



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

ENGINEER'S DAILY REPORT

LAN Engineering Consultant

REPORT NO.	DATE	
684 {7-day} {+ 210 Project Work Day}	October 27, 2008 <i>to 11/15/08</i>	M T W T F S S (DAY)
NORMAL WORK HOUR:	WEATHER:	
START: 6:00AM STOP: 3:30PM	CLEAR / 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
 Senior Bridge Engineer

Office Work:

❖ **Shop Drawing Status Meeting (Caltrans – Design).**

- Handed out the latest updated priority List with PB status as of October 27, 2008. See attached.
- The following is a list of issues that need to be addressed this week:
 - Submittal 827R00 has drawings that cannot be verified due to missing assembly sheets that have not been submitted yet by ABF. This was noted on the PB Memo in the PMIV.

❖ **CCO # 59/68 OBG/Tower Additional penetrations.**

- Working on the update to the OBG Master Charts and CCO 59 Charts. Adding the lift 13 bottom plate penetrations.
- Reviewing the shop drawings for location and dimension verification.
- Hope to get updated Mast list out by end of the week.

❖ **CCO # 75 Review Ongoing.**

- Performing a complete review and comment package for the PB design group. Working with Sandy Michelotti on the package.
- Construction work on E2 cap beam is on-going so changes in this CCO need to be coordinated with Design and construction inspector. Placement of ground plates were given to the contractor on Thursday October 23, 2008. Contractor requested location to be identified and I gave them the information using all the information that I had at the time. Verification from the design group was not made so location of the plates will be the working point for all design around it.

RECT'08 NOV-05 #007563



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REPORT NO.

DATE

684 {7-day} { + 210 Project Work Day}

October 27, 2008

M T W T F S S (DAY)

❖ **CCO # 43 Document Review.**

- Was given a second draft from Tom Ho (TY LIN) of the Special Provision changes in the CCO # 43 Lighting Modifications on Friday evening. Reviewed the document and gave him the review comments that I had made in hard copy form and also emailed him an electronic copy.

❖ **CCO # 79 Document Review.**

- Received a package from Scott Fabel to review for CCO # 79. Will review and comment by tomorrow.

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

Work hours 0545-1745 – 8 hours regular – 2 hours overtime

Attachments:

1. Shop drawing submittal status priority list.
2. Review copy of CCO 43 TY LIN Special Provisions dated 10.27.2008 (Version 2).
3. CCO # 79 Review Package.

SIGNATURE

Name

Michael F. Travis

TITLE

Electrical Engineer – LAN Engineering

PB OBG STATUS CHART October 27, 2008

Attachment #1 (1/3)

Ty ok	CT/JV Status	10/20/2008			Submittal Priority by ABF Requested Due Date			Information Only			**Posted		Reviewing		PB color code ID
		Reference	Subject	Req. Due Date	Responed / *redline	Discipline	Date Received	Req. Due Date	Resp. Engineer	Discipline	Date Received	Contract Due Date			
	Tylin to revise	ABF-SUB-000774R00*	OBG - Miscellaneous (BKR) - Bikepath Railing	25-Sep-2008	Bob Brignano	H	06-Aug-2008		H	06-Aug-2008	25-Sep-2008				
	Ty ok	ABF-SUB-000776R00*	OBG - Rib Stiffeners Details (RS) - LIFT 13E	26-Sep-2008	Abbas Iranmanesh	H	08-Aug-2008		H	08-Aug-2008	27-Sep-2008				
	Ty ok	ABF-SUB-000778R00*	OBG - Standard Details (X) - LIFT 13E	26-Sep-2008	Victor Altamirano	H	07-Aug-2008		H	07-Aug-2008	26-Sep-2008				
	Final by 11/22	ABF-SUB-000792R00*	OBG - Plate Sub Assemblies (BP, EP, SP) - Bottom, Edge, Side - LIFT 13E	08-Oct-2008	John Lyons	H	19-Aug-2008		H	19-Aug-2008	08-Oct-2008				
	Final by 11/22	ABF-SUB-000793R00	OBG - Splice Plate Sub Assembly (SA) - LIFT 13E	08-Oct-2008	Abbas Iranmanesh	H	19-Aug-2008		H	19-Aug-2008	08-Oct-2008				
	ASAP-abf detls.	ABF-SUB-000835R00	OBG - Standard Details & Weld Details (CBWD, FB, X) - Crossbeams 1 to 3	10-Oct-2008	Victor Altamirano	H	26-Sep-2008		H	26-Sep-2008	15-Nov-2008				
	ASAP-abf detls.	ABF-SUB-000836R00	OBG - Crossbeam Shop Drawings (BP, CB, DP, FB, PL, SP) - Crossbeam 3	10-Oct-2008	Philip He	H	26-Sep-2008		H	26-Sep-2008	15-Nov-2008				
	Ty ???	ABF-SUB-000667R01	OBG - STANDARD LAYOUT DETAILS (L) - LIFT 13W	16-Oct-2008	Alex Schmitt	H	02-Oct-2008		H	02-Oct-2008	16-Oct-2008				
	ASAP-abf detls.	ABF-SUB-000837R00	OBG - Crossbeam Shop Drawings (BP, CB, DP, FB, PL, SP) - Crossbeam 2	20-Oct-2008	Chris Havel	H	29-Sep-2008		H	29-Sep-2008	18-Nov-2008				
	Final by 11/24	ABF-SUB-000087R24	Standard Weld Details (WD) - Typical Weld Details	22-Oct-2008	Philip He	H	08-Oct-2008		H	08-Oct-2008	22-Oct-2008				
	Final by 11/22	ABF-SUB-000807R00	OBG - Standard Details (SA) - LIFT 13E	22-Oct-2008	Victor Altamirano	H	02-Sep-2008		H	02-Sep-2008	22-Oct-2008				
	Final by 11/22	ABF-SUB-000808R00*	OBG - Floorbeam Sub Assembly (FB) - LIFT 13E	22-Oct-2008	Philip He	H	02-Sep-2008		H	02-Sep-2008	22-Oct-2008				
	Final by 11/22	ABF-SUB-000809R00	OBG - Exterior Plate Details (PL) - Plate Types 6 thru 16 - LIFT 13E	23-Oct-2008	Abbas Iranmanesh	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Final by 11/22	ABF-SUB-000810R00	OBG - Plate Stiffener Details (RS) - LIFT 13E	23-Oct-2008	Philip He	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Prelim by 11/22	ABF-SUB-000811R00*	OBG - Bottom Plate Sub Assembly (BP) - Plate Types 6, 13, 14 - LIFT 13E	23-Oct-2008	Chris Havel	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Prelim by 11/22	ABF-SUB-000812R00	OBG - Deck Plate Sub Assembly (DP) - Plate Types 1, 10 - LIFT 13E	23-Oct-2008	Victor Altamirano	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Final by 11/22	ABF-SUB-000813R00	OBG - Edge Plate Sub Assembly (EP) - Plate Types 3, 9 - LIFT 13E	23-Oct-2008	Alex Schmitt	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Final by 11/22	ABF-SUB-000814R00	OBG - Side Plate Sub Assembly (SP) - Plate Types 7, 8 - LIFT 13E	23-Oct-2008	Philip He	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	Prelim by 11/22	ABF-SUB-000815R00*	OBG - Standard Details (X) - LIFT 13E	23-Oct-2008	Bob Brignano	H	03-Sep-2008		H	03-Sep-2008	23-Oct-2008				
	ASAP-abf detls.	ABF-SUB-000838R00*	OBG - Crossbeam Shop Drawings (BP, CB, DP, FB, PL, SP) - Crossbeam 1	27-Oct-2008	Ajay Sehgal	H	29-Sep-2008		H	29-Sep-2008	18-Nov-2008				
	Ty by 10/24	ABF-SUB-000708R02	OBG - BIKEPATH STANDARD DETAILS (BKWD)	28-Oct-2008	Alex Schmitt	H	14-Oct-2008		H	14-Oct-2008	28-Oct-2008				
		ABF-SUB-000634R06	Repair Procedure for Closed-rib Welds	30-Oct-2008	Chris Havel	H	16-Oct-2008		H	16-Oct-2008	30-Oct-2008				
		ABF-SUB-000667R02	OBG - Standard Layout Details (L) - LIFT 13W	30-Oct-2008	Alex Schmitt	H	16-Oct-2008		H	16-Oct-2008	30-Oct-2008				
		ABF-SUB-000663R02	OBG - Layout Details (L) - Lift 13E	31-Oct-2008	Bob Brignano	H	17-Oct-2008		H	17-Oct-2008	31-Oct-2008				
	crm ok/final asap	ABF-SUB-000779R01	OBG - Standard Details (SD)	31-Oct-2008	Philip He	H	17-Oct-2008		H	17-Oct-2008	31-Oct-2008				
		ABF-SUB-000832R00	Hinge K Spherical Bushing Ring Bearing Fabrication/Assembly Plans	03-Nov-2008	Ajay Sehgal	H	24-Sep-2008		H	24-Sep-2008	13-Nov-2008				
	Prelim by 11/24	ABF-SUB-000818R00	OBG - Floorbeam Sub Assembly 119 (FB) - LIFT 13E	04-Nov-2008	Victor Altamirano	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000820R00	OBG - Deck Plate Sub Assembly (DP) - Plate Types 2, 18 - LIFT 13E	04-Nov-2008	John Lyons	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000821R00	OBG - Edge Beam (EB) - LIFT 13E	04-Nov-2008	Abbas Iranmanesh	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000822R00	OBG - Side Plate Sub Assembly (SP) - Plate Types 4, 5, 16 - LIFT 13E	04-Nov-2008	Bob Brignano	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000823R00	OBG - Edge, Vertical Plate Sub Assemblies (EP, VP) - LIFT 13E	04-Nov-2008	Philip He	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000824R00*	OBG - Longitudinal Diaphragm Sub Assembly (LD) - Type 2 - LIFT 13E	04-Nov-2008	John Lyons	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000825R00	OBG - Interior Plate Details (PL) - Plate Type K - LIFT 13E	04-Nov-2008	Chris Havel	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
	Prelim by 11/24	ABF-SUB-000826R00	OBG - Plate Rib Stiffener Details (RS) - LIFT 13E	04-Nov-2008	Chris Havel	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
		ABF-SUB-000827R00	OBG - Shop Assembly (SA) - LIFT 13E	04-Nov-2008	Alex Schmitt	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
		ABF-SUB-000828R00	OBG - Segment Assembly (SEG) - Seg OBE Section - LIFT 13E	04-Nov-2008	Philip He	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
		ABF-SUB-000829R00*	OBG - Segment Assembly (SEG) - Seg OBE Section - LIFT 13E	04-Nov-2008	Victor Altamirano	H	15-Sep-2008		H	15-Sep-2008	04-Nov-2008				
		ABF-SUB-000829R00*	OBG - Standard Details (X) - LIFT 13E	05-Nov-2008	Chris Havel	H	16-Sep-2008		H	16-Sep-2008	05-Nov-2008				
		ABF-SUB-000833R00	OBG - Field Bolt Lists (EFB)	13-Nov-2008	Chris Havel	H	24-Sep-2008		H	24-Sep-2008	13-Nov-2008				

ABF-SUB-000839R00	OBG - Miscellaneous Shop Drawing (WDSH) - West Deviation Saddle Housing	18-Nov-2008	Bob Brignano	H	29-Sep-2008	18-Nov-2008
ABF-SUB-000841R00	OBG - Longitudinal Diaphragm Sub Assembly (LD) - LIFT 13E	18-Nov-2008	John Lyons	H	29-Sep-2008	18-Nov-2008
ABF-SUB-000842R00	OBG - Plate Sub Assembly (PL) - LIFT 13E	18-Nov-2008	Alex Schmitt	H	29-Sep-2008	18-Nov-2008
ABF-SUB-000843R00	OBG - Plate Stiffener Assembly (RS) - Vertical, Interior Plate Details - LIFT 13E	18-Nov-2008	Ajay Sehgal	H	29-Sep-2008	18-Nov-2008
ABF-SUB-000844R00	OBG - Segment Assembly (SEG) - LIFT 13E	18-Nov-2008	Abbas Iranmanesh	H	29-Sep-2008	18-Nov-2008
ABF-SUB-000845R00	OBG - Segment Assembly (SEG) - OBE 13b Section - LIFT 13E	19-Nov-2008	Chris Havel	H	30-Sep-2008	19-Nov-2008
ABF-SUB-000846R00	OBG - Shop Assembly Details (SA) - LIFT 13E	19-Nov-2008	Ajay Sehgal	H	30-Sep-2008	19-Nov-2008
ABF-SUB-000848R00	OBG - Floorbeam Sub Assembly (FB) - LIFT 13E	21-Nov-2008	Abbas Iranmanesh	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000849R00	OBG - Standard Details (X) - Floorbeam, Splice Plates - LIFT 13E	21-Nov-2008	Ajay Sehgal	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000850R00	OBG - Deck Plate Sub Assembly (DP) - LIFT 13E	21-Nov-2008	John Lyons	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000851R00	OBG - "K" Plate Sub Assembly (KP) - LIFT 13E	21-Nov-2008	Victor Altamirano	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000852R00	OBG - Side Plate Sub Assembly (SP) - LIFT 13E	21-Nov-2008	Alex Schmitt	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000853R00	OBG - Vertical Plate Sub Assembly (VP) - LIFT 13E	21-Nov-2008	Chris Havel	H	02-Oct-2008	21-Nov-2008
ABF-SUB-000855R00	OBG - Miscellaneous Details (OEM) - Field Splices	22-Nov-2008	John Lyons	H	03-Oct-2008	22-Nov-2008
ABF-SUB-000858R00	OBG - Corner Assembly (CA) - LIFT 13E	26-Nov-2008	Philip He	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000859R00	OBG - Segment Assembly (SEG) - LIFT 13E	26-Nov-2008	Chris Havel	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000860R00	OBG - Shop Assembly (SA) - LIFT 13E	26-Nov-2008	Abbas Iranmanesh	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000861R00	OBG - Standard Details (X) - LIFT 13E	26-Nov-2008	Philip He	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000862R00	OBG - Plate Sub Assembly Details (PL, RS) - LIFT 13E	26-Nov-2008	Bob Brignano	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000863R00	OBG - Side Plate Sub Assembly (SP) - Plate Type 5 - LIFT 13E	26-Nov-2008	Ajay Sehgal	H	07-Oct-2008	26-Nov-2008
ABF-SUB-000864R00	OBG - Vertical Plate Sub Assembly (VP) - LIFT 13E	26-Nov-2008	John Lyons	H	07-Oct-2008	26-Nov-2008
ABF-SUB-00087R25	Standard Weld Details (WD) - Typical Weld Details	27-Nov-2008	Philip He	H	08-Oct-2008	27-Nov-2008
ABF-SUB-000865R00	OBG - Shop Assembly Details (SA) - LIFT 13E	27-Nov-2008	Victor Altamirano	H	08-Oct-2008	27-Nov-2008
ABF-SUB-000866R00	OBG - Segment Assembly Details (SEG) - LIFT 13E	27-Nov-2008	Victor Altamirano	H	08-Oct-2008	27-Nov-2008
ABF-SUB-000867R00	OBG - Floorbeam Sub Assembly (FB) - LIFT 13E	27-Nov-2008	Bob Brignano	H	08-Oct-2008	27-Nov-2008
ABF-SUB-000857R00	OBG - Standard Details & Sections (SD)	28-Nov-2008	Alex Schmitt	H	09-Oct-2008	28-Nov-2008
ABF-SUB-000868R00	OBG - Standards (X) - LIFT 13E	28-Nov-2008	Chris Havel	H	09-Oct-2008	28-Nov-2008
ABF-SUB-000869R00	OBG - Shop Assembly (SA) - LIFT 13E	28-Nov-2008	Victor Altamirano	H	09-Oct-2008	28-Nov-2008
ABF-SUB-000870R00	OBG - Crossbeam Details (CB) - Crossbeams 1, 2, 3	29-Nov-2008	Bob Brignano	H	10-Oct-2008	29-Nov-2008
ABF-SUB-000871R00	OBG Erection Engineering Report for Lifts 7-11	01-Dec-2008	Chris Havel	H	10-Oct-2008	29-Nov-2008
ABF-SUB-000872R00	Freehand Flame Cutting Shop Procedure - ZPMC Fabrication Procedure	02-Dec-2008	Ajay Sehgal	H	13-Oct-2008	02-Dec-2008
ABF-SUB-000876R00	Hinge K Bearing Manual and Calculations - Lubrite Tech	05-Dec-2008	Ajay Sehgal	H	16-Oct-2008	05-Dec-2008

PB TOWER STATUS CHART October 27, 2008

Attachment #1 (3/3)

10/20/2008		Submittal Priority by ABF Requested Due Date					
Ty ok	Reference	Subject	Information Only	Responded / *redline	**Posted	Reviewing	PB color code ID
CT/JV Status	Reference	Subject	Req. Due Date	Resp. Engineer	Discipline	Date Received	Contract Due Date
Ty by 10/22	ABF-SUB-000783R00*	TOWER - T1 Tower Grillage - LIFT 5	01-Oct-2008	Aaron Prchlik	P	12-Aug-2008	08-Oct-2008
Ty to ret. 10/31	ABF-SUB-000605R04	TOWER - Skirt Drawings	06-Nov-2008	Sanny Khow	P	07-Oct-2008	21-Oct-2008
Ty by 10/24	ABF-SUB-000617R02*	TOWER - Skin Plate A - LIFT 4	24-Oct-2008	Aaron Prchlik	P	10-Oct-2008	24-Oct-2008
Ty to ret. 11/7	ABF-SUB-000687R01	TOWER - TL Drawings - LIFT 3	24-Oct-2008	Sanny Khow	P	10-Oct-2008	24-Oct-2008
Ty by 10/24	ABF-SUB-000100R03	Tower Cross Bracing Spherical Bushing Manual	27-Oct-2008	Mohammad Awal	P	13-Oct-2008	27-Oct-2008
Ty by 10/24	ABF-SUB-000211R24	TOWER - T1 - N,W, & E Tower Shafts - Skin Plates - LIFT 1	28-Oct-2008	Sanny Khow	P	14-Oct-2008	28-Oct-2008
Ty to ret. 10/31	ABF-SUB-000605R05	TOWER - Skirt Drawings	28-Oct-2008	Sanny Khow	P	14-Oct-2008	28-Oct-2008
Ty by 10/24	ABF-SUB-000620R02	TOWER - Plate Skin C - LIFT 4	28-Oct-2008	Michelle Chui	P	14-Oct-2008	28-Oct-2008
	ABF-SUB-000621R02	TOWER - Plate Skin D - LIFT 4	28-Oct-2008	Aaron Prchlik	P	14-Oct-2008	28-Oct-2008
Ty by 10/24	ABF-SUB-000622R02*	TOWER - Plate Skin E - LIFT 4	28-Oct-2008	Michelle Chui	P	14-Oct-2008	28-Oct-2008
Ty to ret. 11/7	ABF-SUB-000472R05*	TOWER - Skin Plate E - LIFT 3	29-Oct-2008	Aaron Prchlik	P	15-Oct-2008	29-Oct-2008
Ty by 10/24	ABF-SUB-000687R02	TOWER - TL Drawings - LIFT 3	29-Oct-2008	Sanny Khow	P	15-Oct-2008	29-Oct-2008
	ABF-SUB-000459R04*	TOWER - Skin Plate A - LIFT 3	30-Oct-2008	Mohammad Awal	P	16-Oct-2008	30-Oct-2008
	ABF-SUB-000605R06						
	ABF-SUB-000141R25						
	ABF-SUB-000765R02						

Attachment #2 (1/18)



Michael
Travis/HQ/Caltrans/CAGov
10/27/2008 02:24 PM

To Bill Shedd/D04/Caltrans/CAGov@DOT, George
Boughosn/D04/Caltrans/CAGov@DOT, Scott
Fabel/D04/Caltrans/CAGov@DOT
cc SAS - Caltrans

bcc

Subject CCO #43 TY LIN Special Provisions Draft Review
Comments Dated 10.27.2008 Version 2 MFT

I received a copy of TY LIN Special Provisions Changes on 10.24.2008.
I reviewed them and returned a set to TY LIN on Monday 10.27.2008.
Attached is a PDF Version with my comments on the draft Special Provisions.

TY LIN CCO # 43 Draft Special Provisions Review Comments 10.27.2008 MFT :



Request Letter CCO 43 Revision 10-27-08 Version 2 MFT .pdf

Any questions or comments please let me know.

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

Attachment #2 (2/18)

 Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

Mike Travis

From: Mike Travis **Sent:** Mon 10/27/2008 2:17 PM
To: Tom Ho
Cc:
Subject: CCO #43 TY LIN Special Provision Draft Review Comments 10.24.2008 Version 2(MFT returned 10.27.2008)
Attachments:  [Request Letter CCO 43 Revision 10-27-08 Version 2 MFT.pdf\(462KB\)](#)

Tom,

Attached is a pdf of my comments for the version 2 of the draft CCO # 43 special provision changes you gave me.

Any questions of comments please let me know.

Michael Travis
Electrical/Structural Construction Engineer

Lim And Nascimento Eng. Corp.
Department of Transportation
SAS Construction Office
333 Burma Road
Oakland, California 94607
510-808-4618 Office
916.919.7158 cell



Memorandum

To: Caltrans Construction
333 Burma Road
Oakland, CA 94607

Date: 8/25/08
File: 04-0120F4
04-SF, Ala-80
SFOBB East Spans
SAS

Attn: Rick Morrow

Subject: CCO # 43 (Revision 8/25/08)

It is requested that a contract change order be issued to incorporate the following changes:

PLANS:

- Plan Sheet **268R1** of 1204
- Plan Sheet **906R1** of 1204
- Plan Sheet **908R1** of 1204

SPECIAL PROVISIONS:

In the Special Provisions, Section 10-3.14, "LIGHTING," the following paragraphs are revised as follows:

"10-3.14 LIGHTING SYSTEM, NAVIGATION WARNING SYSTEM, AVIATION WARNING SYSTEM AND FOG DETECTION SYSTEM

Lighting system shall consist of roadway safety lights (pole mounted roadway luminaires type MSR and cable mounted luminaires Type MSR-C), and architectural lights (pole mounted marker lights, cable mounted luminaires Type MAD-C, bikepath lights, light pipes, belvedere lights, suspender uplights, main tower floodlights, and main tower marker lights).

Need to add a discription of the other systems.

Need to add what the other systems consist of.....

~~The pole mounted roadway lighting assembly shall include the base plate, anchor bolts, pole, luminaires, and, for poles over 12 m in height, a luminaire lowering device system, all as shown on the plans and in conformance with these special provisions.~~

GENERAL

~~For roadway lighting poles that incorporate a luminaire lowering device, the installation of the lowering device on each pole shall be made under the supervision of a trained representative of the lowering device manufacturer. Prior to acceptance of the contract, a trained representative of the lowering device manufacturer shall demonstrate that each roadway lighting assembly operates properly. The demonstration shall consist of a minimum of 3 complete cycles of raising and lowering the luminaire carriage (complete~~

Clarification?

Attachment #2 (4/18)

Note
See contract plan sheet 143 for
conflict between the plans and
specifications.

~~with luminaires) the full length of the carriage travel, as designed, within one day, prior to acceptance of the project.~~

All portions of the roadway safety lights and cable mounted architectural lights lighting assembly shall have a minimum design wind velocity rating of 130 km/h.

~~The lowering device system shall be submitted for inspection and testing. Inspection and testing shall be performed at a site in California approved by the Engineer. The lowering device system shall be demonstrated at the Contractor's expense. Notification shall be given to the Engineer at least 7 days prior to demonstration.~~

~~After the roadway lighting system is in operation, an instructional video tape (VHS), complete written instructions and a demonstration to State Maintenance personnel on the maintenance of the roadway lighting assembly, including the procedures for the safe raising and lowering of the luminaire carriage, shall be provided.~~

Spare parts, part lists and the operating, maintenance and service instructions, packaged with or accompanying the equipment installed on the project, shall be delivered to the Engineer prior to acceptance of the project.

SUBMITTALS

Submittals for the roadway lighting system assembly, navigation warning system, aviation warning system and fog detection system shall conform to the provisions in Section 86-1.04, "Equipment List and Drawings," of the Standard Specifications and these special provisions. Submittals shall be delivered to the Engineer at least 45 days prior to erection of the roadway lighting assembly. The Engineer shall be allowed 45 days for the review of submittals. Review areas will include structural, welding, electrical and other areas as determined by the Engineer.

- A. Descriptive data, design working drawings, erection working drawings (including aiming directions for each luminaire), isolux diagram for each type of luminaire, calculations, and a list of the material used for the roadway lighting assembly shall be submitted to the Engineer. The material list shall be complete with the name of manufacturer, catalog number, size, capacity, finish, pertinent ratings and identification symbols used on the plans or in the special provisions for each unit.
- B. Each submittal shall consist of 6 copies.
- C. Plans and detailed drawings shall be not larger than 559 mm x 864 mm.
- D. Each separate item submitted shall bear a descriptive title and the State contract number.

Two copies of the submittals shall be forwarded to the Office of Structure Design. The Engineer shall be given a copy of the cover letter or other notification, and date, that the copies were sent to the Office of Structure Design.

INSPECTION

~~The roadway light poles will be inspected at the fabrication site. The Engineer shall be notified when materials have been delivered to the fabrication site. After delivery, the Engineer shall be given at least 10 days notice before fabrication of the light poles commences.~~

~~If all or a portion of the roadway poles are fabricated more than 480 air line kilometers from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Whereas it is and will be impracticable and extremely difficult to~~

~~ascertain and determine the actual increase in such expenses, it is agreed that payment to the Contractor for furnishing said Roadway Light Poles will be reduced by \$2500 for each fabrication site located more than 480 air line kilometers from both Sacramento and Los Angeles and an additional \$2500 (\$5000 total) for each fabrication site located more than 4800 air line kilometers from both Sacramento and Los Angeles.~~

CORROSION RESISTANCE

Corrosion resistance shall be provided. Methods shall include the following:

- A. Avoidance of contact between stainless steel and carbon steel, between different types of stainless steel (including welding material), and between aluminum and ferrous materials.
- B. Utilizing continuous welding to eliminate crevices which retain moisture.
- C. Minimizing welding of stainless steel.
- D. Use of adequate sections and suitable materials to limit stress related corrosion.

POLE ASSEMBLY

~~The pole shall be constructed, finished and installed in conformance with the provisions for pentagon poles in "Sign Structures" of these special provisions:~~

~~The pole shall include shaft, access hole, access hole cover, support plate, vibration inhibiting plates and anchor base.~~

~~The pole shall be hot dip galvanized after fabrication in conformance with the provisions in Section 75-1.05, "Galvanizing," of the Standard Specifications, and painted in conformance with the provisions in Section 59, "Painting," of the Standard Specifications.~~

~~The pole shall have a reinforced access hole, for poles with lowering devices, this access hole shall allow adequate clearance for maintaining and servicing the lowering device~~

~~Other hardware inside the pole shall accommodate the lowering device.~~

~~The access door shall be hinged to the pole, open horizontally 180 degrees, and when in the open position shall not interfere with access to the interior of the pole.~~

~~Neoprene lining and bonding to pole wall shall conform to the provisions in Section 51-1.145, "Strip Waterstops," of the Standard Specifications.~~

The pole shall be erected plumb. The vertical axis of the erected pole shall be within 75 mm of the theoretical vertical axis when measured without the action of sunlight or wind.

An embossed aluminum plate shall be attached with rivets to the outside of each pole approximately 50 mm above the access hole. The nameplate shall indicate the name of the pole manufacturer and the height of the pole.

A plastic laminated data sheet shall be secured on the inside of the access hole door. The data sheet shall include the names, addresses and telephone numbers of the manufacturers of the pole, luminaire lowering device and luminaires, and the design parameters, including wind velocity, luminaires (number, wattage, model number, mass, projected area and coefficient of drag), and the mass, projected area and coefficient of drag for the pole top lowering mechanism.

should there be a little more installation instructions?

There are also some installation specification located in "Roadway Lighting Poles" Below. Possible include this it those sections.

~~VIBRATION INHIBITING PLATES~~

~~Vibration inhibiting plates, consisting of polytetrafluoro-ethylene (PTFE) and structural steel plates shall conform to the details shown on the plans and these special provisions. The working drawings for vibration inhibiting plates shall include a description of the method of mechanical interlocking of the PTFE fabric to the metallic substrate.~~

~~The manufacturer shall furnish Certificates of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for all material used in the vibration inhibiting plates.~~

~~PTFE surfaces of vibration inhibiting plates shall be unfilled PTFE fabric made from virgin PTFE oriented multifilament and other fibers. The resin in the filaments shall be virgin PTFE material (not reprocessed) in conformance with the requirements of ASTM Designation: D 4441.~~

~~At the highest point of substrate and after compression, the PTFE fabric shall have a minimum thickness of 1.6 mm and a maximum thickness of 3.2 mm.~~

~~Steel plates, shall conform to the requirements of ASTM Designation: A 709/A 709, Grade 36 [250], 50 [345], or 50W [345W].~~

~~Welding of structural steel shall conform to the requirements of AWS D1.1.~~

~~The PTFE fabric shall be epoxy bonded and mechanically interlocked to the steel substrate. All bonding shall be done under controlled factory conditions. Any edges, other than the selvage shall be oversown or recessed so that no cut fabric edges are exposed.~~

~~After completion of the bonding operation the PTFE surface shall be smooth and free from bubbles.~~

~~The surface of the interfacing elements shall be controlled such that upon completion of the assembly the PTFE to steel interface shall be in full bearing.~~

~~Metal surfaces of vibration inhibiting plates exposed to the atmosphere and in contact with the structure of the completed work, shall be hot dip galvanized after fabrication in conformance with the provisions in Sections 75-1.05, "Galvanizing," of the Standard Specifications.~~

~~During fabrication, the maximum temperature of bonded PTFE surfaces shall be 150°C. Damaged plates and plates with scratched mating surfaces shall be returned to the factory for replacement or resurfacing.~~

~~LUMINAIRE LOWERING DEVICE~~

~~The lowering device, along with lighting fixtures and poles shall be manufactured and tested as an integrated system and be provided and warranted by one manufacturer. A prototype system shall be constructed by the manufacturer, for testing of the device with the fixture and track assembly shown on the plans. The manufacturer shall submit prototype test analysis and certified test data demonstrating proper performance of the system lowering device, track, fixture and pole assembly for acceptance, prior to fabrication of equipment to be supplied. The lowering device shall consist of three main subassemblies: headframe, lowering channel and track, and the clevis and winch assembly. The lowering device system shall be in conformance with the following requirements:~~

Headframe

The headframes shall be hot-rolled steel conforming to the requirements in ASTM Designation: A36. The headframes shall be hot-dipped galvanized in conformance with the provisions, in Section 75-1.05, "Galvanizing," of the Standard Specifications. The headframes shall consist of a hoisting cable sheave, power cable roller assembly, latch barrel and protective support cover. The hoist cable sheave shall be corrosion-resistant with hardened surface to prevent cable imprint under load and shall have sintered bronze bushings and a cable keeper. The sheave shall be machined to match the cable diameter. The sheave shall be zinc electroplated and yellow chromate dipped. The hoisting cable shall be stainless steel aircraft cord, manufactured in conformance with the requirements in Military Specification MIL-8320B.

Power cable roller assemblies shall consist of multiple rollers providing a smooth even bending radius for the cable at each end. The design shall prevent the cables from riding up the

Latch barrel assemblies shall be cast of gall-resistant aluminum. The latch shall support the entire weight of the fixture channel and fixtures on its own. It will support the fixture/channel assembly and unload the cables, clevis and winch when the lowering device is not in operation.

Luminaire lowering channel assembly shall consist of a latch pin, system status flag, fixture mounting plate, wiring junction box with power cord connection fitting and a stainless steel track system.

Latch pins shall be fabricated of stainless steel. Latching shall be accomplished by the alternate raising and lowering of the luminaire carriage by the winch and hoisting assembly. When the luminaire carriage is raised to the top of the pole, the carriage shall automatically latch and be secure in a locked position. During the unlatching sequence it shall transfer the load to the winch cable while the operator is away from the base of the pole. The latching and unlatching sequence shall be indicated by reflecting flags visible from the ground. During latching no more than one G of force shall be imparted to the lamps in any direction.

Winch and Clevis

Clevis assemblies shall attach the winch cable to the hoisting cable and the main electrical power cord. The clevis shall not allow either the winch cable or the hoist cables to independently rotate and shall have an ultimate breaking strength of at least 4082.3 kg.

The winch shall have an ultimate strength of five times the lifted load. The winch shall have a 30 to 1 worm gear reduction and shall include an integral drag brake on the worm shaft to prevent free spooling of the winch drum. The drum shall be supported on both ends and shall include a Type 316 stainless steel cable keeper. The winch shall be factory pre-wound with Type 316 stainless steel aircraft cable manufactured in conformance with Military Specification MIL-8320B.

Drive Motor

Portable drive motors shall weigh less than 20.4 kg. Motors shall be 0.75 kW, heavy duty, reversing type with a stalled torque at least twice that required to operate the device. The motors shall drive the winch through a torque limiter coupling to limit the driving force on the cable. The torque limiter shall be factory pre-set. There shall be a back-up

These items are being removed from this contract and being State furnished.
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Attachment #2 (8/18)

~~shear pin designed to shear at a torque level between 50 percent and 100 percent over the torque limiter setting. Motors shall be equipped a remote control unit with a 6 m operating cord.~~

~~Terminal Block~~

~~A prewired 600 V(ac) terminal block in a NEMA Type 3R enclosure and a weatherproof power receptacle shall be mounted on the luminaire ring raceway. When the luminaire carriage is in the lowered position, the receptacle shall enable the luminaires to be energized and tested.~~

~~Power Cables~~

~~An electrical cable of sufficient length to power the luminaire carriage, and with appropriate electrical connections, shall be provided to test the luminaires while in the lowered position. A circuit breaker of the rating shown on the plans and an outlet box shall be provided in the pole base.~~

~~Electrical cords shall be attached to a weathertight wiring chamber through weathertight cable connections. The main power cord shall support its full weight when installed. A positive connection between cord segments shall be provided across cord joints to prevent stress on the joints.~~

~~Power cable shall be Type SO, rated for 600 V(ac) with the number and size of conductors as required. Luminaire ring distribution cord shall be Type ST with insulation suitable for 105°C. Twist lock receptacles (male and female) shall be provided and shall be rated at a minimum of 30-A, 480 V(ac).~~

~~Clevis assemblies shall attach the winch cable to the hoisting cable and the main electrical power cord. The clevis shall not allow either the winch cable or the hoist cables to independently rotate and shall have an ultimate breaking strength of at least 408 kg.~~

~~The winch shall have an ultimate strength of five times the lifted load. The winch shall have a 30 to 1 worm gear reduction and shall include an integral drag brake on the worm shaft to prevent free spooling of the winch drum. The drum shall be supported on both ends and shall include a Type 316 stainless steel cable keeper. The winch shall be factory pre-wound with Type 316 stainless steel aircraft cable manufactured in conformance with Military Specification MIL-8320B.~~

~~Portable drive motors shall weigh less than 20 kg. Motors shall be one horsepower heavy duty, reversing type with a stalled torque at least twice that required to operate the device. The motors shall drive the winch through a torque limiter coupling to limit the driving force on the cable. The torque limiter shall be factory pre-set. There shall be a back-up shear pin designed to shear at a torque level between 50 percent and 100 percent over the torque limiter setting. Motors shall be equipped a remote control unit and with a 6 m operating cord.~~

~~ROADWAY LUMINAIRES TYPE MSR~~

~~Pole mounted roadway luminaires shall be metal halide floodlight with a mounting suitable for the location shown on the plans. Fixtures shall be fully assembled, with die cast aluminum socket housing, reflector housing, lens retainer and hood. Fixtures shall be furnished with metal halide lamp, tempered glass lens, Type 316 stainless steel fixture yoke, Type 316 stainless steel adjustable pivot bracket and mounting plate, with~~

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Attachment #2 (9/18)

~~an attached die cast aluminum ballast box with ballast, and shall be in conformance with the following requirements:~~

~~Housings shall be die cast aluminum. The socket housing shall be removable for lamp replacement, without altering the fixture mounting or aiming assembly. The socket housing shall be held captive by three Type 316 stainless steel latches and a Type 316 stainless steel safety cable attached to the pivot bracket. All exterior hardware shall be Type 316 stainless steel. The reflector housing shall be equipped with a die cast aluminum lens retainer, sealed with a sponge silicone "O" ring lens gasket. Reflector shall be 1.6 mm thick spun aluminum, Type 3002-0 with a polished brite dipped and clear anodized finish. NEMA beam spread shall be shown on the plans. Fixtures shall be equipped with a fully adjustable Type 316 stainless steel mounting yoke and Type 316 stainless steel adjustable pivot bracket aiming system. Fixture and ballast shall be suitable for pole mounting. Mounting hardware shall be Type 316 stainless steel. Lens shall be 4.8 mm thick clear tempered glass. Lamp sockets shall be mogul base, 4 kV pulse rated, vibration resistant porcelain. Lamps shall be metal halide of the wattage shown on the plans. Ballasts shall be high power factor, constant wattage auto-transformer type of the voltage shown on the plans. The ballast shall be supplied with the lighting fixture, internally mounted in a corrosion resistant, cast aluminum, finned box with a weather-resistant sponge silicone "O" ring gasket. Fixtures shall be UL listed for use in wet locations.~~

~~POLE MOUNTED MARKER LIGHTS TYPE MAM~~

~~Pole mounted marker light fixtures shall be a 200 mm diameter decorative lantern for use with twelve high flux LED lighting strips, each containing twelve 12 high flux LED lamps. These fixtures shall be shipped fully assembled, furnished with lamps, power converter, transformer, single piece acrylic lens and gasketed base and fixture cap, and shall comply with the following requirements:~~

~~Housings shall consist of a gasketed bronze baseplate with an acrylic cylinder lens and a removable gasketed bronze cap secured to the fixture with a threaded cap anchor. Lens shall be a 200 mm diameter, single piece injection molded acrylic cylinder, held in place by a gasketed fixture base plate and cap assembly. Lamps shall have a 100,000 hour \pm minimum rating, white high flux LED with 120 degree beam spread, installed within 25 mm x 25 mm x 280 mm LED mounting strips. Each strip shall contain LED lamps. Power converter shall be integral with the fixture and shall convert 480 V, 1 phase, AC power to the required DC voltage for the LED lamps. Housings shall have weatherproof "O" ring gaskets. Fixtures shall be equipped with a cast mounting base, suitable for surface mounting to the Roadway Lighting Pole top. Mounting hardware shall be Type 316 stainless steel. Fixtures shall be UL listed for use in wet locations.~~

ROADWAY LIGHTING POLES

Roadway lighting poles, which include the pole, anchor bolts, nuts and washers, anchor bolt template, vibration inhibiting plates, luminaire lowering device, luminaire (type MSR), pole mounted marker lights (type MAM), MVDS, and junction boxes and conduits inside the pole are a State furnished item. Luminaires type MSR and MAM and

items

These are part of this contract. Need to verify.

items

MVDS will be furnished un-installed. The assembly of State furnished parts and installation of the roadway lighting poles shall be in conformance with the pole manufacturer's instructions, the provisions in Section 86, "Signals, Lighting and Electrical System," of the Standard Specifications and as shown on the plans.

BELVEDERE LIGHTS TYPE MSV

Probably should be : "BELVEDERE LIGHTING POLES". Similar as above.

Should be "lighting poles"

items

Belvedere lights, which include poles and light fixtures (type MSV) are a State furnished item. Light fixtures type MSV will be furnished un-installed. The assembly of State furnished parts and installation of the belvedere lights shall be in conformance with the manufacturer's instructions, the provisions in Section 86, "Signal, Lighting and Electrical System," of the Standard Specifications and as shown on the plans.

Have plans been modified to cover all installation specifications and eliminated conflict specifications?

BIKE PATH LIGHTS TYPE MSB

Bike path way lighting fixtures shall be a railing mounted, tubular shaped, compact fluorescent pathway fixture, with a mounting suitable for the locations shown on the plans. Fixtures shall be furnished complete with lamp, ballast, ballast enclosure and fixture support bracket, high impact lens, internal wiring, and shall be in conformance with the following requirements:

Housings shall be a complete assembly in conformance with the requirements in ASTM Designation: A 36. Housing shall be furnished to the railing fabricator to be incorporated into the railing structure. The housing shall consist of 89-mm diameter (Schedule 40) steel pipe with welded end plates and a welded attached ballast compartment and support bracket. The painted finish shall be applied by the railing fabricator, after the fixture is welded into place.

Reflectors shall be 0.81 mm thick specular aluminum sheet.

Lens shall be extruded high-impact acrylic with prisms on the internal surface and shall be retained by two or more Type 316 stainless steel tamper-proof screws.

Lamps shall be twin-tube compact fluorescent type of the wattage shown on the plans.

Ballasts shall be high power factor type of the voltage shown on the plans. The ballast shall be integral with the lighting fixture and internally mounted in the fixture support bracket. The fixture support bracket shall be equipped with a removable gasketed cover for ballast access.

Fixtures shall be UL listed for use in wet locations.

LIGHT PIPES TYPE MAL

Future light pipe fixtures will be surface mounted, linear lighting system, with two hollow prismatic light guides and a central luminaire housing for use with a 400 watt metal halide lamp. Fixtures will be fully assembled, furnished with lamp, mounting brackets, light guides and remote ballast and will be provided in a separate project.

Cast-in-place light pipe mounting fixtures shall be as shown on the plans. Mounting fixtures shall be installed as a part of this project.

~~**BELVEDERE LIGHTS TYPE MSV**
Belvedere light fixtures shall be suitable for pole mounting, compact, floodlight fixtures for use with compact metal halide PAR 20 lamps. Fixtures shall be fully assembled,~~

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Attachment #2 (11/18)

~~furnished with lamp and ballast and shall be in conformance with the following requirements:~~

~~Housings shall be machined corrosion-resistant silicone aluminum alloy. Finish shall be a chromate conversion undercoating with a thermoplastic polyester powder coat, color will be selected by the architect. Housing shall be equipped with a lens bezel and glare shield.~~

~~Lens shall be tempered glass, housed within the fixture lens bezel, secured in place with a high temperature adhesive.~~

~~Lamps shall be PAR 20 compact metal halide of the wattage shown on the plans.~~

~~Lamp sockets shall be ceramic with attached high temperature teflon coated lead wires.~~

~~Ballasts shall be high power factor, core and coil, voltage shown on the plans. Ballast shall be integral with the lighting fixture, internally mounted in corrosion resistant silicone aluminum alloy box.~~

~~Housing and lens bezel shall be gasketed with high temperature "O" ring gaskets.~~

~~Fixtures shall be equipped with a fully adjustable mounting stem with locking clutch mechanism for control of vertical adjustment. Fixture and ballast shall be suitable for surface and pole mounted applications. Mounting hardware shall be Type 316 stainless steel.~~

~~Poles for mounting Belvedere lights shall be in conformance with the provisions in Section 86 2.04, "Standards Steel Pedestals and Posts," of the Standard Specifications and as shown on the plans. Poles shall be galvanized and painted.~~

~~Fixtures shall be UL listed for use in wet locations. Fixtures shall be C-UL certified.~~

SUSPENDER UPLIGHTS TYPE MAU

Suspender mounted upright luminaires shall be bracket mounted, metal halide upright assemblies with mounting brackets suitable for locations shown on the plans. Fixtures shall be fully assembled, with die-cast aluminum socket housing, reflector housing, lens retainer and hood. Fixture shall be furnished with metal halide lamp, tempered glass lens, Type 316 stainless steel fixture yoke, Type 316 stainless steel adjustable pivot bracket and mounting plate, with an attached die cast aluminum ballast box with ballast, and shall be in conformance with the following requirements:

Housings shall be die-cast aluminum. The socket housing shall be removable for lamp replacement, without altering the fixture mounting or aiming assembly. The socket housing shall be held captive by three Type 316 stainless steel latches and a Type 316 stainless steel safety cable attached to the pivot bracket. All exterior hardware shall be Type 316 stainless steel. The reflector housing shall be equipped with a die cast aluminum lens retainer, sealed with a sponge silicone "O" ring lens gasket.

Reflector shall be 1.6 mm thick spun 3002-0 with a polished brite dipped and clear anodized finish. NEMA beam spread shall be as indicated on the plans.

Lens shall be 4.8mm thick clear tempered glass.

Lamps shall be metal halide, and shall be of the wattage as shown on the plans.

Lamp sockets shall be mogul base, 4 kV pulse rated, vibration resistant porcelain.

Ballasts shall be high power factor, constant wattage auto-transformer type of the voltage shown on the plans. The ballast shall be supplied with the lighting fixture, internally

mounted in a corrosion resistant cast aluminum finned box with a weather-resistant sponge silicone "O" ring gasket.

Fixtures shall be equipped with a fully adjustable Type 316 stainless steel mounting yoke and Type 316 stainless steel adjustable pivot bracket aiming system. Fixture and ballast shall be suitable for bracket mounting. Mounting hardware shall be Type 316 stainless steel.

Fixtures shall be UL listed, for use in wet locations.

CABLE MOUNTED LUMINAIRES TYPE MAD-C AND MSR-C

Cable mounted luminaires shall be bracket mounted, metal halide downlight assembly with mounting brackets suitable for locations shown on the plans. Fixtures shall be fully assembled, with die-cast aluminum socket housing, reflector housing, lens retainer and hood. Fixtures shall be furnished with metal halide lamp, tempered glass lens, Type 316 stainless steel fixture yoke, Type 316 stainless steel adjustable pivot bracket and mounting plate, with an attached die-cast aluminum ballast box with ballast, and shall be in conformance with the following requirements:

Housings shall be die-cast aluminum. The socket housing shall be removable for lamp replacement, without altering the fixture mounting or aiming assembly. The socket housing shall be held captive by three Type 316 stainless steel latches and a Type 316 stainless steel safety cable attached to the pivot bracket. All exterior hardware shall be Type 316 stainless steel. The reflector housing shall be equipped with a die cast aluminum lens retainer, sealed with a sponge silicone "O" ring lens gasket.

Reflector shall be 1.6 mm thick spun 3002-0 with a polished brite dipped and clear anodized finish. NEMA beam spread shall be as indicated on the plans.

Lens shall be 4.8 mm thick clear tempered glass.

Lamps shall be metal halide, and shall be of the wattage shown on the plans.

Lamp sockets shall be mogul base, 4 kV pulse rated, vibration resistant porcelain.

Ballasts shall be high power factor, constant wattage auto-transformer type of the voltage shown on the plans. The ballast shall be supplied with the lighting fixture, internally mounted in a corrosion resistant cast aluminum finned box with a weather-resistant sponge silicone "O" ring gasket.

Fixtures shall be equipped with a fully adjustable Type 316 stainless steel mounting yoke and Type 316 stainless steel adjustable pivot bracket aiming system. Fixture and ballast shall be suitable for bracket mounting. Mounting hardware shall be Type 316 stainless steel.

Fixtures shall be UL listed, for use in wet locations.

MAIN TOWER FLOODLIGHTS TYPE MAR (UP TO 400 WATTS)

Main tower floodlight fixtures shall be surface, wall or tenon mounted, rectangular shaped, metal halide floodlight fixtures with mounting brackets, mounting suitable for locations shown on the plans. Fixtures shall be fully assembled, one piece cast aluminum, suitable for marine use, furnished with metal halide lamp, ballast, lens, power supply cord, and shall be in conformance with the following requirements:

Housings shall be one-piece cast aluminum with integrally cast heat dissipating fins. The housings shall be suitable for use in a marine environment and shall be cast of special

alloy containing less than 0.2 percent copper alloy for resistance to corrosion. Housings shall be equipped with a rectangular shaped cast aluminum door frame, sealed with an E.P.D.M. (Ethylene-Propylene-Diene-Monomere) gasket. Fixture shall be finished with an electrostatically applied powder coat, the color shall be as selected by the architect. Reflector shall be a high purity anodized specular aluminum segmented lighting sheet type.

Lens shall be clear thermal and impact tempered glass.

Lamps shall be pulse-start metal halide, and shall be of the wattage shown on the plans. Lamp sockets shall be vibration resistant, mogul base, porcelain, equipped with an arc stream aligner for focusing lamp arc stream for maximum performance and beam precision.

Ballasts shall be high power factor, constant wattage auto transformer type, of the voltage shown on the plans. The ballast shall be integral with the lighting fixture, internally mounted in a corrosion resistant cast aluminum finned box with a weather-resistant E.D.P.M. gasket.

Fixtures shall be equipped with a fully adjustable aluminum mounting yoke. Fixture and ballasts shall be suitable for surface, wall and tenon mounting. Mounting hardware shall be Type 316 stainless steel.

Fixtures shall be UL listed, for use in wet locations, and Marine Listed, Outside Type – Salt Water.

MAIN TOWER FLOODLIGHTS TYPE MAT (1000 WATTS AND ABOVE)

Main tower floodlight fixture shall be a surface, wall or tenon mounted, octagonally shaped, metal halide floodlight fixture, with mounting brackets for locations shown on the plans. Fixtures shall be fully assembled, one-piece cast aluminum, suitable for marine use, furnished with metal halide lamp, ballast, lens, power supply cord, and shall be in conformance with the following requirements:

Housings shall be one-piece cast aluminum with integrally cast heat dissipating fins. The housings shall be suitable for use in a marine environment and shall be cast of special alloy containing less than 0.2 percent copper alloy for resistance to corrosion. Housings shall be equipped with an octagonal shaped cast aluminum door frame, sealed with an E.P.D.M. (Ethylene-Propylene-Diene-Monomere) gasket. Fixtures shall be finished with an electrostatically applied powder coat, color as selected by the architect.

Reflector shall be a specular aluminum segmented lighting sheet type.

Lens shall be clear thermal and impact tempered glass.

Lamps shall be pulse-start metal halide, and shall be of the wattage shown on the plans. Lamp sockets shall be vibration resistant, mogul base, porcelain, equipped with an arc stream aligner for focusing lamp arc stream for maximum performance and beam precision.

Ballasts shall be high power factor, constant wattage autotransformer type, of the voltage shown on the plans. The ballast shall be integral with the lighting fixture, internally mounted in a corrosion resistant cast aluminum finned box with a weather-resistant E.D.P.M. gasket.

Fixtures shall be equipped with a fully adjustable formed steel bar mounting yoke.

Fixtures and ballasts shall be suitable for surface, wall and tenon mounting. Mounting hardware shall be Type 316 stainless steel.

Fixture shall be UL listed, for use in wet locations.

MAIN TOWER MARKER LIGHTS TYPE MAP

Main tower marker light fixtures shall be a 300 mm marine signal lanterns for use with 4 quartz halogen lamps, automatic lamp changer, and solid state flasher. Fixtures shall be fully assembled, furnished with lamps, lamp changer, flasher and sun switch, single piece acrylic lens, and shall comply with the following requirements:

Housings shall be corrosion resistant, compression molded, UV stabilized fiberglass and polyester base. Housings shall be equipped with a lens ring attached to the base by eight polyester hold-down tabs, and sealed with weatherproof "O" ring gaskets. All metal exterior hardware shall be of marine grade Type 316 stainless steel.

Lens shall be 300 mm, single-piece injection molded acrylic fresnel, attached to the housing with polyester hold-down tabs and gasketed lens ring. Lens shall be equipped with a molded in place bird spike.

Lamps shall be double contact quartz halogen, and shall be of the wattage shown on the plans.

Lamp sockets shall be double contact, bayonet type with 4 lamp solid state flasher/lampchanger and integral sun switch.

Housing and lens ring shall be gasketed with weatherproof "O" ring gaskets.

Fixture housings shall be equipped with a compression molded mounting flange, suitable for surface and pedestal mounting. Mounting hardware shall be Type 316 stainless steel. Fixtures shall be UL listed, standard wet location.

NAVIGATION WARNING SYSTEM

The bridge navigation lights shall be marine signal lanterns conforming to the requirements of Coast Guard Standards 33CFR 118.60, 33CFR84.13 and 33CFR 84.15. The lanterns shall be constructed of painted, anodized, cast aluminum, polycarbonate or fiberglass base, components with a precision-molded, color impregnated, glass, 200 mm Fresnel lens. The lantern shall be hinged for easy access to the lamps and internal assembly. The lantern shall have a bird spike incorporated into the lantern to reduce fouling where post mounted. Lanterns mounted upside down on the bridge structure shall be provided without a bird spike. Closure of the lantern shall be by captive toggle bolts and a watertight gasket. The lantern shall be capable of meeting IP-55 standards. The lantern top shall remain physically connected to the lantern base when opened for servicing. The lantern shall accommodate a 4-place lampchanger with four each S-11 marine signal lamps. Internal shock and vibration isolators are required to extend filament life.

The lantern shall have lens tie rods (astragal) constructed of stainless steel. The tie rods shall be placed at an angle of approximately 27 degrees to allow the light beam to be uniform within 25 percent at all viewing angles. Vertical lens tie rods will not be allowed due to shadowing of the lens, which significantly reduces lantern output. The lantern base shall incorporate a bottom cable entry and four attachment studs on a 120.65 mm bolt circle. Closure bolts and attachment hardware shall be constructed of stainless steel. In order to operate the lampchanger and marine signal lamps, a transformer shall be fitted within the lantern to accept the supply voltage of 120 VAC and provide 10.0 V to 10.5 V to the lampchanger. Four 3.05 A, 12 V, marine signal lamps shall mount in the automatic

lampchanger, which holds the operating lamps at the lens focal point and replaces the operating lamp upon failure. Only the operating lamp shall extend through the focal plane of the optic. Total lamp life for the optic shall exceed 25,000 hours.

AVIATION WARNING SYSTEM

The aircraft warning aviation light shall be a medium intensity, omnidirectional, red obstruction light that complies with AC 70/7460-1K, FAA L-864 and ICAO Annex 14 Chapter 6 for a flash rate of 20 flashes per minute. The light shall consist of an aviation red, FA-250 lantern containing 6 each, 24 volt, 150 watt, prefocussed, high pressure halogen marine signal lamps mounted on a 6 place microprocessor controlled lamp changer. The lens shall be a 250 mm acrylic Fresnal lens with a red lens cover. The housing shall be corrosion resistant cast aluminum with stainless steel fittings and a double silicone-rubber lens gasket. A bird spike shall be provided at the top optic. Lanterns shall be hinged at midpoint for relamping. When the operating lamp fails, the lampchanger shall automatically rotate the next lamp into precise focal position. When all lamps fail, the lampchanger shall automatically post a failure alarm. The lampchanger shall use a pulse with modulated regulator to operate the lamp at 24 volts giving 2000 hours of life per lamp. Input voltage shall be 480 volts, single phase. In order to operate the lampchanger and the aviation light, a transformer shall be fitted within the lantern to accept the supply voltage of 480 volts.

The red steady aircraft warning aviation light shall be a low intensity, omnidirectional, red obstruction light that complies with the requirements of AC 70/7460-1K, ICAO Annex 14 6.3.11 and FAA-L-810. The light shall consist of a single 155 mm red acrylic lenses mounted on a FA-249 (WA) lantern. The lantern shall contain four each, 12 volt, prefocussed, marine signal lamps mounted on a four lampchanger. The housing shall be corrosion resistant cast aluminum with stainless steel fittings and a double silicone-rubber lens gasket. A bird spike shall be provided at the top optic. Lanterns shall be hinged at midpoint for relamping. When the operating lamp fails, the lampchanger automatically rotates the next lamp into precise focal point position. A transformer shall be provided inside the optic which reduces the 480 volt input to 10.5 VAC at the lamp giving 5300 hours per lamp and greater than 21,000 hours for the optic. The aviation warning system shall be operational as soon as the tower is in place.

FOG DETECTION SYSTEM

Marine Infrared Fog Detection

The fog detector shall consist of a single station, backscatter device using modulated infrared light to monitor visibility and trigger operation of a fog signal. The detector shall be capable of remote monitoring of fault and visibility levels with contacts for remote On/Off function. All components shall be designed and constructed so as to provide service under exposed conditions commonly found along the seacoast. The equipment shall be suitable for single pole mounting. Workmanship shall be of the highest grade throughout.

The detector sampling light shall have a wavelength of 0.94 μm with modulated pulse frequency of 16 kHz. The detector shall be capable of triggering operation of a fog signal at three adjustable visibility thresholds over a range of 0.5 to 4 nautical miles. The detector shall have sampling zones of approximately 2 to 12 meters with adjustable sampling times not to exceed 12 seconds every two minutes and a threshold accuracy to

with 10 percent of the threshold values. The detector shall automatically adjust for the accumulation of dirt on the lens panel with no effect on the performance. Threshold relays and remote alarm output shall use no volt contacts.

The detector casing shall be sealed to IP67 requirements with a Hammerite finish. The detector shall be supplied with 120 volt, single phase input 12 volt output power supply mounted in NEMA 4X box, complete with clips to mount on the same pole as the detector. Current drain is not to exceed 50 mA at 12 volts DC.

Fog Signal

The fog signal shall consist of an emitter array, a power supply and interconnection cables that, when assembled, will produce a 300 cycle directional signal of not less than 132 db measured at 7.5 meters on the axis of the horns with a power input of 2000 watts maximum into the array. The interconnection cables shall not be part of the bid. All components shall be designed and constructed so as to provide extended satisfactory service under exposed conditions commonly found along seacoasts and industrial areas. The equipment shall be constructed to withstand the strains, jars, vibration and conditions incident to shipping, storage, installation and operation as an aid to navigation. Components shall be designed so the adjustments and repairs can be made easily and readily by relatively untrained personnel. Workmanship shall be of the highest grade throughout. All components shall be easily accessible and removable from the front of the power supply cabinets.

The emitter array and power supply shall be separate entities. The emitter shall be capable of mounting on a horizontal platform or on a vertical framework. In use, it will be exposed to the weather. The power supply shall be housed in NEMA 12X enclosure designed for wall mounting. The emitter array shall consist of two transmitters each with two steel diaphragms tuned to 150 cycles per second to produce a tone of 3000 cycles per second, with directional horns to couple the mechanical vibrations to the air. Each transmitter shall be driven by a single fixed electromagnet. The horns shall be resonant at 3000 cycles per second and shall be spaced vertically so as to produce the optimum signal. A steel spacer shall be provided with each transmitter.

The power supply shall consist of two solid state inverters, each in its own cabinet, designed to operate from 120 volts, 50 or 60 cycles, single phase alternating current. The input to each shall not be more than 1800 W, 18 A at 120 volts AC, and the output of each shall be not less than 1000 watts of 150 cycle, +0.2 percent, square wave alternating voltage into a single transmitter. A tuning fork for maintaining frequency shall be incorporated in each inverter with provisions for either turning fork to maintain the frequency of both inverters and to keep them in phase. A solid state coding timer shall be installed in each inverter with provisions for either timer to code both inverters.

Provisions shall also be so that either inverter can operate one transmitter of the emitter array. Provisions shall also be made for coding from an external timer. The characteristic shall be specified for each order. The power supply shall be capable of at least a 30 percent duty cycle with any characteristic with a minimum OFF time of one second and maximum ON time of 6 seconds. The power supply and timer shall operate over an ambient temperature range from -29°C to 49°C. The components shall be housed in metal enclosures with gasketed doors. Cable entries shall be through stuffing tubes or similar sealing system. Cabinets shall be finished with one prime coat and one finish coat of enamel. Each power supply shall contain a meter panel clearly labeled which consists

of a DC inverter voltage meter, an AC horn current meter, an input AC circuit breaker, a DC inverter circuit breaker, a DC inverter circuit breaker, an adjustable horn level control zero to 100 percent continuously variable, a manual keying switch, a master slave switch, all with suitable permanent nameplates.

Submittal package shall consist of six copies. Submittals shall be delivered to the Engineer at least 180 days prior to the start of the installation. The Engineer will be allowed 90 days for review of the submittals.

The manufacturer shall provide 6 instruction manuals with each signal. The instruction manual shall include, but not necessary be limited to, the following:

- A. General description of the equipment, including weights of the major components.
- B. Installation instruction, scaled and dimensioned elevation and plan drawings, point to point wiring diagram and schematic wiring diagram. Drawings and installation shall be sufficiently detailed and complete to ensure proper installation and adjustment by others.
- C. Operating and maintenance instructions. These shall be complete and detailed enough to permit proper maintenance by persons not specifically trained on the equipment.
- D. List of all parts with description numbers and photographs or drawings sufficiently complete and clear to permit ready identification for ordering replacements for work or damaged parts in the future.

TESTING

Prior to start of functional testing of the navigation and aviation warning systems, the Contractor shall perform the following tests on all circuits, in the presence of the Engineer, and shall be furnished in a tabulated form to the Engineer.

- A. Continuity Test.
- B. Ground Test.
- C. Insulation Resistance Test.

The above test shall conform to Section 86-2.14B(1), 86-2.14B(2) and 86-2.14B(3) of the Specification respectively. The function test shall consist of not less than 7 days of continuous satisfactory operation. If unsatisfactory performance of the system develops, the conditions shall be corrected and test shall be repeated until the 7 days of continuous, satisfactory operation is obtained.

Any questions regarding this request should be directed to Marwan Nader at (415) 291-3731.

Regards,

T.Y. Lin International – Moffatt & Nichol (J.V.)

The function testing is modifying the section 86-2.14C of the Standard Specifications to a 7-day test period. Also what portion of the testing is the installing contractor responsible for?

This section is covering all the testing for the systems but is very confusing as to how to enforce the testing procedures.

Marwan N. Nader, P.E.
Project Manager, SFOBB-SAS

Enclosure

cc: James Duxbury, T.Y.Lin International
Alex Sanjines, T.Y.Lin International
Andrew Baumberger, T.Y.Lin International

What about the modification of Section 8-1.03 "STATE-FURNISHED MATERIALS of the contract Special Provisions?

Notification
storage
Etc.

Attachment #3 (1/2)



Scott
Fabel/D04/Caltrans/CAGov
10/27/2008 02:22 PM

To Michael Travis/HQ/Caltrans/CAGov@DOT
cc
bcc
Subject CCO 79 Plan Sheet from TYLin

Hi Mike,

I got a plan sheet from TYLin for CO 79. Mark Woods looked at it already and he was OK with it.
Can you take a look at it when you have a chance? I attached a copy. But the TYLin memo is with us.

Thanks,

Scott

Scott Fabel, P.E.
SAS CCO Desk
(c) 510-501-4054



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