FOR CONTRACT NO.: 11-280804

INFORMATION HANDOUT

MATERIALS INFORMATION

GEOTECHNICAL DESIGN REPORT

ROUTE: 11-SD-78-20.6/35.5

State of California

Business, Transportation and Housing Agency

Memorandum

Flex Your Power!
Be energy efficient!

To: Richard Estrada
Traffic Project Development
District 11 MS 230

Date: December 20, 2010

File: 11-SD-78-20.2/35.5
11-280801
1100000304

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – South 2

Subject: Geotechnical Design Report for upgrading the Bridge End Treatments and Metal Beam Guard Rails.

1.0 INTRODUCTION

Pursuant to your request, the Caltrans Office of Geotechnical Design South 2 is providing this report to be used for design of the subject project. The proposed project involves upgrading the bridge end treatment metal beam guard rails at 10 locations on State Route 78 from PM 20.6 to PM 35.5 (from Bear Valley Parkway to Route 67). The plan to upgrade end treatments will add concrete transition blocks to the existing concrete bridge railings, type WB MBGR Transition Rails and End Treatment according to the Standard Plans.

2.0 EXISTING FACILITIES

Within the project area, SR-78 is a two-lane highway that traverses over San Pascual Valley Creek bridge, Guejito Creek bridge, Santa Ysabel Creek bridge, and Santa Maria Creek bridge. The proposed end treatment upgrades will be at the existing concrete railings of these bridges. The site plan shows the proposed locations of the upgrades.

3.0 EXPLORATION

A total of 10 shallow hand auger borings were conducted on 12/09/2010 at the project site close to the existing concrete bridge railings. The approximate boring locations are shown on the attached site plan. The soil borings were advanced into the ground up to six-feet below the existing ground surface utilizing a hand auger. The description of the subsurface soils encountered and the locations of all borings are presented in Table 1.

4.0 GEOLOGY

Within the project area SR-78 traverses through the San Pascual Valley and Santa Maria Valley. Based on our site reconnaissance and review of the geologic maps the site is underlain by alluvium over decomposed granitic rock.

5.0 EXCAVATION CHARACTERISTIC

The new concrete transition blocks and MBGR will be constructed on engineered fill. The fill materials have been derived from decomposed granitic rock and consist of poorly graded sand or silty sand with or without gravel. These materials may be excavated using conventional excavation and augering equipment.

6.0 DIFFERING SITE CONDITIONS

The recommendations contained in this report are based on specific project information regarding structure type and location that have been provided by District 11 Traffic Project Development. If any conceptual changes are made during project design that differ from those conveyed in this report, staff of OGDS2 should review the project to provide appropriate recommendations. Any questions regarding the above recommendations should be directed to the attention of Ali Lari, (858) 467-6922 or Brian Hinman, (585) 467-4051 at OGDS2.

Ali Lari
Transportation Engineer (Civil)
Office of Geotechnical Design-South 2

REGISTERED PROFESSIONAL ENGINEER
ALI LARI
No. C65846
Exp. 12-31-~~05~~ 11
CIVIL
STATE OF CALIFORNIA

Attachments

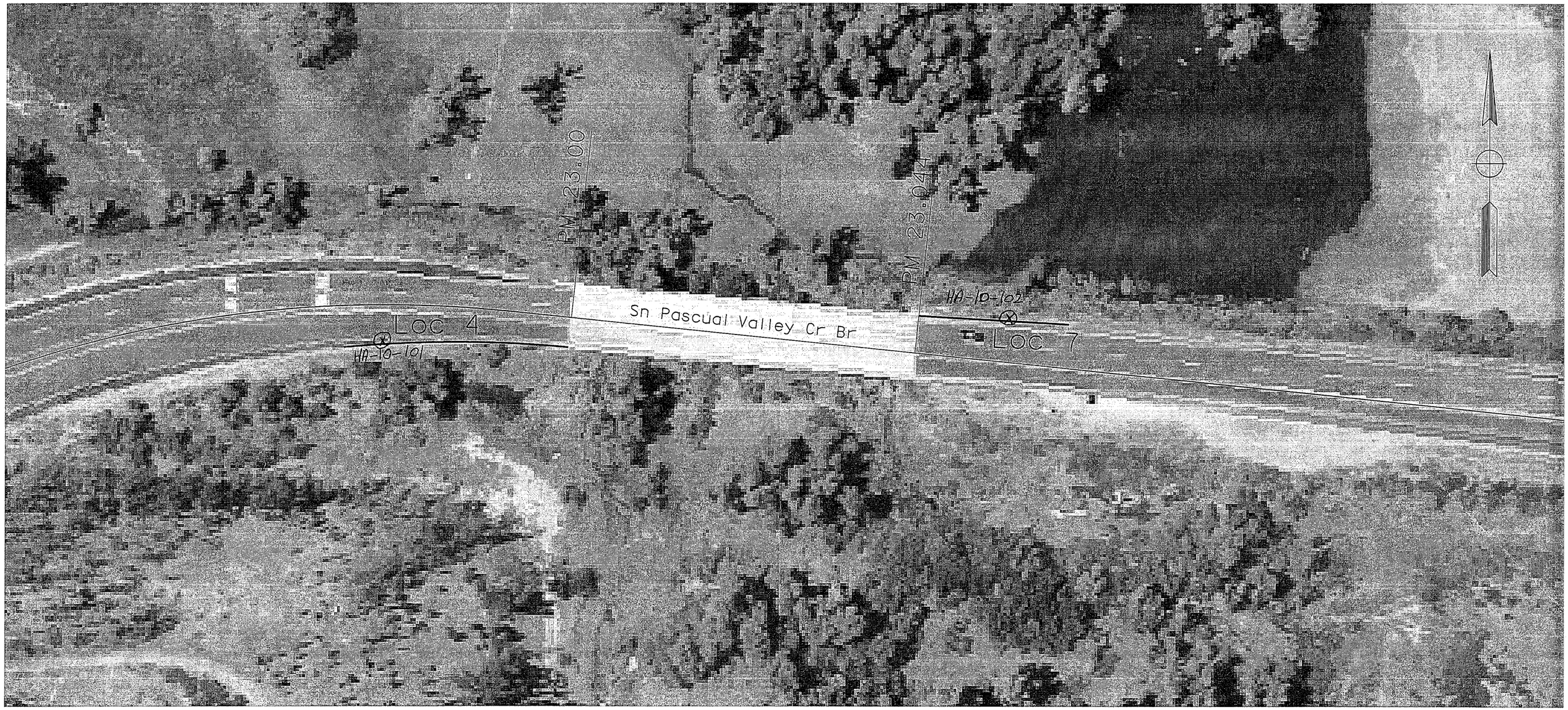
Cc:
AAbghari
BHinman
Manuel Reyes
Mark Willian
Leon Edmonds
Art Padilla
File

Table 1

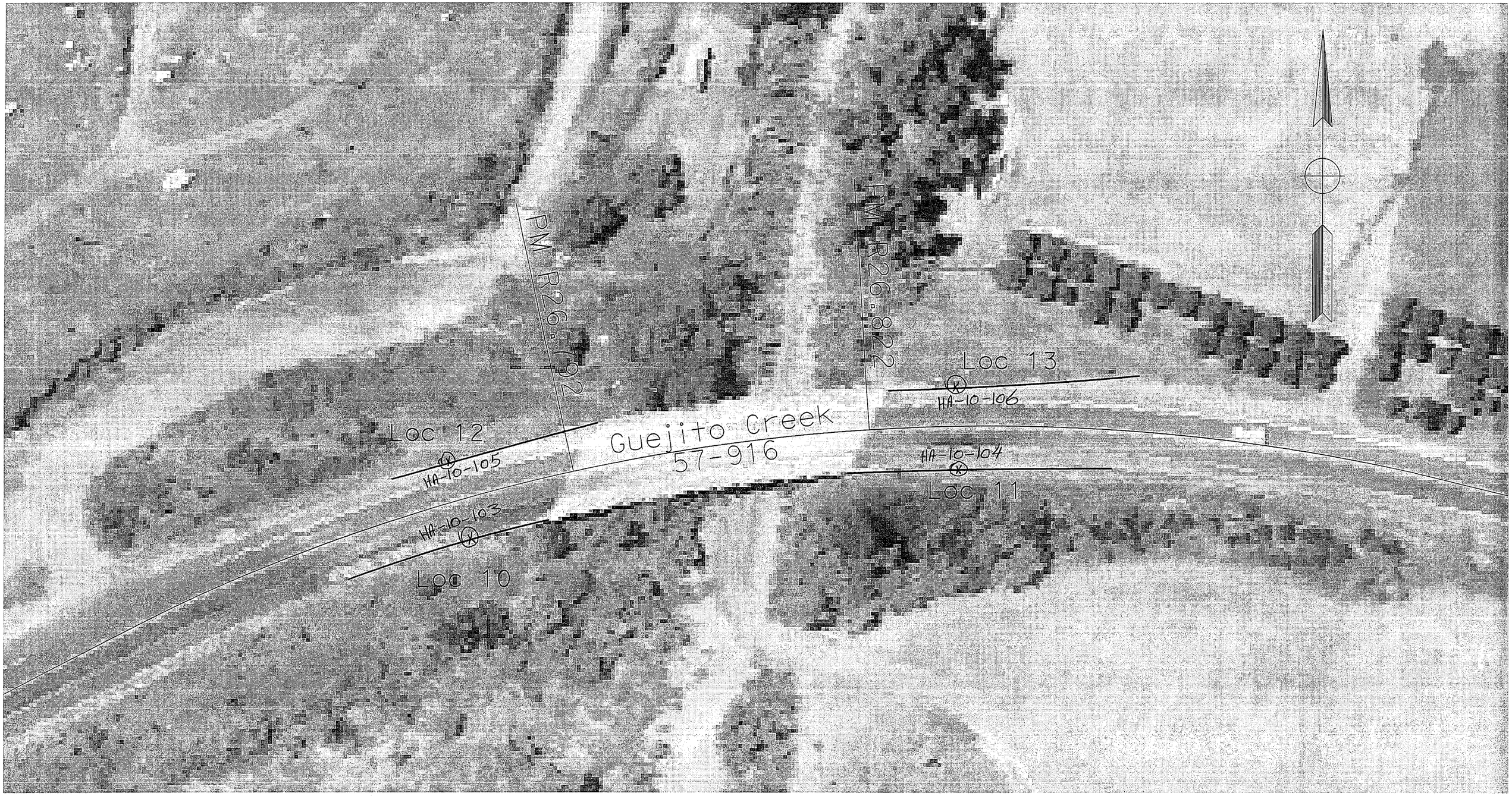
Subsurface Soil Description

Boring Number	Location	Soil Description
HA-10-101	4 West of San Pascual Valley Creek Bridge. eastbound	Poorly graded Sand (SP), estimated medium dense, brown, fine to medium Sand, end of the bore hole at a depth of 6-feet (Fill)
HA-10-102	7 East of San Pascual Valley Creek Bridge. westbound	Poorly graded Sand (SP), estimated medium dense, brown, fine to medium Sand, end of the bore hole at a depth of 6-feet (Fill)
HA-10-103	10 West of Guejito Creek Bridge eastbound	Silty Sand with Gravel (SM), estimated dense, light brown, fine Sand, fine to coarse Gravel, end of the bore hole at a depth of 6-feet (Fill)
HA-10-104	11 East of Guejito Creek Bridge eastbound	Silty Sand with Gravel (SM), estimated dense, light brown, fine Sand, fine to coarse Gravel, at a depth of 2-feet drilling was stopped due to encountering a coarse gravel, a new bore hole was started about 2 feet laterally from the first hole but again encountered gravel at a depth of 2-feet, end of the bore hole at a depth of 2-feet (Fill)
HA-10-105	12 West of Guejito Creek Bridge westbound	Silty Sand with Gravel (SM), estimated dense, light brown, fine Sand, fine to coarse Gravel, at a depth of 2-feet drilling was stopped due to encountering a coarse gravel, a new bore hole was started about 2 feet laterally from the first hole but again encountered gravel at a depth of 2-feet, end of the bore hole at a depth of 2-feet (Fill)
HA-10-106	13 East of Guejito Creek Bridge westbound	Silty Sand with Gravel (SM), estimated dense, light brown, fine Sand, fine to coarse Gravel, at a depth of 2-feet drilling was stopped due to encountering a coarse gravel, a new bore hole was started about 2 feet laterally from the first hole but again encountered gravel at a depth of 2-feet, end of the bore hole at a depth of 2-feet (Fill)
HA-10-107	14 West of Santa Ysabel Creek Bridge eastbound	Silty Sand (SM), estimated dense, reddish brown, fine-Sand, end of the bore hole at a depth of 6-feet (Fill)
HA-10-108	15 East of Santa Ysabel Creek Bridge eastbound	Silty Sand (SM), estimated dense, reddish brown, fine-Sand, end of the bore hole at a depth of 6-feet (Fill)

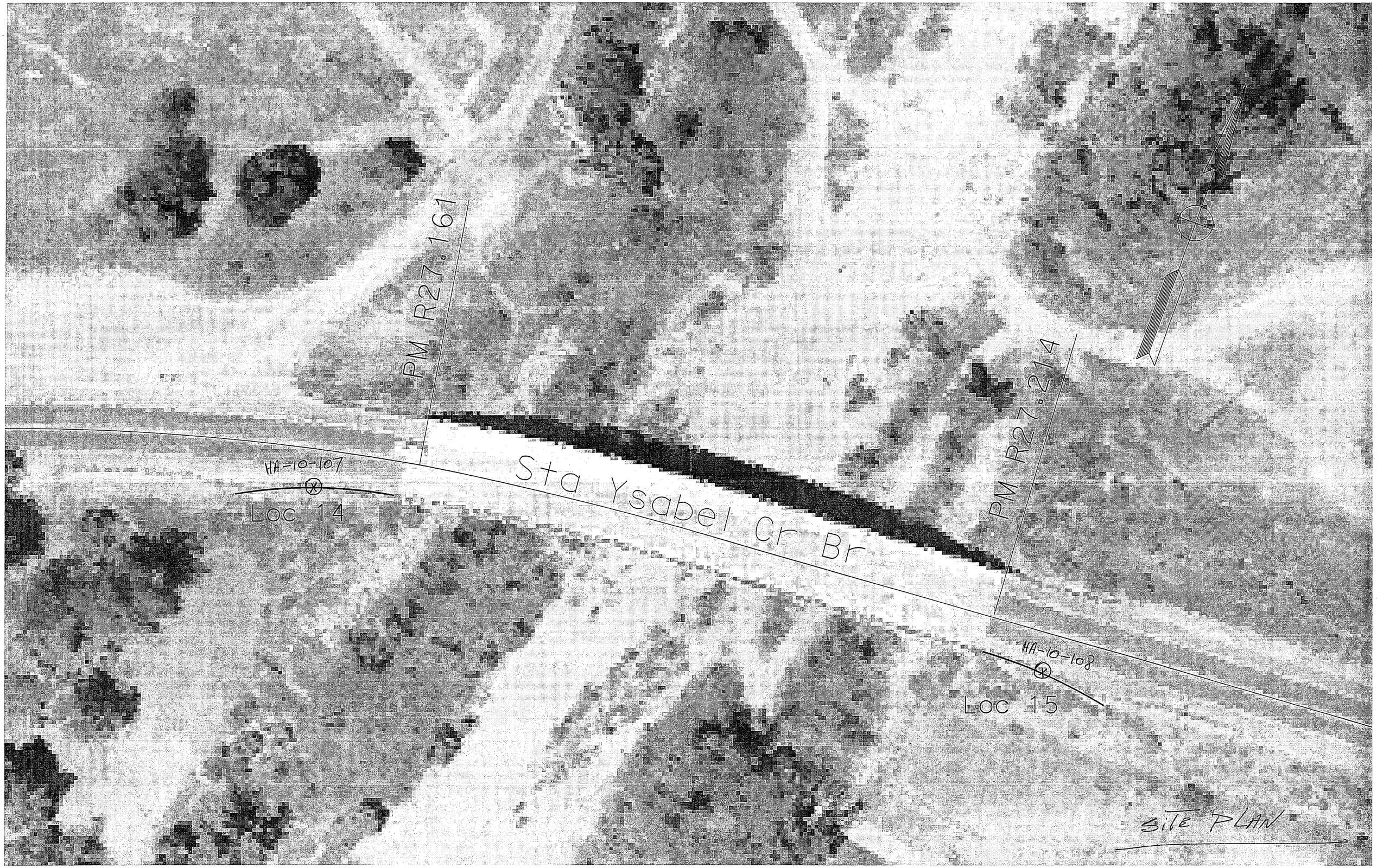
HA-10-109	29 West of Santa Maria Creek Bridge eastbound	Silty Sand (SM), estimated dense, reddish brown, fine-Sand, end of the bore hole at a depth of 6-feet (Fill)
HA-10-110	30 East of Santa Maria Creek Bridge eastbound	Silty Sand with Gravel (SM), estimated dense, dark gray, fine Sand, fine to coarse Gravel, at a depth of 1-foot drilling was stopped due to encountering a coarse gravel, a new bore hole was started about 2 feet laterally from the first hole but again encountered gravel at a depth of 1-foot, end of the bore hole at a depth of 1-foot (Fill)

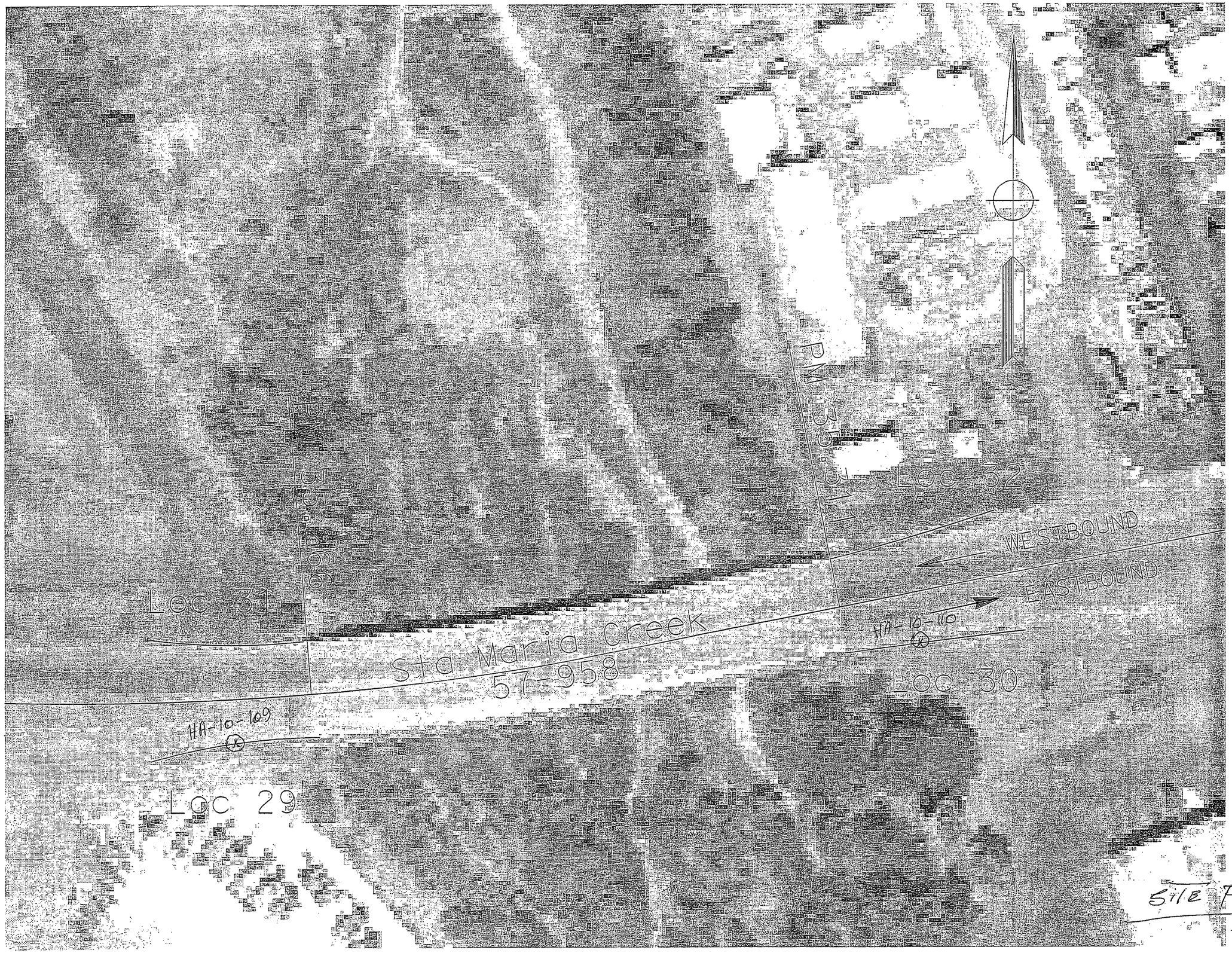

PM 23.00
PM 23.047
Sn Pascual Valley Cr Br
LOC 4
HA-10-101
HA-10-102
LOC 7

SITE PLAN


PM R26.792
PM R29.822
Loc 13
HA-10-106
Guejito Creek
57-916
Loc 12
HA-10-105
HA-10-104
Loc 11
HA-10-103
Loc 10

SITE PLAN


PM R27.161
PM R27.214
HA-10-107
Loc 14
Sta Ysabel Cr Br
HA-10-108
Loc 15
SITE PLAN


Loc 31
Loc 32
Loc 30
Loc 29
WESTBOUND
EASTBOUND
Sta Maria Creek
57-958
HA-10-110
HA-10-109
N

SITE PLAN