INFORMATION HANDOUT

For Contract No. 07-129974
At 07-LA-210-R18.8/R24.9

Identified by
Project ID 0714000080

MATERIALS INFORMATION

Changeable Message Sign Foundation Report, dated December 2, 2014

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

Serious drought.
Help save water!

To: JACQUELINE C. TAN-DISRTRICT 07
Office of Intelligent Transportation System (ITS)

Date: November 24, 2014
(Revised December 2, 2014)

File: 07-LA-210-PM R18.8/R24.9
EA: 07-129971 (0714000080)
Changeable Message Sign

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

Subject: Foundation Report, Changeable Message Sign (CMS)

INTRODUCTION

This report was revised based on the revised location of the CMS sign to Station 1092+15 by D07 Office of Intelligent Transportation Systems (ITS) communicated via email dated November 25, 2014.

Based on the request of District 7 Office of Intelligent Transportation Systems (ITS), dated October 30, 2014, Office of Geotechnical Design South 1 (OGDS1) has prepared this Foundation Report (FR) for the Changeable Message Sign (Model 500) along Route 210 located just east of Gould Avenue Overcrossing (OC) (Bridge No. 53-2177), Station 1087+50 (PM R20.6). The foundation recommendations provided herein are based on the CMS Draft Plan E-11 (dated 10-01-2014) provided by ITS to OGDS1, as well as geotechnical information obtained from As-Built Log of Test Borings (LOTBs) for Gould Avenue OC dated December 1967.

SCOPE OF WORK

The following tasks were performed for the preparation of this report:

- Review of archived data from Gould Avenue OC.
- Geotechnical analysis.
- Preparation of this FR.

PROJECT DESCRIPTION

Project work includes installation of one CMS Model 500 on westbound LA-210 just east of Gould Avenue OC. OGDS1 understands that this CMS sign will be located in landscaped portion of the shoulder at/near existing (approximately 1H:1V) ascending slope adjacent to the roadway shoulder The existing slope is currently covered with wood chips.

Table 1 - General Information for CMS (Model 500)

Sign Type	Location Centerline Route 210	Sign No.	Type of Foundation	Pile Diameter (ft)	Foundation Depth (ft)
Overhead Signs-Truss Single Post CMS Model 500	Sta. 1087+50 **(Revised Sta. 1092+15)**	N/A	CIDH Pile (Standard Plans 2010, Sheet No. S116)	5	22

The stationing was provided by the Office of Intelligent Transportation System.

SITE GEOLOGY AND SUBSURFACE CONDITIONS

Site Geology

The site is located at the southern end of the Transverse Ranges geomorphic province, which is composed of east-west trending mountain ranges and valleys. The site is located between the San Gabriel Mountains to the north and the San Rafael Hills to the south, at the eastern end of the Crescenta Valley. The site is underlain by Recent granular alluvium.

Subsurface Conditions

Site investigation was not performed for this project and As-Built information form Gould Ave. OC was used for design of the proposed CMS foundation.

Gould Avenue OC Borings B-1 and B-2

The underlying soils are composed of slightly compacted to compact, light brown to brown, poorly sorted granitic sand with some silt and clay binders, occasional thin interbeds of silty fine to medium sand and decomposed granite gravel was encountered to approximately 30 ft. depth (elevation +1183 to +1203). Below this level soil consists of compact to very dense light brown to brown silty sand with occasional decomposed granite gravel or cobbles.

Ground Water

Groundwater was not encountered in 1967 investigation for original Gould Ave OC in borings B-1 through B-4 to maximum depth of approximately 80 feet drilled (elevation +1156 ft). It should be noted that groundwater level fluctuates with change of seasons and other factors.

Historical Data

According to the Water Data Library website from the California Department of Water Resources, the nearest well with groundwater elevation data is well 341970N1181959W001, which is approximately ½ mile southwest of the site. The most recent groundwater elevation reading was taken on April 16, 2014, and was at an elevation of +1129 ft.

The Geotracker website of the State Water Resources Control Board shows the nearest monitoring wells are located at an Arco gas station at the corner of Foothill Blvd. and Woodleigh Ln. approximately 0.15 miles south of the site. The latest available data is from the second quarter of 2013. The highest historical groundwater elevation measured was at elevation +1154.24 in well MW-3 on July 28, 2005.

CORROSION EVALUATION

No corrosion tests were performed for this report.

SEISMIC RECOMMENDATIONS

Liquefaction Evaluation

Liquefaction is a phenomenon in which loose, saturated, fine-grained, granular soils behave like a liquid while being subjected to high-intensity ground shaking.

Based upon the groundwater elevation and high density of soils below that elevation, liquefaction potential for this site is considered to be low.

FOUNDATION RECOMMENDATIONS

The following recommendations is based on; 1) As-Built LOTBs for Gould Ave OC, 2) Layout Plan E-11 provided by ITS via email dated October 30, 2014 **(Revised Construction Details Sheet C-1 undated)**, and 3) Reference Sheet No. 31 for Overhead Signs Changeable Message Signs, dated 10/4/2006.

Based on the above information, the pre-selected CIDH pile depth for CMS (Model 500) in accordance to Sheet S116 of Caltrans Standard Plan (2010) is sufficient to support the proposed sign.

CONSTRUCTION CONSIDERATIONS

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

1. The contractor shall be required to clean out the bottom of the shaft prior to placing the cage and the concrete.

2. Concrete placement for construction of the CIDH piling shall be completed within the same day that excavation of the drilled hole has been completed.

3. Moderate caving is anticipated during excavation of the pile boring and during CIDH piles construction. A method of caving control, such as using temporary casing should be considered by the contractor.

4. It should be noted that hard drilling may encounter due to possibility of decomposed granitic gravel in the subsurface material.

If you have any questions or comments, please call M. Mushtaq Ahmed at 213-620-2132 or Shiva Karimi at 213-620-2146.

Prepared by: Date: 11/24/2014

M. MUSHTAQ AHMED, P.E.
Transportation Engineer - Civil
Office of Geotechnical Design – South 1
Branch D

Reviewed by: Date: 11/24/2014

SHIVA KARIMI G.E.
Senior Transportation Engineer
Office of Geotechnical Design – South 1
Branch D

Prepared by: Date: 11/24/2014

KRISTOPHER BARKER, C.E.G.
Engineering Geologist
Office of Geotechnical Design – South 1
Branch D

Attachment: Log of Test Borings for Gould Ave. UC

cc:

District Project Manager	TBD	
GS Corporate	Douglas Brittsan	Douglas_Brittsan@dot.ca.gov
Structure Construction R.E. Pending File		RE_Pending_File@dot.ca.gov
District Materials Engineer	Kirsten Stahl	Kirsten_Stahl@dot.ca.gov

FED. ROAD DIV. NO.	STATE	F. A. PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CALIF.			

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
07	L.A.	210	WILSHIRE TO FOOTHILL	479	494

DESIGN REGISTERED ENGINEER — REGISTERED CIVIL ENGINEER NO. 10104

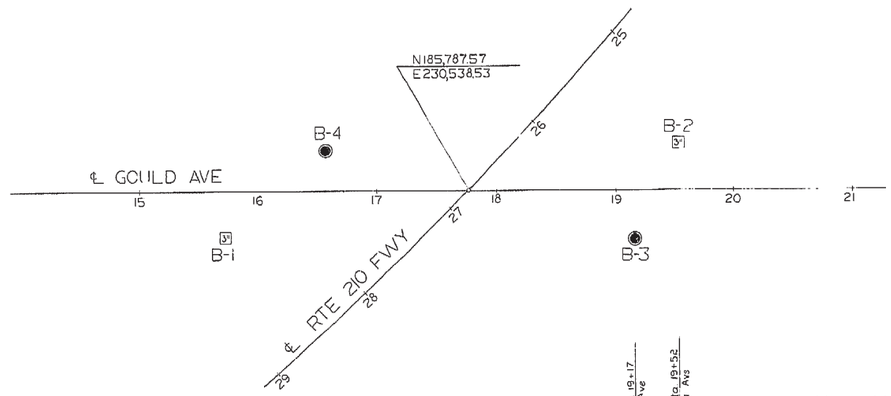
DATE APPROVED April 6, 1970

BENCH MARK

BM = FH-12 Elev. 1196.92
Set Round Head Bolt & Washer stamped "CHC FH-12" 100' west of inter Gould Ave & Foothill Blvd 2' south of island curb (Taper) on Foothill Blvd.

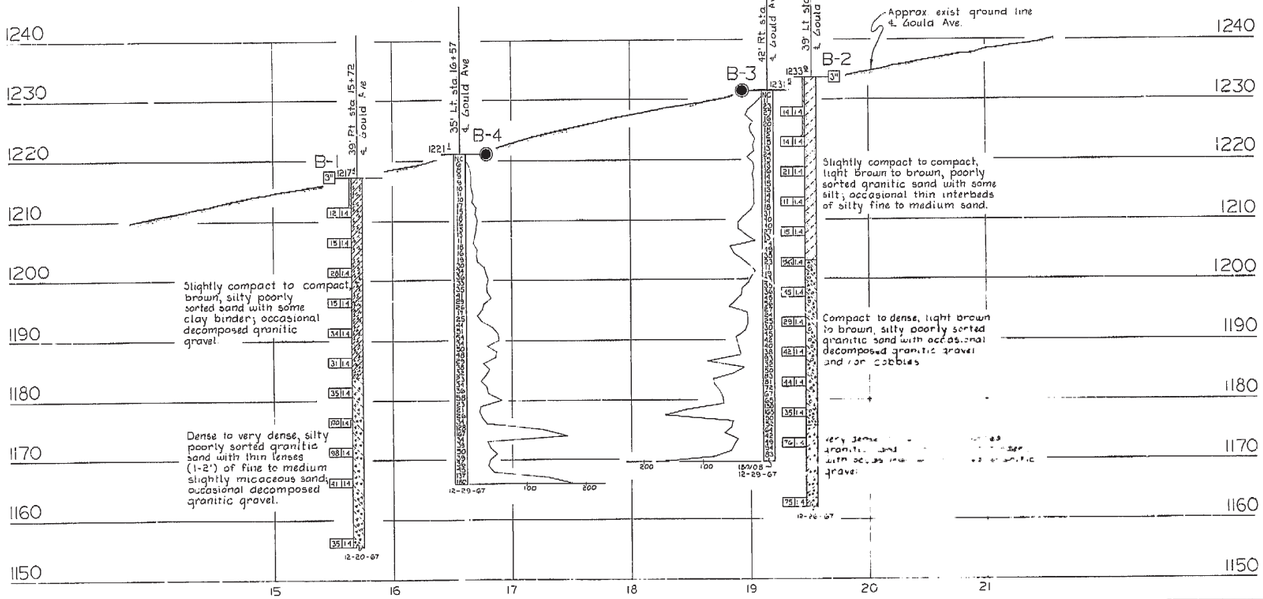
PLAN

Scale 1" = 50'



PROFILE

Scale: Vert 1"=10'
Horiz 1"=50'



DECEMBER 1967

LEGEND OF BORING OPERATIONS

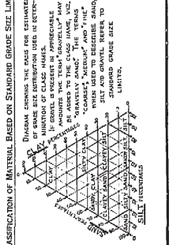
- Penetrometer
- 2½" Core Penetrometer
- Sampler Boring (dry)
- Rotary Boring (wet)
- Auger Boring (dry)
- Jet Boring
- Core Boring
- Test Pit

Penetration Boring — Boring No. 1 — 1" Soil Tube

LEGEND OF EARTH MATERIALS

Gravel; Sand; Silt; Clay; Silty Clay or Clayey Silt; Peat or Organic Matter; Fill Material; Igneous Rock; Sedimentary Rock; Stony Clay or Clayey Stone; Stony Silt or Silty Shale; Metamorphic Rock

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

FIELD STUDY	R. C. D. Schrenk 1-2-68
DRAWN	R. J. Lerma 1-5-68
CHECKED	R. E. Cook 1-5-68

Approval Recommended: [signature] Engineering Geologist

BRIDGE DEPARTMENT
ENGINEERING GEOLOGY SECTION

479

AS BUILT PLANS
Contract No. 07-063721
Date Completed
Document No. 70006123

SHEET	OF
8	8

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

GOULD AVENUE OVERCROSSING

LOG OF TEST BORINGS

SCALE As Noted	BRIDGE 53-2177	FILE	DRAWING 53-2177-7

Chg: 07204
WA: 063721

Disregard prints bearing earlier numbers → PREL. DRAWING No. PR- 1/74

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

DATE 01/11/74 SIGNATURE James E. Cowell TITLE Microfilm Supervisor