

FOR CONTRACT NO.: 10-0S7604

INFORMATION HANDOUT

MATERIALS INFORMATION

**GEOTECHNICAL DESIGN REPORT
DATED OCTOBER 13, 2011**

ROUTE: 10-SJ-99-2.1/4.2

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. MICHAEL K. LIM
Design Manager
Project Development / Design

Date: October 13, 2011

Attention: Majid Monfaredian
Project Engineer

File: 10-SJ-99
PM 2.0/13.0
EA 10-0S7601
ID 1000020516
Changeable Message Signs

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5

Subject: Geotechnical Design Report

Introduction

Per your request, we are providing foundation recommendations for State Route (SR) 99 from PM 2.0 to 13.0 in San Joaquin County, California. The project proposes to install two model 500 Changeable Message Signs (CMS) along SR 99. The CMS locations are shown in **Table 1** below and presented on **Plate No. 1**.

Table 1. CMS Locations

Structure	STA	Line	PM
CMS 1	673+50	SR 99	4.14
CMS 2	220+88	SR 99	12.71

Subsurface Investigation

The subsurface investigation for this project was performed on September 23, 2011 and consisted of two Cone Penetrometer Testing (CPT) soundings. The CPT sounding logs for CPT-1 and CPT-2 are presented on **Plates No 2 and 3**, respectively.

Subsurface Conditions

The CPT soundings indicate that the subsurface material consists of interbedded layers of gravelly to silty sand and clean sand. Soil densities are predominantly medium dense to dense with some thin isolated layers of loose material. The CPT locations are presented on **Plate No. 1**. The CPT sounding logs are presented on **Plates 2 and 3**.

Ground Water

Ground water was not measured in the CPT soundings. As-built LOTB for bridges in the project area show ground water as shallow as 5 feet below the ground surface. Additionally, monitoring wells (California Department of Water Resources) located within the project area show the ground water depth as shallow as 5 to 10 feet below the ground surface. It is anticipated that ground water will be encountered during construction of the CIDH piles.

Geotechnical Recommendations

Design data for Type 500 CMS is presented in **Table 2**.

Table 2. CMS Design Data

CMS Type	CIDH pile properties		Required soil properties	
	Diameter (ft)	Length (ft)	Friction Angle	Unit weight (pcf)
500	5	22	30	120

Based upon our subsurface investigation, the subsurface soils at the proposed CMS locations meet the required soil properties shown above. The two CMS may be constructed using a standard plan foundation, as proposed.

Construction Considerations

1. It is anticipated that ground water will be encountered while drilling the CIDH pile for the CMS. Wet method specification need to be included with the project.

2. The soil at the proposed CMS locations is granular in nature. The CPT soundings indicate some isolated areas of loose soil within the proposed CIDH depth. Caving should be anticipated during construction of the proposed CIDH piles and temporary casing should be used as needed.

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in Acrobat (.pdf) format to the addressee(s) of this report via electronic mail.

Data and information attached with the project plans are:

A. *None*

Data and Information included in the Information Handout provided to the bidders and Contractors are:

A. *Geotechnical Design Report for EA 10-0S7601, dated 10/13/2011.*

Data and Information available for inspection at the District Office:

A. *None*

Data and Information available for inspection at the Transportation Laboratory are:

A. *None*

Mr. Michael K. Lim
October 13, 2011
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EA 10-0S7601

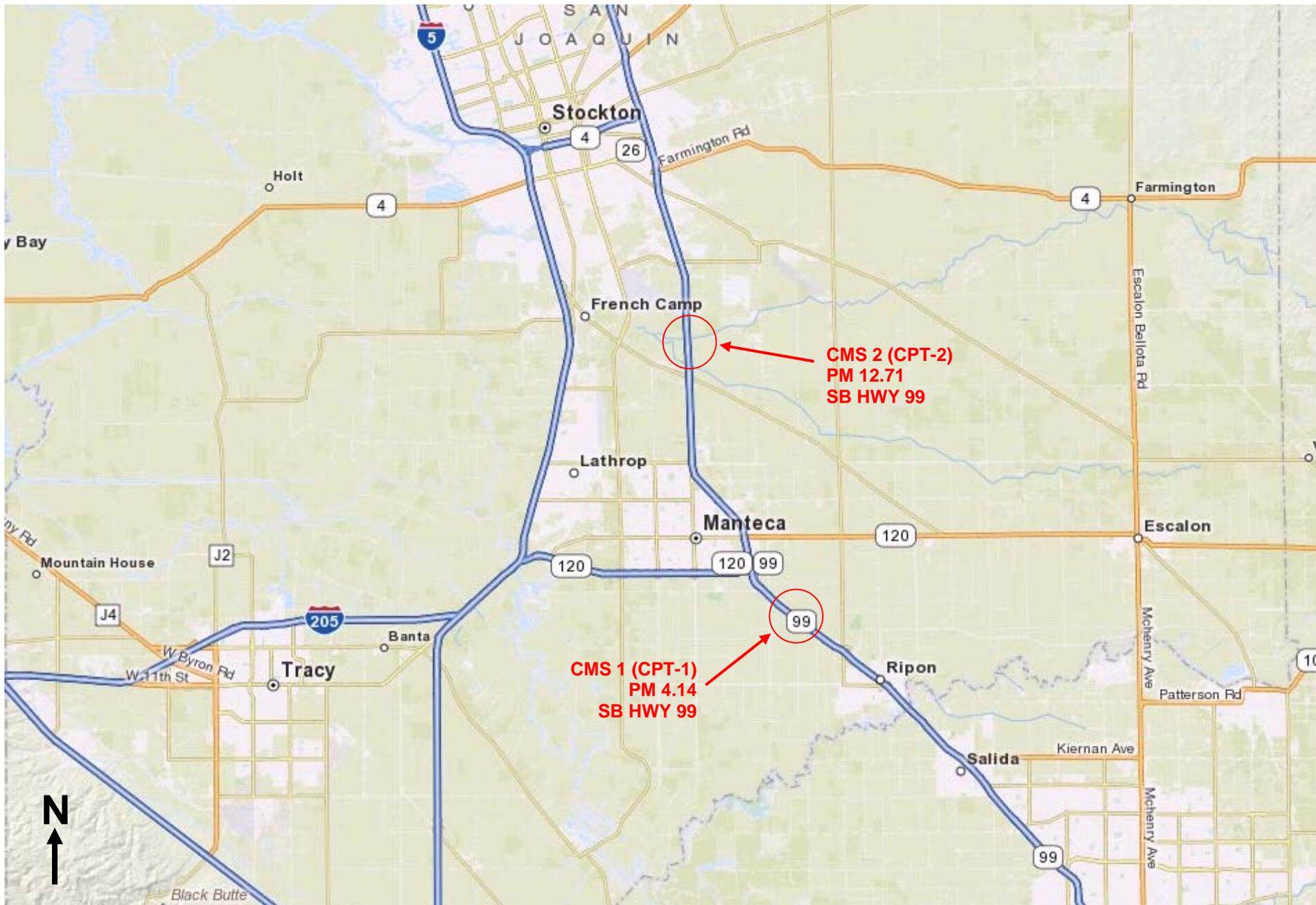
The recommendations contained in this report are based on specific project information. If any changes are made, the Office of Geotechnical Design North should review those changes to determine if these recommendations still apply. If you have any questions regarding this report, please contact Ben Barnes at 916-227-1039.



BENJAMIN M. BARNES, P.E.
Transportation Engineer
Geotechnical Design - North



c: Qiang Huang – Chief, OGDN-E
Mark Willian – GS Corporate
Dave Dhillon – D10 DME
Tony Singh – D10 Project Manager
District Construction R.E. Pending File



Division of Engineering Services
 Geotechnical Services
 Office of Geotechnical Design - North

ID 100020516

EA 10-0S7601

VICINITY MAP

10-SJ-99 PM 2.0/13.0

Plate
 No. 1

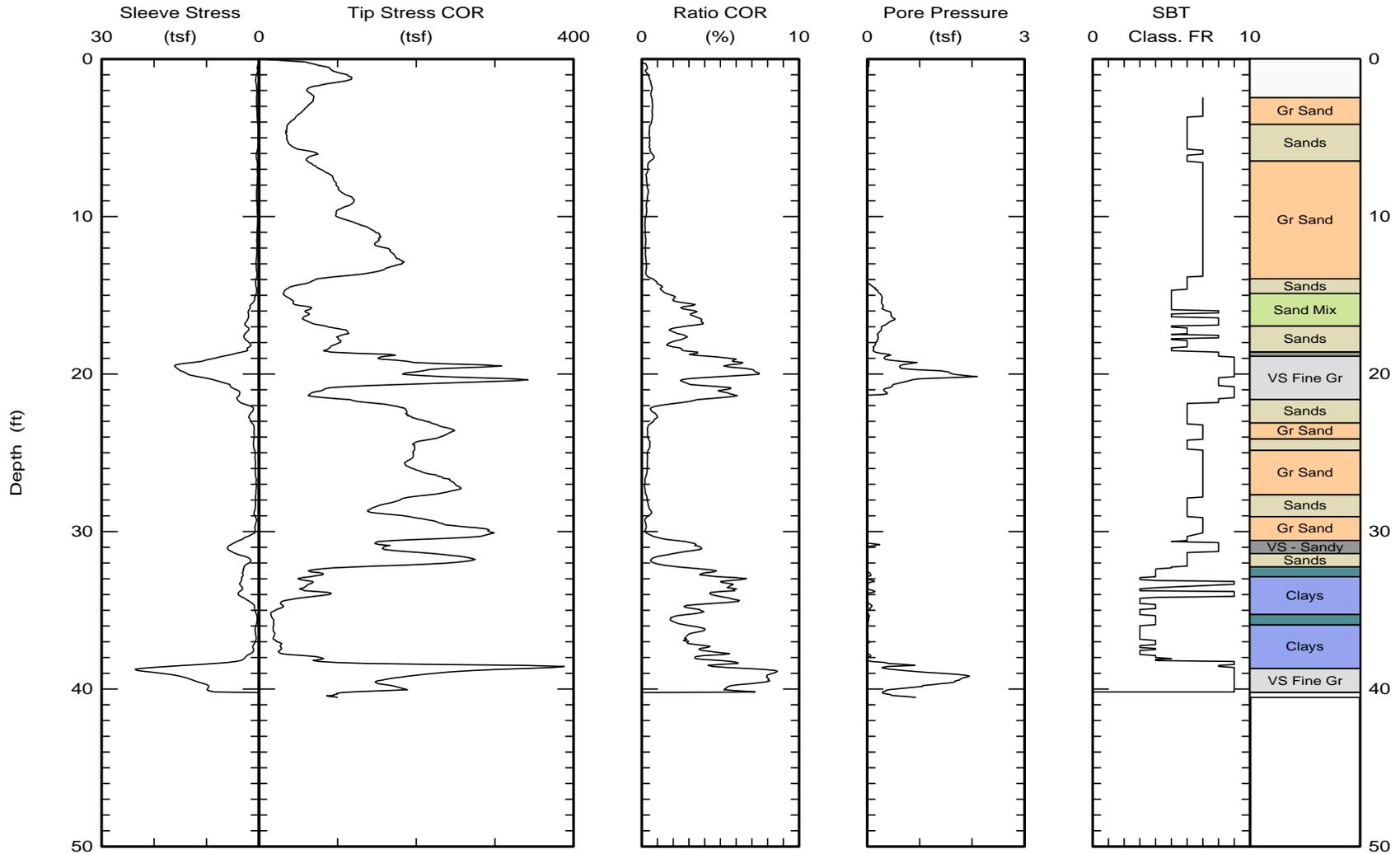


Division of Engineer Service
Geotechnical Service
5900 Folsom Blvd. Sac., CA 95819
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Lat: 37.76728
Lon: -121.16892
Elevation: 49.2 feet

Date: 23/Sep/2011
Test ID: CPT-1
Project: 1000020516

Customer: BEN BARNES
Job Site: HWY 99, CMS-1, PM 4.14



Maximum depth: 40.54 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

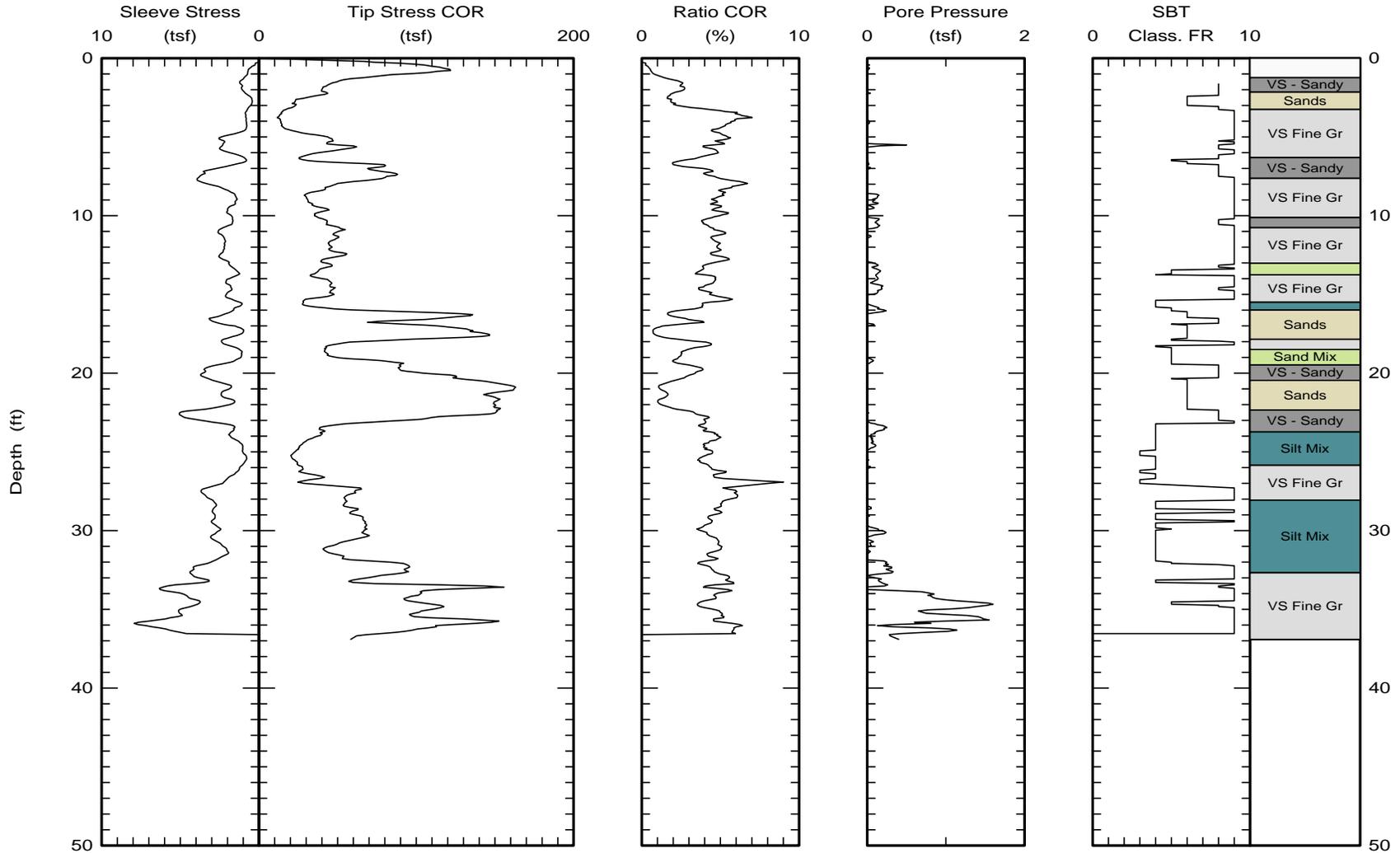


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Geotechnical Service
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Lat: 37.87772
Lon: -121.22011
Elevation: 29.5 feet

Date: 23/Sep/2011
Test ID: CPT-2
Project: 1000020516

Customer: BEN BARNES
Job Site: HWY 99, CMS-2, PM 12.71



Maximum depth: 36.91 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)