
 Exp. 9/30/2008
 STATE OF CALIFORNIA
 ELECTRICAL

REGISTERED ELECTRICAL ENGINEER
 Behzad Gole Mohammadi

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

REVISIONS:

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO
Δ	8-06-07	Revision to misc. electric work. Change location lighting fixtures per RF-1-158 and RF-1-212. Add bridge lighting fixture type per RF-1-210.	MP	EL	RR 42

DETAILS
SAS SUPERSTRUCTURE ROADWAY WESTBOUND
LIGHTING SCHEDULES

See General Comments

E-82



DIST COUNTY ROUTE KILOMETER POST TOTAL SHEET TOTAL
 04 SF 80 13.2/13.9 141R1 1204

REGISTERED ELECTRICAL ENGINEER DATE 12/19/02
 JENS ERLINGSSON
 No. 8249
 Exp. 9/30/08
 STATE OF CALIFORNIA
 ELECTRICAL

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

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Caltrans now has a web site to get to the web site, go to <http://www.dtd.ca.gov>

- SHEET NOTE:**
- 1 Pole mounted lighting fixtures 12 m and higher is provided with lowering device.
- NOTES:**
- For Roadway Level Lighting Wiring Diagrams see sheets E-54 thru E-55.
 - For Roadway Level Lighting Conduit Plan see sheets E-46 thru E-51.
 - For type of Roadway poles, Refer to Sheets E-85 thru E-89.

REVISIONS	DATE	BY	DESCRIPTION
1	8/6/07	MP	Change Roadway Barrier receptacle type per RF-1-242, RF-1-264 18 superseded by RF-1-242.

PULL BOXES

Location	Type	Pull Box Size	Enclosure Type	Nameplate Pull Box Cover	Remarks
Roadway Barrier	PB-Com			Low Voltage - Call Box	
Roadway Barrier	PB-1A			600 V - Electrical	
Roadway Barrier	PB-1B	304 L x 254 W x 127 D	NEMA 4X	600 V - Electrical	See Detail 142R1 Sheet E-209 Receptacle located at main suspender cabinet
Roadway and miscellaneous	PB-1C	152 L x 152 W x 102 D	NEMA 4X	600 V - Electrical	located at suspender brackets
Inside Girder Box	PB-2A	406 L x 254 W x 152 D	NEMA 12	600 V - Electrical	
Service Platform	PB-2B	762 L x 610 W x 203 D	NEMA 4X	600 V - Electrical	
Inside Girder Box	PB-2C	915 L x 610 W x 610 D	NEMA 12	600 V - Electrical	Electrical vaul+embedded in conc. deck
Inside Girder Box	PB-2K	1067 L x 915 W x 305 D	NEMA 12	600 V - Electrical	Electrical vaul+surface/pendant mounted
Inside Girder Box	PB-2L	152 L x 152 W x 102 D	NEMA 12	600 V - Electrical	For future light pipe

PULL BOXES

Location	Type	Pull Box Size	Enclosure Type	Nameplate Pull Box Cover	Remarks
"E" Line Girder access Platform	PB-2D	457 L x 457 W x 203 D	NEMA 4X	600 V - Electrical	For Base Tower power and lighting
Inside Dehumidification #2 Area	PB-2E	203 L x 203 W x 102 D	NEMA 12	600 V - Electrical	For Base Tower Dehumidification #2 power
Tower Base-Elevator Enclosure	PB-2F	203 L x 203 W x 102 D	NEMA 12	600 V - Electrical	For Elevator pit motor power
Tower Walkway Platform, EL. 93.35 m	PB-2G	457 L x 457 W x 203 D	NEMA 4X	600 V - Electrical	For Power and Lighting
Tower Walkway Platform, EL. 93.35 m	PB-2H	457 L x 457 W x 203 D	NEMA 4X	600 V - Electrical	For Power and Lighting
Elevator Enclosure-EL. 93.35 m	PB-2J	203 L x 203 W x 102 D	NEMA 4X	600 V - Electrical	For Power and Lighting
"E" Line Girder access Platform	PB-2K	305 L x 305 W x 152 D	NEMA 4X	600 V - Electrical	For Base Tower power and lighting
Tower Walkway Platform, EL. 53.0 m	PB-2R	203 L x 203 W x 102 D	NEMA 4X	600 V - Electrical	For Power - Booster Pump P1
Tower Vertical Runs	PB-4D	915 L x 610 W x 610 D	NEMA 12	600 V - Electrical	

SPLICE BOXES

Location	Type	Splice Box Size	Enclosure Type	Nameplate Splice Box Cover	Remarks
Inside Girder Box and Tower EL 63.0	PB-3A	1830 L x 915 W x 305 D	NEMA 12	Danger - High Voltage - Keep Out	72 fibers to 12 fibers
Inside Girder Box	PB-3B	813 L x 203 diameter	Cylindrical Housing	Fiber Optic	
Inside Girder Box	PB-3C	813 L x 203 diameter	Cylindrical Housing	Fiber Optic	72 fibers to 72 fibers

PANEL ENCLOSURES

Location	Type	Cabinet/Terminal Box Size	Enclosure Type	Nameplate Cabinet/Terminal Cover	Remarks
Service Platform	PB-6C	See Panel Layout	NEMA 4X	See Panel Layout on E-305	For Navigation Relay Cabinet
Inside Girder Box	PB-7B	See Panel Layout	NEMA 12	See Panel Layout on E-321	For Sada Communication Terminal Box
Service Platform	PB-7C	508 H x 406 W x 203 D	NEMA 4X	Calltrans Telephone	Enclosure only - For Telephone Terminal Box
Inside Girder Box	PB-7D	508 H x 406 W x 203 D	NEMA 12	Calltrans Telephone	Enclosure only - For Telephone Terminal Box
Service Platform	PB-8A	Size by contractor	NEMA 4X-Fiberglass	See Panel Schedules	Enclosure only - For Transformer/Panel

SAS SUPERSTRUCTURE WB

Location	Type	Pull Box Size	Enclosure Type	Nameplate Pull Box Cover	Remarks
Inside Light Pole	PB-2N	152 L x 152 W x 102 D	NEMA 12	TOS-WVDS	Cable Termination
Tower Platform	PB-2M	305 L x 305 W x 152 D	NEMA 12	TOS-WVDS	Cable Termination
Inside Dehumidification #1 Area	PB-TOS	203 L x 203 W x 102 D	NEMA 4X	TOS-COM	Dehumidification Unit #1



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	13.2/13.9	142R1	1204

REGISTERED ELECTRICAL ENGINEER DATE 12/19/07
 JENS ERLINGSSON
 12-6-04
 PLANS APPROVAL DATE
 PB POWER, Inc.
 A Parsons Brinckerhoff Company
 303 Second St., Suite 700N
 San Francisco, CA 94107-1317

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Calltrans now has a web site to get to the web site, go to <http://www.calltrans.com>

SHEET NOTE:
 1 Panel enclosures shgll be provided with padlock provisions.

See 142R1 Comments

See General Comments

REGISTERED PROFESSIONAL ENGINEER
 MAREK TAKAL
 E 8651
 EXP. 9/20/2008
 REGISTERED ELECTRICAL ENGINEER
 STATE OF CALIFORNIA

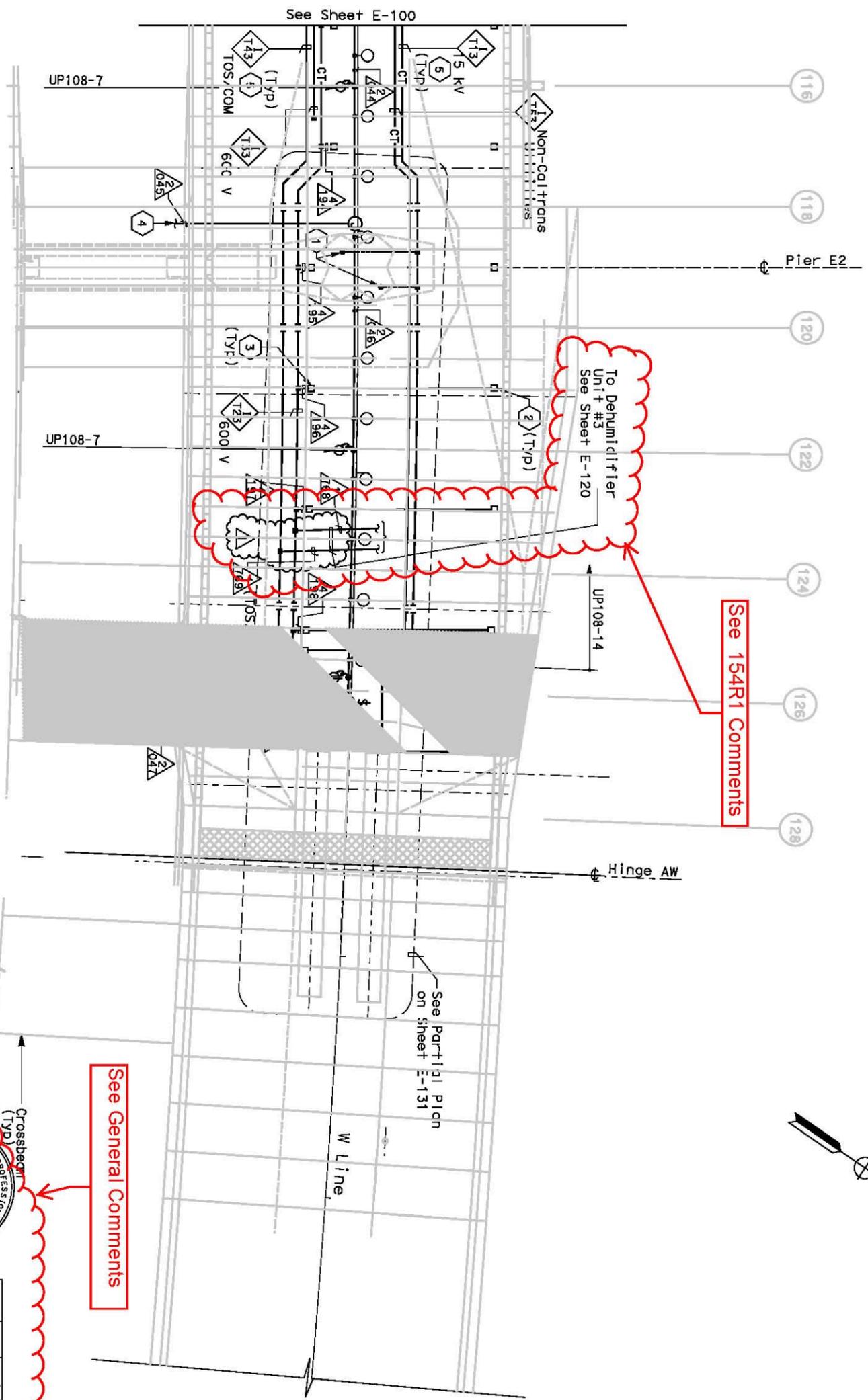
REGISTERED ELECTRICAL ENGINEER
 W. J. Miller

REVISIONS

MARK	DATE	DESCRIPTION	BY	CK	COO
Δ	8/6/07	Revision to misc. electric work. Change Roadway Barrier receptacle type per RF-1-242, RF-1-264 18 superseded by RF-1-242.	MP	EL	RR 42

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

SAS SUPERSTRUCTURE ROADWAY WESTBOUND PULLBOX SCHEDULES



SAS SUPERSTRUCTURE - CONDUIT AND CABLE TRAY PLAN

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

DGN FILE => \13103\ms\pse\struc\cc0\cc042\04-0120F1_014-r01.dgn
 USERNAME => rveys1

EA 0120F1
 CU 04251

LAST REVISION 00-00-00 DATE PLOTTED => 8/27/2007 TIME PLOTTED => 7:52:21 AM

SAS SUPERSTRUCTURE GIRDER WESTBOUND LIGHTING AND ELECTRICAL SYSTEMS
 SCALE 1:200



REGISTERED ELECTRICAL ENGINEER

MARK	DATE	DESCRIPTIONS	BY	CHK	CCO
Δ	8/6/07	Relocate conduit routing and change pull box type per RF-180.	MP	EL	RR
			42		

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

- NOTES:**
- References:
 - TOS equipment is shown for conduit routing only. For typical details of TOS controller and devices, see sheets E-344 through E-361.
 - For types of pull boxes, splice boxes and enclosures, see sheet E-83.
 - For bridge grounding plan, see sheet E-111.
 - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
 - For other work related to Hinge AW and items not shown on this sheet, see Electrical Special Provisions.
 - The girder lighting fixtures are shown diagrammatically. Contractor shall install fixtures at rolling posts with a maximum of 8000 mm between fixtures. For types and typical lighting fixture installation details, see sheet E-123.
 - The cable trays are shown diagrammatically. For typical girder cable tray plans and sections, see sheets E-124 and E-125.
- SHEET NOTES:**
- 250 kcmil bare copper grounding conductor exothermically welded to 500 kcmil system ground conductor. See E2/T1 structures EA-0120E1 for limit of work.
 - PB-2L with circuit for future light pipes.
 - PB-2A, locate on top of floor.
 - For lighting inside crossbeam, see sheet E-119.
 - For cable tray & ground bar support, refer to sheet E-125.

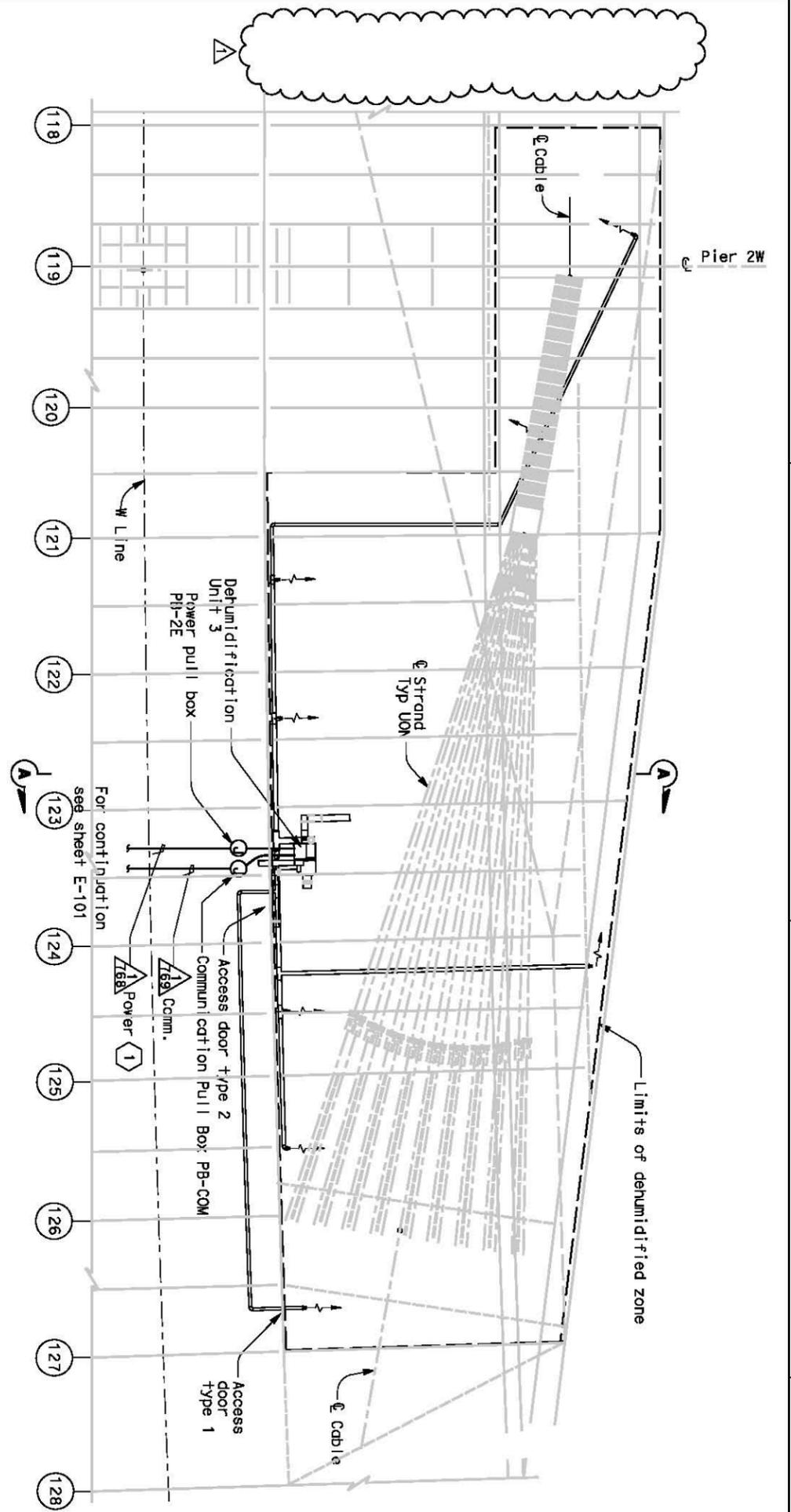
Caltrans
Electric

REGISTERED ELECTRICAL ENGINEER DATE 12/19/02
 JENS ERLINSSON
 NO. 8249
 STATE OF CALIFORNIA
 ELECTRICAL

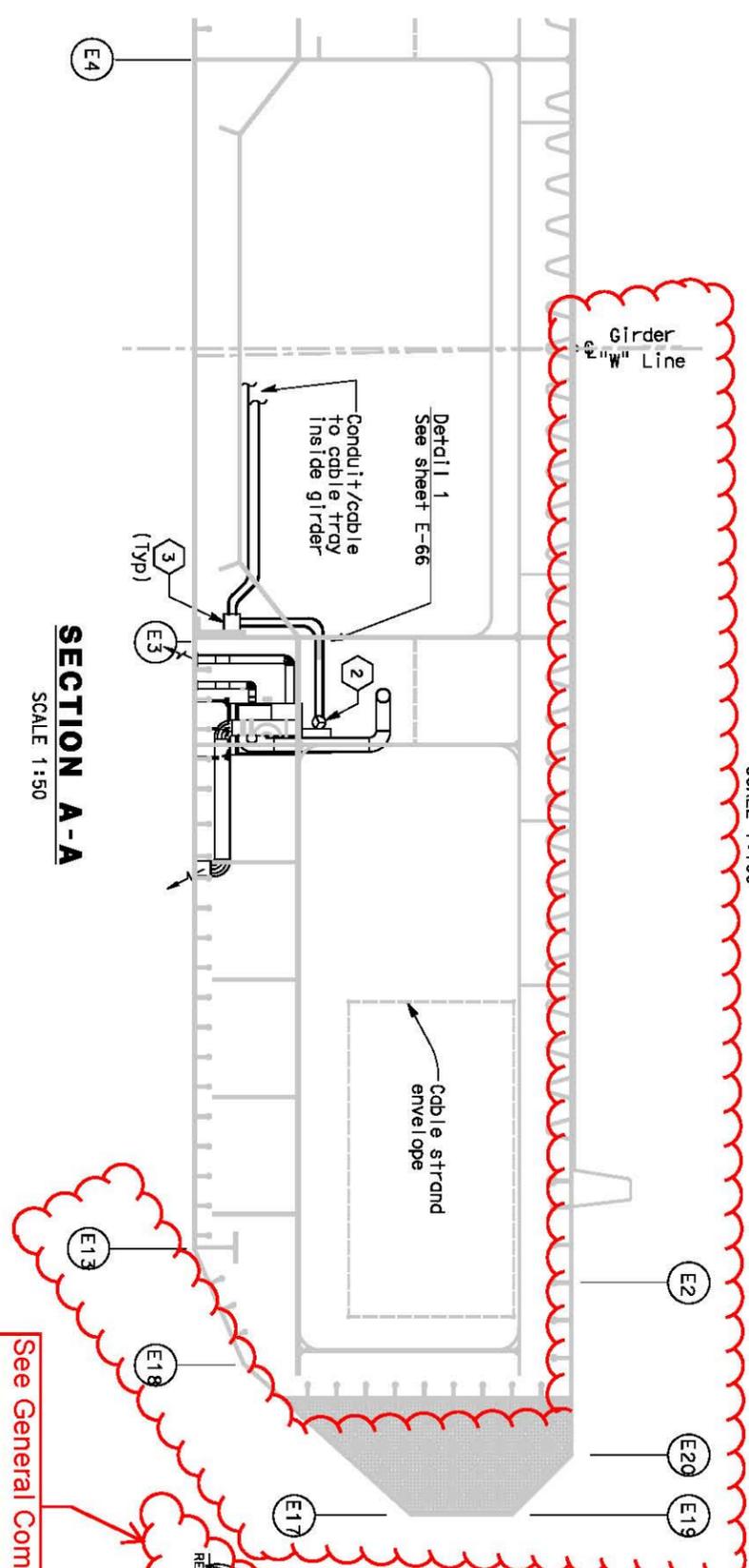
PLANS APPROVAL DATE 12-6-04
 PB POWER, Inc.
 A Parsons Brinckerhoff Company
 303 Second St., Suite 700N
 San Francisco, CA 94107-1317

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electric copies of this plan sheet.
 Caltrans now has a web site To get to the web site, go to <http://www.dot.ca.gov>

DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILE	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	154R1	1204	1204



PLAN
 SCALE 1:100



SECTION A-A
 SCALE 1:50

See General Comments

See 172R1 Comments



REGISTERED ELECTRICAL ENGINEER

REVISION	DATE	DESCRIPTION	BY	CHK	CCO
1	8/6/07	Revision to misc. electric work. Remove column number references per RFI-180.	MP	RR	42

CONTRACT CHANGE ORDER NO. 42
 SHEET X OF XX

EQUIPMENT	ELECTRICAL	COMM
Dehumidification Unit 3	-480 V, 3 phase, 16 kW (estimated load) - CKT #1117, LVCC-A - Integral circuit breaker disconnect	- RTU #11W dt platform #8

- NOTES:**
- References:
 - See sheets M001 through M011 for dehumidifier plans and details.
 - For pull box schedule, see sheet E-83.
 - E Line dehumidification unit 4 is similar. W Line dehumidification unit 3 is shown.

SHEET NOTES:

- Route power conduit/cable from dehumidifier to TOS/COM cable tray inside girder. Extend circuit to MH-25. See table this sheet.
- Final connections to dehumidifier shall be liquid tight flexible metal conduit.
- Install power and com. junction boxes on unistrut support.

Caltrans
Electric

REGISTERED ELECTRICAL ENGINEER DATE: 12/19/02
 JAMES ERLINSSON
 No. 9249
 STATE OF CALIFORNIA

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

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 Caltrans now has a web site to get to the web site, go to <http://www.dot.ca.gov>

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	13.2/13.9	172R1	1204