

## Memorandum

**DATE:** August 12, 2006

PB-RDP-05835

**TO:** Regional Managers/Regional Engineers

**FROM:**  Robert Ball, Deputy Director of Engineering and Construction

**CC:** Ofelia Alcantara, Acting Director of Engineering; RDP Task Leads

**SUBJECT:** Notice to Designers No. 12 – Seismic Retrofit and Clearance Check List for Existing Primary Type 2 Structures

### **Purpose:**

The purpose of this Notice to Designers is to provide guidance to the Regional Teams to implement a screening Check List for evaluation of the Existing Primary Type 2 (EPT2) structures for use during the preliminary engineering/environmental phase. This screening will be used for determining:

- Seismic retrofit measures that should be included in the Rehabilitation Strategy Plan (RSP) and Evaluation of Existing Structures Report (EESR) and;
- Anticipated clearances (vertical and horizontal) below EPT2 structures to confirm if adequate for High Speed Train (HST) operations.

The RSP/EESR for EPT2 structures is to be included in the Scope of Work for Regional Consultants (RC) and Environmental & Engineering Consultants (E&ECs). The final RSP/EESR for EPT2 structures is to be included in the Scope of Work for Design/Build procurements. The check lists are intended to screen EPT2 structures for Authority's use in providing direction for seismic retrofit measures and clearance envelope strategies to be implemented within the RSP/EESR and included in new procurements. The RSP/EESR for each EPT2 structure should also address items such as grounding/bonding, fencing with solid opaque material above the high speed rail tracks to screen High Speed Rail (HSR) operations from roadway and pedestrian view, pier protection and other items to allow for HSR operations.

The final RSP/EESR for each EPT2 should provide the methodology and implementation for use during the preliminary engineering and environmental phase so that an approved retrofit/rehabilitation strategy can be cleared within the environmental phase, and used as a scoping document for new procurements. The retrofit/rehabilitation strategy shall be presented to the Authority during a meeting, prior to finalizing the RSP/EESR.

### **Background:**

The check list is attached and an example EPT2 General Plan for a RSP/EESR is provided for illustration purposes only.

- **Existing Primary Type 2 Overhead Structures**
- **Seismic Evaluation and Clearance Check List**

The purpose of this Check List is to screen the seismic retrofit status of existing Primary Type 2 structures in accordance with Caltrans Memos to Designers 20-4, and to determine acceptable minimum vertical and horizontal clearances below existing Primary Type 2 at the proposed HST.

The Check List is to be completed by the RC and E&EC for each existing Primary Type 2 structure along potential HST alignments, and is to be included in the Rehabilitation Strategy Plan/Evaluation of Existing Structures Report for each Primary Type 2 structure. The Rehabilitation Strategy Plan for each existing Primary Type 2 structure is to be completed so that an approved retrofit/rehabilitation strategy can be cleared within the environmental phase. The Rehabilitation Strategy Plan/Evaluation of Existing Structures Report will serve as a scoping document for Design/Build procurements.

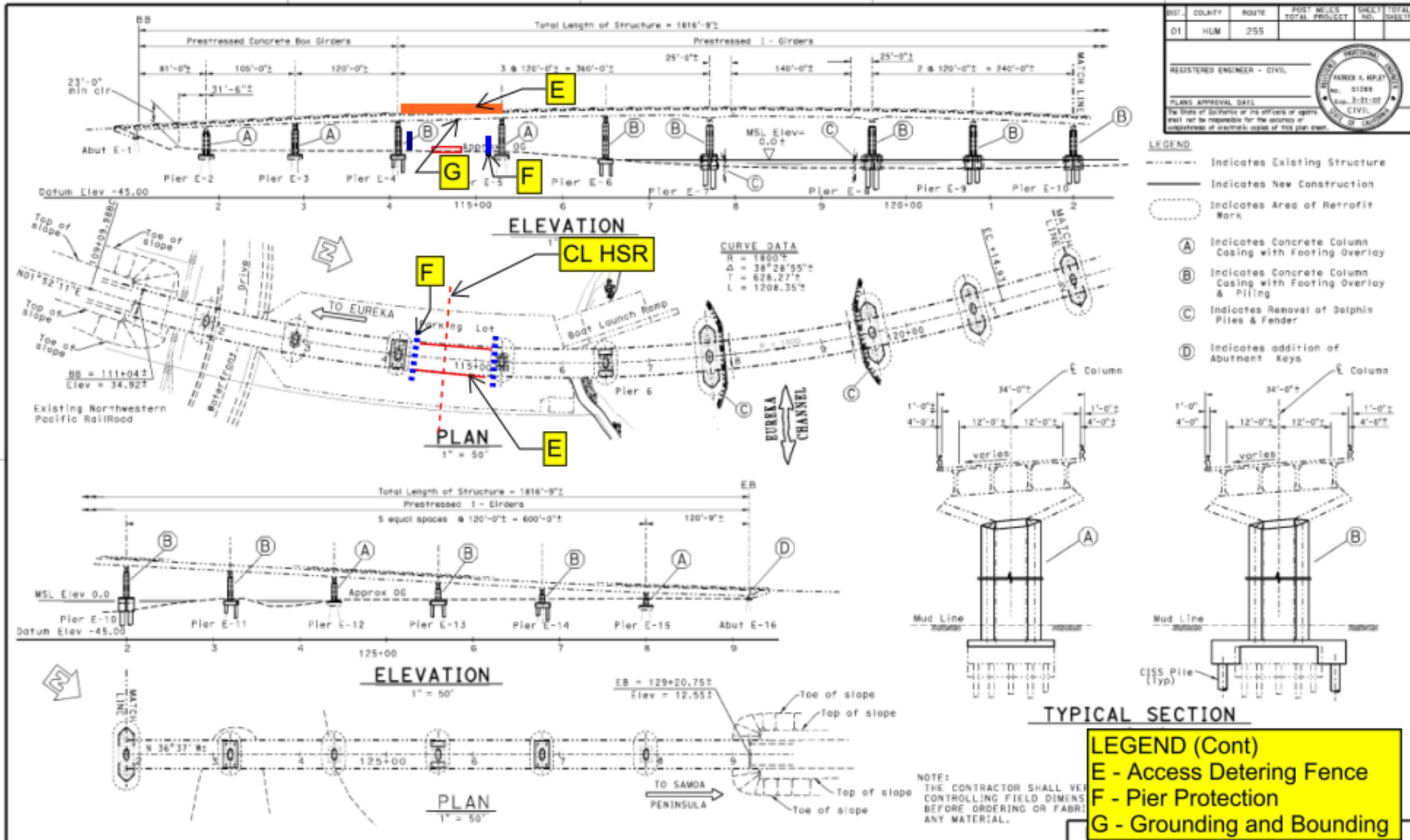
<b>Structure Identification</b>	
Bridge Name:	<i>(Example: 12<sup>th</sup> Street Overcrossing/Overhead)</i>
Bridge Number:	<i>(Example: 04C-00150)</i>
Bridge Location: (Dst/Co/Rte/PM)	<i>(Example: 04/SF/NA/NA)</i>
Bridge Owner/Jurisdiction:	<i>(Example: City of San Francisco)</i>
Facility Type: (OH, POC)	<i>(Example: OC/OH)</i>
<b>Seismic Design Status (See Note 1)</b>	
Structure has been design to meet Caltrans “No Collapse” performance standards (Yes/No)	<i>(Example: Yes)</i>
Year of seismic retrofit, if applicable (Per MTD 20-4)	<i>(Example: 1995)</i>
<b>Existing Clearance Status (See Note 2)</b>	
Minimum anticipated vertical clearance from HST Top of Rail to Superstructure (Feet):	<i>(Example: 24.5)</i>
Minimum anticipated Horizontal Clearance from Centerline of HST to Face of Structure (Feet)	Left: <i>(Example: 23)</i> Right: <i>(Example: 40)</i>
<b>Other Data</b>	
Number of Spans:	<i>(Example: 7 spans)</i>
Year of First Construction:	<i>(Example: 1930)</i>
Bridge Length, BB to EB (Feet):	<i>(Example: 523)</i>
Span Length over HSR Tracks (Feet):	<i>(Example: 85)</i>
Width of Structure above HSR (Feet):	<i>(Example: 73)</i>
Superstructure Type over HSR Track or Supporting HST	<i>(Example: Steel plate girder with RC deck)</i>
Substructure Type Supporting Span over HSR Tracks	<i>(Example: Pile cap with precast-prestressed piles)</i>
Dedicated HST Track (Yes/No)	<i>(Example; Yes)</i>
Dedicated HST Track less than 125 mph (Yes/No)	<i>(Example: No)</i>

**Note 1:** If the structure has not been designed to meet Caltrans “No Collapse” performance standards, a Seismic Retrofit Strategy Report shall be developed by the RC/E&EC and approved by the Authority. The

*final Seismic Retrofit Strategy Report shall be part of the RC/E&EC Regional Rehabilitation Strategy Plan/Evaluation of Existing Structures Report.*

***Note 2:** If the minimum required vertical and/or horizontal clearances are not met, the RC/E&EC is to submit a **Design Variance Request (DVR)** for Authority/RDP direction regarding the substandard clearance. The DVR disposition shall be part of the RC/E&EC Rehabilitation Strategy Plan/Evaluation of Existing Structures Report.*

# Example General Plan for Rehabilitation Strategy Plan



DESIGNER	Fadel Alameddine 11-98	DESIGNED BY	Gary Tolen 11-98	LOAD FACTOR DESIGN	LIVE LOADING, WIND-OR AND ALTERNATING AND PERMIT DESIGN LOAD	STATE OF CALIFORNIA	ENGINEERING SERVICE CENTER	PROJECT NO.	04-230	EUREKA CHANNEL BRIDGE	
DETAILS	Ralph Nakoko 12-98	DESIGNED BY	Pat Ripley 12-98	LAYOUT	Ralph Nakoko	DEPARTMENT OF TRANSPORTATION	OFFICE OF EARTHQUAKE ENGINEERING S	TITLE	C.2	GENERAL PLAN	
MANUFACTURER	Sergey Simek 08-00	DESIGNED BY	Gary Tolen 08-00	INSPECTION						SHEET 3 OF 59	