DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	117R1	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.
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San Francisco, CA 94107-1317

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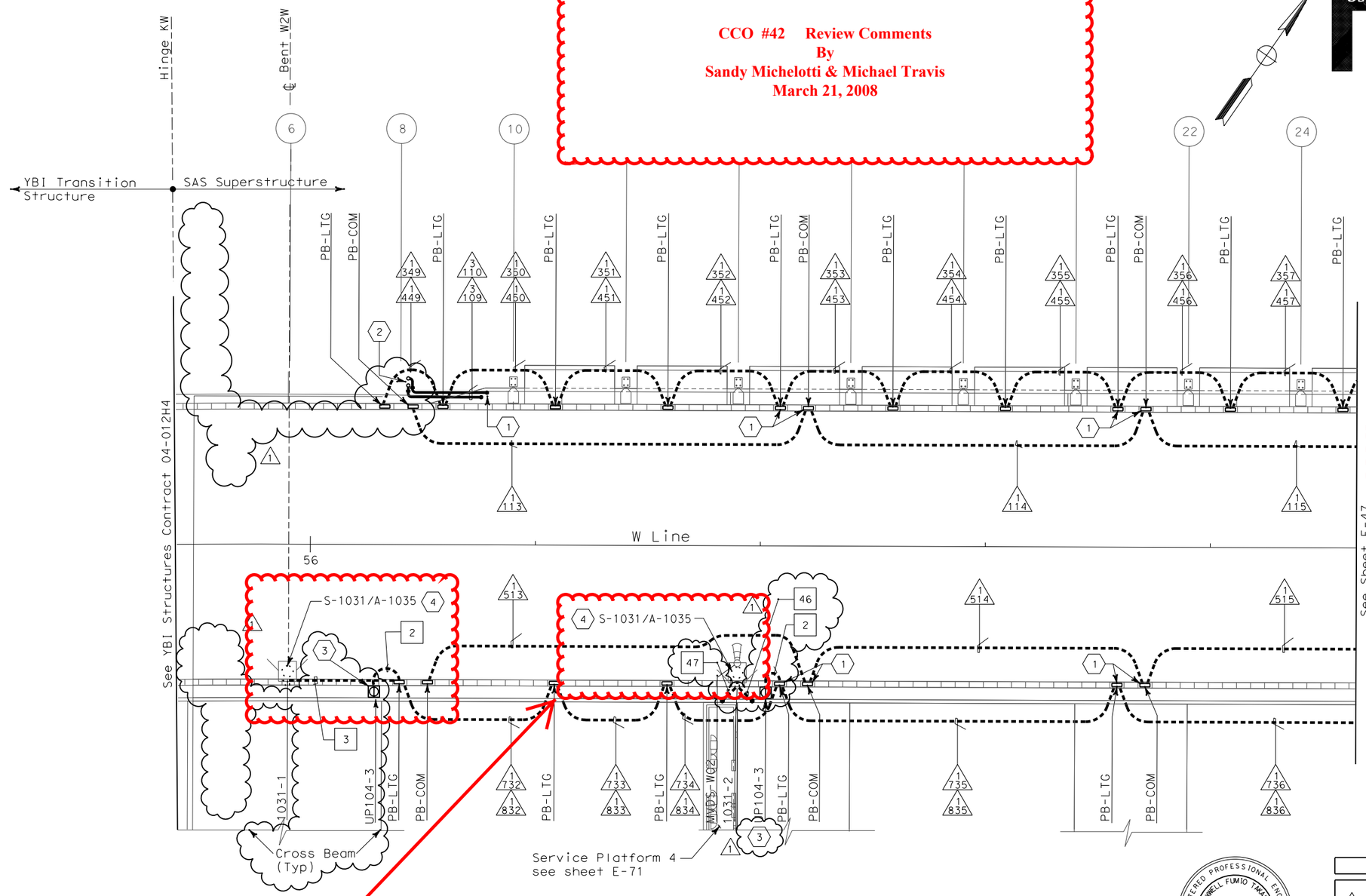
Caltrans Metric

CCO #42 Review Comments
By
Sandy Michelotti & Michael Travis
March 21, 2008



SHEET NOTES:

1. Conduit from barrier pullbox or other equipment down into Girder, see sheet E-96.
2. For conduit to Suspend Lighting, see sheet E-226. Typ for all PB-LTG located on the north side of the roadway.
3. Roadway Barrier Receptacle, see Detail 1, sheet E-68.
4. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. 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-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.
2. For Roadway Level Lighting Pole Schedules, see sheet E-82.

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

CONDUIT PLAN

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

FOR REVISION ONLY

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

SAS SUPERSTRUCTURE ROADWAY WESTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-46

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

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Jens Erlingsson 12/19/02
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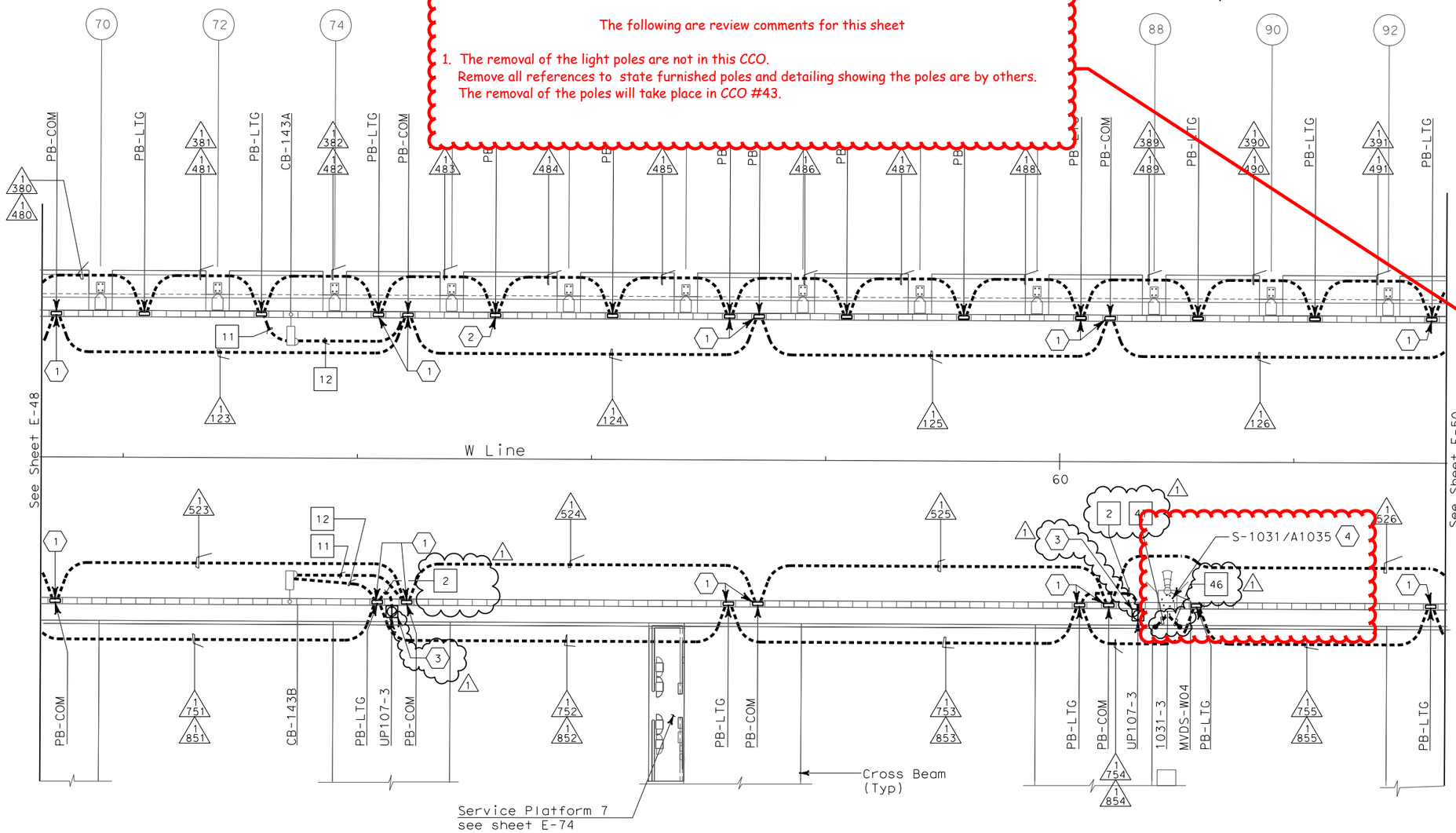
Caltrans Metric

SAN FRANCISCO BAY

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.



CONDUIT PLAN

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.

(4) Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CCTV and MVDS, 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.

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

SAS SUPERSTRUCTURE ROADWAY WESTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-49

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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	121R1	1204

REGISTERED ELECTRICAL ENGINEER 12/19/02 DATE

12-6-04
PLANS APPROVAL DATE

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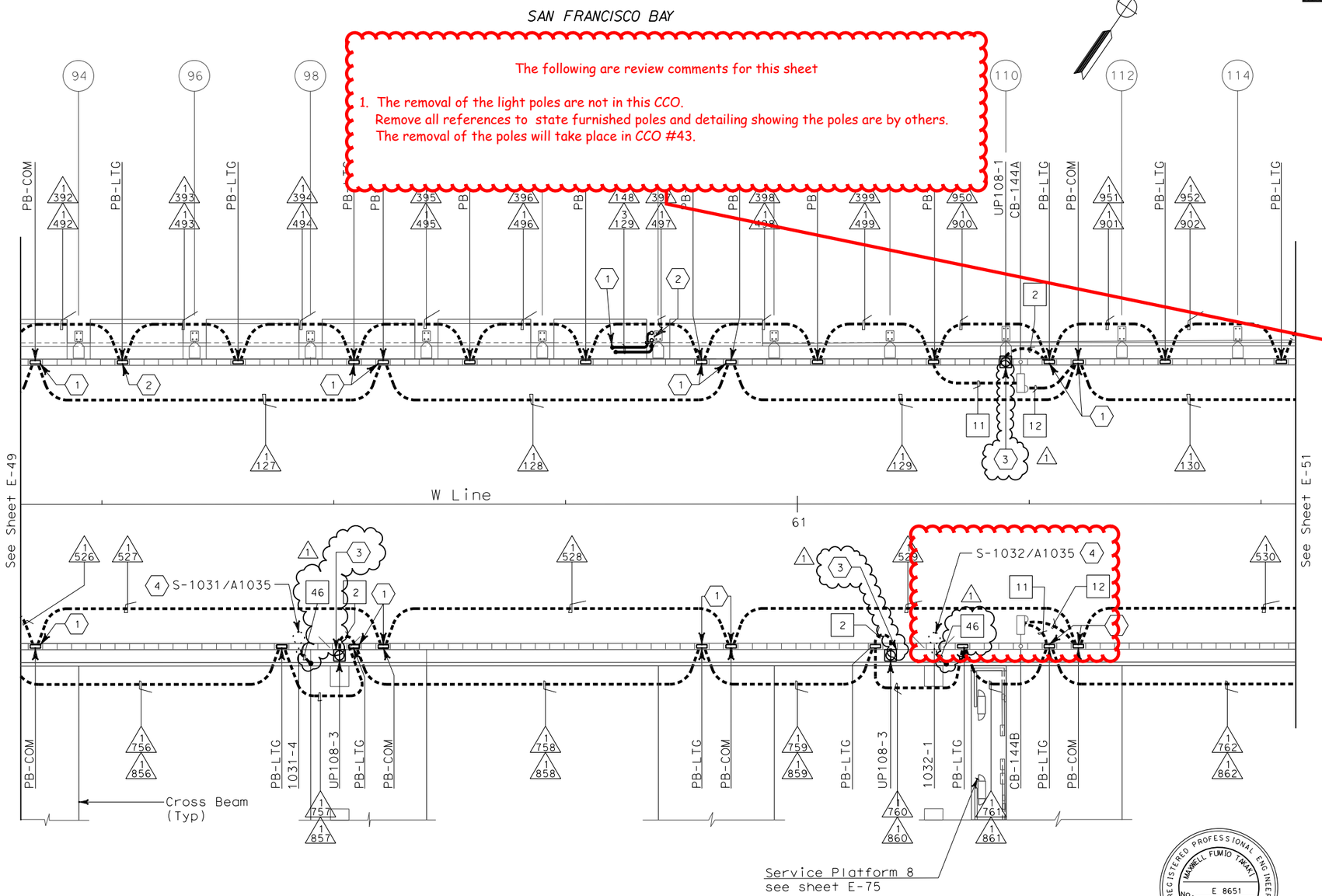

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. Conduit from barrier pullbox or other equipment down into Girder, See sheet E-100.
2. For conduit to Suspend Lighting, See sheet E-230.
3. Roadway Barrier Receptacle, see Detail 1, sheet E-68.
4. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. 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-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.
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.

CONDUIT PLAN

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

SAS SUPERSTRUCTURE ROADWAY WESTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-50

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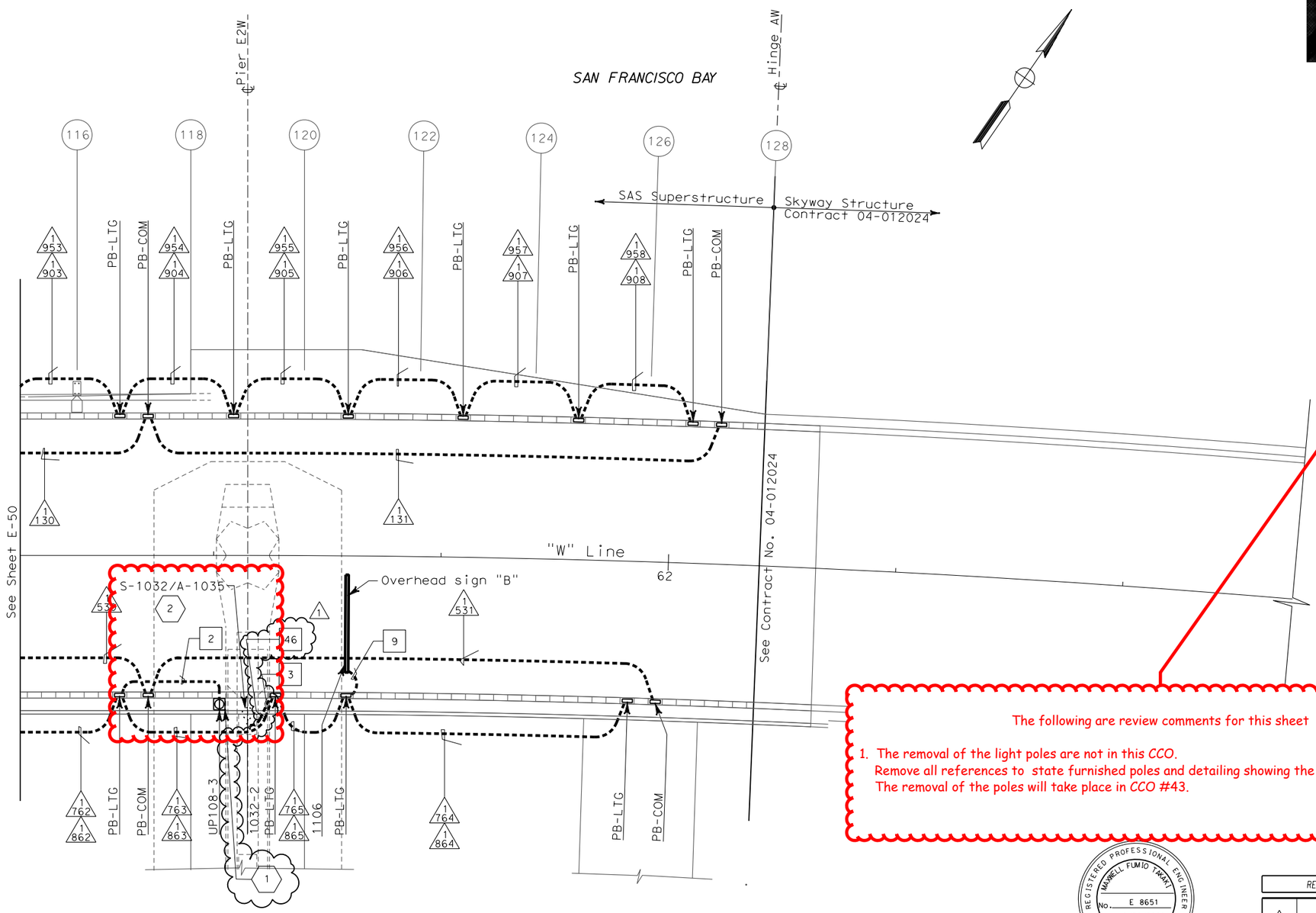

CONDUIT PLAN

SHEET NOTES:

1. Roadway Barrier Receptacle, see Detail 1, sheet E-68.
2. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. 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-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.
2. For roadway level lighting pole schedules, see sheet E-82.

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REVISIONS

CONTRACT CHANGE ORDER NO. _____
SHEET _____ OF _____

SAS SUPERSTRUCTURE ROADWAY WESTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-51

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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CU 04251 EA 0120F1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	123R1	1204

REGISTERED ELECTRICAL ENGINEER 12/19/02 DATE

12-6-04
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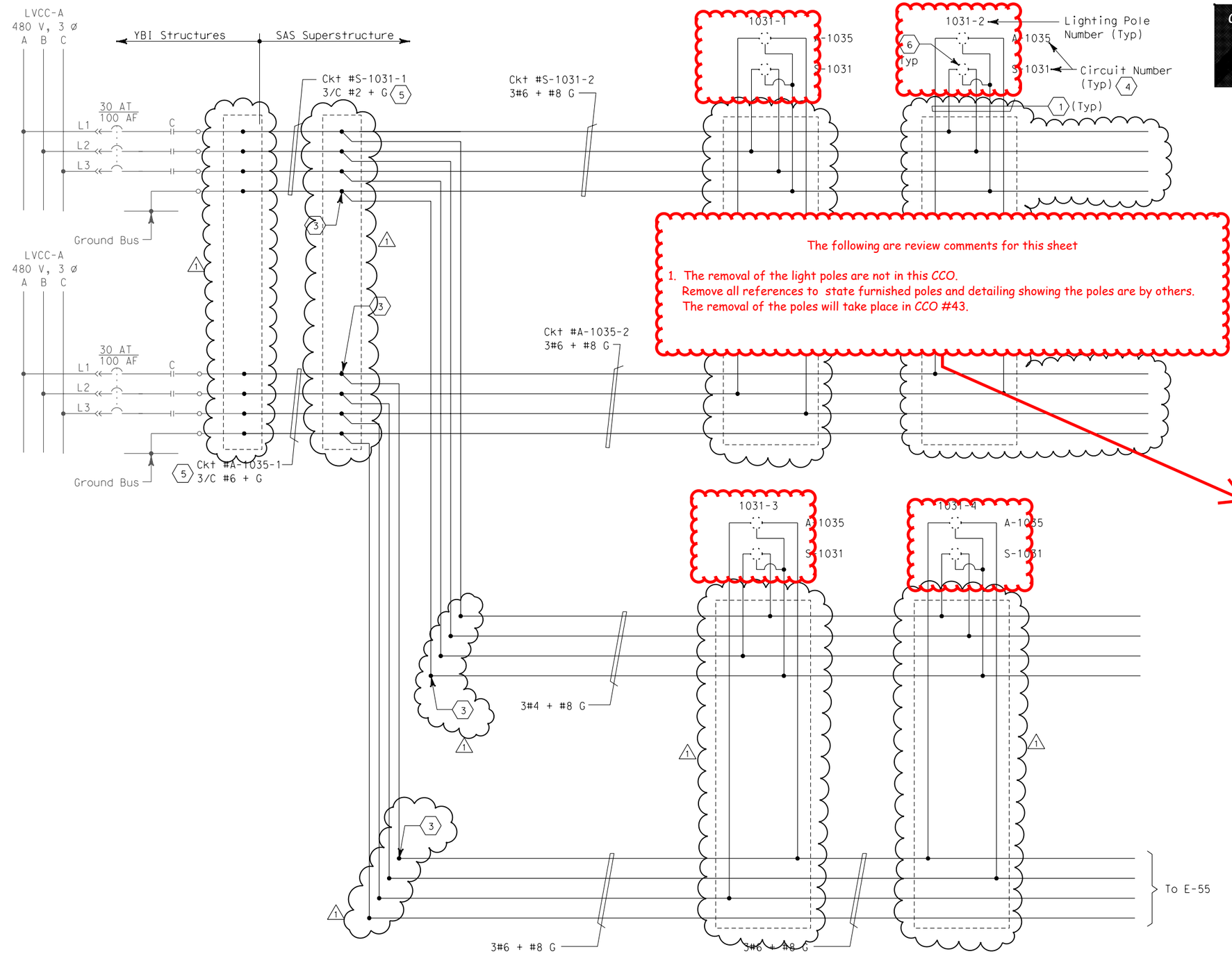

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. 4#10 + #10 G single conductors.
2. Deleted.
3. Conductors spliced inside junction box PB-2A located inside girder.
4. For SAS Superstructure roadway westbound lighting schedule, see sheet E-82.
5. The Contractor shall extend and coil 5 meters of cable in manhole 25. All cables shall be tagged with circuit numbers as shown. For location of manhole 25, see sheet E-11.
6. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For pull box schedule, see sheet E-83.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.

REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER MARVELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

FOR REVISION ONLY

DETAILS
SAS SUPERSTRUCTURE ROADWAY WESTBOUND 480 V ROADWAY LIGHTING WIRING DIAGRAM
NO SCALE

E-54

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12/19/02
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12-6-04
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REGISTERED PROFESSIONAL ENGINEER JENS ERLINGSSON No. 8249 Exp. 9/30/06 ELECTRICAL STATE OF CALIFORNIA

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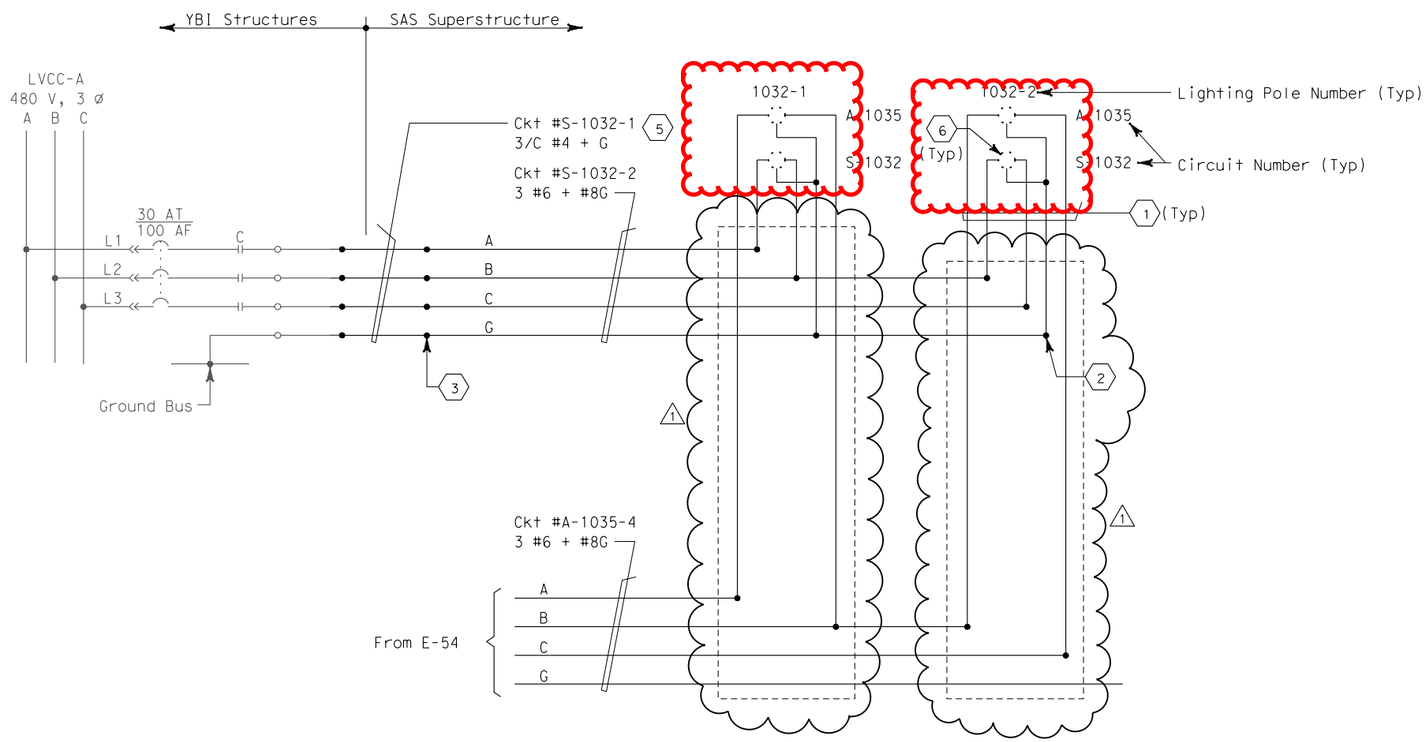

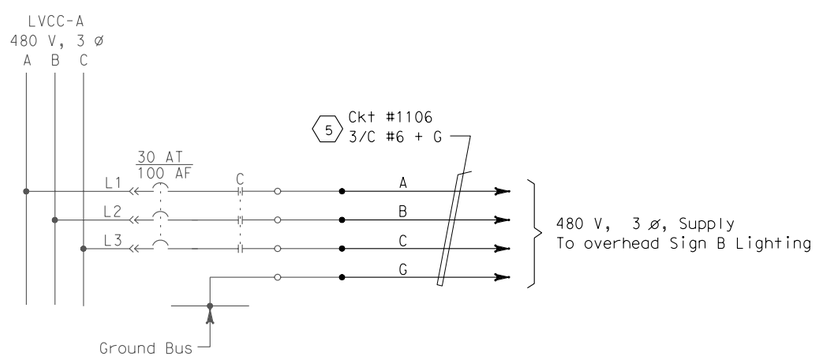

480 V OVERHEAD SIGN

SHEET NOTES:

1. 4#10 + #10 G single conductors.
2. Conductors spliced inside pull box PB-LTG. (Pole #1032-2 only).
3. Conductors spliced inside junction box PB-2A located inside girder.
4. For SAS superstructure roadway westbound lighting schedule, see sheet E-82.
5. The Contractor shall extend and coil 5 meters of cable in manhole 25. All cables shall be tagged with circuit numbers as shown. For location of manhole 25, see sheet E-11.
6. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For pull box schedule, see sheet E-83.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
   - For single line diagram, see sheets E-29 through E-34.

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

REGISTERED PROFESSIONAL ENGINEER MANNELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REVISIONS

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SHEET _____ OF _____

DETAILS
SAS SUPERSTRUCTURE ROADWAY WESTBOUND
480 V ROADWAY LIGHTING WIRING DIAGRAM
NO SCALE

E-55

REVISED BY	DATE REVISED
JP	JE

CALCULATED/DESIGNED BY	DATE 08/01
CHECKED BY	12/01

DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

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04	SF	80	13.2/13.9	141R1	1204

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PIER 1 TOWER LIGHTS SCHEDULE (ROADWAY LEVEL)

Circuit Number	Station	Location: Roadway side	Location: Suspend at Panel Point	Mounting	Ltg. Fixture Type	Number/ Wattage	Remarks
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+69	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	1-1000 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	1-1000 W	with Remote Ballast

LIGHTING POLE SCHEDULE

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

SHEET NOTE:

1. 20 meter light poles, luminaires and lowering devices shall be state furnished and installed by the contractor.

NOTES:

1. For Roadway Level Lighting Wiring Diagrams see sheets E-54 thru E-55.
2. For Roadway Level Lighting Conduit Plan see sheets E-46 thru E-51.
3. For type of Roadway poles. Refer to Sheets E-85 thru E-89.

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

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	D	Downward flood light	1	1000 W	A		C	Cable
		S	Safety light	U	Upward flood light	2	400 W	B		D	Roadway deck
				R	Roadway light	3	250 W	C		PB	Pier Base/ Pole mount
				T	Pylon flood light	4	175 W			RC	Roadway at Cross beam
				M	Marker light	5	100 W			P	Pole mounted without lower/raiser
				P	Pylon marker light	6	50 W			L	Pole mounted with lower/raiser
				B	Bike path light						
				V	Belvedere light						
				L	Light pipe						

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REVISIONS

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DETAILS
SAS SUPERSTRUCTURE ROADWAY WESTBOUND LIGHTING SCHEDULES

E-82

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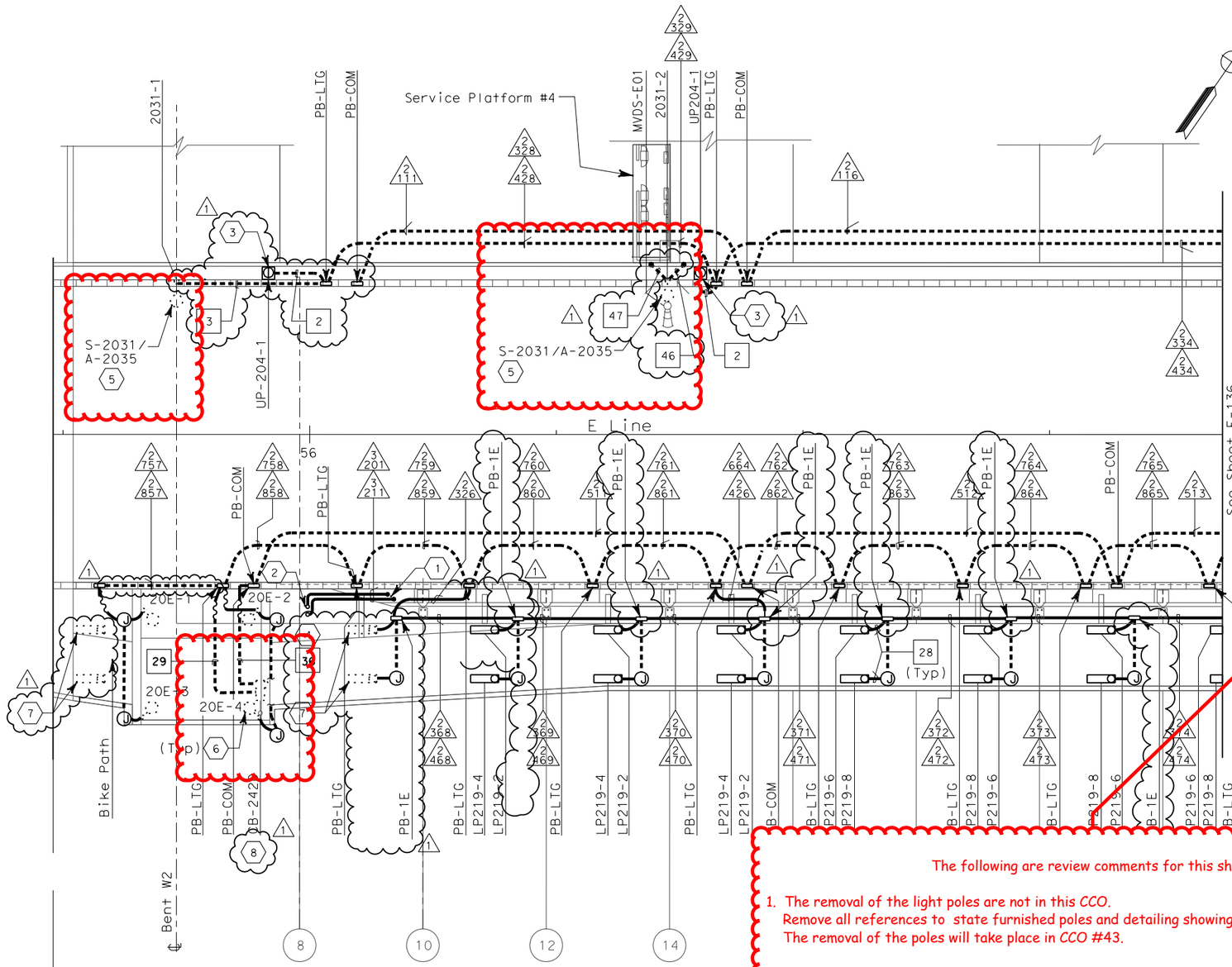

SAS SUPERSTRUCTURE - CONDUIT PLAN

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. Conduit from barrier pull box or other equipment down into Girder Box, see sheet E-181.
2. For conduit to suspension cable lighting, see sheet E-226.
3. Roadway Barrier Receptacle, see Detail 1, sheet E-162.
4. Contractor shall coil 30 meters inside cable tray for feed into PB-COM by others.
5. Light pole, luminaires and lowering device are state furnished and installed by contractor.
6. Belvedere light poles and luminaires are state furnished and installed by others.
7. Railing lights are contractor furnished and installed by others.
8. Call box is state furnished and installed by contractor.

1. References:
   - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CMS, CCTV and MVDS, see sheets E-160 thru E-162 and E-169.
   - 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-169.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.

For Roadway level, Bike Path and Belvedere Lighting Fixture Schedules and wiring diagrams see sheets E-146, E-147 and E-165.

For Roadway level and Bike Path Call Box Schedule, see sheet E-397.

For number of lighting fixtures (main tower lights) see lighting schedule sheets E-271 and E-272.

5. All conduits and fittings routed exposed between the Bike Path and the roadway shall be galvanized rigid steel, PVC coated.
6. See sheets E-160 thru E-165 for conduit locations.
7. For Belvedere Lighting Fixture installation, see sheet E-173.

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SAS SUPERSTRUCTURE ROADWAY EASTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-135

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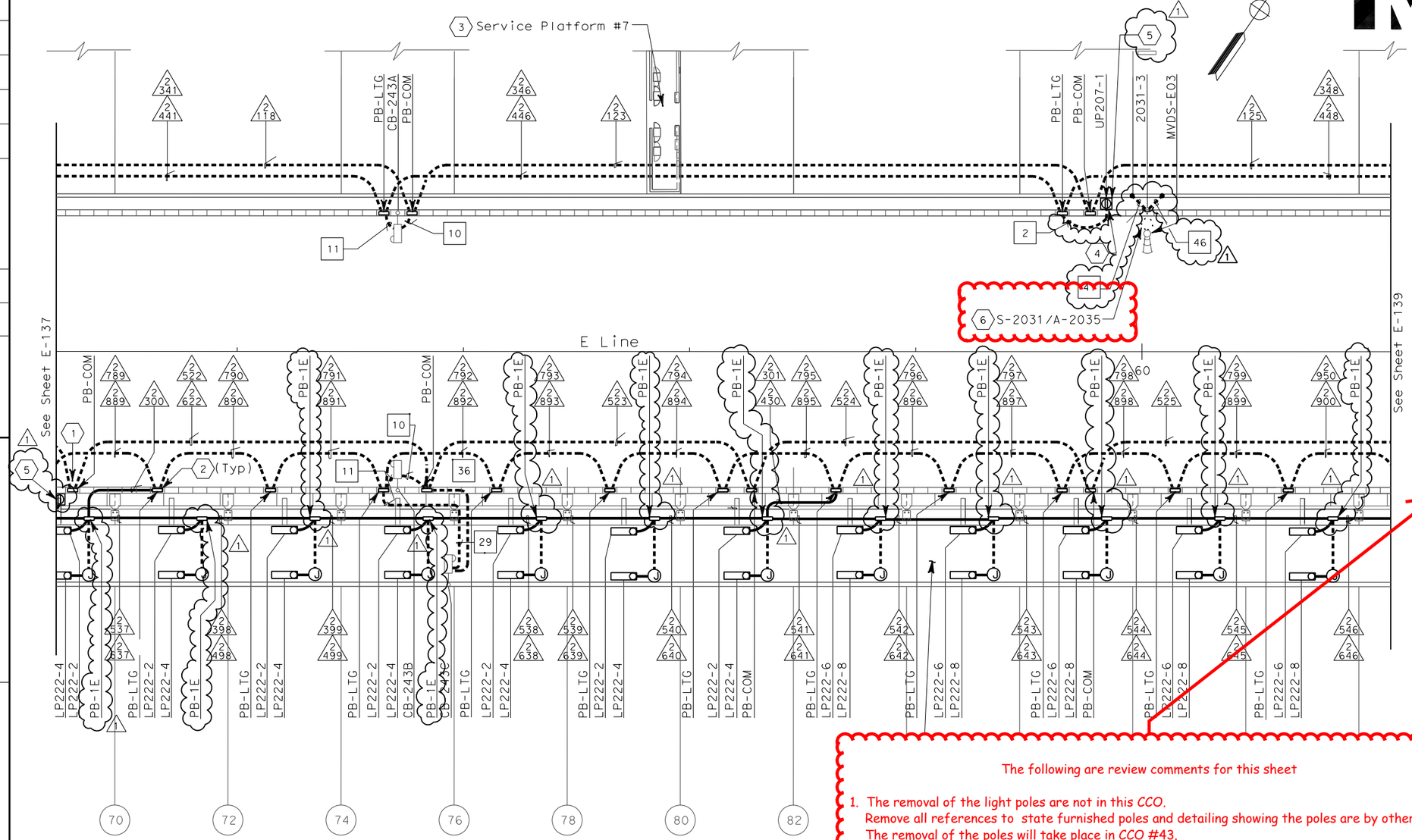

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. Conduit from barrier pullbox or other equipment down into Girder Box, see sheet E-184.
2. For conduit to tower and suspension cable lighting, see sheet E-229.
3. Contractor shall furnish and install UP-207 and LP-222 per sheet E-74. For complete scope of work on platform and other related work not shown on this sheet, see Electrical Special Provisions.
4. Conduit down to girder for MVDS, see sheet E-184.
5. Roadway Barrier Receptacle, see Detail 1, sheet E-162.
6. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CMS, CCTV and MVDS, see sheets E-160 thru E-162 and E-169.
   - 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-169.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
2. For Roadway Level Call Boxes, refer to sheet E-396.
3. For Roadway level, Bike Path and Belvedere Lighting Fixture Schedules, see sheets E-146, E-147 and E-165.
4. For Roadway level and Bike Path 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. All conduits and fittings routed exposed between the Bike Path and the roadway shall be galvanized rigid steel, PVC coated.
7. See sheets E-160 thru E-165 for conduit locations.

SAS SUPERSTRUCTURE - CONDUIT PLAN

REGISTERED PROFESSIONAL ENGINEER MARNELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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

E-138

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

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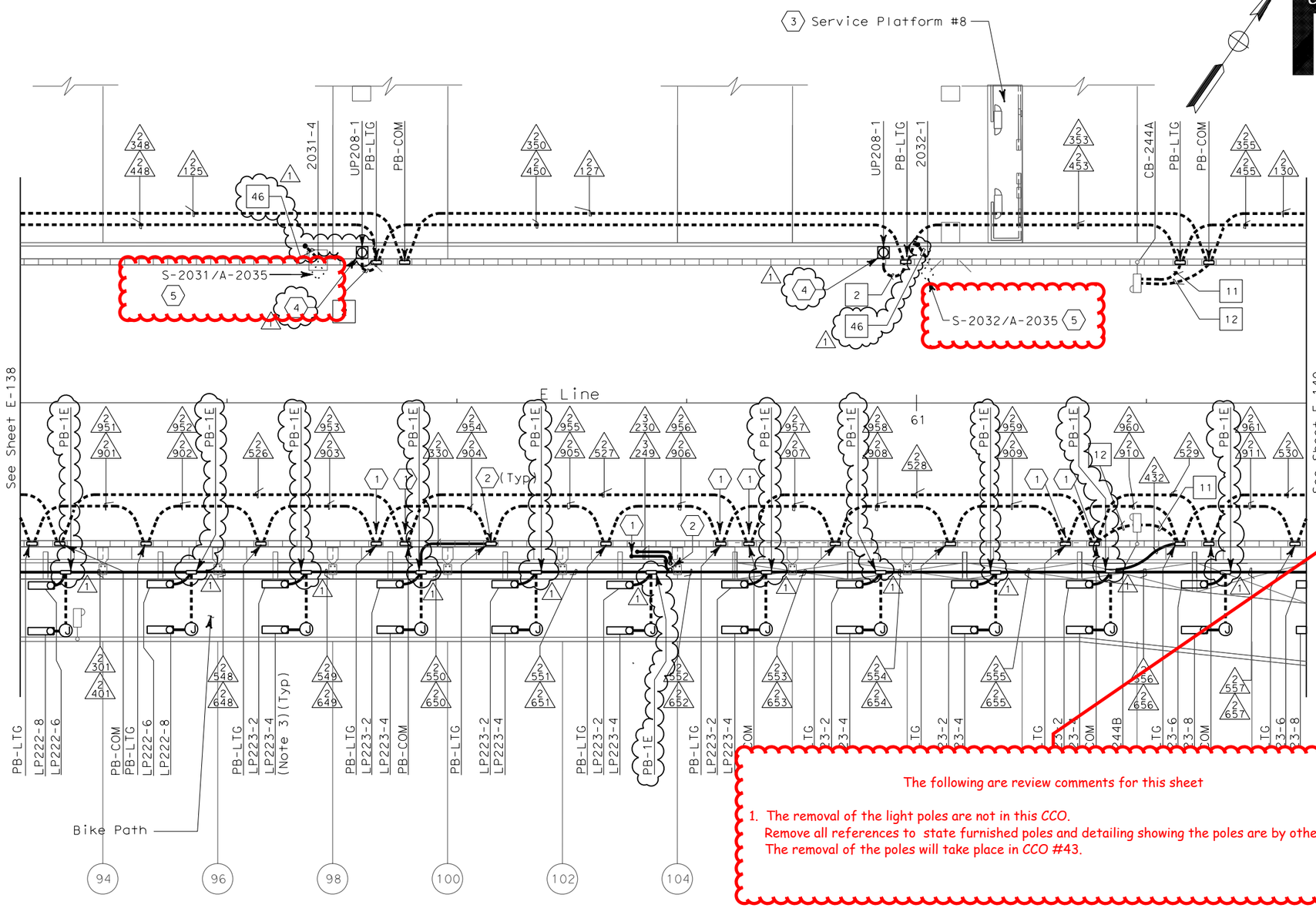

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
Remove all references to state furnished poles and detailing showing the poles are by others.
The removal of the poles will take place in CCO #43.

SAS SUPERSTRUCTURE - CONDUIT PLAN

SHEET NOTES:

1. Conduit from barrier pullbox or other equipment down into Girder Box, see sheet E-185.
2. Contractor shall furnish and install UP-208 and LP-223 per sheet E-75. For complete scope of work on platform and other related work not shown on this sheet, see Electrical Special Provisions.
3. For conduit to tower and suspension cable lighting, see sheet E-230.
4. Roadway Barrier Receptacle, see Detail 1, sheet E-162.
5. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CMS, CCTV and MVDS, see sheets E-160 thru E-162 and E-169.
   - 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-169.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
2. For Roadway Level Call Boxes, refer to sheet E-396.
3. For Roadway level, Bike Path and Belvedere Lighting Fixture Schedules, see sheets E-146, E-147 and E-165.
4. For Roadway level and Bike Path 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. All conduits and fittings routed exposed between the Bike Path and the roadway shall be rigid galvanized steel, PVC coated.
7. See sheets E-160 thru E-165 for conduit locations.

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SHEET _____ OF _____

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SAS SUPERSTRUCTURE ROADWAY EASTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-139

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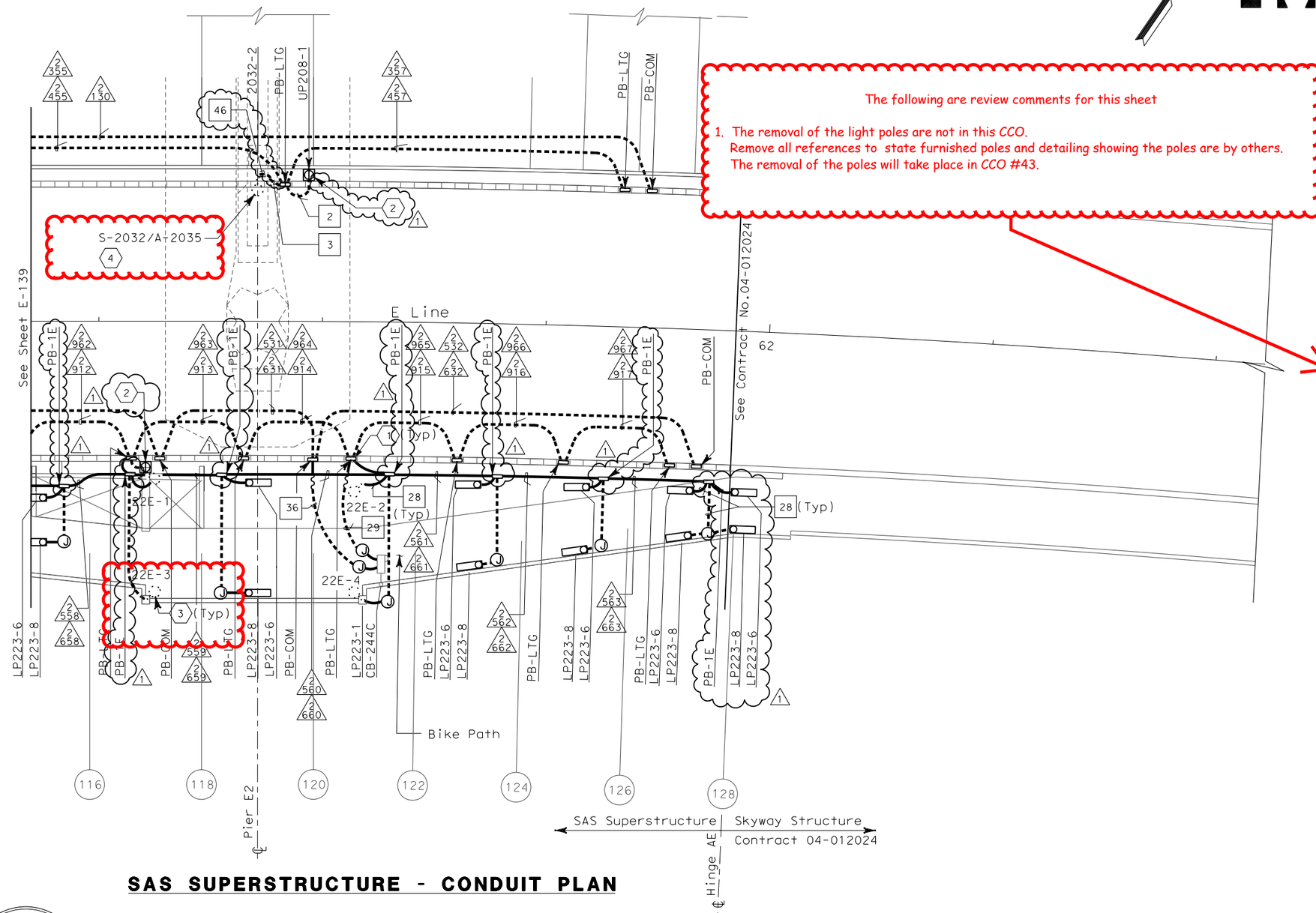
The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.



SAS SUPERSTRUCTURE - CONDUIT PLAN

SHEET NOTES:

1. For conduit to tower and suspension cable lighting, see sheet E-230.
2. Roadway Barrier Receptacle, see Detail 1, sheet E-162.
3. Belvedere lights are state furnished and installed by contractor.
4. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. References:
   - For typical details and locations of conduit connections to light poles, barrier outlet boxes, call boxes, overhead sign lighting, CMS, CCTV and MVDS, see sheets E-160 thru E-162 and E-169.
   - 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-169.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
2. For Roadway Level Call Boxes, refer to sheet E-396.
3. For Roadway level, Bike Path and Belvedere Lighting Fixture Schedules, see sheets E-146, E-147 and E-165.
4. For Roadway level and Bike Path 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. All conduits and fittings routed exposed between the Bike Path and the roadway shall be galvanized rigid steel, PVC coated.
7. See sheets E-160 thru E-165 for conduit locations.
8. For Belvedere lighting fixture installation, see sheet E-173.

REGISTERED PROFESSIONAL ENGINEER MONELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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SAS SUPERSTRUCTURE ROADWAY EASTBOUND
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

E-140

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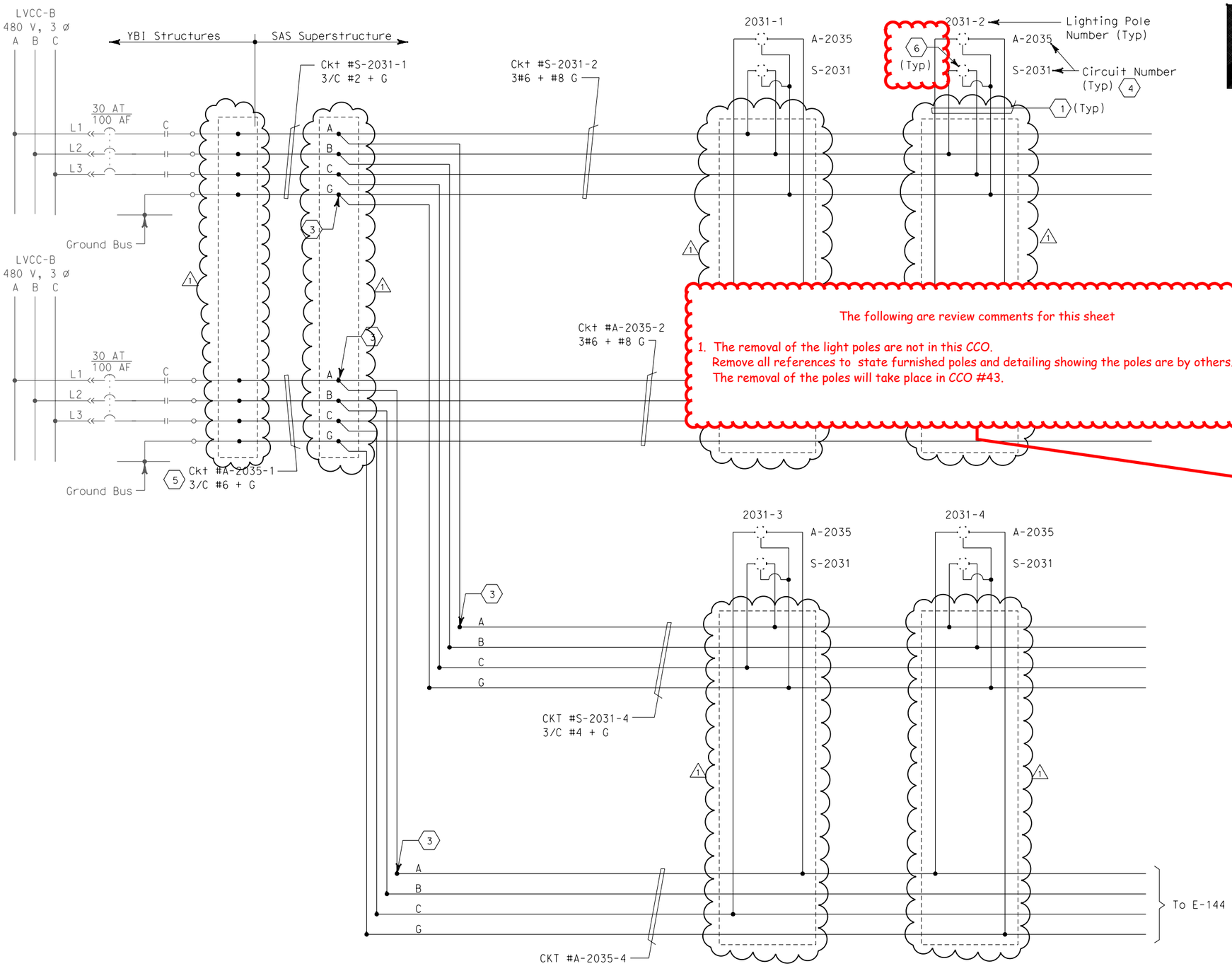

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
Remove all references to state furnished poles and detailing showing the poles are by others.
The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. 4#10 + #10 G, single conductors.
2. Deleted.
3. Conductors spliced inside junction box located inside girder.
4. For Main Span Roadway Eastbound lighting schedule, see sheet E-168.
5. The Contractor shall extend and coil 5 meters of cable in manhole 25. All cables shall be tagged with circuit numbers as shown.
6. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. Use multi-conductor cable if circuit is routed via cable trays.
2. References:
   - For LVCC-B single line diagrams, see sheets E-32 to E-34
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
3. For SAS Superstructure Roadway Eastbound 480 V Roadway Lighting, see sheets E-135 thru E-140.

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DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND 480 V ROADWAY LIGHTING WIRING DIAGRAM
NO SCALE

E-143

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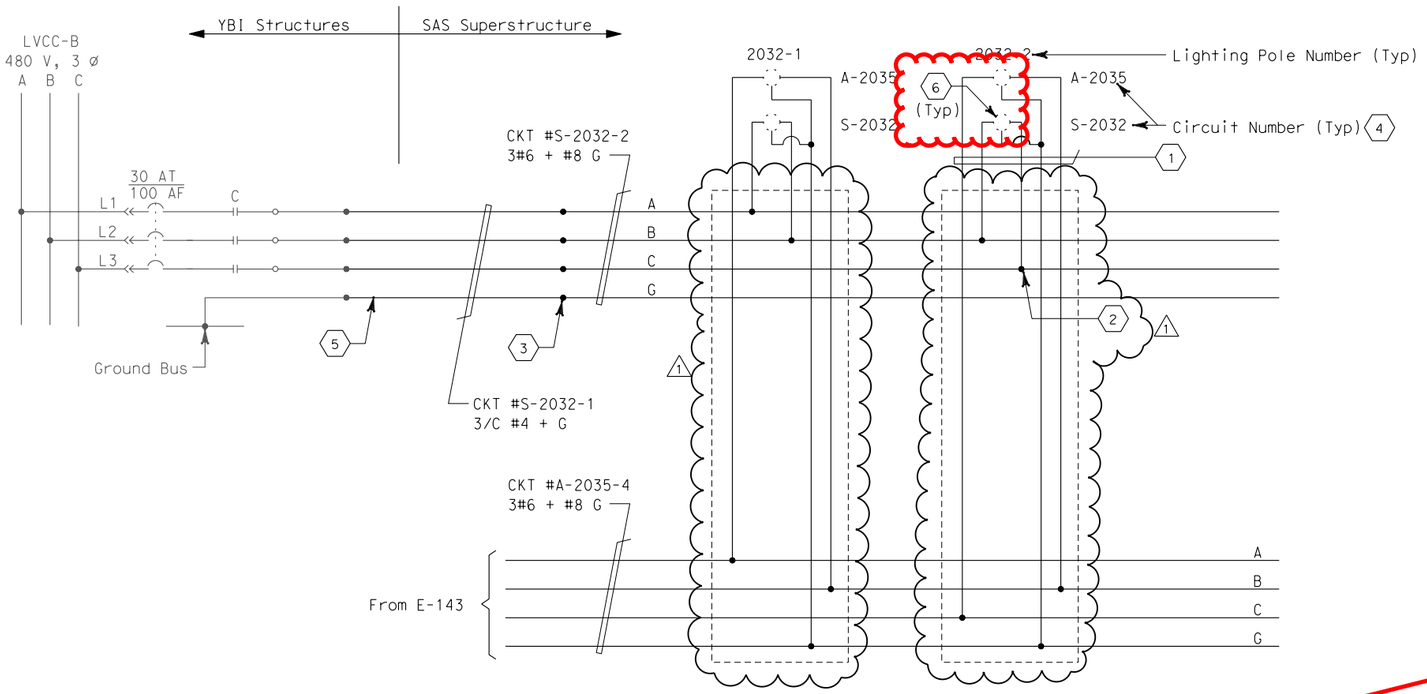

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1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

SHEET NOTES:

1. 4#10 + #10 G single conductors.
2. Tape and coil conductors ~~spliced~~ inside pull box PB-LTG. (Pole #2032-2 only). △1
3. Conductors spliced inside junction box located inside girder.
4. For SAS Superstructure Roadway Eastbound lighting schedule, see sheet E-168.
5. The Contractor shall extend and coil 5 meters of cable in manhole 25. All cables shall be tagged with circuit numbers as shown.
6. Light pole, luminaires and lowering device are state furnished and installed by contractor.

NOTES:

1. Use multi-conductor cable if circuit is routed via cable trays.
2. References:
   - For LVCC-B single line diagrams, see sheets E-32 to E-34
   - For pull box schedules, see sheet E-169
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
3. For SAS Superstructure Roadway Eastbound 480 V Roadway Lighting, see sheets E-139 and E-140.

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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CONTRACT CHANGE ORDER NO._____
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DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND 480 V ROADWAY LIGHTING WIRING DIAGRAM
NO SCALE

E-144

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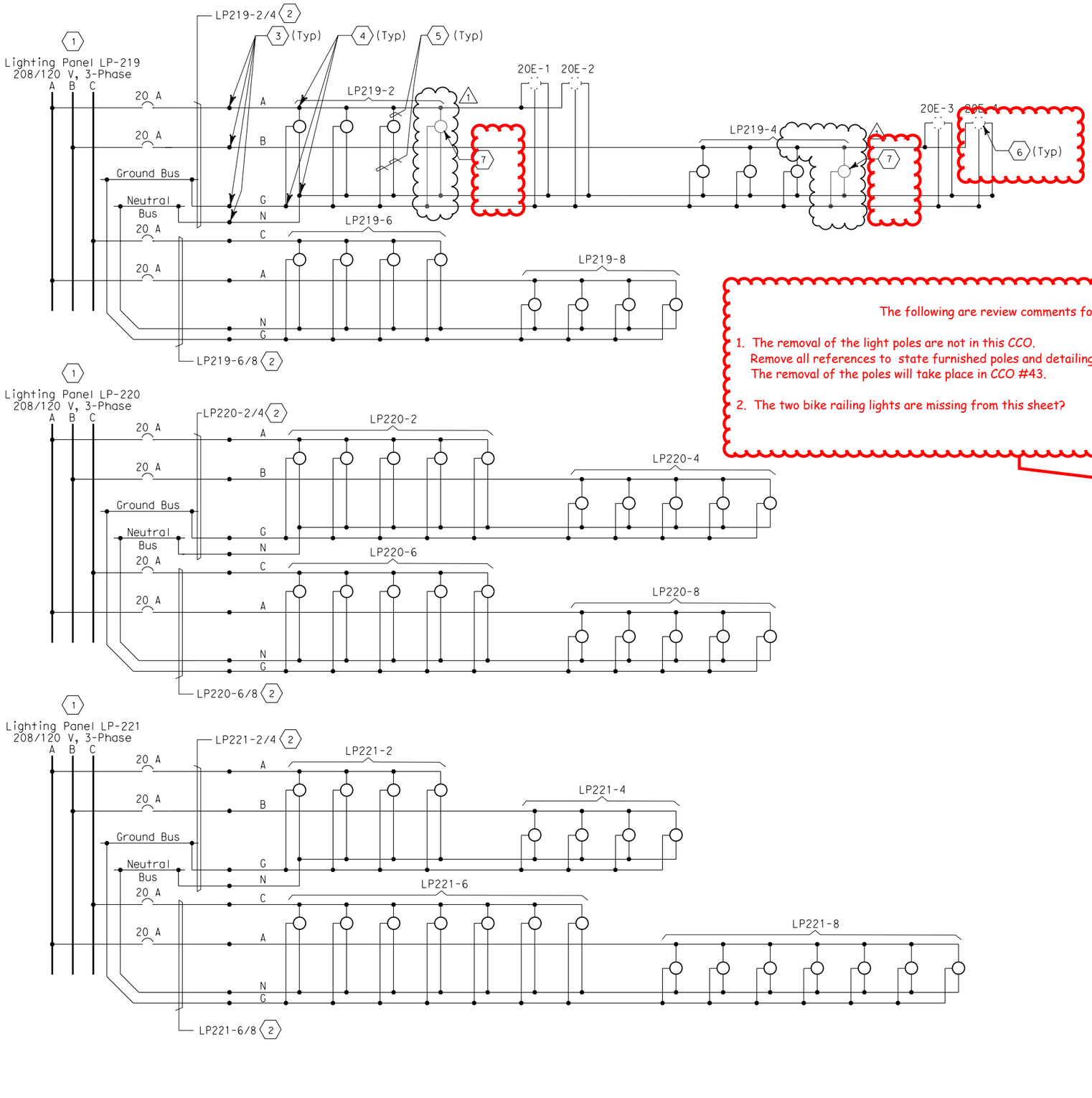

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1. The removal of the light poles are not in this CCO.
   Remove all references to state furnished poles and detailing showing the poles are by others.
   The removal of the poles will take place in CCO #43.

2. The two bike railing lights are missing from this sheet?

SHEET NOTES:

1. For lighting panel schedule LP-219, LP-220, LP-221, see sheets E-155 and E-156.
2. Lighting feeder cable is 3/C #6 + G.
3. Conductors spliced inside PB-LTG located in barrier.
4. Conductors spliced inside PB-LTG (PB-9A) located next to bike path.
5. 2#10 + #10 G single conductors.
6. Belvedere light poles and luminaires are state furnished and installed by contractor.
7. Railing lights are contractor furnished and installed by others.

NOTES:

1. For circuit and conduit/cable tray schedules, see sheets starting at E-401.

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKATA No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND 120 V BIKE PATH LIGHTING WIRING DIAGRAMS

NO SCALE

E-146

DATE	REVISED BY	DATE	REVISED BY
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CU 04251 — EA 0120F1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	204R1	1204

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12-6-04
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LIGHTING PANEL LP-219 (CKT #2103)

LOCATION: SAS SUPERSTRUCTURE SERVICE PLATFORM #4

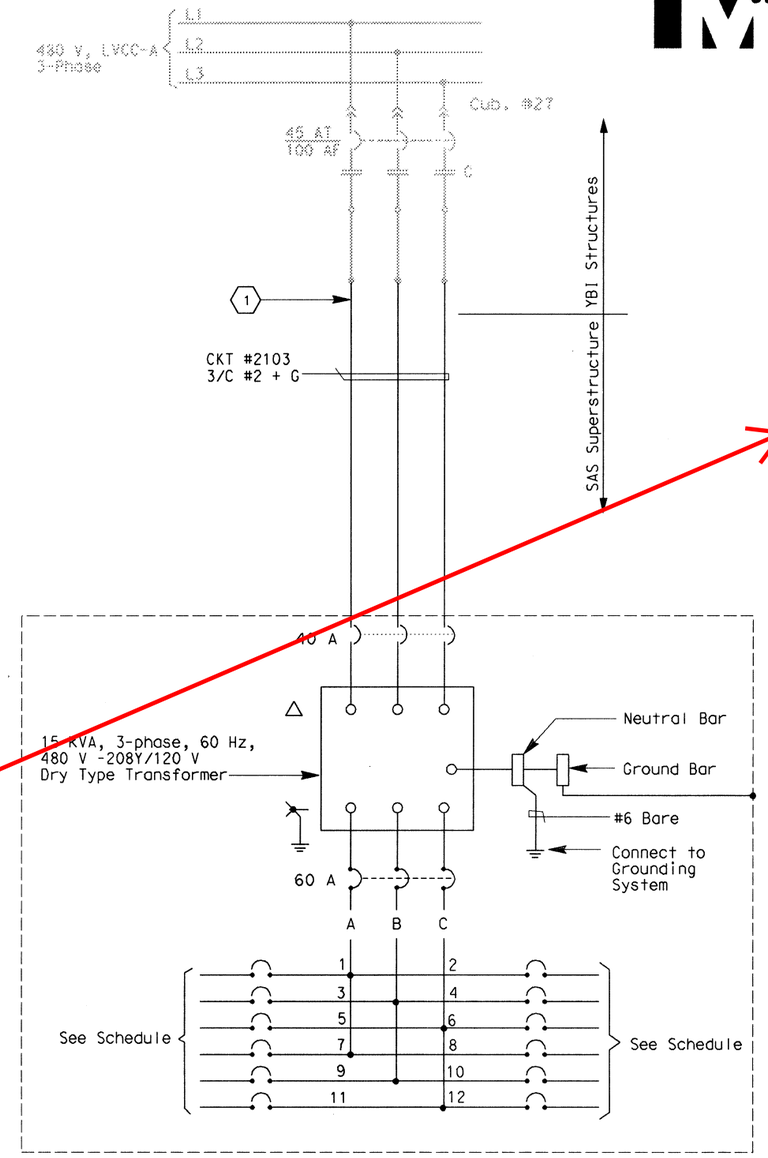
LOAD DESCRIPTION	LTG	CB		CB	LTG	LOAD DESCRIPTION
Spare		20/1	1 A 2	20/1	162 (1)	Bike Path LTG (4) Belvedere (2) (2) (1)
		20/1	3 B 4	20/1	162 (1)	Bike Path LTG (4) Belvedere (2) (2) (1)
		20/1	5 C 6	20/1	216	Bike Path LTG (4)
		20/1	7 A 8	20/1	216	Bike Path LTG (4)
		20/1	9 B 10	20/1		Spare
		20/1	11 C 12	20/1		
TOTAL VA					756 (1)	TOTAL VA

LOAD SUMMARY (INCLUDES .90 PF) (VA)
LIGHTING (AT 100%): 756 (1)

BALANCE (kVA)
Phase A - 0.378 (1)
Phase B - 0.162
Phase C - 0.216

VOLTAGE: 208/120 V
PHASE/WIRES: 3-phase, 4-wire
BUS RATING: 100 A
MAIN: 60 A
MOUNTING: Surface
K.A.I.C.: 10

TOTAL kVA: 0.756 (1)



The following are review comments for this sheet

1. This sheet was missing from the last updated CCO # 42 Set.
There are still items that are associated with this CCO included in this sheet.

SHEET NOTES:

(1) The Contractor shall extend and coil 5.0 meters of cable in M.H.#25 All cables shall be tagged with circuit numbers as shown.

(2) Installation of Belvedere additional loads by others.

NOTES:

1. The Contractor shall provide nameplates and circuit schedules as shown.
2. Install transformer/panelboard inside a PB-8A enclosure (fiberglass) to be sized by the Contractor.
3. References:
   - For LVCC-A single line diagram, see sheets E-29 thru E-31.
   - For circuit and conduit/cable tray schedules, see sheets starting at E-401.
   - For pull box schedule, see sheet E-169.

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REVISIONS

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SHEET _____ OF _____

This Sheet is missing from this Update Package.

DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND PANEL LP-219 SCHEDULE
NO SCALE

E-155

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REVISED BY
DATE REVISED

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EA 0120F1
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12-6-04
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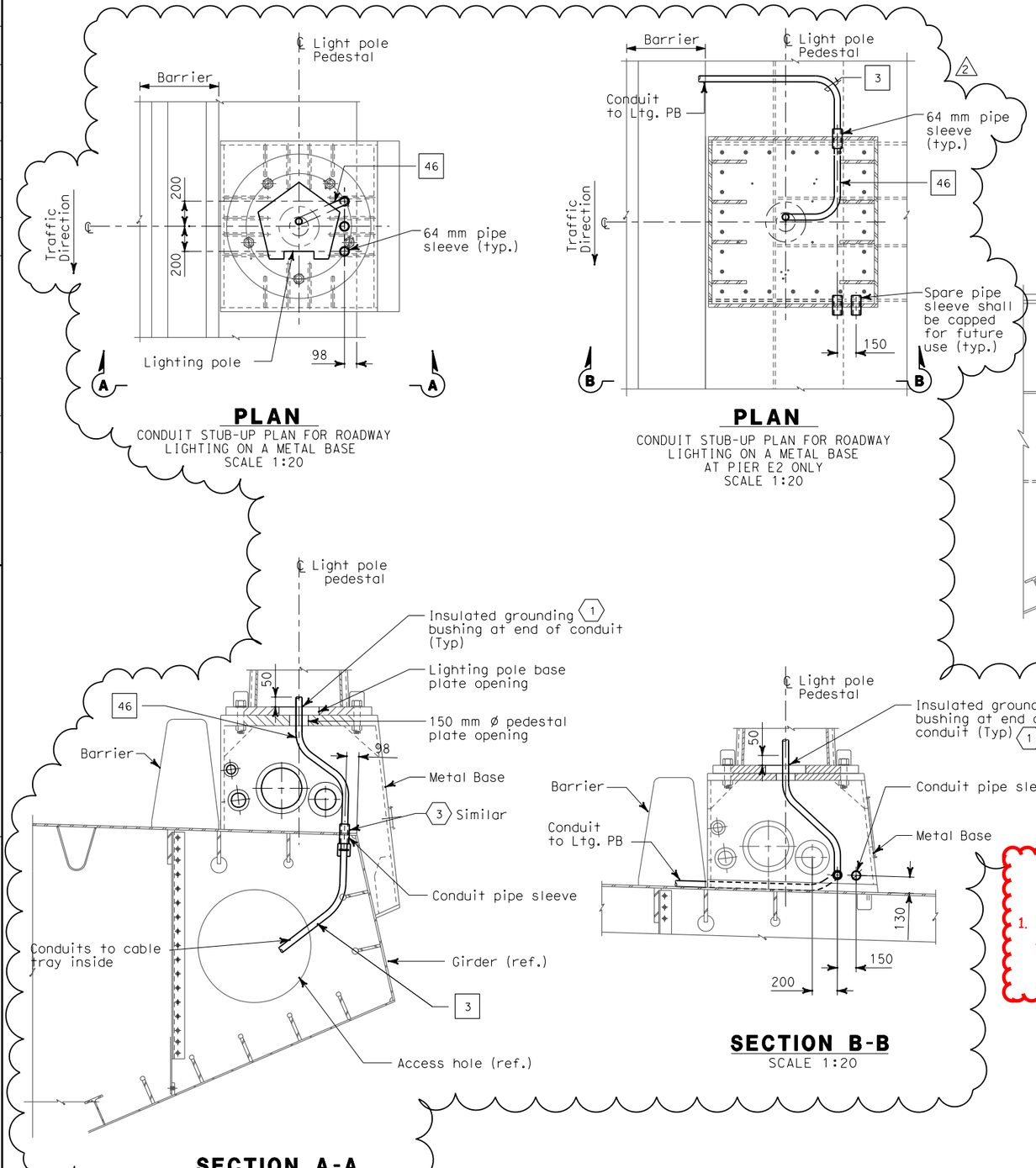

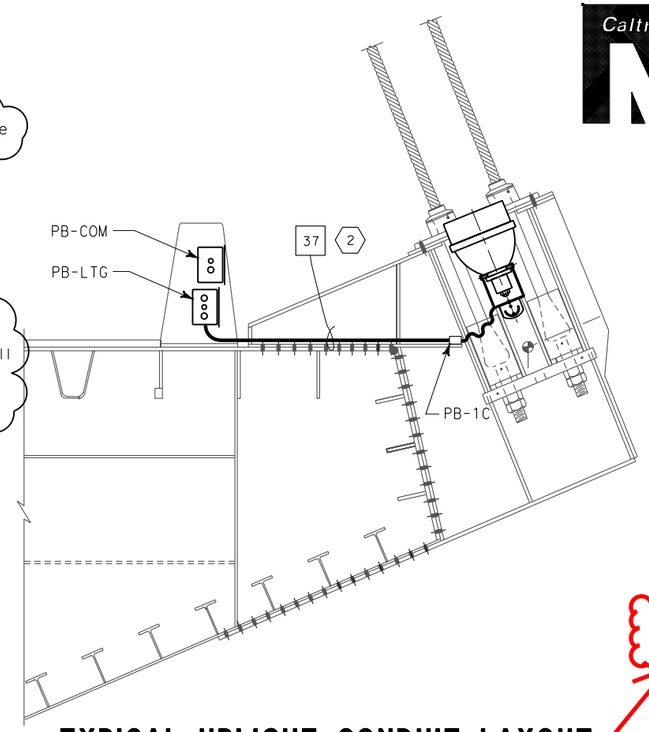

TYPICAL UPLIGHT CONDUIT LAYOUT
SCALE 1:20

SHEET NOTES:

1. Bond grounding bushing to ground lug of lighting pole with #6 bare copper wire.
2. Conduit shall be clear of all piping and pipe sleeve. Route conduit on top of deck plate, outside of girder box.
3. See Utility Detail No. 1 (Sheet No. 965 of 1204) for conduit penetration through girder plate and lighting pole metal base. The contractor shall install sealant between the sleeve and conduit for future light pipe, plug and cap sleeve to prevent water or moisture from passing inside the sleeve. 1

NOTES:

1. References:
   - For lighting pole schedule, see sheet E-168.
   - For location of pull boxes inside girder, see sheets E-181 thru E-186.
   - For luminaire support details, see structural sheets.

The following are review comments for this sheet

1. Marks from previous CCO's are to be removed when a new CCO modifies the sheet. See CCO guidelines.

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1	10/16/06	REVISED SHEET NOTES	LR	MG	11

REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND CONDUIT LOCATIONS
SCALE AS NOTED

E-161

REVISED BY	DATE REVISED
KG	10/01
AB	11/01

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LIGHTING POLE SCHEDULE

Circuit Number	Pole Number	Station	Location: Roadway side	Mounting Height (M)	Ltg. Fixture Type	Number/ Wattage	Remarks (Mounting Provisions)
S-2031	2031-1	55+89	North	20	MSR-2B-L	3-400 W	Pole mounted
A-2035					MAM-3	1-250 W	
S-2031	2031-2	56+29	North	20	MSR-2B-L	3-400 W	Pole mounted
A-2035					MAM-3	1-250 W	
S-2031	2031-3	59+99	North	20	MSR-2-L	2-400 W	Pole mounted
					MSR-2B-L	2-400 W	
A-2035					MAM-3	1-250 W	
S-2031	2031-4	60+49	North	20	MSR-2-L	2-400 W	Pole mounted
S-2031					MSR-2B-L	2-400 W	
A-2035					MAM-3	1-250 W	
S-2032	2032-1	61+01	North	20			Pole mounted
					MSR-2-L	2-400 W	
					MSR-2B-L	2-400 W	
A-2035					MAM-3	1-250 W	
S-2032	2032-2	61+54	North	20	MSR-2-L	2-400 W	Pole mounted
					MSR-2B-L	2-400 W	
A-2035					MAM-3	1-250 W	

(1)

BELVEDERE LIGHTING POLE AND FIXTURE SCHEDULE (1)

Circuit Number	Pole Number	Location	Mounting Height (M)	Ltg. Fixture Type	Number/ Wattage
LP219-2	20E-1	Belvedere 20E	4.3	MSV	2-35 W
LP219-2	20E-2		4.3	MSV	2-35 W
LP219-4	20E-3		4.3	MSV	2-35 W
LP219-4	20E-4		4.3	MSV	2-35 W
LP223-6	22E-1	Belvedere 22E	4.3	MSV	2-35 W
LP223-6	22E-2		4.3	MSV	2-35 W
LP223-8	22E-3		4.3	MSV	2-35 W
LP223-8	22E-4		4.3	MSV	2-35 W

(2)

NOTES:

. References:
- For roadway level lighting wiring diagram, see sheets E-143 thru E-145.
- For roadway level lighting conduit diagram, see sheets E-135 thru E-140.

SHEET NOTES:

(1) 20 meter light poles, luminaires and lowering devices are state furnished and installed by contractor.

(2) Belvedere light poles and luminaires are state furnished and installed by contractor.

PIER 1 MAIN TOWER LIGHTS SCHEDULE (ROADWAY LEVEL)

Circuit Number	Station	Location: Roadway side	Location: Suspend at Panel Point	Mounting	Ltg. Fixture Type	Number/ Wattage	Remarks
PYLON LIGHTING							
A-3039	57+34	North	PP-35/36	Bridge deck	MAT-1B-D	2-1000 W	with Remote Ballast
A-3039	57+36	North	PP-36	Bridge deck	MAT-1C-D	1-1000 W	with Remote Ballast
A-3039	57+42	North	PP-36/37	Bridge deck	MAT-1A-D	2-1000 W	with Remote Ballast
A-3039	57+55	North	PP-39	Bridge deck	MAT-3-D	2-250 W	with Remote Ballast
A-3039	57+60	North	PP-40	Bridge deck	MAT-3-RC	2-250 W	with Remote Ballast
A-3039	57+66.7	South	West of PP-42	Bridge deck	MAT-1A-D	(1) 1-1000 W	with Remote Ballast
		(1)	(1)			(1)	
A-3040	58+05	North	PP-48/49	Bridge deck	MAT-1B-D	2-1000 W	with Remote Ballast
A-3040	58+03	North	PP-48	Bridge deck	MAT-1C-D	1-1000 W	with Remote Ballast
A-3040	57+97	North	PP-47/48	Bridge deck	MAT-1A-D	2-1000 W	with Remote Ballast
A-3040	57+84	North	PP-45	Bridge deck	MAT-3-D	2-250 W	with Remote Ballast
A-3040	57+79	North	PP-44	Bridge deck	MAT-3-RC	2-250 W	with Remote Ballast
A-3040	57+71.7	South	East of PP-42	Bridge deck	MAT-1A-D	(1) 1-1000 W	with Remote Ballast
		(1)	(1)			(1)	

The following are review comments for this sheet

1. The removal of the light poles are not in this CCO.
Remove all references to state furnished poles and detailing showing the poles are by others.
The removal of the poles will take place in CCO #43.

LIGHTING FIXTURE TYPE DESIGNATION (1)

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	D	Downward flood light	1	1000 W	A		C	Cable
		S	Safety light	U	Upward flood light	2	400 W	B		D	Roadway deck
				R	Roadway light	3	250 W	C		PB	Pier Base/ Pole mount
				T	Pylon flood light	4	175 W			RC	Roadway at Cross beam
				M	Marker light	5	100 W			P	Pole mounted without lower/raiser
				P	Pylon marker light	6	50 W			L	Pole mounted with lower/raiser
				B	Bike path light						
				V	Belvedere light						
				L	Light pipe						

BIKE PATH FIXTURE SCHEDULE

Location	Mounting	Ltg. Fixture Type	Number/ Wattage	Remarks
Bike Path Structure	Bike Path Railway	MSB	1-40 W	Compact Fluorescent

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REVISIONS

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DETAILS
SAS SUPERSTRUCTURE ROADWAY EASTBOUND LIGHTING SCHEDULES
NO SCALE

E-168

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JP	10/01

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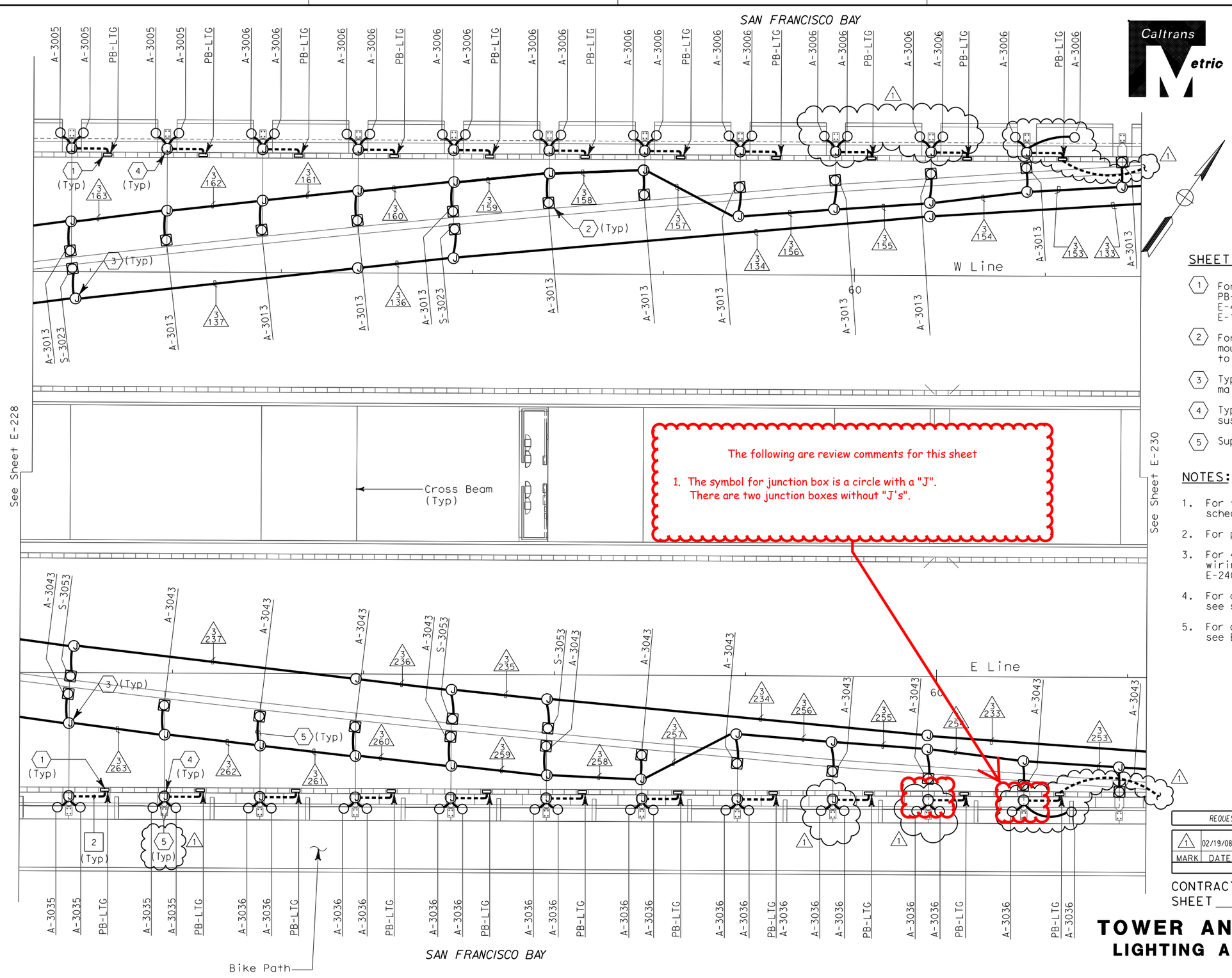

The following are review comments for this sheet

1. The symbol for junction box is a circle with a "J". There are two junction boxes without "J's".

SHEET NOTES:

1. For additional conduits and actual location from PB-LTG, see SAS Superstructure Roadway Plans: E-49 (Westbound) E-138 (Eastbound)
2. For tower and suspension cable lighting mounting details, see sheets E-251 and E-257 to E-261.
3. Type PB-1B junction box is mounted on main suspension cable.
4. Type PB-1C junction box is mounted on suspender brackets.
5. Supplied with lighting fixture assembly.

NOTES:

1. For tower and suspension cable lighting schedule see sheets E-271 to E-272.
2. For pull box schedule see sheets E-83 & E-169.
3. For 480 V main suspension cable lighting wiring diagrams, see sheets E-236 through E-240 and E-243 through E-247.
4. For circuit and conduit/cable tray schedules, see sheets starting at E-401.
5. For other related work not shown on this sheet, see Electrical Special Provisions.

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CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

TOWER AND SUSPENSION CABLE
LIGHTING AND ELECTRICAL SYSTEMS

SCALE 1:200

SAS SUPERSTRUCTURE

E-229

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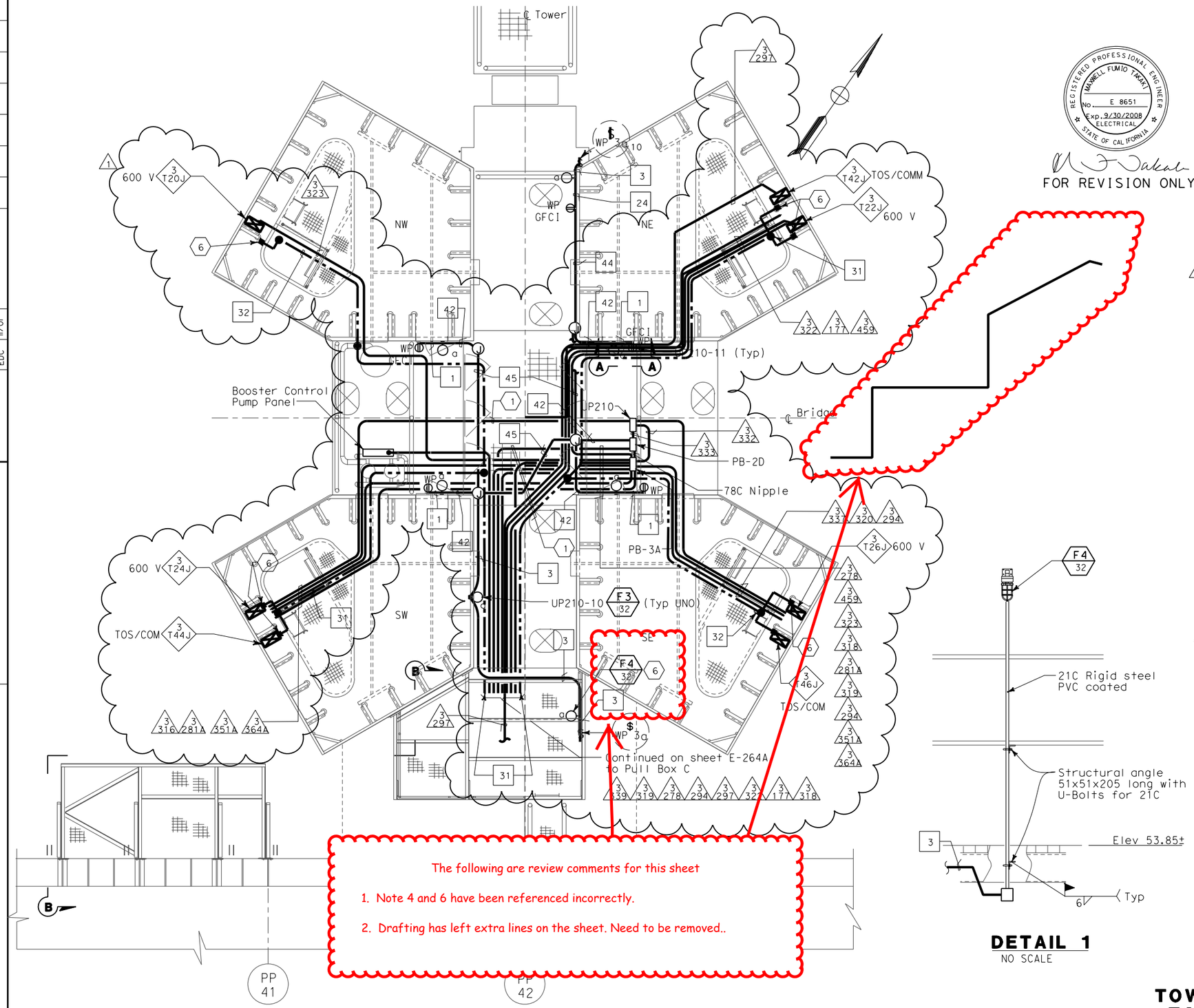

The following are review comments for this sheet

1. Note 4 and 6 have been referenced incorrectly.
2. Drafting has left extra lines on the sheet. Need to be removed..

WALKWAY AND ACCESS PLATFORM TO "E" LINE GIRDER AT ELEV 53.85 m

SCALE 1:40

DETAIL 1

NO SCALE

SHEET NOTES:

1. All conduits which thereafter cross the access walkways shall be raised to a level of at least 2438 above the grating to pass overhead, allowing free walkways on the remaining three quadrants of the platform. Door on north face of SE tower shaft shall remain accesible.
2. Down to elev. 3.0 m, see sheet E-231.
3. For continuation, see sheet E-266.
4. See Detail 1, this drawing.
5. 250 kcmil Copper conductor down to Elevation 3.0 Sheet E-231.
6. #4/0 Bare copper conductor bonded to all cable trays (Typ.)

NOTES:

1. References:
   - For typical conduit installation details, see sheet E-268.
   - For utility panel UP-210 schedule, see sheet E-278.
   - For types of pull boxes, splice boxes and enclosures, see sheets E-83 and E-169.
   - For conduit and cable tray schedules, see sheets starting at E-401.
   - For lighting fixture schedule, see sheet E-273.
   - For vertical conduit runs support system, see sheet E-287.
   - For Section A-A, see sheet E-285.
   - For lighting installation details, see sheet E-267.
2. Electrical conduits shall enter the tower shafts between stiffeners A3 and A4 only for conduits going up or down inside the tower shafts between C1 and C2 only. For conduit entry details, see Structural Utility drawings.
3. All conduits and fittings routed exposed at grating shall be rigid galvanized steel, PVC coated.
4. Fixture mounting height elevation shall be 2.125 m above floor/platform elevation UNO.
5. For other related work not shown on this sheet, see Electrical Special Provisions.
6. For Section B-B, see sheet EE-264A.
7. Typical conduit installation. See Detail 8, sheet E-268.

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DETAILS
TOWER AND SUSPENSION CABLE
TOWER POWER AND LIGHTING

SCALE AS NOTED

E-264

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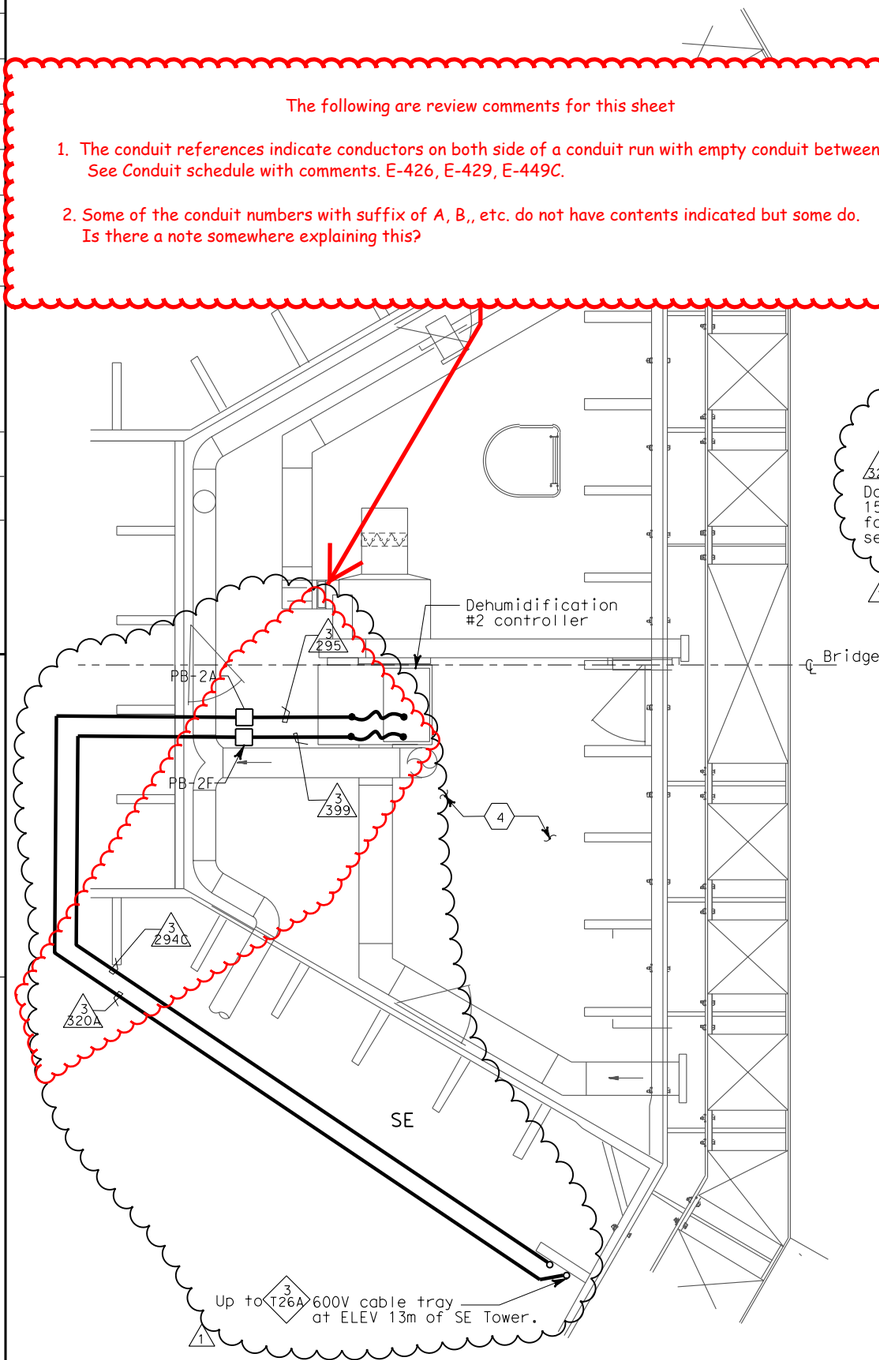
The following are review comments for this sheet

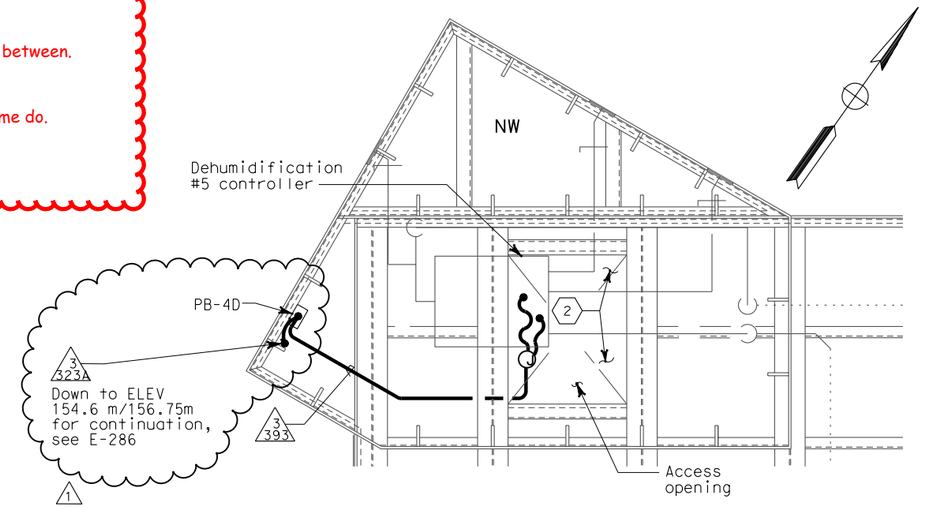
1. The conduit references indicate conductors on both side of a conduit run with empty conduit between. See Conduit schedule with comments. E-426, E-429, E-449C.

2. Some of the conduit numbers with suffix of A, B,, etc. do not have contents indicated but some do. Is there a note somewhere explaining this?



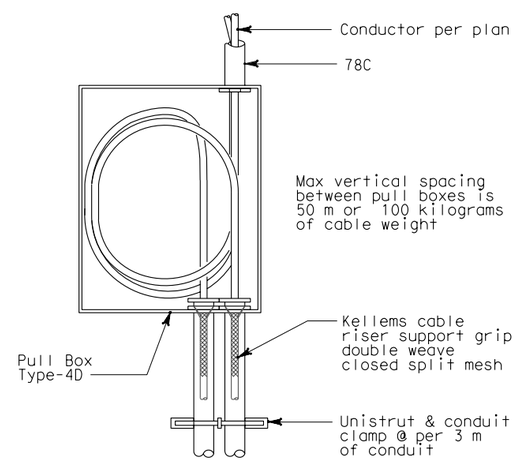
DEHUMIDIFICATION UNIT #2 PLAN- AT ELEV. 9.0 m

NO SCALE



DEHUMIDIFICATION UNIT #5 PLAN- AT ELEV. 158.0 m

SCALE: 1:20



CABLE AND CONDUIT SUPPORT SYSTEM FOR VERTICAL CABLE RUNS

SCALE: 1:10

SHEET NOTES:

1. Deleted.
2. For lighting and receptacles in this area, see plan at elevations 154.6 m to 156.75 m on sheet E-268.
3. Deleted.
4. For lighting and receptacles in this area, see sheet E-266.

NOTES:

1. References:
   - For types of pull boxes, splice boxes and enclosures, see sheets E-83 and E-169.
   - For conduit and cable tray schedules, see sheets starting at E-401.
   - For typical conduit installation details, see sheet E-268.
2. For other related work not shown on this sheet, see Electrical Special Provisions.

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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REQUEST FOR INFORMATION NOT ADDRESSED IN THIS CCO REMAIN IN FORCE

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1	02/19/08	ELECTRICAL MODIFICATIONS	MP EL	RR	42

REVISIONS

CONTRACT CHANGE ORDER NO._____
SHEET _____ OF _____

DETAILS
TOWER AND SUSPENSION CABLE
TOWER POWER AND LIGHTING

SCALE AS NOTED

E-287

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: BEHZAD GOLEMOHAMMADI

CALCULATED/DESIGNED BY: FK | DATE: 10/01 | REVISED BY
CHECKED BY: EDC | 11/01 | DATE REVISED

DATE PLOTTED => 3/17/2008
TIME PLOTTED => 5:28:40 PM
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FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

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CU 04251 | EA 0120F1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	381R1	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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REGISTERED PROFESSIONAL ENGINEER MANNELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

FOR REVISION ONLY

CONDUIT DATA

Conduit No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
3256	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3257	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
						A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3258	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3259	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3260	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3261	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3262	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3263	E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3264	E-228, E-229	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3265	E-228	40	Flexible nonmetallic conduit	425.70	511.11	A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
						A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3266	E-228	40	Flexible nonmetallic conduit	425.70	511.11	A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
						A-3042-2	3 + 1gnd #6,#8, 600 V, RHH/RHW insulation
3267	E-228	40	Flexible nonmetallic conduit	425.70	511.11	A-3042-2	3 + 1gnd #6,#8, 600 V, RHH/RHW insulation
						A-3043-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3268	E-228	40	Flexible nonmetallic conduit	212.85	511.11	Pull rope	Soft-Fiber Polyester
						A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3269	E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3270	E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3271	E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3272	E-228	40	Flexible nonmetallic conduit	212.85	511.11	Pull rope	Soft-Fiber Polyester
						A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3273	E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3274	E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3275	E-227, E-228	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3276	E-227	40	Flexible nonmetallic conduit	212.85	511.11	A-3042-2	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester

CONDUIT DATA

Conduit No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
1 ~~3277~~							
3277A	E-265	27					
3278	E-264, E-264A	103	RGS-PVC coated conduit	2820.14	3324.51	2123-2	1-3/C + gnd #2/0,600V, EPR insulation
						A-3057-1	1-3/C + gnd #2,600V, EPR insulation
						2123	1-3/C + gnd #2,600V, EPR insulation
						2123-3	1-3/C + gnd #2/0,600V, EPR insulation
3281	E-231, E-264	53	RGS-PVC coated conduit	625.60	879.42	A-3057-1	1-3/C + gnd #2,600V, RHH/RHW insulation
						UP210-5	2 + 1 gnd #12,600V, RHH/RHW insulation
						UP210-7	2 + 1 gnd #12,600V, RHH/RHW insulation
1 3281A	E-264	53					
3282	E-231	41	RGS-PVC coated conduit	425.70	534.55	A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						A-3057-3	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3283	E-231	41	RGS-PVC coated conduit	212.85	534.55	Pull rope	Soft-Fiber Polyester
						A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3285	E-231	41	RGS-PVC coated conduit	212.85	534.55	A-3057-3	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3286	E-231	41	RGS-PVC coated conduit	212.85	534.55	A-3057-3	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3287	E-231	41	RGS-PVC coated conduit	212.85	534.55	A-3057-3	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3288	E-231	41	RGS-PVC coated conduit	212.85	534.55	Pull rope	Soft-Fiber Polyester
						A-3057-3	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3290	E-231	41	RGS-PVC coated conduit	212.85	534.55	Pull rope	Soft-Fiber Polyester
						A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3291	E-231	41	RGS-PVC coated conduit	212.85	534.55	Pull rope	Soft-Fiber Polyester
						A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3292	E-231	41	RGS-PVC coated conduit	212.85	534.55	Pull rope	Soft-Fiber Polyester
						A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
3293	E-231	41	RGS-PVC coated conduit	212.85	534.55	A-3057-4	3 + 1 gnd #6,#8, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
3294	E-264, E-264A	41	RGS-PVC coated conduit	170.36	534.55	2120-1	1-3/C #14,600 V, EPR insulation
						2120-2	1-3/C #14,600 V, EPR insulation
3295	E-265	53	RGS conduit	754.18	1255.65	Pull rope	Soft-Fiber Polyester
						2120	1-3/C + gnd #1/0,600 V, EPR insulation
1 3297	E-264, E-264A	27					

For continuation, see next sheet.

CONDUIT AND TRAY SCHEDULE

E-426

DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

CALCULATED/DESIGNED BY PBP
CHECKED BY AB

DATE 8/02 REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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DATE PLOTTED => 3/17/2008
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CU 04251 EA 0120F1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	382R1	1204

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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

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKAKI No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

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CONDUIT DATA

Conduit No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
3298	E-265	53	RGS-PVC coated conduit	102.61	879.42	Pull rope	Soft-Fiber Polyester
						UP210-9	1-3/C #12,600 V, EPR insulation
3311	E-265	53	RGS conduit	0.00	879.42	Pull rope	Soft-Fiber Polyester
3316	E-264	53	RGS conduit	192.46	879.42	Pull rope	Soft-Fiber Polyester
						UP210-2	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
						UP210-4	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
1 3316A	E-266	53					
3318	E-264, E264A	78					
3319	E-264, E-264A	78	RGS-PVC coated conduit	1678.72	1935.24	2121	1-3/C + gnd #1/0,600 V, EPR insulation
						2120	1-3/C + gnd #1/0,600 V, EPR insulation
						2121-1	1-3/C #14,600 V, EPR insulation
						2121-2	1-3/C #14,600 V, EPR insulation
3320	E-264, E-265	53	RGS-PVC coated conduit	754.18	1935.24	2120	1-3/C + gnd #1/0,600 V, EPR insulation
						Pull rope	Soft-Fiber Polyester
1 3320A	E-287	53					

CONDUIT DATA

Conduit No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
3322	E-264, E-264A	78	RGS-PVC coated conduit	1043.76	1935.24	2119-A	3+1 gnd, #250 kcmil, #1/0, 600 V, EPR insulation
						Pull rope	Soft-Fiber Polyester
1 3323	E-264	78	RGS-PVC coated conduit	924.54	2564.19	2121-2	1-3/C #14,600 V, EPR insulation
						2121-1	1-3/C #14,600 V, EPR insulation
						Pull rope	Soft-Fiber Polyester
						2121	1-3/C + gnd #1/0,600 V, EPR insulation
1 3322C	E-265	78					
3323A	E-286, E-287	78					
3329	E-265	53	RGS-PVC coated conduit	0.00	879.42	Pull rope	Soft-Fiber Polyester
3330	E-264A, E-281	41	RGS-PVC coated conduit	384.80	879.42	CCTVE01BA	TVP
						CCTVE01BB	TVCP
						CCTVE01AA	TVP
						CCTVE01AB	TVCP
1 3330C	E-281	41					
3330D	E-281	41					
3332	E-264	78	RGS-PVC coated conduit	0.00	1935.24	Pull rope	Soft-Fiber Polyester
3333	E-264	78	RGS-PVC coated conduit	1375.59	1935.24	Pull rope	Soft-Fiber Polyester
						UP210-11	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
						UP210-10	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
						2123	1-3/C + gnd #2,600 V, EPR insulation
						UP210-9	2 + 1 gnd #12,#12, 600 V, RHH/RHW insulation
1 3330E	E-281	41					
3330F	E-281	41					
3337	E-264	53	RGS-PVC coated conduit	145.44	879.42	UP210-8	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
						Pull rope	Soft-Fiber Polyester
						UP210-6	2 + 1 gnd #8,#10, 600 V, RHH/RHW insulation
1 3337A	E-266	53					

For continuation, see next sheet.

CONDUIT AND TRAY SCHEDULE

E-427

REVISED BY	DATE REVISED
PBP	AB

DATE 8/02 | 8/02

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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DATE PLOTTED => 3/17/2008
TIME PLOTTED => 5:35:00 PM

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	13.2/13.9	407R1	1204

REGISTERED ELECTRICAL ENGINEER 12/19/02 DATE

12-6-04
PLANS APPROVAL DATE

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

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

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1	02/19/08	ELECTRICAL MODIFICATIONS	MP EL	RR	42

REVISIONS

CONTRACT CHANGE ORDER NO. _____
OF _____

REGISTERED PROFESSIONAL ENGINEER MAXWELL FUMIO TAKATA No. E 8651 Exp. 9/30/2008 ELECTRICAL STATE OF CALIFORNIA

FOR REVISION ONLY

CONDUIT DATA

Conduit No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
3177A	E-264A	78	Liquidtight flex metal conduit	1853.73	1928.98	2119-B	3+1gnd, #250 kcmil, #1/0, 600V, EPR insulation
						2204-2	1-3/C #16, 600V, EPR Insulation
3177B	E-264A, E-182	78	RGS - PVC co				
3278A	E-264A	78	Liquidtight				
						2910-11	1-3/C #16, 600V, EPR Insulation
3278B	E-264A, E-182	78	RGS - PVC coated conduit	1827.85	1953.24	2123-2	1-3/C + gnd #2/0, 600V, EPR Insulation
						2123-3	1-3/C + gnd #2/0, 600V, EPR Insulation
						2910-11	1-3/C #16, 600V, EPR Insulation
3294A	E-264A	78	Liquidtight flex metal conduit		1928.98	Pull rope	Soft-fiber polyester
3294B	E-264A, E-182	78	RGS - PVC coated conduit		1935.24	Pull rope	Soft-fiber polyester
1 3294C	E-287	41					
3319A	E-264A	78	Liquidtight flex metal conduit	1849.08	1928.98	2121	1-3/C + gnd #1/0, 600V, EPR Insulation
						2121-1	1-3/C #14, 600V, EPR Insulation
						2120	1-3/C + gnd #1/0, 600V, EPR Insulation
						2121-2	1-3/C #14, 600V, EPR Insulation
						2120-1	1-3/C #14, 600V, EPR Insulation
						2120-2	1-3/C #14, 600V, EPR Insulation
3319B	E-264A, E-182	78	RGS - PVC coated conduit	1849.08	1935.24	2121	1-3/C + gnd #1/0, 600V, EPR Insulation
						2121-1	1-3/C #14, 600V, EPR Insulation
						2120	1-3/C + gnd #1/0, 600V, EPR Insulation
						2121-2	1-3/C #14, 600V, EPR Insulation
						2120-1	1-3/C #14, 600V, EPR Insulation
						2120-2	1-3/C #14, 600V, EPR Insulation
3322A	E-264A	78	Liquidtight flex metal conduit	1853.73	1928.98	2119-A	3+1gnd, #250 kcmil, #1/0, 600V, EPR insulation
						2123	1-3/C + gnd #2, 600V, EPR Insulation
						1201-1	1-2/C + gnd #8, 600V, EPR Insulation
						2204-1	1-3/C #16, 600V, EPR Insulation
3322B	E-264A, E-182	78	RGS - PVC coated conduit	1853.73	1935.24	2119-A	3+1gnd, #250 kcmil, #1/0, 600V, EPR insulation
						2123	1-3/C + gnd #2, 600V, EPR Insulation
						1201-1	1-2/C + gnd #8, 600V, EPR Insulation
						2204-1	1-3/C #16, 600V, EPR Insulation
3330A	E-264A	78	Liquidtight flex metal conduit	552.33	1928.98	CCTVE01BA	TVP
						CCTVE01BB	TVCP
						CCTVE01AA	TVP
						CCTVE01AB	TVCP
						GND	1-#250 kcmil, bare copper
3330B	E-264A, E-182	78	RGS - PVC coated conduit	552.33	1935.24	CCTVE01BA	TVP
						CCTVE01BB	TVCP
						CCTVE01AA	TVP
						CCTVE01AB	TVCP
						GND	1-#250 kcmil, bare copper
3339A	E-264A	78	Liquidtight flex metal conduit	1432.01	1928.98	2125	3+1gnd, #250 kcmil, #1/0, 600V, EPR insulation
						1201-6	1-2/C + gnd #8, 600V, EPR Insulation
						GND	1-#250 kcmil, bare copper

The following are review comments for this sheet

1. The conduit references indicate conductors on both side of a conduit run with empty conduit between. See Conduit schedule with comments. E-426, E-429, E-449C. See Sheet E-287.

2. Some of the conduit numbers with suffix of A, B,, etc. do not have contents indicated but some do. Is there a note somewhere explaining this?

CONDUIT DATA

No	Reference	Size	Type	Total Fill (mm²)	Allowable Fill (mm²)	Included Cable No.	Conductor Type
3339B	E-264A, E-182	78	RGS - PVC coated conduit	1432.01	1935.24	2125	3+1gnd, #250 kcmil, #1/0, 600V, EPR insulation
						1201-6	1-2/C + gnd #8, 600V, EPR Insulation
						GND	1-#250 kcmil, bare copper
3348A	E-264A	78	Liquidtight flex metal conduit		1928.98	Pull rope	Soft-fiber polyester
3348B	E-264A, E-182	78	RGS - PVC coated conduit		1935.24	Pull rope	Soft-fiber polyester
3349A	E-264A	78	Liquidtight flex metal conduit		1928.98	Pull rope	Soft-fiber polyester
3349B	E-264A, E-182	78	RGS - PVC coated conduit		1935.24	Pull rope	Soft-fiber polyester
3359A	E-264A	78	Liquidtight flex metal conduit	648.52	1928.98	CCTVE01AC	TVC
						CCTVE01AD	TVL
						MVDSE02A	MVDS DLC
						MVDSE03A	MVDS DLC
						CCTVE01BC	TVC
						CCTVE01BD	TVL
3359B	E-264A, E-182	78	RGS - PVC coated conduit	648.52	1935.24	CCTVE01AC	TVC
						CCTVE01AD	TVL
						MVDSE02A	MVDS DLC
						MVDSE03A	MVDS DLC
						CCTVE01BC	TVC
						CCTVE01BD	TVL
8011A	E-264A	78	Liquidtight flex metal conduit		1928.98	Pull rope	Soft-fiber polyester
8011B	E-264A, E-182	78	RGS - PVC coated conduit		1935.24	Pull rope	Soft-fiber polyester
9057A	E-264A	78	Liquidtight flex metal conduit	442.35	1928.98	2910-12	4 pair #22, shielded pairs, 300V, PE insulation
						2910-8	4 pair #22, shielded pairs, 300V, PE insulation
						2910-7	4 pair #24, overall shielded, 300V, PE insulation
						2119-2	4 pair #22, shielded pairs, 300V, PE insulation
9057B	E-264A, E-182	78	RGS - PVC coated conduit	442.35	1935.24	2910-12	4 pair #22, shielded pairs, 300V, PE insulation
						2910-8	4 pair #22, shielded pairs, 300V, PE insulation
						2910-7	4 pair #24, overall shielded, 300V, PE insulation
						2119-2	4 pair #22, shielded pairs, 300V, PE insulation
9057C	E-264A, E-366	21	RGS - PVC coated conduit	62.07	187.69	2910-11	1-3/C #16, 600V, EPR Insulation

CONDUIT AND TRAY SCHEDULE

E-449C

REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY	DATE 3/04
EJL	3/04
CHECKED BY	JE

DESIGN OVERSIGHT
BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/17/2008
TIME PLOTTED => 5:42:16 PM

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

DGN FILE =>T:\13103\MS\pse\SAS Struc\CCO\SAS CCO42\04-0120f1_0407R01.dgn
USERNAME =>llorico

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