

# **INFORMATION HANDOUT**

**For Contract No. 07-1W2204  
At 07-LA-10,60,91,105,210, etc.-Var**

**Identified by  
Project ID 0700020813**

## **MATERIALS INFORMATION**

Foundation Recommendation

## Memorandum

*Flex your power!  
Be energy efficient!*

To: MR. GRISH BIGLARIAN  
District 7 Office of Traffic Design

Date: October 23, 2012

Attention: Ms. Jennifer Nguyen

File: 7- LA-10-PM 18.56  
Overhead Sign Replacement  
0738-1W2201

From: DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
Geotechnical Services  
Office of Geotechnical Design – South 1  
Branch D

Subject: Foundation Recommendation for Overhead Sign 100 on Westbound Route 10 Ramp to Route 101

### INTRODUCTION

Based on the email transmitted to Office of Geotechnical Design South 1 (OGDS1) by District 7 Office of Traffic Design, dated September 26, 2012, the Overhead Sign 11C has been renamed to Overhead Sign 100. Proposed Sign Plan and Sign Details were provided to OGDS1 by D07 Office of Design on September 26, 2012. OGDS1 has prepared foundation recommendation for the installation of Overhead Sign 100 supported on Cast-In-Drilled-Hole (CIDH) pile foundation.

### SITE DESCRIPTION

The proposed overhead sign (OH) is located on westbound Route 10 Ramp to northbound 101, 100 feet east of State Street Bridge #53-1328 in Los Angeles County. Information provided by D07 Traffic Design regarding location and Post type for proposed overhead sign are summarized in Table 1. Finished grade elevation was not provided to OGDS1.

### SCOPE OF WORK

The scope of work for the proposed project performed by OGDS1, Branch D consisted of the following task:

1. Review of pertinent geotechnical reports and As-Built plans;
2. Field reconnaissance by an engineer to observe the existing condition at the site of the proposed overhead sign;
3. Interpretation of subsurface soil and groundwater conditions at the site of the proposed overhead sign;
4. Engineering analyses and preparation of this report to present geotechnical recommendation for foundation design and construction of the proposed overhead sign;

**Table 1 – Overhead Sign Information Summary**

Sign ID	Sign Location	Sign Type	FDN Stand. Plan	Foundation Type	Located On Slope
100	Route 10 westbound connector 100 feet east of State St. Bridge # 53-1328	Truss Cantilever (Type 8)	S7	5' DIA. 25' DEPTH CIDH	NO

- Finished grade elevation was not provided in SIGN DETAIL SD-1 Plotted March 9, 2012 by Office of Traffic Design. OGDS1 estimates top of pile elevation at 320.0 feet based on available AS-Built plans.

**FIELD INVESTIGATION AND TESTING PROGRAM**

No field exploration or a laboratory test program was conducted for this project since the subsurface information obtained from 1957 geotechnical investigation was considered adequate for the proposed OH sign. Therefore a brief description of the past geotechnical investigation conducted at the site is given below.

Past geotechnical investigations conducted at the site consisted of the 1957 subsurface exploration for State Street overcrossing. In the subsurface exploration conducted in 1957, five 3-inch rotary borings and two 2 ¼-inch cone-penetrometer test and one hand driven soil tube were performed. Summary of AS-Built boring information is shown in Table 2.

**Table 2 - Summary of Borings**

Boring	Station (State St)	Offset From State St. (ft)	Surface Elevation (ft)	Boring Depth (ft)	GWT Elevation (ft)
B1	62+82	134 RT	335.7	10	NA
B2	63+98	18 LT	327.3	21	NA
B3	65+05	17 RT	322.0	59	NA
B4	65+33	60 Rt.	321.2	22	NA
B5	65+01	160Rt.	319.5	46	NA
B6	61+56	16LT	334.5	71	312
B7	62+95	19RT	330.2	62	298
B8	62+31	63LT	332.5	49	317

- 1957 As-Built State St. Bridge No. 53-1328

**LABORATORY TESTING PROGRAM**

No laboratory test was performed.

## **SITE GEOLOGY AND SUBSURFACE CONDITIONS**

### **SITE SUBSURFACE CONDITIONS**

Based on 1957 AS – Built information, earth material at the site from the ground surface to a depth of about seven feet consist of a quaternary terrace cap of dense, oxidized, slightly silty angular sand, gravel, and cobbles. Underlying the terrace deposit and extending to the maximum depth drilled at elevation 263 feet is the Yorba member of the Puente formation (Upper Miocene age). The Puente formation sampled at this site location consists of dense, slightly silty blue to gray fine sand which becomes coarser with depth. Coarse oil saturated sand was encountered within this formation at elevation 268 feet.

### **Groundwater**

Based on 1957 AS – Built information, ground water was encountered at elev. 314 feet. However, the quantity that will be encountered during construction is expected to be minor. It should be noted that ground water levels can fluctuate with the change of season and other factors including local irrigation.

### **CORROSION**

No corrosion test was performed.

### **SEISMIC EVALUATIONS**

The project site is not located within any California Geological Survey (CGS) designated Earthquake Fault Zone (EFZ). The subject site is not considered prone to surface fault rupture hazard; therefore the possibility of surface fault rupture hazard at the site is considered very low.

### **LIQUEFACTION**

The 1957 drilling records indicate shallow groundwater at State St. (Bridge No.53-1328) near proposed overhead sign locations. However due to presence of cohesive material in the subsurface soil likelihood for liquefaction at this project site is moderate to low.

### **FOUNDATION RECOMMENDATIONS**

The proposed Overhead Sign 100 will be supported on 5 feet diameter and 25 feet long Cast-In-Drilled-Hole (CIDH) pile. The OH Sign Type was provided to OGDS1 by Mr. Grish Beglarian on March 9, 2012.

Based on the subsurface conditions indicated above, Standard plan S7 and Caltrans Overhead Signs Reference Sheet "Pile Foundation Depth Selection No.13" the proposed foundation for OH Sign 100 are adequate as designed.

## CONSTRUCTION CONSIDERATIONS

The following recommendations are made for CIDH pile installation and construction and are recommended to be incorporated in the Special Provisions of the project.

1. Perched groundwater/groundwater appears to be present below elevation +314 feet. Contractor should consider using wet method for construction of CIDH pile.
2. The contractor shall be required to clean out the bottom of the CIDH pile shaft prior to placing the cage and the concrete.
3. Rebar cage and concrete placement for construction of the CIDH pile should be completed within the same day that excavation of the drilled hole has been completed.
4. Moderate to minor caving may be anticipated during excavation of the pile boring and during CIDH pile construction.

If you have any questions, please contact Akbar Mehrazar at (949) 440-3415 or Shiva Karimi at (213) 620-2146.

Prepared by:                      Date: 10/23/2012

*A Mehrazar*

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Reviewed by:                      Date: 10/23/2012

*Shiva Karimi*

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