



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ENGINEER'S DAILY REPORT
 LAN Engineering Consultant

REPORT NO.	259 (7-day)	DATE	August 29, 2007	M T W T F S S (DAY)
NORMAL WORK HOUR:	START: 7:00AM	STOP: 3:30PM	WEATHER: OVERCAST/SUNNY	
LOCATION :	Construction Field Office :		333 Burma Road, Oakland 94607	
	Working Drawing Campus Office :		375 Burma Road, Oakland 94607	

04-SF-80-13.2/13.9
 Contract No. 04-0120F4
 {SAS Superstructure}

Caltrans Supervisor:
 Gary Lai *GL*
 Senior Bridge Engineer

Office Work:

- ❖ **SAS Bridge lighting Pole Pedestal conduit feed issue – See Attachment #1**
Subject: Install a proposed conduit installation in the prototype pedestal on site.
 - Sent a material list to Bill Shedd so materials can be purchased by Caltrans.
 - Worked on all the contract documents coving the Pole Pedestals on the SAS Structure:
 - Location of the poles on the structure:
 - ✓ Contract Plans.
 - ✓ RFI Changes.
 - Number and size of conduits feed the poles:
 - Contract Plans.
 - RFI Changes
 - Future Requirements.

- ❖ **Power conductor color code in the contract – See attachment #2**
Subject: Color coding of power conductors in the SAS contract.
 - Sent an email to Bill Shedd indicating that the standard color code required in Caltrans contracts for 480 Volt three phase and 120/208 three phase power wiring. I could not find a reference in the contract plans or Special Provisions. This needs to be checked out by PB designers whether or not this requirement has been addressed.

Any questions or comments you can reach me at (916) 919-7158. My E-Mail address is Mike.Travis@LANEngineering.com or Michael_Travis@dot.ca.gov

END OF REPORT

SIGNATURE

Name	TITLE
Michael F. Travis	Electrical Engineer – LAN Engineering

Attachment #1 (1/1)

Michael
Travis/HQ/Caltrans/CAGov
08/29/2007 01:25 PM

To Gary J Lai/D04/Caltrans/CAGov@DOT, Bill
Shedd/D04/Caltrans/CAGov@DOT
cc Martin Chandrawinata/D04/Caltrans/CAGov@DOT
bcc Mike.Travis@LANEngineering.com
Subject SAS Lighting Pedestal Prototype Electrical Conduit
Installation

Bill/Gary,

After researching the plans and RFI's I have come up with the following conclusions about the pedestals on the SAS:

* The original power feeds on all the poles was a 27C conduit (1").
This was changed during a RFI process to a 41C conduit (1-1/2").

*Four of the twelve poles has a Microwave Vehicle Detection Sensor system installed through a 41C (1-1/2") conduit.

* Future Camera on the poles were shown on a preliminary plans package on three of the twelve poles. a 41C conduit (1-1/2") was shown.

NOTE after a conversation with Ellery Lucus (PB) this morning I was informed the following was confirmed and pointed out in the conversation:

The power feed to all the poles have been changed to a 41C conduit (1-1/2").
The conduit feed to the poles with MVDS system installed has a separate 41C conduit feed.
I was informed the future feeds for cameras can be done through the power conduit.
This would mean that four poles would have two 41C conduit installed and all the rest will have one 41C conduit installed.

My conclusion:

I do not feel this would be adequate for the installation of all the possible electrical feeds for the pole. I would recommend that three 41C conduits be placed in pedestal enclosure and have the conduits routed from the pole base stub-up area to the OBG penetration within the pedestal enclosure. I will layout this scenario in the prototype to show that it would be possible. The fabrication would take place in china and field connection points would be at pole base and inside OBG when the structure arrives on-site.

The following is a list of materials that would be needed to modify the prototype for this scenario:

15 1-1/2 " PVC conduit couplings.
6 1-1/2 " PVC 90 degree sweeps.
6' 1-1/2 " PVC conduit

Need to look for possible support bracket.
Unistrut / clamps for inside enclosure

Tools needed:

Hack Saw
Drill - 2", 2.25, 2.5" drill bits
Heater for conduit bending.

Attachment #2 (1/2)

Michael
Travis/HQ/Caltrans/CAGov
08/29/2007 04:30 PM

To Bill Shedd/D04/Caltrans/CAGov@DOT
cc Gary J Lai/D04/Caltrans/CAGov@DOT, SAS - Caltrans
bcc Takaki@pbworld.com
Subject Power Conductor Color Coding on the SAS Bridge Project

Bill,

I was trying to find the color coding of the power circuit wiring in the special provisions but was unable to find it.

Attached is a copy of the SSP that we use in the Caltrans Design Projects.

We have 480 Volt three phase wiring and also 120/208 three phase wiring in this project.



Copy of section covering Color Code of Wiring: Conductor identification.doc

We should request PB to verify this is part of the contract.

Michael Travis
SFOBB Construction Offices
Design Campus Building
375 Burma Road
Oakland Ca. 94607
Phone: 510-808-4618

Attachment #2 (2/2)

Conductor identification.--The neutral and equipment grounding conductors shall be identified as follows:

Neutral conductor shall have a white or natural gray insulation except that conductors No. 4 and larger may be identified by distinctive white marker such as paint or white tape at each termination.

Equipment grounding conductor shall be bare or insulated. If insulated, equipment grounding conductors shall have green or green with one or more yellow stripes insulation over its entire length except that conductors No. 4 and larger may be permanently identified by distinctive green markers such as paint or green tape over its entire exposed insulation.

Ungrounded feeder and branch circuit conductors shall be color coded by continuously colored insulation, except conductors No. 6 AWG or larger may be color coded by colored tape at each connection and where accessible. **Ungrounded conductor color coding shall be as follows:**

SYSTEM	COLOR CODE
120/240V-Single phase	Black, blue
120/240V-Three phase	Black, orange, blue
120/208V-Three phase	Black, red, blue
277/480V-Three phase	Brown, orange, yellow

Once an insulated circuit conductor, including grounded and ungrounded conductors, is identified with a specific color code, that color code shall be used for the entire length of the circuit.

Where more than one branch circuit enters or leaves a conduit, panel, gutter, or junction box, each conductor shall be identified by its panelboard and circuit number. All control conductors including control conductors of manufacturer supplied and field wired control devices shall be identified at each termination with the wire numbers shown on the plans, approved shop drawings, and as directed by the Engineer where deemed necessary. Identification shall be made with one of the following:

Where more than one branch circuit enters or leaves a conduit, panel, gutter, or junction box, each conductor shall be identified by its panelboard and circuit number. All control conductors including control conductors of manufacturer supplied and field wired control devices shall be identified at each termination with the wire numbers shown on the plans, approved working drawings, and as directed by the Engineer where deemed necessary. Identification shall be made with one of the following:

1. Adhesive backed paper or cloth wrap-around markers with clear, heat shrinkable tubing sealed over either type of marker.
2. Self-laminating wrap around type, printable, transparent, permanent heat bonding type thermoplastic film markers.
3. Pre-printed, white, heat-shrinkable tubing.

Each terminal block shall have a molded marking strip attached with screws. The identifying numbers of the terminating conductors, as shown on the plans or on the submittal drawings, shall be engraved in the marking strip.