INFORMATION HANDOUT

For Contract No. 07-258404
At 07-LA-5-18.4/23.2

Identified by
Project ID 0712000102

MATERIALS INFORMATION

Hazardous Waste Summary of Soil Analytical Results

Geotechnical Design Report for Proposed Treatment BMPs

Log of Test Borings

Fiber Optic System As-Builts

EA 258401

07-LA-5, PM 18.4/23.2

Information Handout

(Hazardous Waste)

Note:

Due to the project work scope changes, one location in the following table was dropped from the final design package.

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - LEAD and pH
ADL SITE INVESTIGATION
LA-5, PM 18.4/23.2
LOS ANGELES COUNTY, CALIFORNIA
EFIS: 0712000102 (EA#258401)
TASK ORDER #17
CONTRACT 07A3322

Design Location ID	Layout Sheet / Stantec Figure	TMDL Device	Sample ID	Total Lead [1] (mg/kg)	Soluble Lead [1] Cal WET Citric (mg/L)	Soluble Lead [1] TCLP (mg/L)	pH [2]	Soil Classification
1	L-1 / Stantec Figure 2	BSW	1258-101-0	39	--	--	--	Z-2
			1258-101-1	6.6	--	--	--	
			1258-101-2	3.3 JB	--	--	--	
			1258-102-0	110 J	5.8	--	--	
			1258-102-1	12	--	--	--	
			1258-102-2	5.5	--	--	--	
		MVP	1258-103-0	940	64	0.46	8.0	Z-2
			1258-103-1	46	--	--	--	
			1258-103-2	17	--	--	--	
			1258-104-0	270	19	0.24	--	
			1258-104-1	64	3.3	--	--	
			1258-104-2	10	--	--	--	
		GSRD	1258-105-0	22	--	--	--	Z-2
			1258-105-1	5.5	--	--	--	
			1258-105-2	5.1	--	--	--	
			1258-105-3	5.2	--	--	--	
			1258-105-5	5.9	--	--	--	
			1258-106-0	200	13	0.090 JB	--	
			1258-106-1	15	--	--	--	
			1258-106-2	11	--	--	--	
			1258-106-3	2.8	--	--	--	
			1258-106-5	8.8	--	--	--	
2	L-1 / Stantec Figure 2	BSW	1258-107-0	150	7.0	--	--	Z-2
			1258-107-1	100 J	6.2	--	--	
			1258-107-2	190	5.2	--	--	
			1258-108-0	110	4.6	--	--	
			1258-108-1	11	--	--	--	
			1258-108-2	200	7.0	0.077 JB	--	
		MVP	1258-109-0	1,900	130	1.90	8.4	Z-2
			1258-109-1	380	28	0.48	--	
			1258-109-2	190	11	--	--	
			1258-110-0	940	58	0.35	--	
		GSRD	1258-111-0	300	14	0.13 JB	--	Z-2
			1258-111-1	42	--	--	--	
			1258-112-0	490	29	0.27	--	
			1258-112-1	69	3.2	--	--	
			1258-112-2	83	2.8	--	--	
3	L-2 / Stantec Figure 3	BSW	1258-113-0	550 J	31	0.23	7.1	Z-2
			1258-113-1	90 J	2.1	--	--	
			1258-113-2	26 J	--	--	--	
			1258-114-0	330 J	20	0.23	--	
			1258-114-1	56 J	1.7	--	--	
			1258-114-2	130 J	5.7	--	--	
4	L-3 / Stantec Figure 4	BSW	1258-115-0	67 J	8.9 J	--	--	Z-2
			1258-115-1	7.1 J	--	--	--	
			1258-115-2	12 J	--	--	--	
			1258-116-0	86 J	2.0	--	7.8	
			1258-116-1	25 J	--	--	--	
			1258-116-2	4.7 J	--	--	--	

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Design Location ID	Layout Sheet / Stantec Figure	TMDL Device	Sample ID	Total Lead [1] (mg/kg)	Soluble Lead [1] Cal WET Citric (mg/L)	Soluble Lead [1] TCLP (mg/L)	pH [2]	Soil Classification
5	L-4 / Stantec Figure 5	BSW	1258-117-0	550	31	0.70	8.3	Z-2
			1258-117-1	10	--	--	--	
			1258-117-2	13	--	--	--	
			1258-118-0	220	15 J	0.28	--	
			1258-118-1	30	--	--	--	
			1258-118-2	29	--	--	--	
6	L-4 / Stantec Figure 5	MVP	1258-119-0	250	19	0.20	8.0	Z-2
			1258-119-1	18 J	--	--	--	
			1258-119-2	15	--	--	--	
			1258-120-0	120	33	--	--	
			1258-120-1	8.3	--	--	--	
			1258-120-3	16	--	--	--	
		AVSF	1258-121-0	110	2.0	--	--	X
			1258-121-1	15	--	--	--	
			1258-121-2	6.5	--	--	--	
			1258-121-3	5.9	--	--	--	
			1258-121-5	7.0	--	--	--	
			1258-122-0	100	3.3	--	--	
			1258-122-1	15	--	--	--	
			1258-122-2	5.5	--	--	--	
			1258-122-3	4.6	--	--	--	
			1258-122-5	4.0	--	--	--	
7	L-5 / Stantec Figure 6	BSW	1258-123-0	190	8.4	--	--	Z-2
			1258-123-1	69	3.5	--	--	
			1258-123-2	63	5.3	--	--	
			1258-124-0	48	--	--	--	
			1258-124-1	51	2.9	--	--	
			1258-124-2	54	3.7	--	--	
		MVP	1258-125-0	25	--	--	--	Z-2
			1258-125-1	28	--	--	--	
			1258-125-2	5.5	--	--	--	
			1258-126-0	260	15	0.22	7.8	
			1258-126-1	21	--	--	--	
			1258-126-2	4.9	--	--	--	
		GSRD	1258-127-0	26	--	--	--	X
			1258-127-1	19	--	--	--	
			1258-127-2	16	--	--	--	
			1258-127-3	11	--	--	--	
			1258-127-5	7.2	--	--	--	
			1258-128-0	19	--	--	--	
			1258-128-1	3.1	--	--	--	
			1258-128-2	2.9	--	--	--	
			1258-128-3	2.9	--	--	--	
			1258-128-5	2.8	--	--	--	

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - LEAD and pH
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LA-5, PM 18.4/23.2
LOS ANGELES COUNTY, CALIFORNIA
EFIS: 0712000102 (EA#258401)
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Design Location ID	Layout Sheet / Stantec Figure	TMDL Device	Sample ID	Total Lead [1] (mg/kg)	Soluble Lead [1] Cal WET Citric (mg/L)	Soluble Lead [1] TCLP (mg/L)	pH [2]	Soil Classification
8	L-6 / Stantec Figure 7	BSW	1258-129-0	90	2.7	--	--	Z-2
			1258-129-1	82	4.8 J	--	--	
			1258-129-2	67	2.2	--	--	
			1258-130-0	150	**8.5**	--	--	
			1258-130-1	26	--	--	--	
			1258-130-2	9.3	--	--	--	
9	L-6 / Stantec Figure 7	BSW	1258-131-0	140	4.1	--	--	Z-2
			1258-131-1	140	5.9	--	--	
			1258-132-0	170	6.2	--	7.0	
			1258-132-1	130	7.3	--	--	
			1258-132-2	98	8.3	--	--	
10	L-6 / Stantec Figure 7	GSRD	1258-133-0	300	**36**	0.28	--	Z-2
			1258-133-1	100	**7.2**	--	--	
			1258-133-2	44	--	--	--	
			1258-133-3	110	**6.4**	--	--	
			1258-133-5	110	**8.2**	--	--	
			1258-134-0	380 J	**24**	0.24	8.0	
			1258-134-1	170 J	**8.6**	--	--	
			1258-134-2	92 J	**7.5**	--	--	
			1258-134-3	100 J	**5.2**	--	--	
			1258-134-5	41 J	--	--	--	
QA/QC			EB-01-033115	<0.0050	--	--	--	--
			EB-01-040115	<0.0050	--	--	--	
			EB-01-040215	<0.0050	--	--	--	
Statistics[3]			Minimum	2.8	1.7	0.077	7.0	--
			Maximum	1900	130	1.9	8.4	--
			Mean	117	14	0.38	7.8	--
			Standard Deviation	232	21	0.42	0.5	--
Threshold Limits			Non-Hazardous Waste Type X	<1000	<5	<5	--	--
			Caltrans Lead Variance Type Y-1	<1411	≥5	<5	≥5.5	
			California Hazardous Waste (Type Z-2)	≥1000	≥5	<5	--	--
			RCRA Hazardous Waste (Type Z-3)	--	--	≥5	≤2 or ≥12.5	--
			California Human Health Screening Level[3]	320	--	--	--	--
			Regional Screening Level[4]	800	--	--	--	--

Notes:

(1) Total Lead, California Waste Extraction Test (Cal WET - Citric), and Toxicity Characteristic Leaching Procedure (TCLP) analysis done using EPA method 6010B. Extraction methods vary.

(2) pH determined with EPA method 9045B.

(3) California Human Health Screening Levels for Commercial/Industrial and Residential Land Use, Soil, California Environmental Protection Agency, January 2005; updated 2010 Office of Environmental Health Hazard Assessment Table 1.

(4) United States Environmental Protection Agency (Region 9) Regional Screening Levels (RSLs; in mg/Kg) for industrial and residential soil (last updated January 2015)

TMDL = Total Maximum Daily Load
BSW = Biofiltration Swales
MVP = Maintenance Vehicle Pullout
GSRD = Gross Solids Removal Device
AVSF = Austin Vault Sand Filters

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = Not analyzed or not applicable
Bold = Exceeds threshold limit

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
B - The analyte was detected in the method, field and/or trip blank.

State of California **Business, Transportation and Housing Agency**

M e m o r a n d u m

To: MR KHAN HOSSAIN, CHIEF
Office of Design C

Date: December 03, 2014
File: 07-LA-05-PM 22.26/22.43
EA 07-258401 (0712000102)
Los Angeles River Trash
TMDL
BMP's for Areas 57 And 58

Attn: **Mr. Regan Davis**

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

Subject: Geotechnical Design Report (GDR) for Proposed Treatment BMP's For Sites 57 and 58.

Per your request dated July 03, 2014, a Geotechnical Design Report (GDR) has been prepared for the proposed treatment BMP areas 57 and 58. The proposed Treatment BMP for site 57 is a combination of Biofiltration Swale and Gross Solid Removal Devises. The proposed treatment BMP for site 58 is an Austin Vault Sand Filter. The purpose of these systems is to treat runoff water from adjacent tributary areas (I-5 freeway) prior to disposal to an approved drainage facility. A Site Vicinity Plan is shown in Figure-1. An "Exploration Plan" showing the exploration borings is attached in Appendix A.

Since your initial request, the location of the Austin Vault has been relocated away from I-5, to a central location close to our boring A-14-003. The layout plans for the access maintenance road are unavailable at this time.

1.0 SCOPE OF WORK

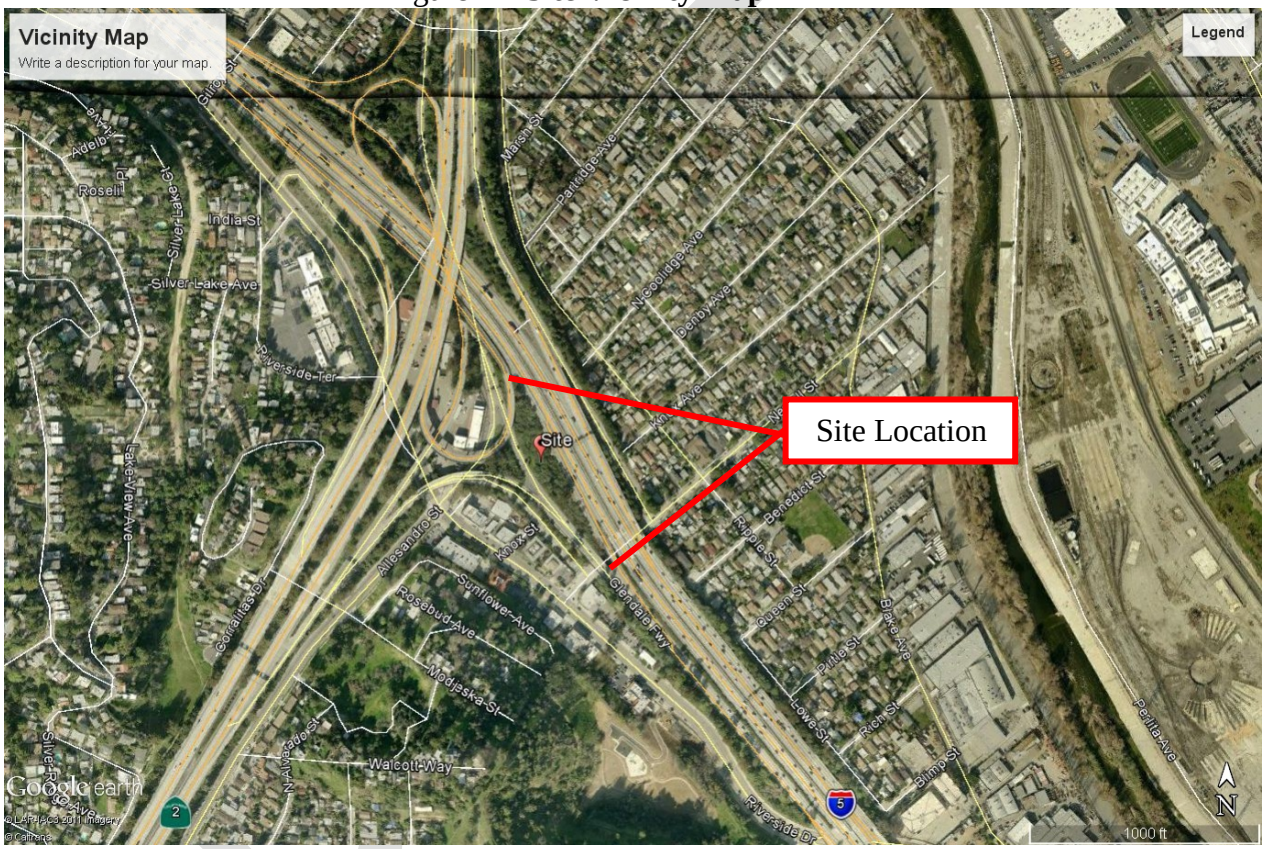
The purpose of the subsurface exploration is to provide geotechnical recommendations for implementation of treatment BMP's for areas 57 and 58. The scope of work included the following:

- Review of existing geotechnical reports of nearby structures.
- Conduct a geotechnical investigation on August 5th and 6th 2014. This investigation included the drilling and sampling of three (3) soil borings, and laboratory testing of select soil samples collected during the investigation.
- Analyze the collected data and prepare this Geotechnical Design Report (GDR).

2.0 INTRODUCTION

The geotechnical investigation was executed based on preliminary plans provided by District-7, Design-C Branch. Initial proposed treatment BMP's included two (2) separate filtration systems located at north and south corners of the site. Subsequent conversations with the project Engineer indicated that the Austin Vault has been moved close to boring (A-14-003). No schematics of the proposed structures were provided at the time of the field investigation. The proposed filtration systems are described in Section 2.2. The site location is shown below on Figure-1. The revised filtration systems are shown in Appendix C.

Figure 1 – **Site Vicinity Map**



2.1 Site Description

The project site (Areas 57 & 58) is roughly triangular in shape, and is located along the right hand shoulder of I-5 southbound. It is bound by the I-5/SR-2 interchange on the north, by Newell Street UC on the south and by SR-2 connector on the west. The Site has been roughly cleared. Dry brush, few trees and highway debris covered the site at the time of our investigation. The site slopes to the south west at an approximate 10% slope from the western edges of I-5 towards the SR-2 connector. A site vicinity map is shown in Figure 1.

2.2 Project Description

Site 57: Has a "Biofiltration Swale and Gross Solid Removal Devise combination". The swale length is approximately 345 feet long. The "GSRD" is 24.5 feet long by 11.5 feet wide and is three (3) feet deep. Based on our conversations with the Project Engineer, the proposed GSRD unit may be eliminated. The GSRD is shown to be located at the northwestern most down-gradient end of the swale. This system is along the SR-2 interchange to I-5 southbound, and is located at the southeastern most corner of the site. (See Appendix C)

Site 58: Has an "Austin Vault Sand Filter". Per Initial layout plans, the dimensions of the vault as reported are 124 feet long by 24 feet wide, and per the project engineer is 14 feet deep. This system has been relocated to a central location, within the immediate vicinity of boring A-14-003. (See Appendix C)

Construction of an **access road** for heavy equipment to maintain the above-mentioned structures will be also required. The location of this access road is not known at this time.

3.0 GEOTECHNICAL INVESTIGATION

The exploration program conducted for the project consisted of drilling and sampling of three (3) soil borings within close vicinity of the proposed/ potential underground structures. The Soil Boring investigation was conducted August 5th and 6th, 2014. For exploration locations refer to Appendix-A. The field logs were submitted to our Engineering Graphics Unit to produce the Log of Test Borings (LOTB)’s. The LOTB's will be transmitted to your office when complete.

The borings were drilled at locations of the initial proposed structures and the final expected location (Refer to Appendix A). A-14-001 which was drilled to 32.5 feet below the surface (BGS), is within the proposed site for the GSRD. A-14-002 drilled to 31.5 feet BGS is within the initial Austin Vault location. A-14-003 was drilled to 52.5 feet BGS is within the final Austin Vault location.

A Caltrans-operated Mobile rig CME-85 was utilized to drill the soil borings. The rig was outfitted with hollow stem auger drilling equipment. The diameter of the hollow stem auger borings is approximately 6 inches. The drive samples were taken at 5 foot intervals within the borings. The SPTs were performed in accordance with ASTM D 1586-92. These samples were driven using a 140-pound hammer falling freely for 30 inches for a total penetration of 18 inches.

The cuttings from the drilling operation were drummed and hauled off site. The borings were subsequently backfilled with a cement slurry grout in accordance to the California Well Standards (Bulletin 74-90), under permit # 893431. This permit was obtained by Fugro Consultants from the County of Los Angeles, Department of Environmental Health. The drilling operation as well as the boring abandonment was observed and inspected by a representative of Fugro Consultants. Copies of the field logs were submitted to the consultant per the permit requirements.

A summary of the exploratory borings is summarized in Table 2. Surface elevations, stations, and offsets of the Borings conducted during the investigation were provided by District 07 Surveys branch and are shown in Table 2.

Table 2 – Summary of Borings

Boring No.	Date Drilled	Station	Offset (left) (ft)	Surface Elevation[1] (ft)	Total depth[2] (feet)
A-11-001	08/06/2014	1178+80.82	179.45	375.12	31.5
A-11-002	08/05/2014	1182+04.29	80.41	383.42	32.5
A-11-003	08/05/2014	1179+99.64	141.17	378.52	52.5

Notes:
1. Relative to Mean Sea Level.
2. Below Existing Ground Elevation.

4.0 GEOLOGIC CONSIDERATIONS

4.1 Regional Geology

The northern portion of the Los Angeles River Drainage is within the Transverse Ranges Province which is characterized by east-west trending mountains and valleys. This project is bounded on the south by the Santa Monica Mountains and the Elysian Hills, and on the north by the San Gabriel Mountains, The Verdugo Mountains and the San Rafael Hills. East-west trending faults associated with this area include the Elysian Park Thrust, Puente Hills Thrust, Hollywood/Raymond faults.

4.2 Site Geology

The site is located between the SR 2 to Interstate 5 southbound connector ramp which is at grade and the slip-ramp from the SB I-5 to Stadium Way/SB Interstate 5 which is in fill. There are two BMP's a Biofiltration Swale and Gross Solid Removal Devise combination and an AVSF with an access road proposed at this location. Three borings were conducted A-14-001 and A-14-002 and A-14-003. Medium dense clayey sand, silty sand and sandy silt was encountered in all borings from the surface at approximate elevation 375-383 feet to approximate elevation 365 feet. From elevation 365 to elevation 330 medium dense to very dense sand, sand with silt and sand with silt

and gravel was encountered. In the deepest boring A-14-003 dense gravel with silt and sand was encountered below elevation 330. Groundwater was not encountered in any of borings during the investigation. The closest mapped fault to the site is the Hollywood fault that has been mapped 1.63 miles west of the site.

4.3 Groundwater

Groundwater within the Los Angeles River basin is highly variable. In some areas the groundwater is very deep but in other areas the groundwater is near the surface and could be groundwater or perched water. Groundwater was not encountered in the borings for this project to the depth explored (approximately 50 feet or elevation 326 feet). Seasonal or localized groundwater may be higher during and after heavy rainfall seasons which may lead to a condition of shallow groundwater. When this occurs during or prior to construction of the project then precautions may need to be taken for dewatering of excavations at the BMP locations.

Groundwater was encountered in July 2013 for Project 07-259021 in a boring A-13-013 near the southbound on-ramp to the 2 freeway at Riverside Drive at elevation 344.0 feet approximately 25.0 feet below the ground surface. This site is located approximately 1300 feet north of the current project location.

We reviewed investigation reports for the I-5/SR-2 interchange (53-0527 R/L) as well as Newell St. UC (53-0162). These structures are located immediately to the north and the south of the site respectively. Both reports indicated that "No groundwater was encountered above elevation 320 during the investigations". Per the provided topographic map the lowest site elevation is about 370 feet, at the proposed structures.

4.4 Seismicity

The seismicity in the area of the project is based on many different faults located in the Los Angeles area. The underground structures are based on Standard Plans and do not require input from Headquarters Structure Design. Therefore, no analysis has been performed to develop and recommend ground motion parameters for the seismic design of these structures. The underground structures locations are basically four walls with the bottom constructed of reinforced concrete and partially filled with sand. The Austin Vault as described is not considered to be a critical structure that may be impacted by earthquakes. The main issue in an earthquake is ground shaking and deformation of the soils from settlement and ground rupture. If these underground structures are subjected to earthquakes they may expect to be damaged primarily by heavy ground shaking which could be expected to produce damage in the form of settlement and possibly broken connections to the hydraulic lines into or out of the structures.

4.5 Corrosion

A bulk sample was collected from boring A-14-001, from the top 30 feet. Tests for sulfate and chloride content are not performed unless the minimum resistivity test value is below 1000. The results as summarized in Table-1 show that soils at the subject site have a low corrosion

potential. Based on laboratory test results, corrosion-resistant design practices and materials are not warranted at this time.

Table 1 – Corrosion Test Results

Boring	Depth Interval (ft)	Minimum Resistivity (Ohm-cm)	pH	Chloride Content (ppm)	Sulfate Content (ppm)
A-11-01	0-31.5	1725	7.96	N/A	N/A

Note: Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less. A minimum Resistivity value of less than 1000 (Ohm-cm) indicates the presence of high quantities of soluble salts and a higher propensity for corrosion.

5.0 GEOTECHNICAL CONSIDERATIONS

5.1 SUBSURFACE CONDITIONS

The site in underlain by two (2) broadly described layers. The upper 14-19 feet consist of clayey Sands (SC), silty Sands (SM) and Silts (ML). The soil in this upper layer is in a medium dense/stiff to very stiff condition with blow counts between 13 and 22. Isolated SPT blow counts of 1 and 6 were encountered at a depth of six (6) feet BGS. Mechanical Analysis results indicated fines content between 33 and 54% within this upper layer.

The upper layer is underlain predominantly by sands with low fines content and some gravels, such as; well graded sands with silt (SW-SM), poorly graded sand with silt (SP-SM), Poorly graded sands (SP) and poorly graded sands with silt and sand (GP-GM). The blow counts varied between 12 and refusal. The fines content of this stratum varied between 5 and 11%, these soils are highly prone to caving.

Gravels were encountered generally at the interface between the two layers.

5.2 LABORATORY TESTING

Laboratory testing was performed on SPT and bulk samples obtained from the borings. Laboratory testing included a Maximum Density Curve, Mechanical Analysis, Plasticity Index and Corrosivity. Soil samples were transported to Caltrans Southern Region laboratory in Fontana for testing. Testing was performed in accordance with California Test Methods and/or ASTM procedures (see Table 3 below). Laboratory tests results are presented in Appendix B.

Table 3 – Laboratory Test Methods

Test	Standard
Mechanical Analysis of Soils	CTM 203
Plasticity Index of Soils	CTM 204
Corrosion – Resistivity, pH	CTM 643
Maximum Density Curve	ASTM-1557

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Proposed Treatment BMP, Site "Area 57".

The proposed Treatment BMP for this area is a **Biofiltration Swale and Gross Solid Removal Devise combination**. No plans were available at the preparation time of this report. However, based on typical details, this system may include the following:

1- A trapezoidal earth vegetated channel, in which the contaminants are absorbed.
2- A concrete inlet structure "Header" with an inlet pipe and side walls, in which the flow enters the system.
3- A Concrete out flow structure/channel collects the "treated" flow and disposes it to an approved drainage system.

From a geotechnical point of view, the above-mentioned concrete structures do not support significant loads. However, it is required that soils beneath these structures must be competent. Prior to the placement of any forms or reinforcement, the exposed bottoms of both structures should be inspected and approved by the field engineer. The soils must be free of buried rubble or artificial fill. All undocumented fill must be removed to expose native firm soils. In order to place these footings on a uniform base, confirm a competent bottom and reduce settlements, we recommend the scarification and recompaction of the top one (1) foot below the bottom of the footings then compact the bottom to 90% relative compaction. The scarification and recompaction should extend laterally one (1) foot beyond the exterior footing foot-print.

6.2 Proposed treatment BMP Area 58.

The proposed treatment BMP at this location is an **Austin Vault** with general dimensions of 124 feet long by 24 feet wide and is 14 feet deep. No plans were available at the preparation time of this report. However, based on typical details, this vault consists for four (4) reinforced concrete walls and Mat foundation-type bottom. The vault is partially filled with a sand filter medium, and is an open structure.

As per the legend sheet of the "Water Pollution Control Details", for the Austin Vault Sand Filters, the upper one foot beneath the vault bottom must be compacted to 95% relative

compaction. The compaction should extend laterally one (1) foot beyond the exterior footing foot-print.

Prior to poring the Mat foundation, the bottom of the exposed excavation must be inspected and approved by the Resident Engineer. Any visual evidence of undocumented fill, buried rubble and construction debris must be removed/replaced, to expose native competent soil. All soft/pumping areas must be stabilized prior to backfill. The backfill beneath the footings (Mat foundation) must be compacted to 95 % relative compaction, prior to the placement of any forms or steel reinforcement. Even though native on-site soils may be reused, the quality of backfill should be in general accordance to Structural backfill as specified in Section 19-3.02B.

Should special foundation design be required, LRFD loads must be provided.

6.3 Access Roads

In your request it states, "Construction of an access road for heavy equipment is proposed to maintain the Austin Vault Sand Filter". No plans are available at this time. Depending on the layout of the associated access road, some grading may be required in form of cuts/fills. Listed below are earth work recommendations, including earth-retaining structure options:

- In order to avoid/minimize unnecessary cuts/fills, the most economical method would be to construct the access roads at elevations at or close to existing grades. This is basically governed by the geometry of the road layout, as well as the type and size of the maintenance vehicle. We recommend that Maintenance be consulted prior to design and construction of this road.

- If cuts/ fills will be needed for the construction of the road, we recommend a 2:1 sloping design for all cuts/fill, with a vegetated ground cover to control erosion. Depending on the access road location, this 2:1 design may conflict with nearby roadways. We therefore recommend that the underground structures and associated roads be kept close to the middle of the site, to provide ample space for side sloping.

- Should earth retaining structures be required, the following wall types may be considered:

  1- **Type-1 Standard wall** on spread footings: Limited removal/recompaction on the order of 1-3 feet beneath the footing might be required, to provide for a uniform bearing surface and stabilize/deal with soft or unsuitable soils. The recompacted soils should extend laterally a distance equal to the removal depth beneath the footing. This lateral removal distance should extend beyond the exterior footing footprint.

  2- **Solider Pile wall**/wood lagging: This is a top-down construction-type wall and may be constructed at areas of limited right of way. This wall may retain soils up to 15 feet in height, without tie backs. Even though construction is relatively simple, it is a special design wall that may require Structure Design involvement.

Should retaining walls be required, please provide us with the proposed locations, height and bottom of footing elevations of these walls. Copies of the final plans should be submitted for our review, in order to finalize our recommendations.

6.4 Lateral Active/Passive Earth Pressures

For preliminary lateral earth pressures for retaining structures, the following parameters may be used for preliminary design:

- $\phi = 32^{o}$ (Angle on internal friction)
- $K_a = 0.3$ (Active earth pressure coefficient)
- $K_p = 3.0$ (Passive earth pressure coefficient)
- $\gamma = 125$ PCF (Density of in situ soil)

A rectangular earth pressure diagram may be used for temporary bracing for flexible walls. The estimated lateral pressure may be calculated according to the following formula:

$\sigma_h = 0.65\ K_a\ \gamma\ H$. Where H is the height of the wall.

The proposed soil retaining method and shoring design is the contractor's responsibility. All calculations must be transmitted to the RE for his/her review and approval, prior to construction.

6.5 Bearing Capacity

Given the site subsurface soils as described in the LOTB, Standard plans Specifications and the requirements set forth in the report, the subsurface soils within this site should provide adequate bearing capacity to support the proposed structures as described herein.

6.6 Settlement

In order to reduce settlements, The Inlet/ outlet structures described in Sections (6.1/6.2) and connections associated with the Austin Vault must be designed in such a manner to prevent water leakage to the subsurface soils beneath the above-mentioned structures. The proposed systems must be frequently inspected by the staff maintaining these structures, especially at periods during/ after heavy rains. Any identified leakage must be immediately repaired to avoid excessive settlements.

6.7 Liquefaction

Liquefaction is a phenomenon in which loose, saturated, fine-grained, granular soils behave like a liquid while being subjected to high-intensity ground shaking. Liquefaction occurs when shallow groundwater, low-density, sandy soils, and high-intensity ground motion exist at a site.

Saturated, loose to medium dense, near-surface, cohesionless soils exhibit the highest liquefaction potential, while dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential.

Given the provided information in Section 4.3, a high groundwater elevation 344 feet for the site is assumed. Based on the above information, a 6-foot potentially liquefiable layer was encountered within boring A-14-003 at an approximate depth of 34.5 feet below the adjacent ground surface.

Mentioned in Section 4.4, since the proposed underground structures are based on Standard Plans, no seismic information is presented in this Draft report. However, should this project require input from Head Quarters Structure Design, a liquefaction analysis will be performed and subsequently presented at that time.

7.0 CONSTRUCTION CONSIDERATIONS

All grading procedures must be in accordance to chapter 19 “Earthwork” of the Caltrans 2010 Standard Specifications. Science the proposed structures are "Standard Structures", construction must be carried out in accordance to the approved plans, and recommendations set forth in this report.

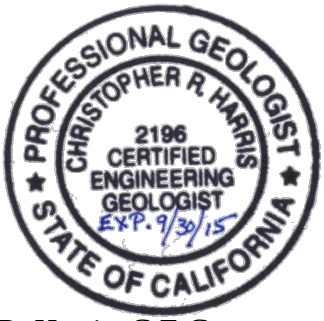
The exposed surfaces beneath the proposed structures, including access roads must be firm and free of undocumented fills. All soft/pumping areas must be over excavated to native competent firm surface.

All excavations must comply with OSHA requirements. Excavations deeper than five (5) feet must be sloped at a 2:1 (H: V). If the slope cannot be maintained, temporary shoring is required. The proposed retaining method is the contractor’s responsibility. All calculations must be submitted to the RE for review and approval prior to construction.

No excavation should extend into a 2:1 slope zone beginning at the edge of the shoulder, and extending to the bottom of the excavation. Depending on the final locations of the underground structures, side sloping for the excavations might infringe into the above mentioned zone. If the sloping infringes on that zone, shoring will be required.

If you have any questions, please contact Nadeem Srour at (909) 383-4578 or Ted Liu at (213) 620-2136.

Prepared by:



Christopher R. Harris, C.E.G.
Engineering Geologist
Office of Geotechnical Design South 1
Branch C

Reviewed by:

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Senior Transportation Engineer
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Nadeem Srour, P.E., G.E.
Transportation Engineer
Office of Geotechnical Design South 1
Branch C

CC List

1. Ravi B Ghate: District-7, Program & Project Management
2. Kristen Stahl: District-7, Materials Engineer

Attachments:

Appendix A: Exploration Plan.
Appendix B: Laboratory Test Results.
Appendix C: Proposed TMDL Locations

Appendix A:

Exploration Plan

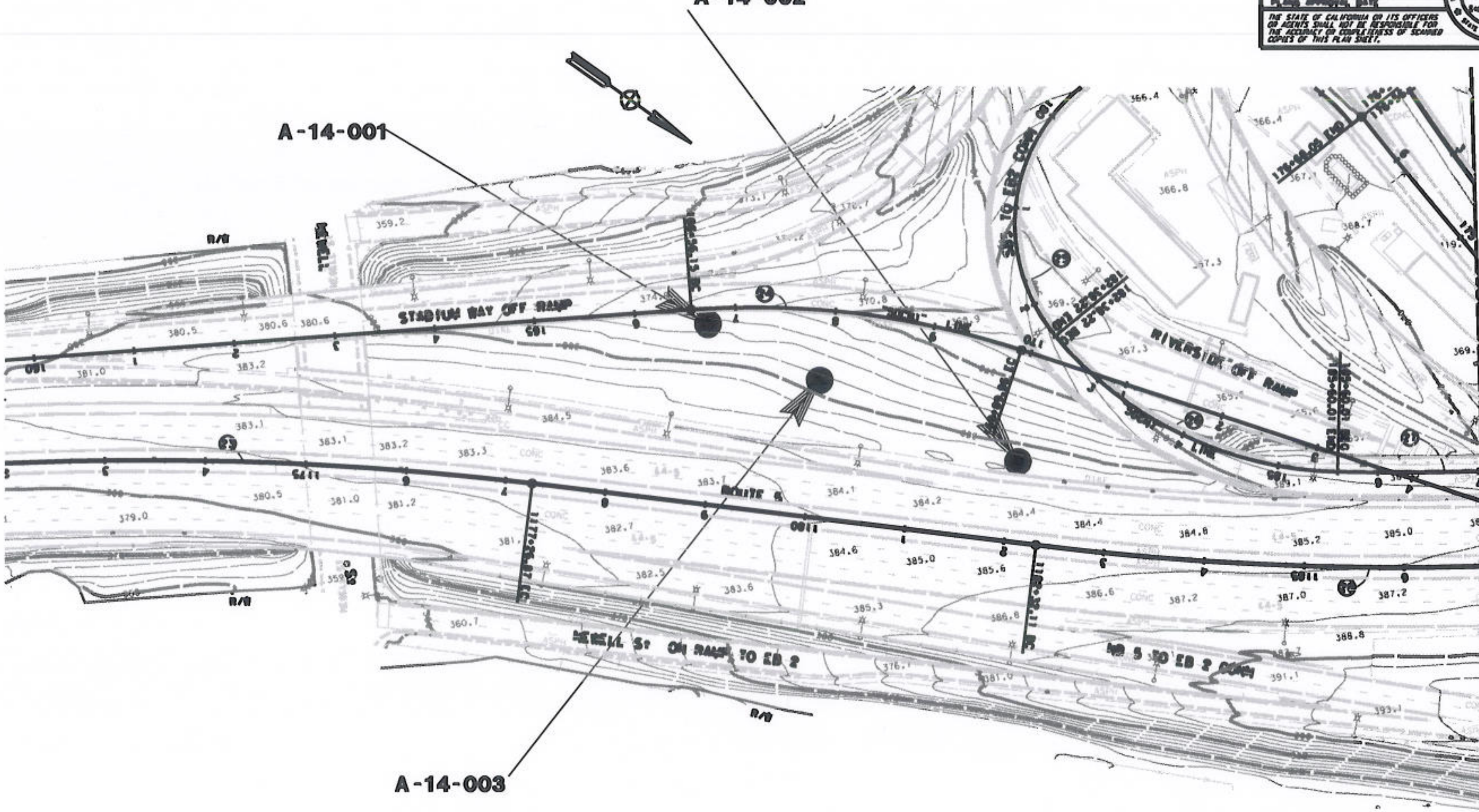
NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	18.4/36.3		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



Explanation:

● A-14-003 : Boring Location and Number

Boring Location Map
LAYOUT
SITES 57, 58

SCALE: 1" = 50'

L-7

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | FUNCTIONAL SUPERVISOR

BORDER LAST REVISED 7/2/2010 | RELATIVE BORDER SCALE IS IN INCHES | UNIT 0000 | PROJECT NUMBER & PHASE | 00000000001

Appendix B:

Lab. Testing Results

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-001

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578

Fax. No.:

0 7	2 5 8 4 0 1	S - 2	4217B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

GRADING ANALYSIS

Total Wt. 729 g By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5	0	0		100	
20	4.75	20	3		97	
709		729				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt.			0	100	97	
(g)	2.36 mm	4	4	96	93	
	1.18 mm	9	8	92	89	
112.3 g	600 µm	17	15	85	82	
	300 µm	31	28	72	70	
	150 µm	53	47	53	51	
	75 µm	62	55	45	43.7	

MECH. / HYDRO.		R	Corr.	C.R.	Mat'l in Sus.	Comb % In Sus
1hr.	5M	33.0	7.0	26.0	23%	22%
24hr.	1M	24.0	7.0	17.0	15%	15%

SAND EQUIVALENT

MIN. SPEC.

					Avg.
Sand	R2				
Clay	R1				
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=	
Dura-Fine	R2/R1 =	

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry
(A) Ov. Dry
ABS. %
Wt. S+C+H2O
Wt. S+C
W=Wt. H2O

$$\text{Bulk} = \frac{500}{500 - W} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet	L.L.
Gr. Dry	
H2O	P.L.
Tare	
Net Dry	P.I.
% H2O	

PLASTICITY INDEX

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

SP. GR. COARSE CT206/CT209, #4

(B) S.S. Dry
(A) Ov. Dry
ABS. %
(C) Wt. S. in H2O

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo		Spec.	
Wa		Grav.	
Wb			

CONTRACT NO. 07-25840 1

LAB. NO. 4217B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-001

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578
Fax. No.:

0 7	2 5 8 4 0 1	S - 5	4218B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

GRADING ANALYSIS

Total Wt. 382 g By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
0	25	0	0		100	
11	19	11	3		97	
14	12.5	25	7		93	
12	9.5	37	10		90	
13	4.75	50	13		87	
332		382				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	87	
	2.36 mm	5	5	95	83	
	1.18 mm	14	13	87	76	
111.6 g	600 µm	30	27	73	64	
	300 µm	60	54	46	40	
	150 µm	86	77	23	20	
	75 µm	97	87	13	11.3	

MECH. / HYDRO.		R	Corr.	C.R.	Mat'l In Sus.	Comb % In Sus.
1hr.	5M	12.0	7.0	5.0	4%	3%
24hr.	1M	10.0	7.0	3.0	3%	3%

SAND EQUIVALENT

MIN. SPEC.

Sand R2					Avg.	
Clay R1						
S.E. Value						

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. **% CP** Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry
(A) Ov. Dry
ABS. %
Wt. S+C+H2O
Wt. S+C
W=Wt. H2O

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry
(A) Ov. Dry
ABS. %
(C) Wt. S. in H2O

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.
P.L.
P.I.

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.
Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)
Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo	Spec.	
Wa	Grav.	
Wb		

CONTRACT NO. 07-2584 01

LAB. NO. 4218B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-001

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

0 7	2 5 8 4 0 1	S - 7	4219B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578

Fax. No.:

GRADING ANALYSIS

Total Wt. 715 g By: Date:

Wt. Ret	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
0	19	0	0		100	
9	12.5	9	1		99	
11	9.5	20	3		97	
12	4.75	32	4		96	
683		715				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	96	
	2.36 mm	2	2	98	94	
	1.18 mm	10	9	91	87	
113.5 g	600 µm	51	45	55	53	
	300 µm	94	83	17	16	
	150 µm	105	93	7	7	
	75 µm	108	95	5	4.8	

MECH. / HYDRO.		R	Corr.	C.R.	Mat'l In Sus.	Comb % In Sus.
1hr.	5M	10.0	7.0	3.0	3%	3%
24hr.	1M	8.0	7.0	1.0	1%	1%

SAND EQUIVALENT

MIN. SPEC.

Sand	R2				Avg.	
Clay	R1					
S.E. Value						

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=	
Dura-Fine	R2/R1 =	

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry
(A) Ov. Dry
ABS. %
Wt. S+C+H2O
Wt. S+C
W=Wt. H2O

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry
(A) Ov. Dry
ABS. %
(C) Wt. S. in H2O

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.
P.L.
P.I.

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.
Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo	Spec.	
Wa	Grav.	
Wb		

CONTRACT NO. 07-257401

LAB. NO. 4219B

07-AGG-SSD (RG/SD 7/93, Rev. HC 10/17/11)

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-002

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

0 7	2 5 8 4 0 1	S - 2	4221B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578
Fax. No.:

GRADING ANALYSIS

Total Wt. 485 g By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5					
0	4.75	0	0		100	
485		485				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt.			0	100	100
(g)	2.36 mm	1	1	99	99
	1.18 mm	1	1	99	99
108.0 g	600 µm	4	4	96	96
	300 µm	11	10	90	90
	150 µm	28	26	74	74
	75 µm	50	46	54	54.0

MECH. / HYDRO.		R	Corr.	C.R.	Mat'l In Sus.	Comb % In Sus
1hr.	5M	28.0	7.0	21.0	19%	19%
24hr.	1M	18.0	7.0	11.0	10%	10%

SAND EQUIVALENT

					MIN.
Sand R2				Avg.	SPEC.
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

		SPEC.
Dura-Coarse	Sed.Ht.=	
Dura-Fine	R2/R1 =	

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

%Ret.x(Wt.Cr./Tot.Wt.) = Prod. SPEC.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

RESULT SPEC.

SP. G. FINE (SSD)

(B) S.S. Dry
(A) Ov. Dry
ABS. %
Wt. S+C+H2O
Wt. S+C
W=Wt. H2O

Bulk = $\frac{500}{500 - W}$ =

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry
(A) Ov. Dry
ABS. %
(C) Wt. S. in H2O

App = $\frac{A}{A - C}$ =

SSD = $\frac{B}{B - C}$ =

OD = $\frac{A}{B - C}$ =

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.
P.L.
P.I.

pH / RESISTIVITY

	Field	Lab
Soil pH		
H2O		

Min. Resistivity
Based on 18 gauge CMP.
Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)
Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo		Spec.	
Wa		Grav.	
Wb			

CONTRACT NO. 07-258401

LAB. NO. 4221B

07-AGG-SSD (RG/SD 7/93, Rev. HC 10/17/11)

SRL SOIL & AGGREGATE TESTS

Sample of: Soil
Sampled from: A-14-002
Material Source: I-5 / LA River - PM 22.26
Owner / Mfr.:
Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578
Fax. No.:

0 7	2 5 8 4 0 1	S - 4	4223B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED ASAP

GRADING ANALYSIS

Total Wt. 816 g By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
0	25	0	0		100	
24	19	24	3		97	
11	12.5	35	4		96	
3	9.5	38	5		95	
48	4.75	86	11		89	
730		816				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	89	
	2.36 mm	13	11	89	79	
	1.18 mm	33	28	72	64	
116.3 g	600 µm	51	44	56	50	
	300 µm	67	58	42	37	
	150 µm	81	70	30	27	
	75 µm	91	78	22	19.6	

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus.
1hr.	5M	15.0	7.0	8.0	7%	6%
24hr.	1M	11.0	7.0	4.0	3%	3%

SAND EQUIVALENT

MIN. SPEC.

					Avg.
Sand R2					
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=
Dura-Fine	R2/R1 =

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. **% CP** Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet		L.L.	
Gr. Dry			
H2O		P.L.	
Tare			
Net Dry		P.I.	
% H2O			

PLASTICITY INDEX

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING

NM

ORGANIC IMPURITIES

Satisfactory

Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo	Spec.	
Wa	Grav.	
Wb		

CONTRACT NO. 07-2584 01

LAB. NO. 4223B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-003

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

0 7	2 5 8 4 0 1	S - 2	4225B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

NORMAL | PRIORITY | DATE NEEDED: ASAP

By: FAX MAIL PHONE OTHER

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

GRADING ANALYSIS

Total Wt. 525 g | By: | Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
0	25	0	0		100	
22	19	22	4		96	
0	12.5	22	4		96	
4	9.5	26	5		95	
9	4.75	35	7		93	
490		525				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	93	
	2.36 mm	2	2	98	91	
	1.18 mm	6	5	95	88	
113.0 g	600 µm	11	10	90	84	
	300 µm	21	19	81	75	
	150 µm	49	43	57	53	
	75 µm	73	65	35	32.6	

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus.
1hr.	5M	22.0	7.0	15.0	13%	12%
24hr.	1M	16.0	7.0	9.0	8%	7%

SAND EQUIVALENT					MIN.
Sand R2				Avg.	SPEC.
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX		SPEC.
Dura-Coarse	Sed.Ht.=	
Dura-Fine	R2/R1 =	

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES — SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. **% CP** Ret. No.4 =

% CP = P/R

R-VALUE	SPEC.
RESULT	

SP. G. FINE (SSD)	
(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	
Bulk = 500 / (500 - W) =	

SP. GR. COARSE CT206/CT209, +4	
(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	
App = A / (A - C) =	
SSD = B / (B - C) =	
OD = A / (B - C) =	

MOISTURE CONTENT	SPEC.	PLASTICITY INDEX
Gr. Wet	L.L.	
Gr. Dry		
H2O	P.L.	
Tare		
Net Dry	P.I.	
% H2O		

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE		
NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED		✓
■ Fine Grade	202	✓
■ Coarse Grade	202	✓
Filler Material	202	
■ Mech. Analysis	203	✓
Plasticity Index	204	
% Crushed Particles	205	
SpG. Coarse	206	
SpG. Fine (SSD)	207	
SpG. of Soils	209	
L.A.R.T.	211	
Unit Wt.	212	
Organic Impurities	213	
Soundness	214	
Relative Compaction	216	
Sand Equivalent	217	
Moisture Content	226	
Cleaness Value	227	
Durability Fine	229	
Durability Coarse	229	
Flat & Elongated	ASTM D 4791	
R-Value	301	
Fine Agg Angularity	AASHTO T 304	
Mortar Strength	515	
pH (RC)	532	
Resistivity (RC)	532	
pH (CMP)	643	
Resistivity (CMP)	643	
Expansion Index	UBC-29-2	
Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE		✓
A.B.	PCC	
A.S.	Bk.Fill	
EMB.	MISC.	
O.G.	Sub-Grade	
A.C. Agg.	SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo	Spec.	
Wa	Grav.	
Wb		

CONTRACT NO. 0 7 - 2 5 8 4 0 1

LAB. NO. 4 2 2 5 B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-003

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578
Fax. No.:

07	2584	01	S	- 3	4226B
	CONTRACT NO.		SAMPLE NO.		LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

GRADING ANALYSIS

Total Wt. 582 g By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5	0	0		100	
28	25	28	5		95	
35	19	63	11		89	
27	12.5	90	15		85	
12	9.5	102	18		82	
24	4.75	126	22		78	
456		582				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	78	
	2.36 mm	4	4	96	75	
	1.18 mm	9	8	92	72	
106.0 g	600 µm	15	14	86	67	
	300 µm	26	25	75	59	
	150 µm	41	39	61	48	
	75 µm	56	53	47	36.7	

MECH. / HYDRO.		R	Corr.	C.R.	Mat'l In Sus.	Comb % In Sus.
1hr.	5M	21.0	7.0	14.0	13%	10%
24hr.	1M	14.0	7.0	7.0	7%	5%

SAND EQUIVALENT

						MIN. SPEC.
Sand R2					Avg.	
Clay R1						
S.E. Value						

L.A.R.T.	Rev.	Wt.	Wt. Ret	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

		SPEC.
Dura-Coarse	Sed.Ht.=	
Dura-Fine	R2/R1 =	

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

%Ret.x(Wt.Cr./Tot.Wt.) = Prod. SPEC.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

RESULT SPEC.

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

Bulk = 500 / (500 - W) =

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

App = A / (A - C) =

SSD = B / (B - C) =

OD = A / (B - C) =

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.	
P.L.	
P.I.	

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)
Wt Pycnometer + H_2O (Wa)
Wt Pycnometer + H2O + Soil (Wb)
Wo / (Wo + Wa - Wb)

Wo	Spec.	
Wa	Grav.	
Wb		

CONTRACT NO. 07-2584 01

LAB. NO. 4226 B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-003

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

0 7	2 5 8 4 0 1	S - 7	4227B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

NORMAL ☐ PRIORITY ☐ DATE NEEDED: ASAP

By: FAX ☐ MAIL ☐ PHONE ☐ OTHER ☐

R.E.: Nadeem Srour
Address:

Phone No.: 909-383-4578

Fax. No.:

GRADING ANALYSIS

Total Wt. 507 g | By: | Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25	0	0		100	
12	19	12	2		98	
0	12.5	12	2		98	
3	9.5	15	3		97	
8	4.75	23	5		95	
484		507				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	95	
	2.36 mm	2	2	98	93	
	1.18 mm	6	5	95	90	
115.4 g	600 µm	14	12	88	84	
	300 µm	49	42	58	55	
	150 µm	96	83	17	16	
	75 µm	106	92	8	7.6	

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus.
1hr.	5M	11.0	7.0	4.0	3%	3%
24hr.	1M	8.0	7.0	1.0	1%	1%

SAND EQUIVALENT — MIN. SPEC.

					Avg.
Sand R2					
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX — SPEC.

Dura-Coarse Sed.Ht.=

Dura-Fine R2/R1 =

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES — SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. **% CP** Ret. No.4 =

% CP = P/R

R-VALUE — SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

$Bulk = \frac{500}{500 - W} =$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

$App = \frac{A}{A - C} =$

$SSD = \frac{B}{B - C} =$

$OD = \frac{A}{B - C} =$

MOISTURE CONTENT — SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L. | P.L. | P.I.

pH / RESISTIVITY

	Field	Lab
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo | Spec.

Wa | Grav.

Wb

CONTRACT NO. 07-252401

LAB. NO. 4227B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-003

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

0	7	2	5	8	4	0	1	S	-	1	0				4228B
CONTRACT NO.								SAMPLE NO.							LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/20/14

NUMBER OF CONTAINERS: 1 Plastic Bag

NORMAL ☐ PRIORITY ☐ DATE NEEDED: ASAP

By: FAX ☐ MAIL ☐ PHONE ☐ OTHER ☐

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

GRADING ANALYSIS

Total Wt. 413 g | By: | Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5	0	0		100	
95	25	95	23		77	
41	19	136	33		67	
11	12.5	147	36		64	
15	9.5	162	39		61	
34	4.75	196	47		53	
217		413				

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)						
			0	100	53	
	2.36 mm	6	6	94	50	
99.0 g	1.18 mm	13	13	87	46	
	600 µm	21	21	79	42	
	300 µm	40	40	60	32	
	150 µm	73	74	26	14	
	75 µm	85	86	14	7.4	

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus.
1hr.	5M	11.0	7.0	4.0	4%	2%
24hr.	1M	10.0	7.0	3.0	3%	2%

SAND EQUIVALENT

MIN. SPEC.

Sand R2					Avg.
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.	
P.L.	
P.I.	

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
■	Fine Grade	202	✓
■	Coarse Grade	202	✓
	Filler Material	202	
■	Mech. Analysis	203	✓
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo | Spec.

Wa | Grav.

Wb

CONTRACT NO. 07-2584-01

LAB. NO. 4228B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-001

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

0 7	2 5 8 4 0 1	S - 1	4216B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/18/14

NUMBER OF CONTAINERS: 1 Plastic Bag

NORMAL ☐ PRIORITY ☐ DATE NEEDED: ASAP

By: FAX ☐ MAIL ☐ PHONE ☐ OTHER ☐

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

GRADING ANALYSIS

Total Wt. ____ By: ____ Date: ____

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5					
	4.75					

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)			0	100		
	2.36 mm					
.0 g	1.18 mm					
	600 µm					
	300 µm					
	150 µm					
	75 µm					

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus
1hr.	5M					
24hr.	1M					

SAND EQUIVALENT

					MIN. SPEC.
Sand R2				Avg.	
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = ____ Wt. of spheres = ____

DURABILITY INDEX

			SPEC.
Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES — SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 = ____

% CP = P/R

R-VALUE — SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

Bulk = $\frac{500}{500 - W}$ =

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

App = $\frac{A}{A - C}$ =

SSD = $\frac{B}{B - C}$ =

OD = $\frac{A}{B - C}$ =

MOISTURE CONTENT — SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.	27
P.L.	19
P.I.	8

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES	
NM	Satisfactory	
	Unsatisfactory	

TEST(S) REQUESTED

			✓
	Fine Grade	202	
	Coarse Grade	202	
	Filler Material	202	
	Mech. Analysis	203	
■	Plasticity Index	204	✓
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo ____ Spec. Grav. ____

Wa ____

Wb ____

CONTRACT NO. 07-25840 1

LAB. NO. 4216B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-001

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA
SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

0 7	2 5 8 4 0 1	B u l k	4220B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/18/14

NUMBER OF CONTAINERS: 1 Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

GRADING ANALYSIS

Total Wt. By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5					
	4.75					

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)			0	100		
	2.36 mm					
.0 g	1.18 mm					
	600 µm					
	300 µm					
	150 µm					
	75 µm					

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus
1hr.	5M					
24hr.	1M					

SAND EQUIVALENT

MIN. SPEC.

Sand R2				Avg.	
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC.

Gr. Wet		L.L.	
Gr. Dry			
H2O		P.L.	
Tare			
Net Dry		P.I.	
% H2O			

PLASTICITY INDEX

pH / RESISTIVITY

	Field	Lab.
Soil pH		7.96
H2O		5.97
Min. Resistivity		1725

Based on 18 gauge CMP.

Estimated life: 31 yrs.

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING

NM

ORGANIC IMPURITIES

Satisfactory

Unsatisfactory

TEST(S) REQUESTED

			✓
	Fine Grade	202	
	Coarse Grade	202	
	Filler Material	202	
	Mech. Analysis	203	
	Plasticity Index	204	
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
■	pH (CMP)	643	✓
■	Resistivity (CMP)	643	✓
	Expansion Index	UBC-29-2	
■	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	✓

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)	129.1
Opt. Moist Content (%)	8.2

Laboratory Remarks:
Run max density and run sulfides and chlorides if Resist. is < 1000.

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo Spec.

Wa Grav.

Wb

CONTRACT NO. 07-2584 01

LAB. NO. 4220 B

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-002

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

07	258401	S - 3	4222B
	CONTRACT NO.	SAMPLE NO.	LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/18/14

NUMBER OF CONTAINERS: 1 Plastic Bag

NORMAL ☐ PRIORITY ✓ DATE NEEDED: ASAP

By: FAX ☐ MAIL ☐ PHONE ☐ OTHER ☐

GRADING ANALYSIS

Total Wt. ____ By: ____ Date: ____

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5					
	4.75					

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)			0	100		
	2.36 mm					
	1.18 mm					
.0 g	600 µm					
	300 µm					
	150 µm					
	75 µm					

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus
1hr.	5M					
24hr.	1M					

SAND EQUIVALENT

						MIN. SPEC.
Sand R2					Avg.	
Clay R1						
S.E. Value						

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = ____ Wt. of spheres = ____

DURABILITY INDEX

Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

%Ret.x(Wt.Cr./Tot.Wt.) = Prod. ____ SPEC. ____

Wtd. Avg. % CP Ret. No.4 = ____

% CP = P/R ____

R-VALUE

RESULT ____ SPEC. ____

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	

$$\text{Bulk} = \frac{500}{500 - W} =$$

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	

$$\text{App} = \frac{A}{A - C} =$$

$$\text{SSD} = \frac{B}{B - C} =$$

$$\text{OD} = \frac{A}{B - C} =$$

MOISTURE CONTENT

SPEC. ____

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L. 23

P.L. N.P.

P.I. N.P.

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING	ORGANIC IMPURITIES
NM	Satisfactory
	Unsatisfactory

TEST(S) REQUESTED

			✓
	Fine Grade	202	
	Coarse Grade	202	
	Filler Material	202	
	Mech. Analysis	203	
■	Plasticity Index	204	✓
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo ____ Spec. Grav. ____

Wa ____

Wb ____

CONTRACT NO. 07-258401 B

LAB. NO. 4222

SRL SOIL & AGGREGATE TESTS

Sample of: Soil

Sampled from: A-14-003

Material Source: I-5 / LA River - PM 22.26

Owner / Mfr.:

Date Sampled:

SRL Lab. Stamp

By _____ for

D. OZOWARA

SRL Materials Engineer

0	7	2	5	8	4	0	1	S	-	1				4224B
		CONTRACT NO.						SAMPLE NO.						LAB. NO.

DATE RCV'D: 8/7/14 DATE OUT: 8/18/14

NUMBER OF CONTAINERS: 1 Plastic Bag

By: FAX MAIL PHONE OTHER

NORMAL PRIORITY DATE NEEDED: ASAP

R.E.: Nadeem Srour

Address:

Phone No.: 909-383-4578

Fax. No.:

SOUTHERN REGIONAL LABORATORY
13970 Victoria Street
Fontana, CA 92336

Phone: (909) 350 9039

Fax: (909) 829 6294

GRADING ANALYSIS

Total Wt. By: Date:

Wt. Ret.	Size (mm)	Acc. Wt. Ret.	% Ret.	% Pass	Comb. % Pass	SPEC.
	87.5					
	75					
	62.5					
	50					
	37.5					
	25					
	19					
	12.5					
	9.5					
	4.75					

FINE GRADE / MECHANICAL ANALYSIS

Dry Wt. (g)			0	100		
.0 g	2.36 mm					
	1.18 mm					
	600 µm					
	300 µm					
	150 µm					
	75 µm					

MECH. / HYDRO.		R	Corr.	C.R.	Mat In Sus.	Comb % In Sus
1hr.	5M					
24hr.	1M					

SAND EQUIVALENT

MIN. SPEC.

Sand R2					Avg.
Clay R1					
S.E. Value					

L.A.R.T.	Rev.	Wt.	Wt. Ret.	% Ret.	% Loss	% SPEC.
A B	100	5000g				
C D	500	5000g				

No. of spheres = Wt. of spheres =

DURABILITY INDEX

SPEC.

Dura-Coarse	Sed.Ht.=		
Dura-Fine	R2/R1 =		

R-VALUE BATCH

% Run	Size	Wt.
	25 mm	
	19 mm	
	12.5 mm	
	9.5 mm	
	4.75 mm	

% CRUSHED PARTICLES

SPEC.

%Ret.x(Wt.Cr./Tot.Wt.) = Prod.

Wtd. Avg. % CP Ret. No.4 =

% CP = P/R

R-VALUE

SPEC.

RESULT

SP. G. FINE (SSD)

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
Wt. S+C+H2O	
Wt. S+C	
W=Wt. H2O	
Bulk = 500 / (500 - W) =	

SP. GR. COARSE CT206/CT209, +4

(B) S.S. Dry	
(A) Ov. Dry	
ABS. %	
(C) Wt. S. in H2O	
App = A / (A - C) =	
SSD = B / (B - C) =	
OD = A / (B - C) =	

MOISTURE CONTENT

SPEC.

Gr. Wet	
Gr. Dry	
H2O	
Tare	
Net Dry	
% H2O	

PLASTICITY INDEX

L.L.	22		
P.L.	N.P.		
P.I.	N.P.		

pH / RESISTIVITY

	Field	Lab.
Soil pH		
H2O		
Min. Resistivity		

Based on 18 gauge CMP.

Estimated life:

CLEANNESS VALUE

NL	SED. HT.	RESULT

FILM STRIPPING

NM

ORGANIC IMPURITIES

Satisfactory

Unsatisfactory

TEST(S) REQUESTED

			✓
	Fine Grade	202	
	Coarse Grade	202	
	Filler Material	202	
	Mech. Analysis	203	
■	Plasticity Index	204	✓
	% Crushed Particles	205	
	SpG. Coarse	206	
	SpG. Fine (SSD)	207	
	SpG. of Soils	209	
	L.A.R.T.	211	
	Unit Wt.	212	
	Organic Impurities	213	
	Soundness	214	
	Relative Compaction	216	
	Sand Equivalent	217	
	Moisture Content	226	
	Cleaness Value	227	
	Durability Fine	229	
	Durability Coarse	229	
	Flat & Elongated	ASTM D 4791	
	R-Value	301	
	Fine Agg Angularity	AASHTO T 304	
	Mortar Strength	515	
	pH (RC)	532	
	Resistivity (RC)	532	
	pH (CMP)	643	
	Resistivity (CMP)	643	
	Expansion Index	UBC-29-2	
	Max. Dry Density/ Opt. Moist Content	ASTM-D1557	

SAMPLE TYPE

			✓
A.B.		PCC	
A.S.		Bk.Fill	
EMB.		MISC.	
O.G.		Sub-Grade	
A.C. Agg.		SOIL	✓

TL-101 S.I.C. NO.

Expansion Index

Dry Density

Max. Dry Density (pcf)

Opt. Moist Content (%)

Laboratory Remarks:

SPECIFIC GRAVITY OF SOILS

Wt Oven Dry Soil (Wo)

Wt Pycnometer + H_2O (Wa)

Wt Pycnometer + H2O + Soil (Wb)

Wo / (Wo + Wa - Wb)

Wo		Spec. Grav.	
Wa			
Wb			

CONTRACT NO. 07-2584-01

LAB. NO. 4224B

Appendix C:
Proposed TMDL Locations

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/36.3		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

SCALE: 1" = 50'

A-14-002

A-14-001
(GSRD)

A-14-003
(Austin Vault)

STADIUM WAY OFF RAMP

NEWELL ST

Exist 24" RCP

CAP INLET

CAP INLET

"5GCN1" LINE

"5GCN2" LINE

SB 5 TO EB 2 CONN

RIVERSIDE OFF RAMP

ROUTE 5

NEWELL St ON RAMP TO EB 2

NB 5 TO EB 2 CONN

176+68.05 END

R/W

Explanation:

● A-14-003 : Boring Location and Number

LAYOUT PLAN FOR TMDL LOCATIONS

SITES 57, 58

LW7-X

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => &DATE

TIME PLOTTED => &TIME

BORDER LAST REVISED 7/2/2010

USERNAME => &USER

DGN FILE => &REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

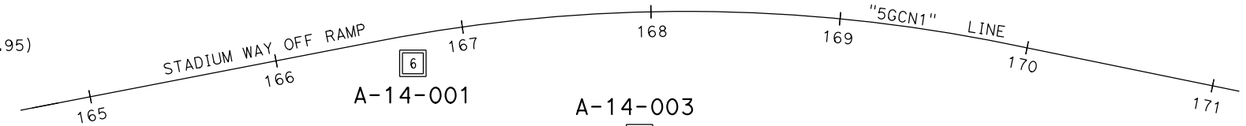
UNIT 0000

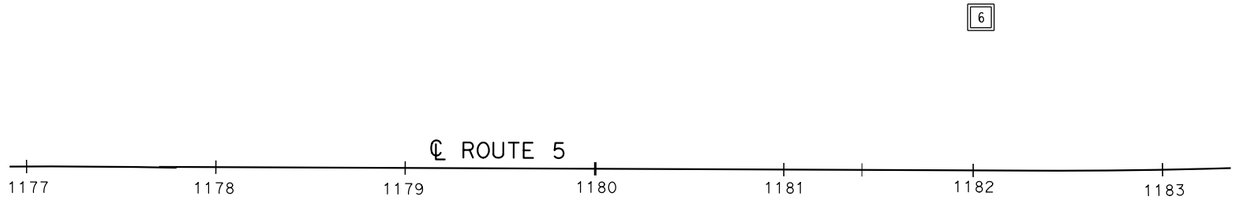
PROJECT NUMBER & PHASE 00000000001

BENCH MARK

Elev 384.06

Mag Nail in AC shoulder backing at begining of S/B LA-5 Stadium Way offramp. The Point is 102' N/O electrolier #22401 & 5.5' W/O eldge roll gutter
Sta 1181+51.21', 68.13' Lt
N 1859067.87 E 6486423.36, US. feet NAD (1991.95)
NAVD 88, 01/08/2014





PLAN
1" = 40'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5			

10-22-14
REGISTERED GEOTECHNICAL ENGINEER

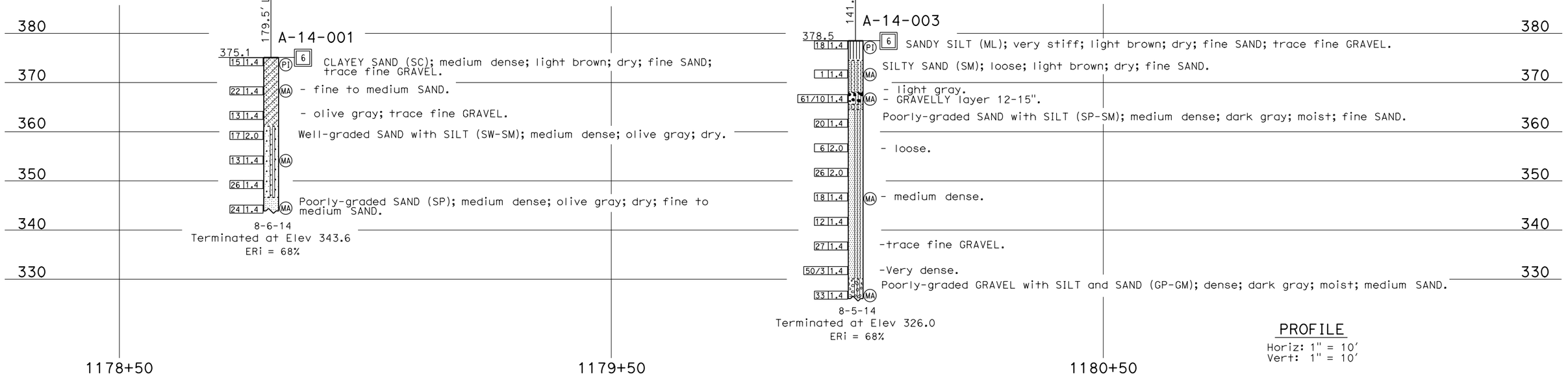
REGISTERED PROFESSIONAL ENGINEER
Nadeem Scrour
No. 2801
Exp. 12-31-15
GEOTECHNICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.



PROFILE
Horiz: 1" = 10'
Vert: 1" = 10'

Note: No ground water encountered during field investigation.

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	LA RIVER TRASH AREAS 57 & 58
FUNCTIONAL SUPERVISOR	DRAWN BY: W. Tang	FIELD INVESTIGATION BY:		DESIGN BRANCH X	POST MILE	LOG OF TEST BORINGS 1 OF 2
NAME: C. Liu	CHECKED BY: C. Harris	M. Islam			22.26-22.43	

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 07120001021 CONTRACT NO.: 07-258404

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-17-14	10-21-14			X	X

USERNAME => S119809 DATE PLOTTED => 24-JUN-2015 TIME PLOTTED => 08:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5			

10-22-14
REGISTERED GEOTECHNICAL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Nadeem Scrour
No. 2801
Exp. 12-31-15
GEOTECHNICAL
STATE OF CALIFORNIA

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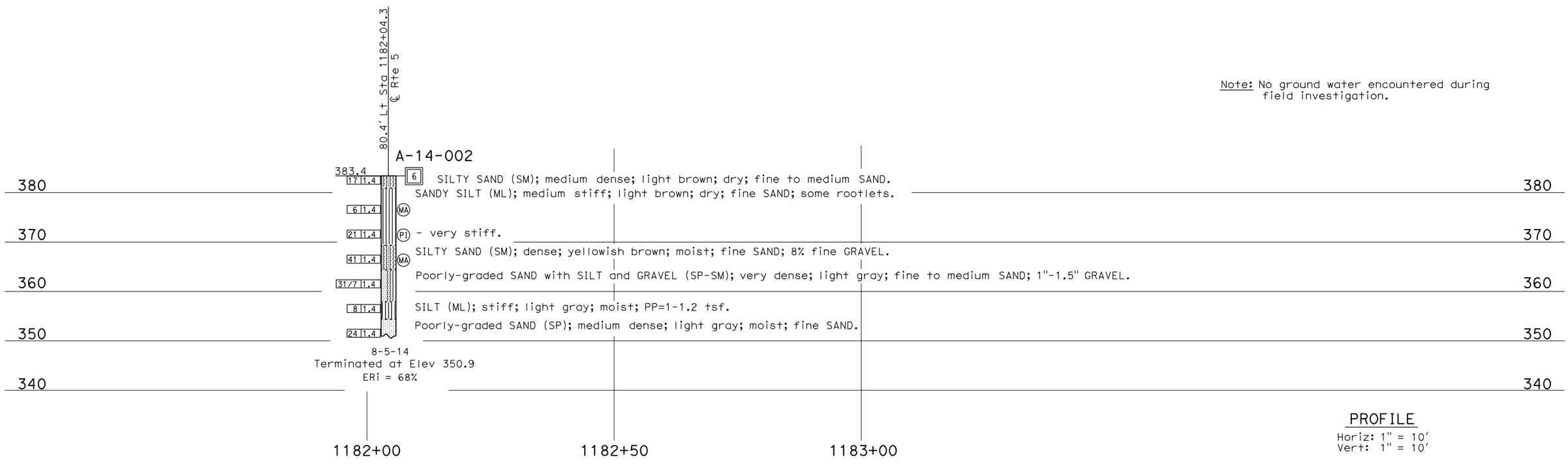
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 2"



Note: No ground water encountered during field investigation.

PROFILE
Horiz: 1" = 10'
Vert: 1" = 10'

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	LA RIVER TRASH AREAS 57 & 58
FUNCTIONAL SUPERVISOR NAME: C. Liu	DRAWN BY: W. Tang CHECKED BY: C. Harris	FIELD INVESTIGATION BY: M. Islam\ N. Srour	DESIGN BRANCH X	POST MILE 22.26-22.43	LOG OF TEST BORINGS 2 OF 2

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 07120001021 CONTRACT NO.: 07-258404

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-17-14	10-21-14			X	X

USERNAME => S119809 DATE PLOTTED => 24-JUN-2015 TIME PLOTTED =>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,SO.1	23	153

Joseph A. Kaak 3/23/93
REGISTERED ELECTRICAL ENGINEER (Date)

8-31-92
PLANS APPROVAL DATE

JOSEPH A. KAAK No. 10991 Exp. 6/30/95 ELECTRICAL

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC
CONTROL DESIGN SYSTEMS

PROJECT NOTES

[1] INSTALL TYPE III-BF SERVICE EQUIPMENT ENCLOSURE ON NEW FOUNDATION.

[2] INSTALL CAMERA POLE (TYPE 15) ON EXISTING SIGN STRUCTURE POLE. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.

[3] INSTALL CAMERA POLE (TYPE 30) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.

[4] INSTALL CAMERA POLE (TYPE 40) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.

[5] INSTALL CAMERA POLE (TYPE 45) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.

[6] INSTALL NO.6(T) PB (MODIFIED) WITH TWISTED PAIR SPLICE CLOSURE. SEE DETAIL B, SHEET E-69.

[7] INSTALL TYPE 334-TV CABINETS (2) ON NEW FOUNDATION; CABINETS TO INCLUDE CAMERA CONTROL RECEIVER, EQUIPMENT AT DATA NODE AND EQUIPMENT AT VIDEO NODE. SEE DETAIL B, SHEET E-74.

[8] INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION; CABINET TO INCLUDE CAMERA CONTROL RECEIVER, VIDEO TRANSMITTER AND VIDEO REPEATER. SEE DETAIL A, SHEET E-74.

[9] INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION; CABINET TO INCLUDE CAMERA CONTROL RECEIVER AND VIDEO TRANSMITTER. SEE DETAIL A, SHEET E-73.

[10] INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION; CABINET TO INCLUDE CAMERA CONTROL RECEIVER, VIDEO TRANSMITTER AND EQUIPMENT AT DATA NODE. SEE DETAIL C, SHEET E-73.

[11] INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINETS TO INCLUDE CAMERA CONTROL RECEIVER AND EQUIPMENT AT VIDEO NODE. SEE DETAIL B, SHEET E-73.

[12] JACK 4" GALVANIZED STEEL CONDUIT BENEATH ROADWAY. SEE DETAIL B, SHEET E-65.

[13] INSTALL CONDUIT(S) IN 6" WIDE TRENCH IN DIRT OFF SHOULDER, WITHIN 10' OF EDGE OF SHOULDER. SEE SHEETS E-61 AND E-64 FOR DETAILS.

[14] INSTALL CONDUIT(S) IN 6" WIDE TRENCH IN ASPHALT SHOULDER, MAINTAINING 4' MINIMUM DISTANCE FROM EDGE OF TRAVELWAY. SEE SHEETS E-62 AND E-64 FOR DETAILS.

[15] JACK TWO 4" GALVANIZED STEEL CONDUITS BENEATH ROADWAY. SEE DETAIL C, SHEET E-65.

[16] INSTALL COMMUNICATIONS TERMINAL BLOCK AND TELEPHONE BRIDGE IN EXISTING CONTROLLER CABINET. SEE SHEET E-71 FOR DETAILS.

[17] PRUNE PLANTS AFTER CAMERA IS INSTALLED AND OPERATING. ENGINEER TO VERIFY THAT FINAL VIEW IS UNOBSCURED.

[18] INSTALL BD-3 PEDESTAL FOR COMMUNICATIONS. SEE SHEET E-72 FOR DETAILS.

[19] INSTALL CONDUIT(S) IN 6" WIDE SAWCUT TRENCH IN CONCRETE SIDEWALK, MAINTAINING 4' MINIMUM DISTANCE FROM EDGE OF TRAVELWAY. SEE SHEETS E-63 AND E-64 FOR DETAILS.

[28] INSTALL 3" STL CONDUIT. ELECTRIC UTILITY COMPANY TO INSTALL 3 #2 CONDUCTORS.

[29] ELECTRIC UTILITY COMPANY TO INSTALL METER.

[30] INSTALL 3" CONDUIT TYPE H SERVICE RISER ON POWER POLE.

[31] INSTALL 240V/120V STEP DOWN TRANSFORMER IN PULL BOX.

[32] JACK 2" GALVANIZED STEEL CONDUIT BENEATH ROADWAY. SEE DETAIL A, SHEET E-65.

[33] ADD SERVICE (AND COMMUNICATIONS) CONDUCTORS IN EXISTING CONDUIT.

[34] INSTALL 15A, 120V CIRCUIT BREAKER FOR CAMERA AND TYPE 334-TV CABINET.

[35] REMOVE EXISTING SERVICE RISER FROM POWER POLE.

[36] INSTALL 20A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.

[37] INSTALL 2 15A, 120V CIRCUIT BREAKERS FOR CAMERAS AND TYPE 334-TV CABINETS.

[38] ADD COMMUNICATIONS CABLE(S) TO EXISTING CONDUIT.

[39] INSTALL 15A, 240V CIRCUIT BREAKER FOR CAMERA AND TYPE 334-TV CABINET.

[40] INSTALL 40A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.

[41] INSTALL 20A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.

[42] INSTALL 40A, 240V CIRCUIT BREAKER FOR FREEWAY LIGHTING.

[43] INSTALL 40A, 240V CIRCUIT BREAKER FOR FREEWAY SIGN(S).

[51] ATTACH RISER CONDUIT TO FACE OF ABUTMENT WALL WITH TWO-HOLE PIPE STRAPS. LOCATE IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL A, SHEET E-87.

[52] ATTACH RISER CONDUIT TO FACE OF COLUMN OR PIER WALL WITH TWO-HOLE PIPE STRAPS. LOCATE RISER IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL B, SHEET E-88.

[53] ATTACH RISER CONDUIT TO FACE OF WING WALL AND/OR ABUTMENT WALL WITH TWO-HOLE PIPE STRAPS. LOCATE IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL C, SHEET E-88.

[54] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL R, SHEET E-91.

[55] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL J, SHEET E-91.

[56] CORE HOLE IN CONCRETE WALL AT LOCATION REQUIRED BY PLACEMENT OF CONDUIT ON STRUCTURE. DIAMETER OF CORED HOLE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT PLUS 1/2 INCH. SEE DETAIL D, SHEET E-89.

[57] INSTALL CONDUIT(S) IN NEW CONCRETE RAIL AT FACE OF TYPE 9 RAIL ON WING WALL. TRANSITION CONDUIT(S) FROM NEW CONCRETE SECTION TO TRENCH IN BACKFILL NEAR END OF WING WALL. SEE RAIL MODIFICATIONS SAN FERNANDO ROAD OVERHEAD BARRIER DETAILS.

[58] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL E, SHEET E-90.

[59] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL P, SHEET E-90.

[60] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL L, SHEET E-90.

[61] ATTACH CONDUIT WITH PIPE HANGER STRAPS TO BOTTOM SOFFIT OF BRIDGE DECK SLAB IN INTERIOR BAY. LOCATE CONDUIT TO CLEAR BRACING. SEE DETAIL I, SHEET E-92.

[66] ATTACH CONDUIT TO OUTSIDE OF BRIDGE RAIL. INSTALL COVER OVER CONDUIT. SEE DETAIL O, SHEET E-93.

[68] DRILL AND BOND REINFORCING STEEL IN HORIZONTAL SURFACE BEHIND TYPE 27 RAIL. PLACE CONDUIT(S) ON HORIZONTAL OR VERTICAL POSITION TO CLEAR EXISTING FACILITIES. ENCASE CONDUITS IN CONCRETE. SEE DETAIL N, SHEET E-92.

[70] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL F, SHEET E-90.

[71] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN UTILITY VOID AND REPLACE CONCRETE. SEE DETAIL G, SHEET E-90

[72] ATTACH CONDUIT WITH ONE-HOLE PIPE STRAPS TO OUTSIDE OF RAIL POST. LOCATE CONDUIT AT SAME ELEVATION AS BOTTOM CHANNEL OF RAIL. SEE DETAIL H, SHEET E-90.

[73] CONSTRUCT TYPE 25M-9 BARRIER AT FACE OF EXISTING TYPE 9 BARRIER RAIL. INSTALL CONDUIT IN NEWLY CONSTRUCTED RAIL. SEE MODIFICATIONS SAN FERNANDO ROAD OVERHEAD BARRIER DETAILS.

[74] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL M, SHEET E-91.

[75] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL K, SHEET E-89.

[76] SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL S, SHEET E-89

[79] CONNECT NEWLY INSTALLED CONDUIT TO EXISTING CONDUIT.

GENERAL NOTES:

1. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON PLAN WERE OBTAINED FROM OWNER'S RECORDS AND/OR OWNERS PLANS.
2. THE LOCATION OF UNDERGROUND FACILITIES SHOWN ON PLAN ARE APPROXIMATE.
3. BLANK
4. THE LOCATIONS OF EXISTING CONTROLLER CABINETS, EXISTING SERVICE ENCLOSURES, POWER POLES AND EXISTING DEMARCATION BOXES ARE APPROXIMATE.
5. THE LOCATIONS OF PROPOSED CCTV POLES AND TOWERS SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO PLACEMENT OF FOUNDATIONS.
6. THE LOCATIONS OF PROPOSED CABINETS, PULL BOXES, SPLICE VAULTS AND DEMARCATION BOXES ARE APPROXIMATE AND MAY BE CHANGED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
7. TYPE 334-TV CABINET DOOR SWING SHOWN ON NEW CABINETS INDICATES FRONT DOOR.
8. EXISTING DETECTOR LOOPS AND CONDUITS ARE SHOWN IN THE VICINITY OF PROPOSED CONDUIT TRENCHES. CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO EXISTING CONDUITS. TRENCHING WITH HAND TOOLS MAY BE REQUIRED.
9. BEFORE REMOVING OR MODIFYING ANY EXISTING ELECTRICAL FACILITIES, THE CONTRACTOR SHALL PROVIDE 72 HOUR ADVANCED WRITTEN NOTICE TO ALL AGENCIES CONCERNED.
10. FOR SUPPLEMENTAL LEGEND, SEE STANDARD PLANS ES-1A AND ES-1B
11. UNLESS OTHERWISE NOTED, ALL CONDUIT BENDS SHALL BE 4 FOOT RADIUS FACTORY BENDS.
12. ALL CONDUITS IN CONDUCTOR SCHEDULE TABLES ARE EXISTING UNLESS MARKED (N) INDICATING PROPOSED NEW CONDUIT. ALL CONDUCTORS IN PROPOSED NEW CONDUITS ARE NEW. ALL CONDUCTORS IN EXISTING CONDUITS ARE EXISTING UNLESS MARKED (N).
13. PVC, WHERE CALLED OUT IN THESE PLANS, SHALL MEAN RIGID NON-METALLIC CONDUIT AS DEFINED IN THE STANDARD SPECIFICATIONS.
14. ALL NO. 5 AND NO. 6 PULLBOXES ARE THE TRAFFIC TYPE WHETHER OR NOT THE PULLBOX IS IDENTIFIED WITH A (T) MODIFIER.

LEGEND

- PROPOSED CCTV CAMERA SEE SHEET E-75 & STRUCTURES SHEETS FOR DETAILS
- PROPOSED SPLICE VAULT SEE SHEET E-70 FOR DETAILS
- (T) OR — PROPOSED NO. 6(T) PULLBOX (MODIFIED) SEE SHEETS E-65 THROUGH E-69 FOR DETAILS
- —C——C— PROPOSED COMMUNICATIONS CONDUIT(S)
- PROPOSED SERVICE CONDUIT
- 13 14 — CONDUIT LINE DELIMITER FOR CONSTRUCTION NOTES
- EXISTING DETECTOR LOOP SEE SHEETS E-2 THROUGH E-36
- B / 75 — DETAIL CALLOUT FOR DETAIL B ON SHEET E-75
- EXISTING SIGN SUPPORT STRUCTURE
- PROPOSED NO. 5(T) PULLBOX ON TRUNK LINE SEE DETAIL A, SHEET E-65, AND DETAIL C SHEET E-69
- PROPOSED TYPE 334-TV CABINET

AS BUILT
Contract No. 07-116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

LEGEND AND NOTES

E-1

DATE REVISED | REVISED BY | CALCULATED/DESIGNED BY | CHECKED BY | DESIGN OVERSIGHT GLORIA GWYNNE
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
E1.DWG

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,50.1	24	153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOSEPH A. KWAK
No. 10991
Exp. 6/30/95
STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

CHANGE ORDER
INSTALL SPLICE VAULT

RTE 5/10, 101 SEPARATION
BRIDGE NO. 53-2644L PM 16.90

SERVICE POINT FOR HUB

10"M SCG
24.5' N ¢

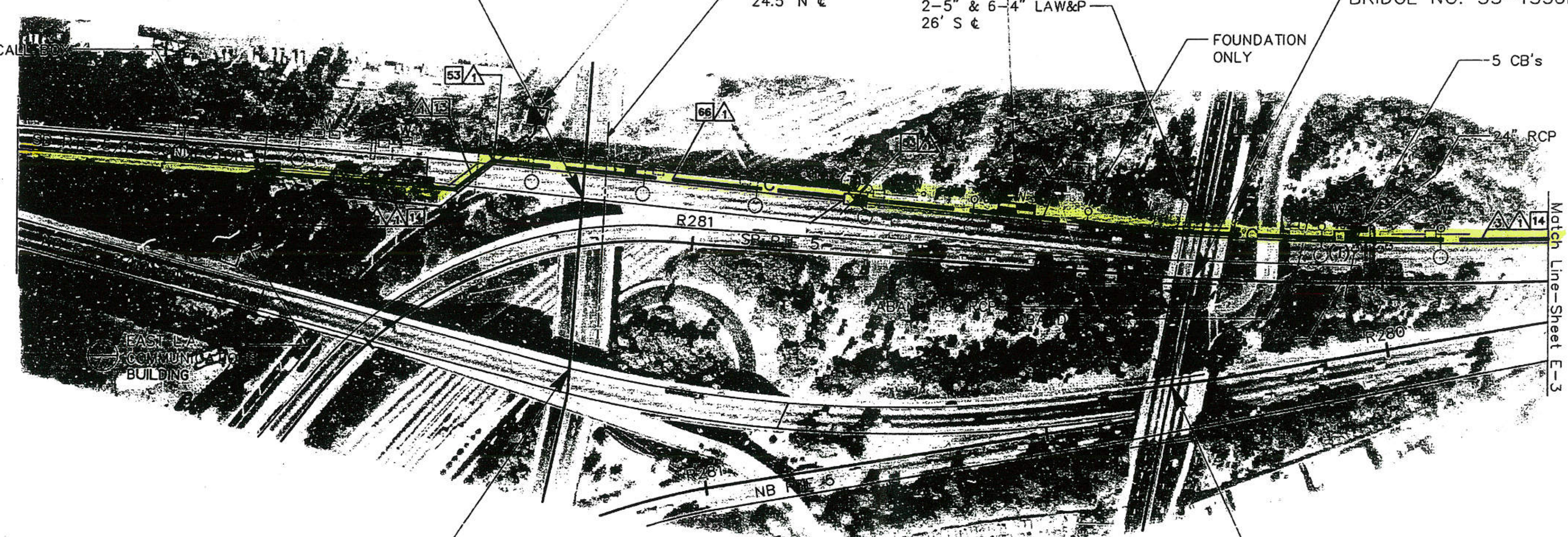
2-5" & 6-4" LAW&P
26' S ¢

FOUNDATION
ONLY

WHITTIER BLVD. OVERCROSSING
BRIDGE NO. 53-1356L PM 17.07

5 CB's

24" RCP



RTE 5/10, 101 SEPARATION
BRIDGE NO. 53-2644G PM 16.90

WHITTIER BLVD. OVERCROSSING
BRIDGE NO. 53-1356R PM 17.07

CONDUCTOR SCHEDULE			
		RUN	
CONDUCTOR TYPE	FUNCTION	1	3
50P22 CABLE	PHONE LINES	1	
48SMFO CABLE	MUX VID/DATA	1	
8MMFO CABLE	SHORT HAUL VIDEO	1	
	CONDUIT SIZE	4" (N)	4" (N)

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date June 13, 1997

APPROX. SCALE: 1"=100'
REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE
RELATIVE DISTANCE IN THOUSANDS OF FEET.

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT: GLORIA GWYNNE
CALCULATED/DESIGNED BY: JK
CHECKED BY
DATE REVISED BY: 3/23 JK; 5/12 JK
DATE REVISED

116635E02.DWG 05/15/92

FORM DC-OE-92-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 07387 EA 116634

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,50.1	25	153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

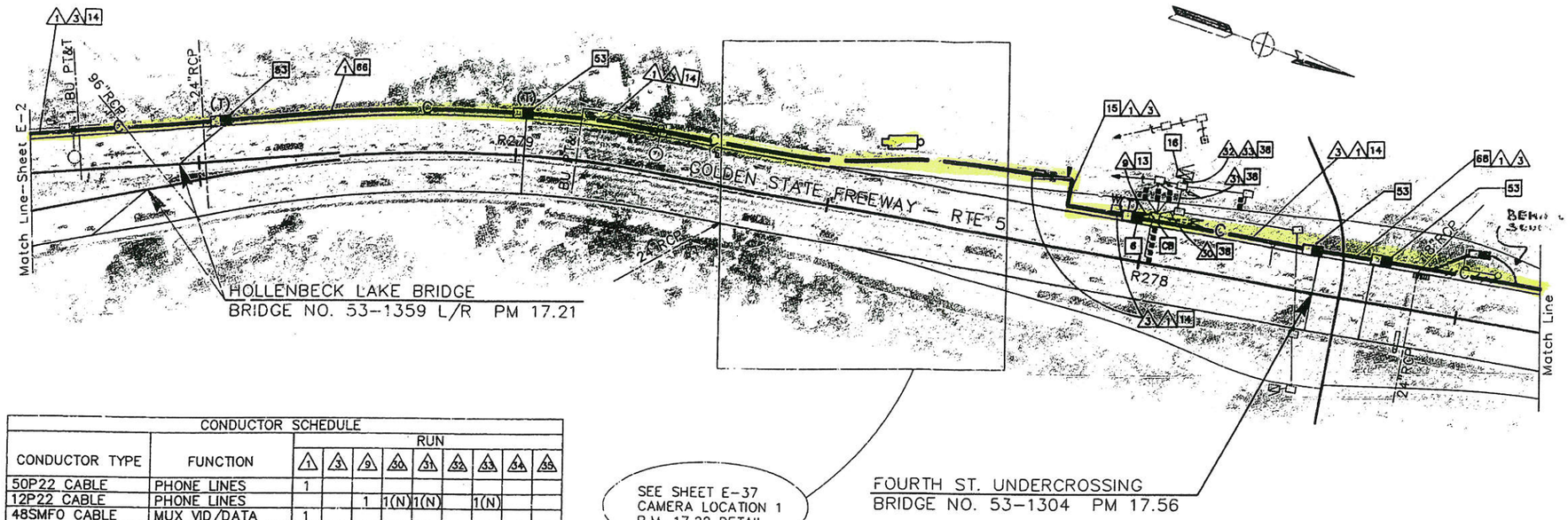
8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

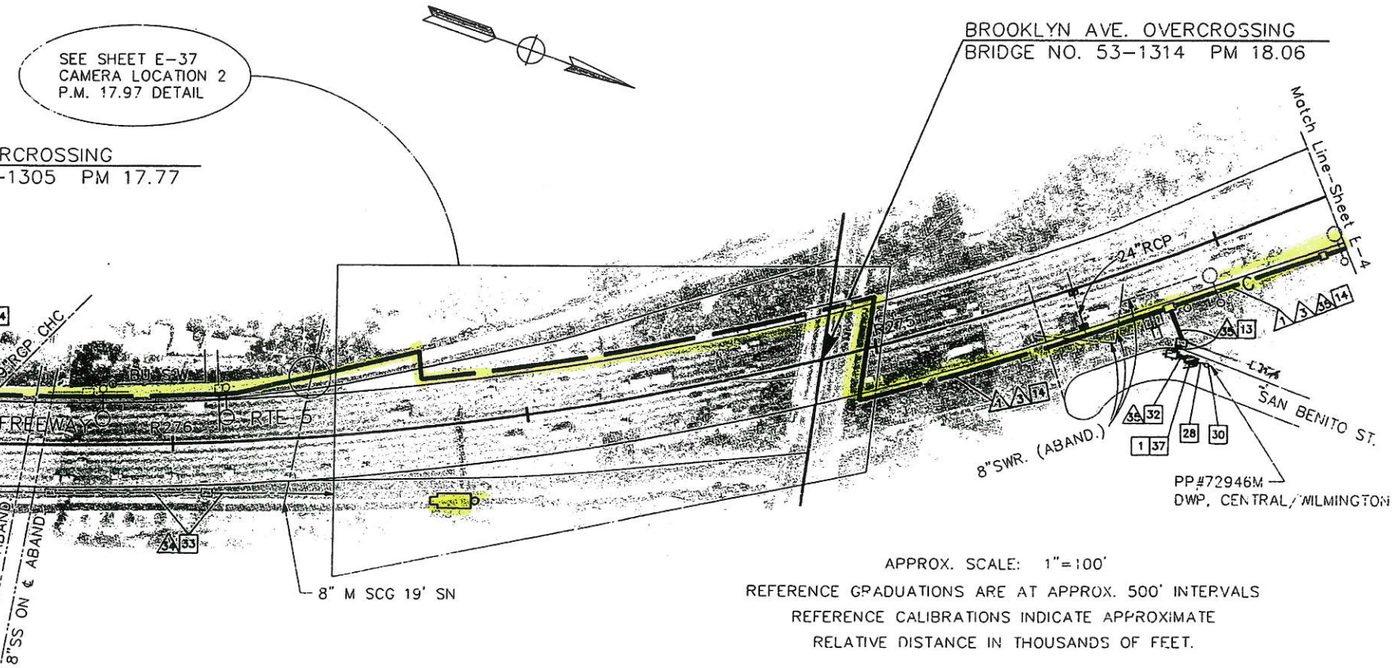
DATE	REVISED BY	DATE REVISED	CALCULATED/ DESIGNED BY	CHECKED BY
3/23	JK	5/12	JK	GLORIA GWYNNE

DESIGN C[illegible]IGHT



CONDUCTOR SCHEDULE											
		RUN									
CONDUCTOR TYPE	FUNCTION	1	3	9	30	31	32	33	34	35	
50P22 CABLE	PHONE LINES	1									
12P22 CABLE	PHONE LINES			1	1(N)	1(N)		1(N)			
48SMFO CABLE	MUX VID/DATA	1									
8MMFO CABLE	SHORT HAUL VIDEO	1									
#4	POWER								2(N)	2	
#2	POWER									2	
#8	GROUND									1	
#8 EXIST.	RMS SERVICE					2	2				
2#12 EXIST.	DLC				7	7		12			
#14 EXIST.	RAMP METER				6	6	12				
#10 EXIST.	COMMON				1	1	1				
#12 EXIST.	T.D.C. SERVICE					2					
#18 EXIST.	SHIELDED TEL. CABLE							1			
#6 EXIST.	FWY. SIGNAL LIGHT								4		
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2"	2½"	2½"	2½"	2½"	3" (N)	

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date June 13, 1997



FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

APPROX. SCALE: 1"=100'
REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE
RELATIVE DISTANCE IN THOUSANDS OF FEET.

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-3

DLW 05/14/92
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
STA
116634E03.DWG

FORM DC-OE-92-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU	07387	EA	116634

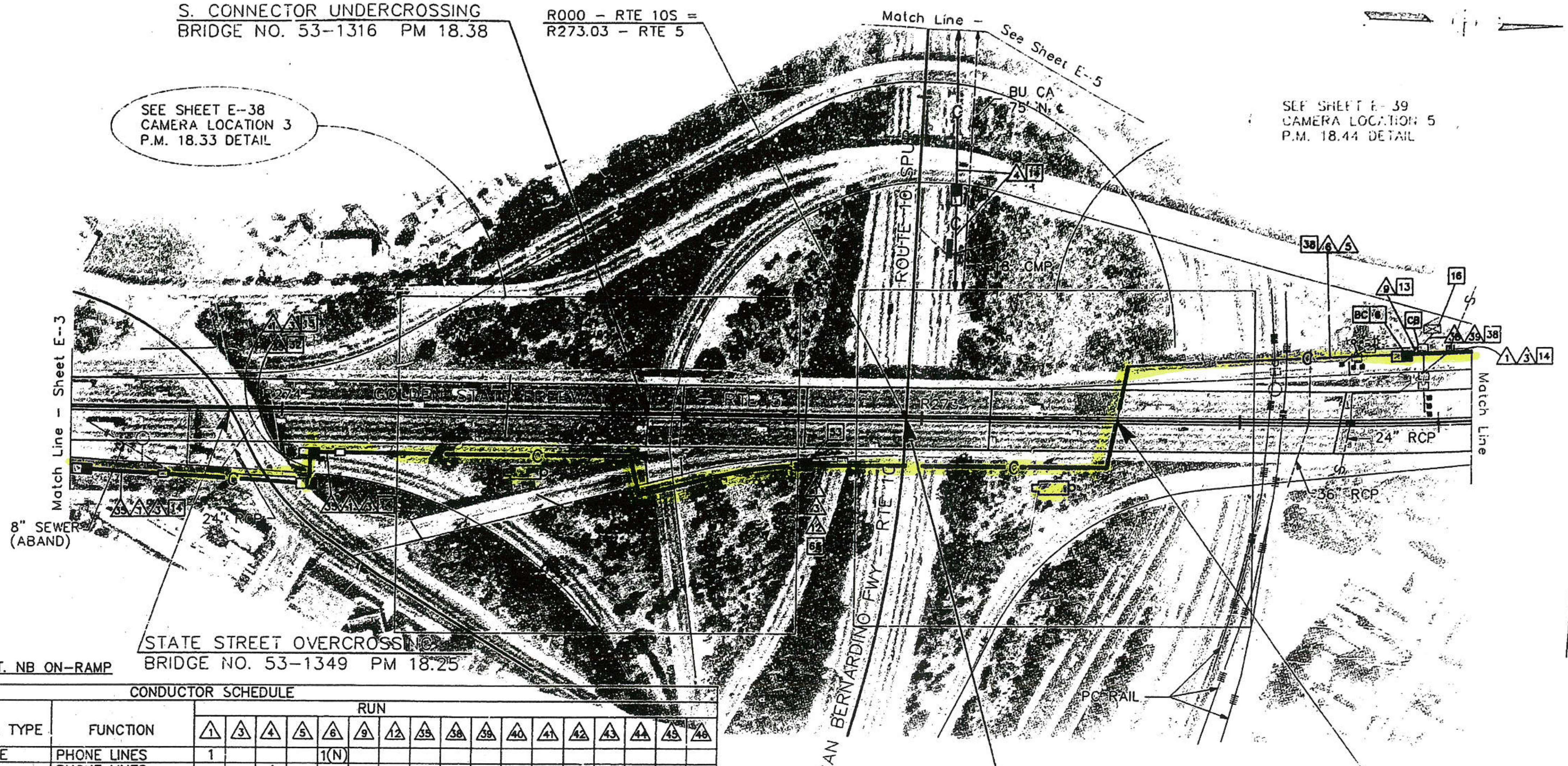
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,SO.I	26	153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JOSEPH A. KWAK No. 10991 Exp. 6/30/05 ELECTRICAL STATE OF CALIFORNIA

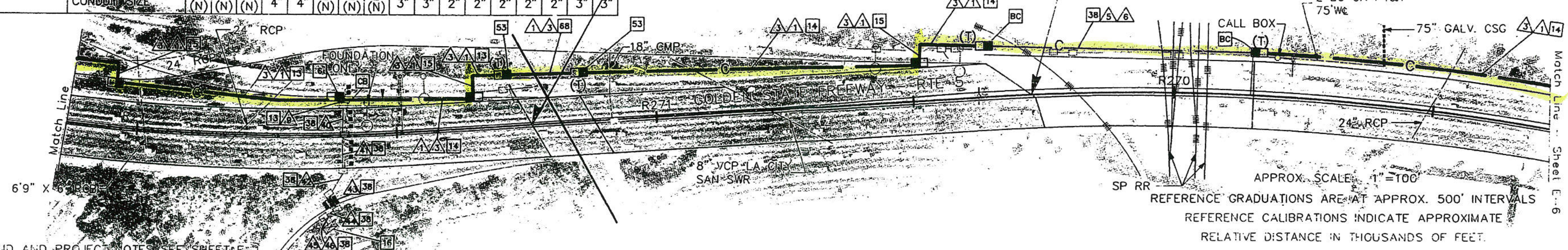
NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

MARENGO ST. NB ON-RAMP

CONDUCTOR SCHEDULE																		
		RUN																
CONDUCTOR TYPE	FUNCTION	1	3	4	5	6	9	12	35	38	39	40	41	42	43	44	45	46
50P22 CABLE	PHONE LINES	1				1(N)												
6P19 CABLE	PHONE LINES			1														
12P22 CABLE	PHONE LINES						1				1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	
48SMFO CABLE	MUX VID/DATA	1				1(N)												
8MMFO CABLE	SHORT HAUL VIDEO	1				1(N)												
2MMFO B/O CABLE	SHORT HAUL VIDEO			1														
#4	POWER								2									
#2	POWER							2	2									
#8	GROUND							1	1									
#14 EXIST.	METER ON									6								6
#12 EXIST.	DLC										6	4	7	5	5	5	14	
#10 EXIST.	COMMON									1								1
#6 EXIST.	SERVICE RMS									2								2
#18 EXIST.	SHIELDED TEL. CABLE										1						1	
	CONDUIT SIZE	4" (N)	4" (N)	3" (N)	4"	4"	2" (N)	2" (N)	2" (N)	3"	3"	2"	2"	2"	2"	2"	3"	3"



FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: GLORIA GWYNNE
CALCULATED/DESIGNED BY: JK | CHECKED BY
REVISED BY: JK | DATE REVISED: 3/23, 5/24

05/15/92
11663EC04.DWG

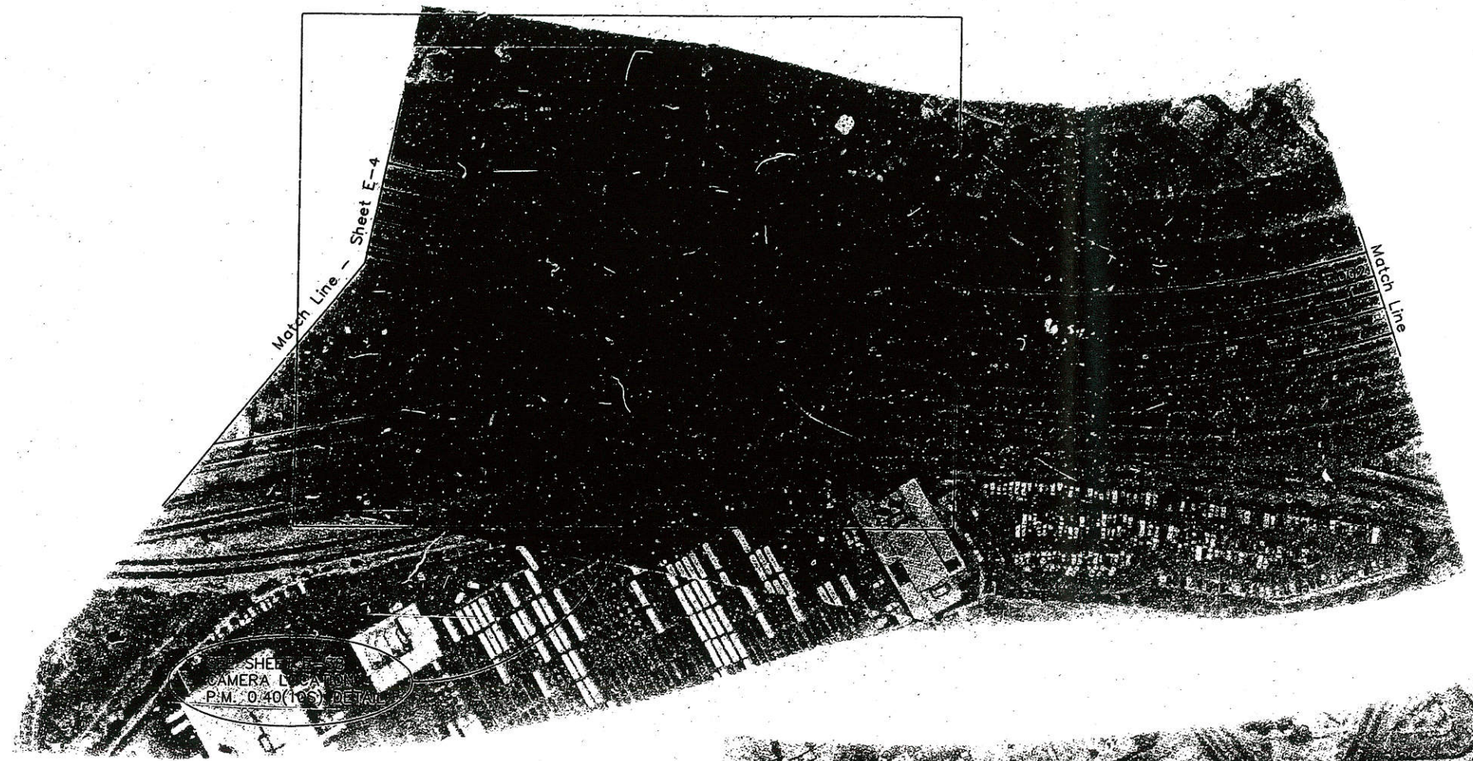
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS
07	LA	5,10	16.9/46.2,SO.1	27 153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

PROFESSIONAL ENGINEER — REGISTERED — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — STATE OF CALIFORNIA

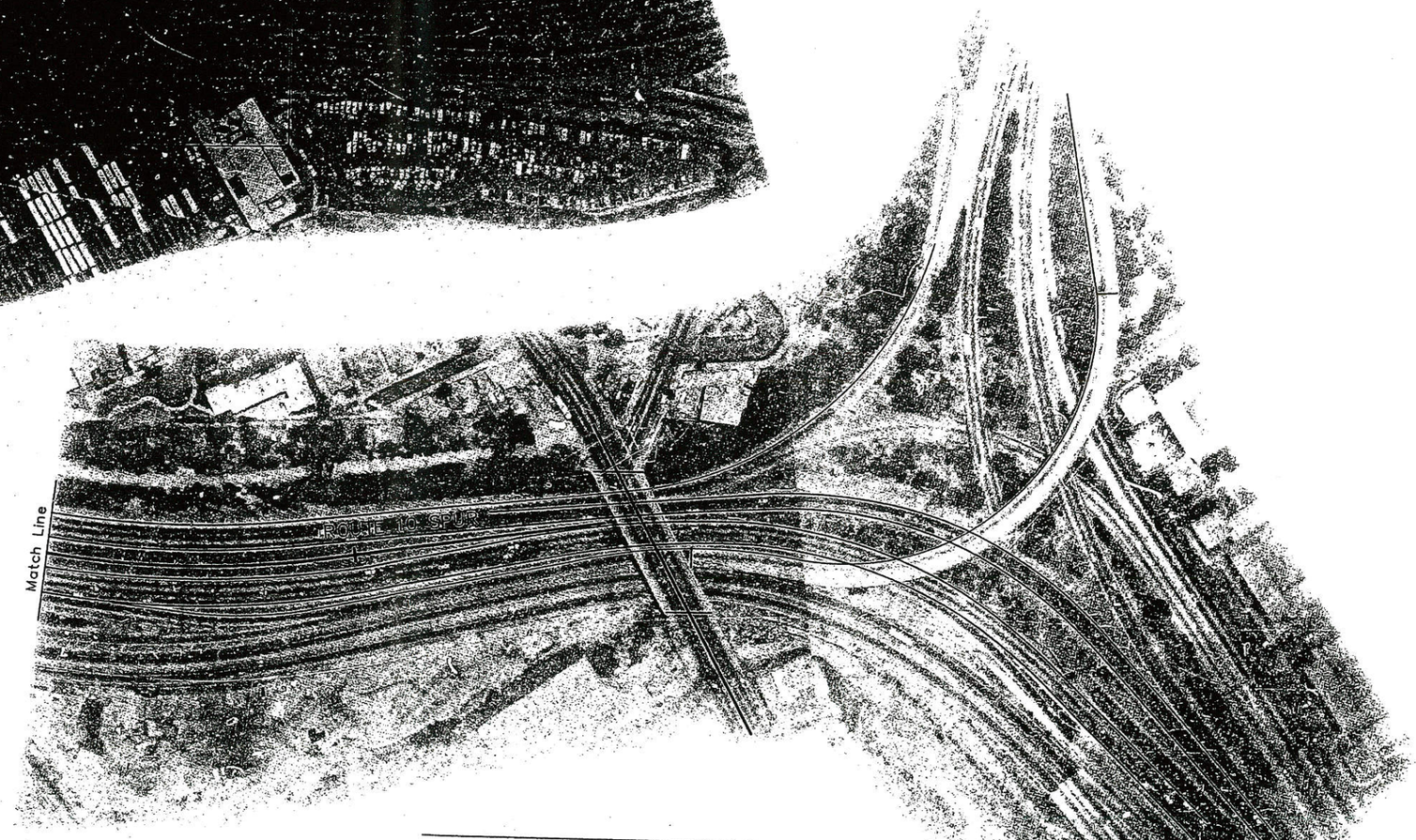
8-31-92
PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



SHEET E-38
CAMERA LOCATION 4
PM 00.40 (10 SPUR)

ON RTE 10 →



AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

APPROX. SCALE 1" = 100'
REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE
RELATIVE DISTANCE IN THOUSANDS OF FEET.

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-5

DATE	REVISED BY
3/23	JK

DATE REVISED	CALCULATED/ DESIGNED BY	CHECKED BY

DESIGN OVERSIGHT
GLORIA GWYNNE

CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
STATE

03/17/92
1:1663E05.DWG

FORM DC-0E-92-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 07387 EA 116634

...	10	16.9/46.2,SO.I	28	153

Joseph A. Kwok

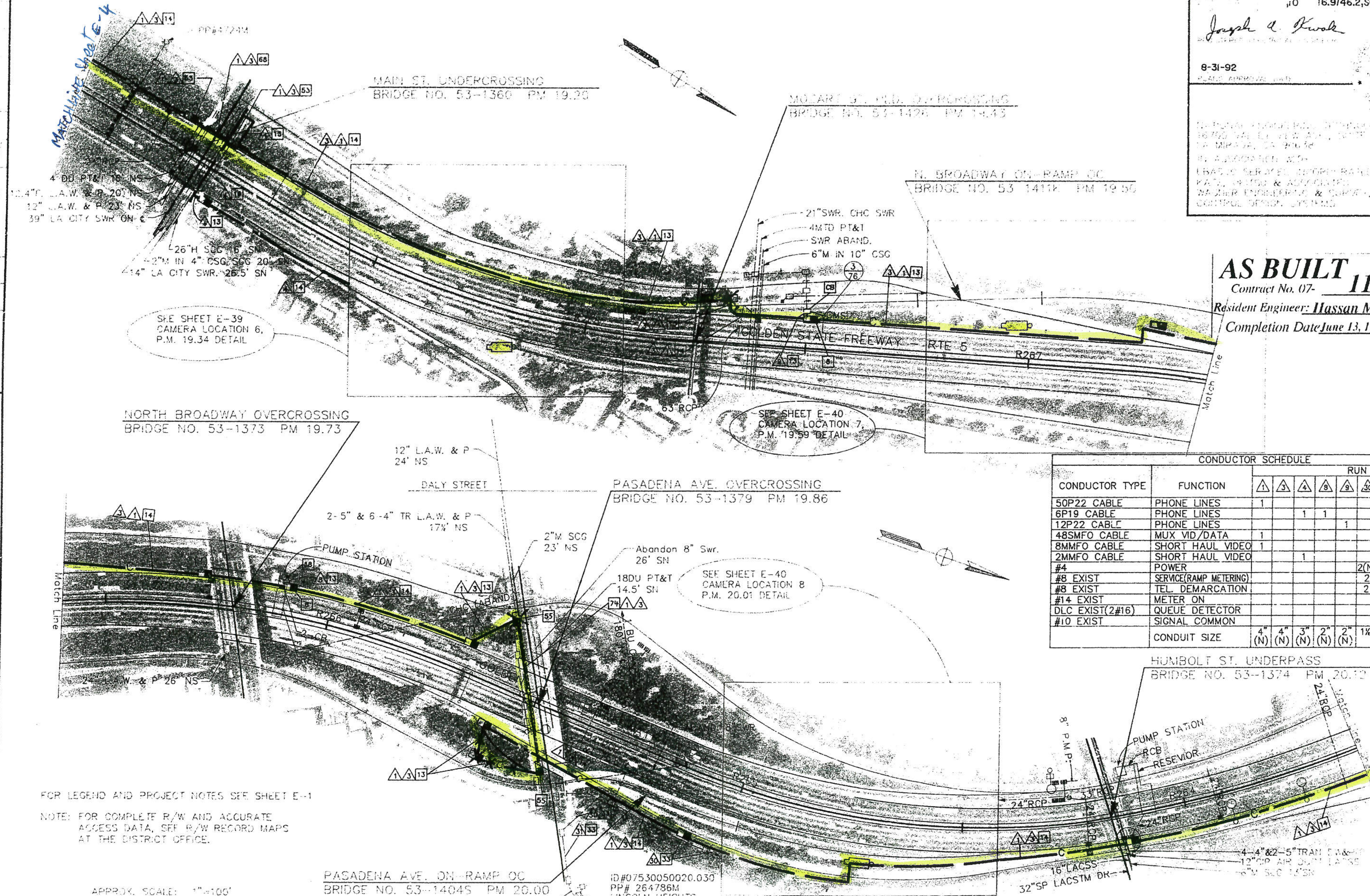
8-31-92

AS BUILT

Contract No. 07- 116634

Resident Engineer: Hassan Mazmaa

Completion Date June 13, 1997



CONDUCTOR SCHEDULE								
		RUN						
CONDUCTOR TYPE	FUNCTION	1	3	4	8	9	30	31
50P22 CABLE	PHONE LINES	1						
6P19 CABLE	PHONE LINES			1	1			
12P22 CABLE	PHONE LINES					1		
48SMFO CABLE	MUX VID/DATA	1						
8MMFO CABLE	SHORT HAUL VIDEO	1						
2MMFO CABLE	SHORT HAUL VIDEO			1				
#4	POWER						2(N)	2(N)
#8 EXIST	SERVICE(RAMP METERING)						2	2
#8 EXIST	TEL. DEMARCATION						2	2
#14 EXIST	METER ON							1
DLC EXIST(2#16)	QUEUE DETECTOR							1
#10 EXIST	SIGNAL COMMON							1
	CONDUIT SIZE	4" (N)	4" (N)	3" (N)	2" (N)	2" (N)	1½"	2"

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

APPROX. SCALE: 1"=100'

REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE RELATIVE DISTANCE IN THOUSANDS OF FEET.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONDUCTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: GLORIA GWYNNE

CALCULATED/DESIGNED BY / CHECKED BY: JK
DATE REVISED: 3/23

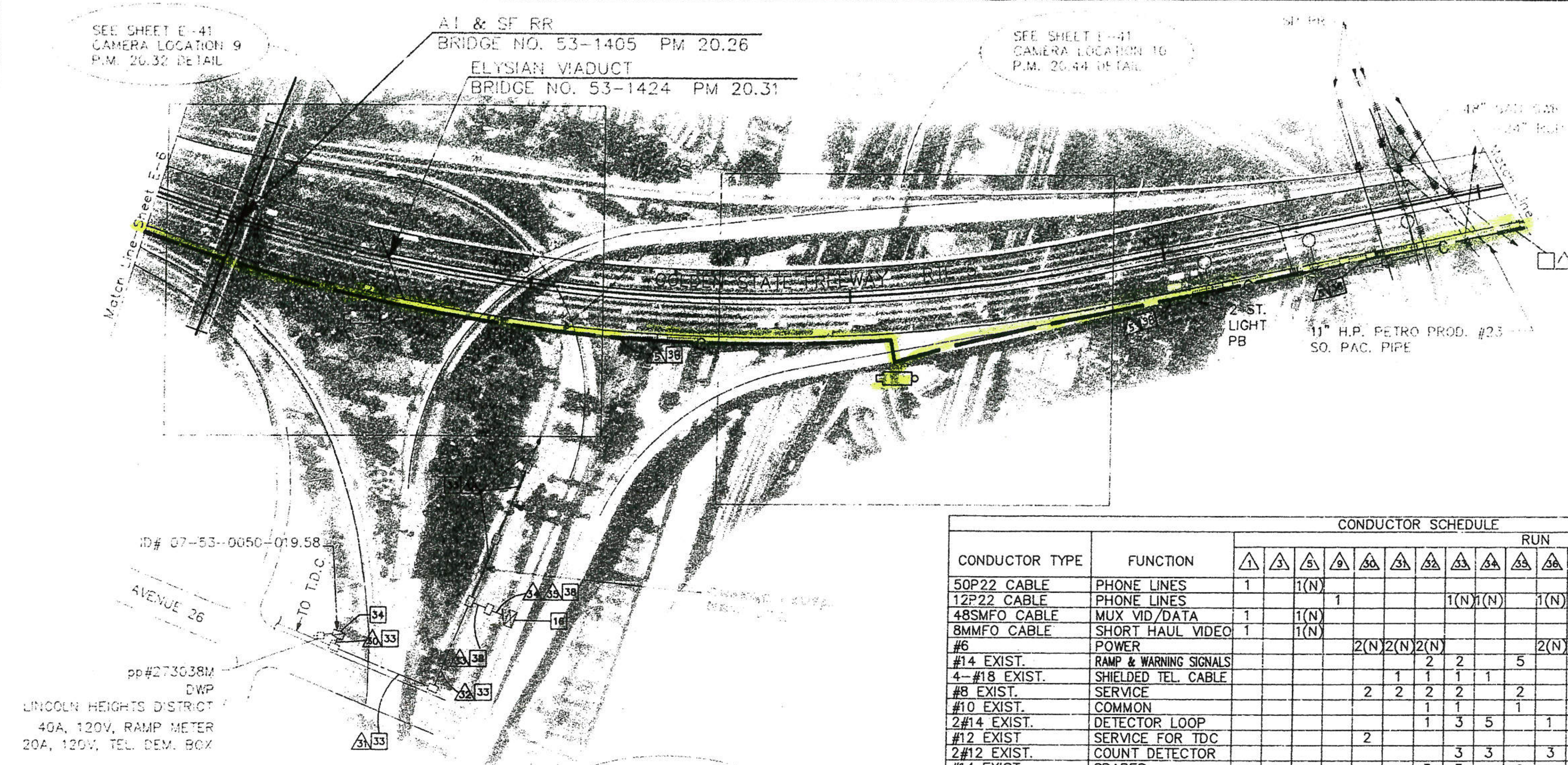
FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

FORM DC-OE-92-PF (REV. 3/88)

DIST	COUNTY	ROUTE	POST MILES	SHEET NO.	TOTAL SHEETS
10		16.9/46.2,SO,I		29	153

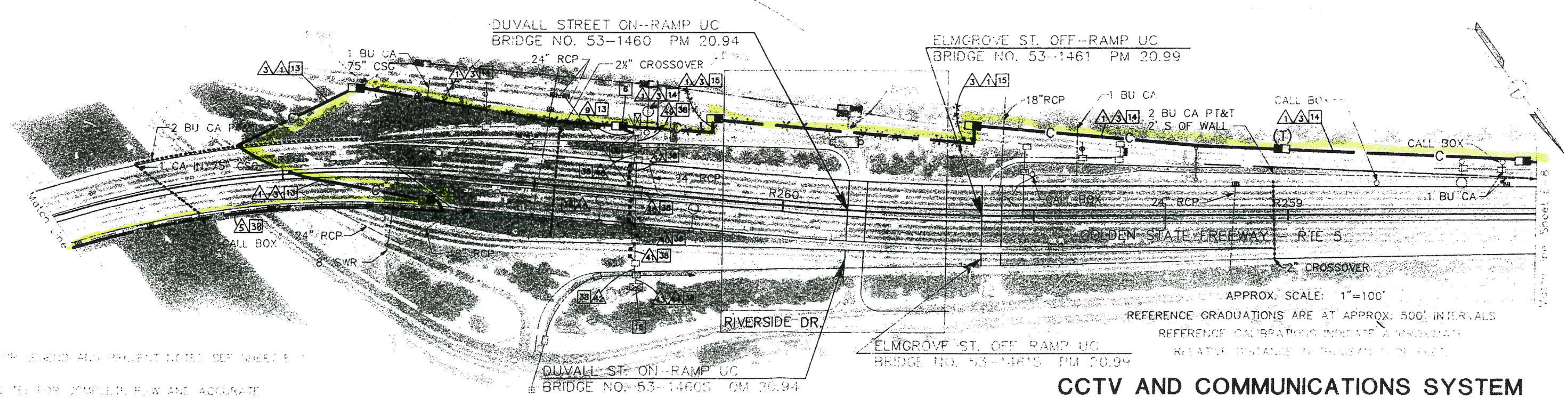
Joseph A. Kwok
REGISTERED ELECTRICAL ENGINEER

8-31-92
PLANS APPROVAL DATE



AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CONDUCTOR SCHEDULE																						
CONDUCTOR TYPE	FUNCTION	RUN 1	3	5	9	30	31	32	33	34	35	36	40	41	42	43	44	45	46	47	48	49
50P22 CABLE	PHONE LINES	1		1(N)																		
12P22 CABLE	PHONE LINES				1				1(N)	1(N)		1(N)	1(N)	1(N)	1(N)	1(N)		1(N)	1(N)	1(N)	1(N)	1(N)
48SMFO CABLE	MUX VID/DATA	1		1(N)																		
8MMFO CABLE	SHORT HAUL VIDEO	1		1(N)																		
#6	POWER					2(N)	2(N)	2(N)				2(N)										
#14 EXIST.	RAMP & WARNING SIGNALS							2	2		5						4				3	4
4-#18 EXIST.	SHIELDED TEL. CABLE						1	1	1	1			2	2	2			2	2	2	2	2
#8 EXIST.	SERVICE					2	2	2	2		2						2					2
#10 EXIST.	COMMON							1	1		1						2					1
2#14 EXIST.	DETECTOR LOOP							1	3	5		1	4	5	6	12		2		2	4	12
#12 EXIST	SERVICE FOR TDC					2																
2#12 EXIST.	COUNT DETECTOR								3	3		3										
#14 EXIST.	SPARES							3	3		6						4					1
#10 EXIST.	S/B RTE 110 RMS																					2
	CONDUIT SIZE	4" (N)	4" (N)	4"	2" (N)	2"	2"	2"	2"	2¼"	2¼"	1¼"	1¼"	2"	1¼"	3"	3"	2"	2"	2"	2"	2"



APPROX. SCALE: 1"=100'

REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONDUCTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT — GLORIA GWYNNE

CALCULATED/DESIGNED BY — CHECKED BY — JK

REVISED BY — DATE REVISED — 3/23

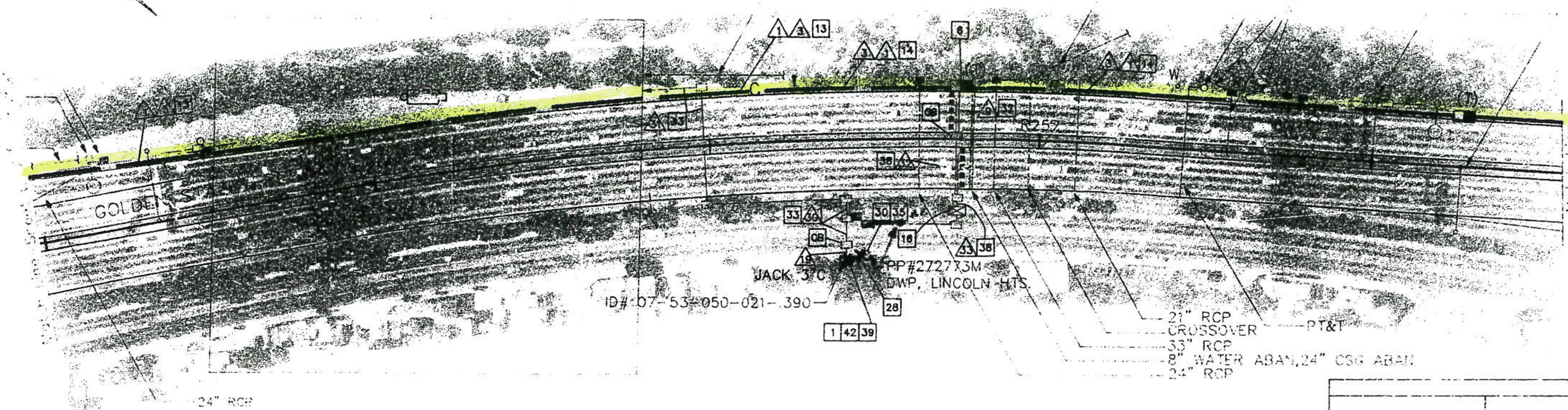
FOR REDUCED PLANS 0 1 2 3

.10 16.9/46.2,SO.I 30 153

Joseph A. Kwak

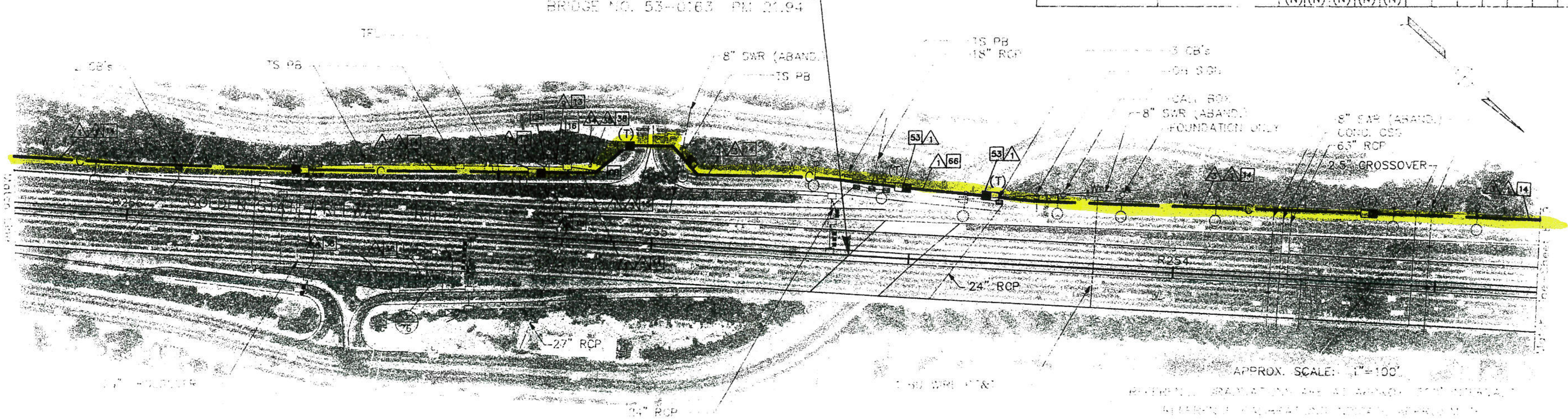
8-31-92

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mamoo
Completion Date: June 13, 1997



CONDUCTOR SCHEDULE

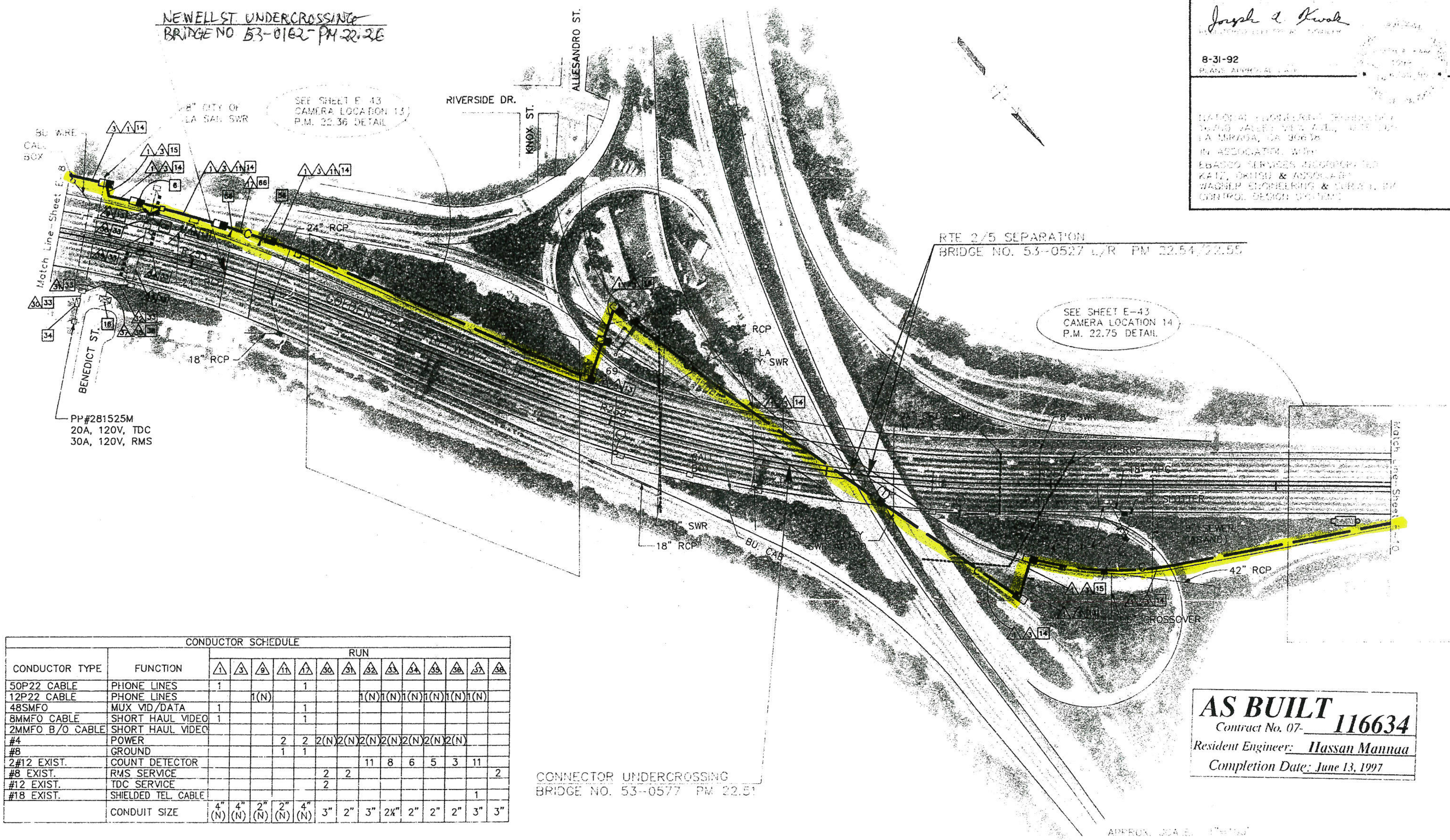
CONDUCTOR TYPE	FUNCTION	RUN 1	RUN 3	RUN 9	RUN 18	RUN 19	RUN 30	RUN 31	RUN 32	RUN 33	RUN 34	RUN 35	RUN 36	RUN 37
50P22 CABLE	PHONE LINES	1												
12P22 CABLE	PHONE LINES			1	2				1(N)	1(N)	1(N)		1(N)	1(N)
48SMFO CABLE	MUX VID/DATA	1												
8MMFO CABLE	SHORT HAUL VIDEO	1												
#8	POWER					2	2(N)	2(N)						
#8	GROUND					1								
#6 EXIST.	FWY LIGHTING					2	2	2						
DLC EXIST.	DETECTOR LOOP								5	10	10			
#8 EXIST.	RMS SERVICE									2		2		
#14 EXIST.	RAMP METER											6		
#10 EXIST.	COMMON											1		
4#18 EXIST.	SHIELDED TEL. CABLE										1		1	1
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2" (N)	3" (N)	2"	2"	2"	2½"	3"	3"	2"	3"



DESIGN OVERSIGHT
GLORIA GWYNNE
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
JK 3/23

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-8



CONDUCTOR SCHEDULE															
CONDUCTOR TYPE	FUNCTION	RUN													
		1	3	9	11	17	30	31	32	33	34	35	36	37	38
50P22 CABLE	PHONE LINES	1				1									
12P22 CABLE	PHONE LINES			1(N)					1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	
48SMFO	MUX VID/DATA	1				1									
8MMFO CABLE	SHORT HAUL VIDEO	1				1									
2MMFO B/O CABLE	SHORT HAUL VIDEO														
#4	POWER				2	2	2(N)	2(N)	2(N)	2(N)	2(N)	2(N)	2(N)		
#8	GROUND				1	1									
2#12 EXIST.	COUNT DETECTOR								11	8	6	5	3	11	
#8 EXIST.	RMS SERVICE						2	2							2
#12 EXIST.	TDC SERVICE						2								
#18 EXIST.	SHIELDED TEL. CABLE													1	
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2" (N)	4" (N)	3"	2"	3"	2½"	2"	2"	2"	3"	3"

,10 16.9/46.2,SO.1 31 153

Joseph L. Kwok

8-31-92
PLANS APPROVAL DATE

IN ASSOCIATION WITH:

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

REFERENCE GRADUATIONS ARE AT APPROX. 500 FT. INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE
RELATIVE DISTANCE IN THOUSANDS OF FEET

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE
ACCESS DATA, SEE R/W RECORD MAPS
AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM
(LAYOUT)

E-9

CHECKED BY JK 3/23 DATE REVISED 5/22

GLORIA GWYNNE

Caltrans

CONDUCTOR SCHEDULE										
		RUN								
CONDUCTOR TYPE	FUNCTION	△1	△3	△9	△38	△39	△40	△41	△42	△43
50P22 CABLE	PHONE LINES	1								
12P22 CABLE	PHONE LINES			1			1(N)	1(N)	1(N)	
48SMFO CABLE	MUX VID/DATA	1								
8MMFO CABLE	SHORT HAUL VIDEO	1								
#4	POWER				2(N)	2(N)				
#8 EXIST.	TDC SERVICE						2			
#8 EXIST.	SERVICE RMS				2	2	2	2		2
#12 EXIST.	SERVICE TDC				2					
#14 EXIST.	RAMP METER						1	1		4
#10 EXIST.	COMMON						1	1		2
2#14 EXIST.	DLC						2	4	13	
#14 EXIST.	SPARES						1			4
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2"	2"	2"	2"	3"	3"

,10 16.9/46.2,50.1 32 153

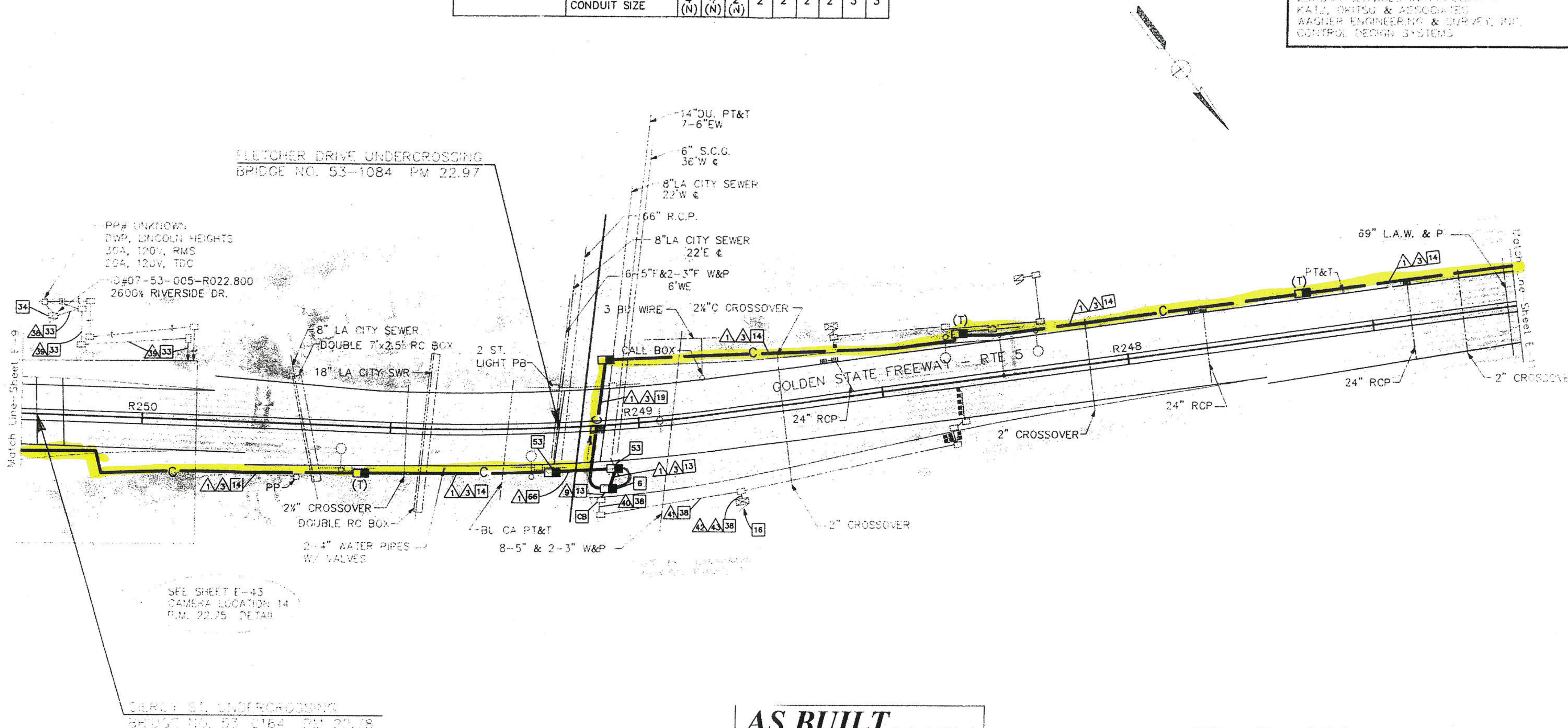
Joseph A. Kwok

REGISTERED ELECTRICAL ENGINEER

8-31-92

PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



AS BUILT

Contract No. 07-116634

Resident Engineer: Hassan Mannaa

Completion Date: June 13, 1997

APPROX. SCALE: 1"=100'

REFERENCE ORIENTATIONS ARE AT APPROX. 500' INTERVALS.

REFERENCE CALIBRATIONS INDICATE APPROXIMATE RELATIVE DISTANCE IN THOUSANDS OF FEET.

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-10

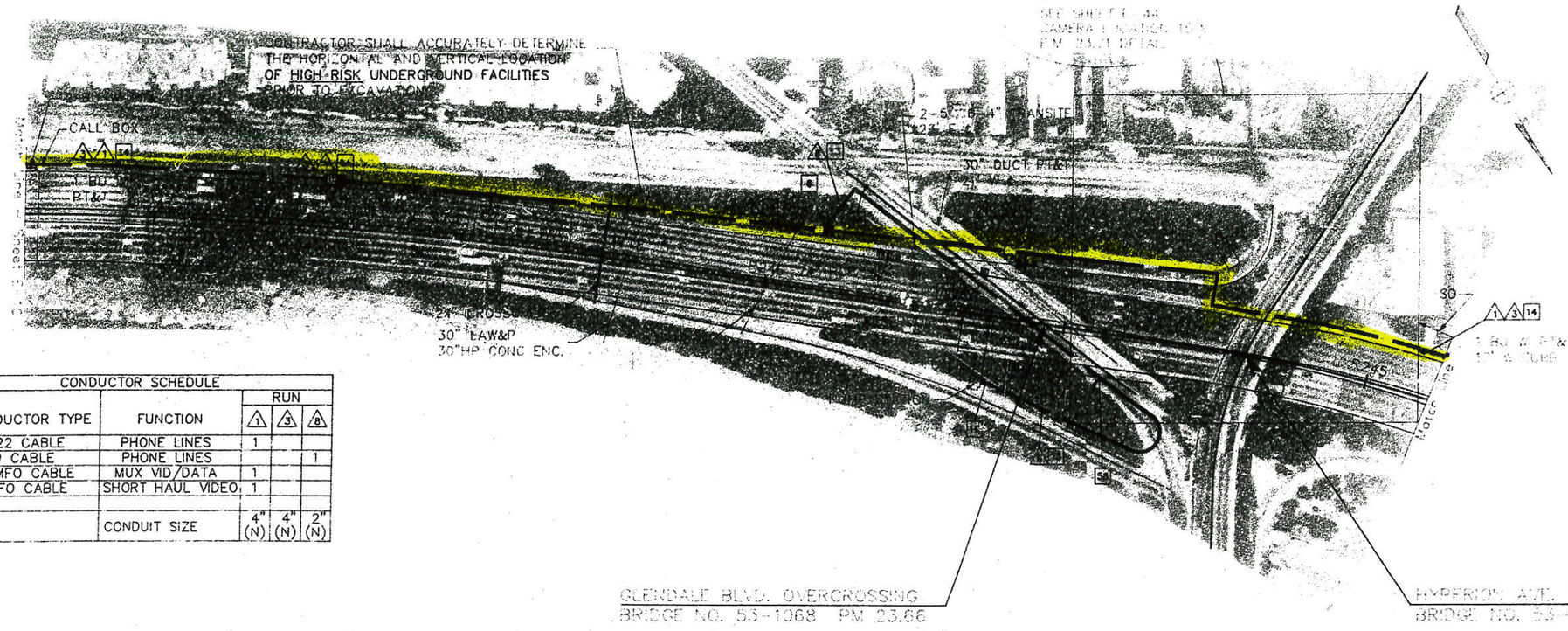
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

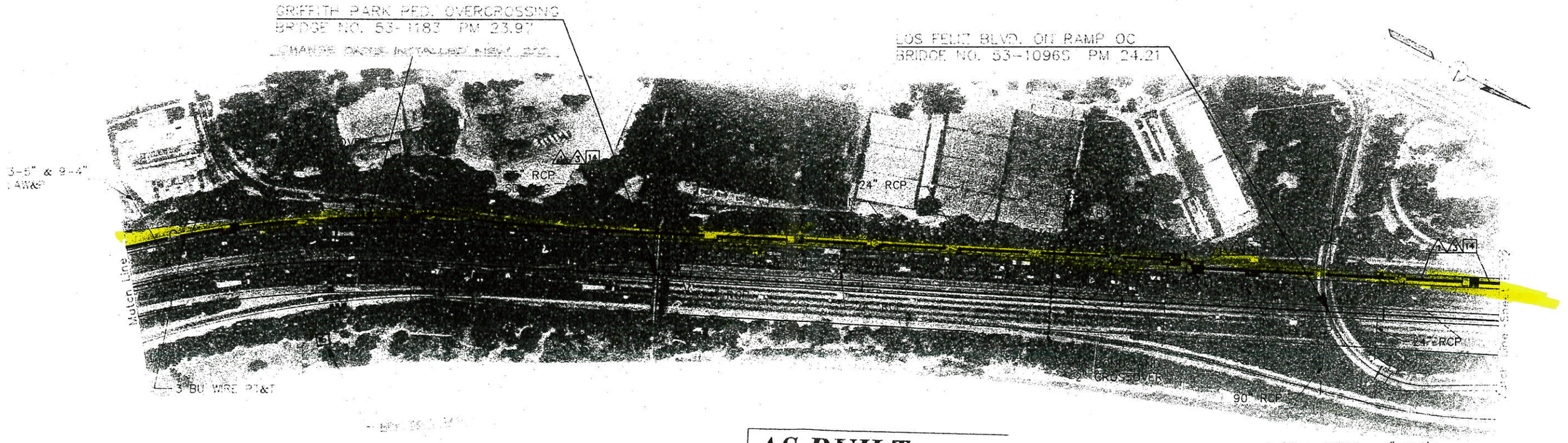
DESIGN OVERSIGHT

GLORIA GWYNNE

CALCULATED/DESIGNED BY | CHECKED BY | JK | DATE REVISED BY | 3/23 | DATE REVISED



CONDUCTOR SCHEDULE				
CONDUCTOR TYPE	FUNCTION	RUN 1	RUN 3	RUN 8
50P22 CABLE	PHONE LINES	1		
6P19 CABLE	PHONE LINES			1
48SMFO CABLE	MUX VID/DATA	1		
8MMFO CABLE	SHORT HAUL VIDEO	1		
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)



AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-11

10 16.9/46.2,50.1 33 153
Joseph A Kwak
8-31-92

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVER... GLORIA GWYNNE
CHECKED BY JK 3/23 DATE REVISED

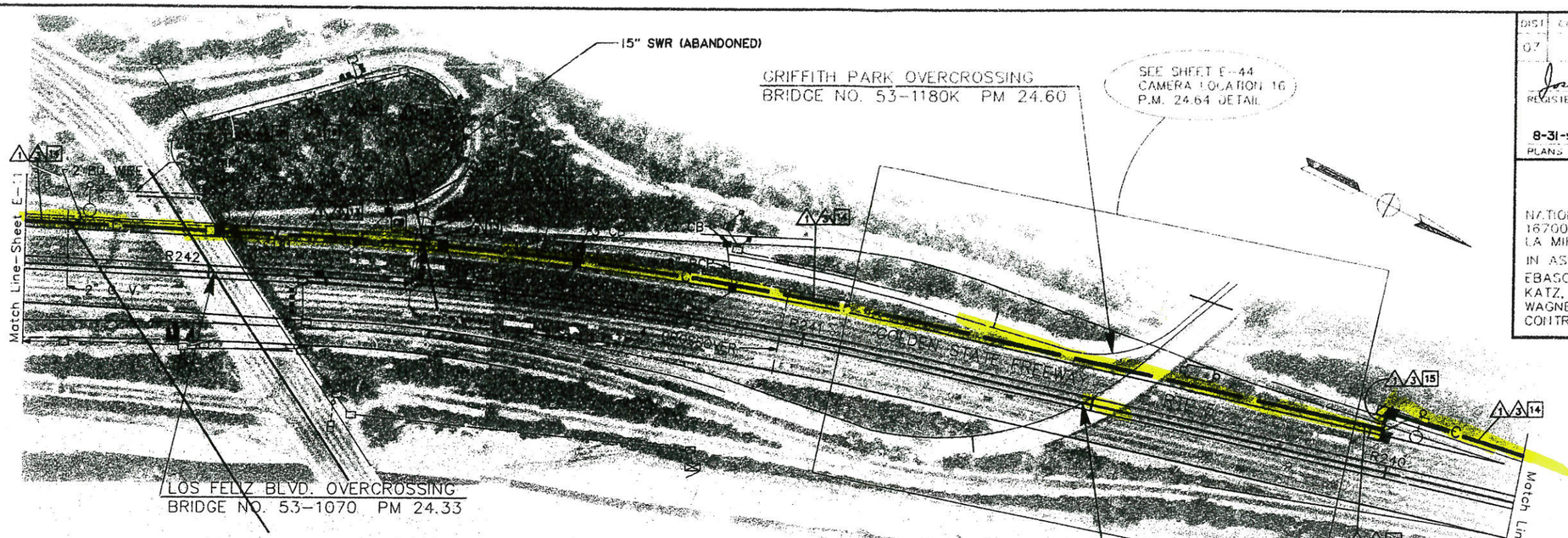
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	16.9/46.2,50.1	34	153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

8-31-92
PLANS APPROVAL DATE

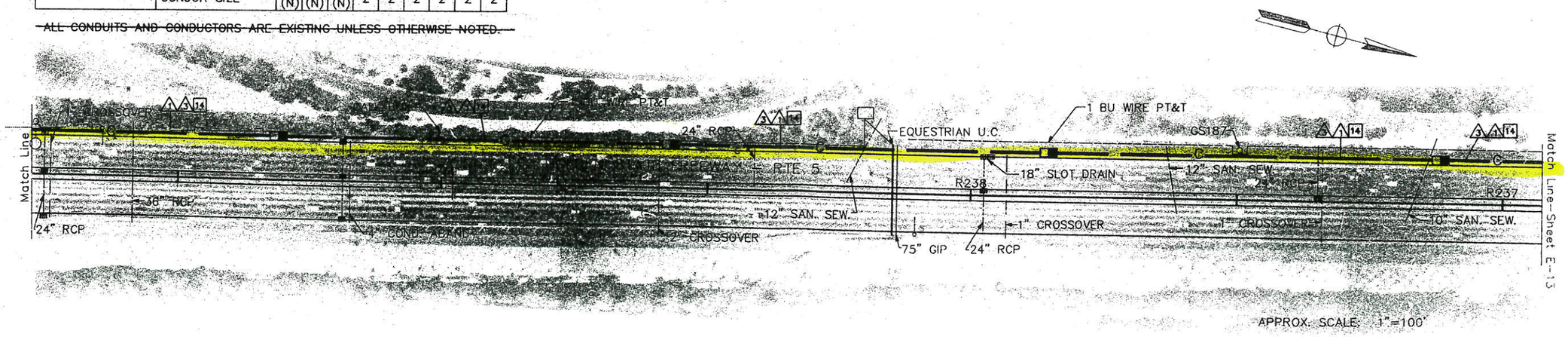
JOSEPH A. KWAK No. 0991 Exp. 6/30/95 STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



CONDUCTOR SCHEDULE											
CONDUCTOR TYPE	FUNCTION	RUN									
		1	3	9	30	31	32	33	34	35	
50P22 CABLE	PHONE LINES	1									
12P22 CABLE	PHONE LINES			1	1(N)	1(N)	1(N)	1(N)	1(N)		
48SMFO CABLE	MUX VID/DATA	1									
8MMFO CABLE	SHORT HAUL VIDEO	1									
#14 EXIST.	RAMP SIGNAL									3	
#14 EXIST.	METER ON									1	
#14 EXIST.	SPARES									4	
2#12 EXIST.	COUNT DETECTOR				5	6	8	9	9		
2#12 EXIST.	RAMP DETECTOR								3		
#10 EXIST.	COMMON									2	
#8 EXIST.	SERVICE									2	
4#18 EXIST.	SHIELDED TEL. CABLE				2	3	3	3	3		
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2"	2"	2"	2"	2"	2"	

~~ALL CONDUITS AND CONDUCTORS ARE EXISTING UNLESS OTHERWISE NOTED.~~



APPROX. SCALE 1"=100'
REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE
RELATIVE DISTANCE IN THOUSANDS OF FEET.

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-12

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

DATE	REVISED BY	DATE REVISED
3/23	JK	

CALCULATED/DESIGNED BY
CHECKED BY
DESIGN OVERSIGHT
GLORIA GWYNNE
CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
03/19/92
STAT.
116635E12.DWG

FORM DC-OE-92-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 0738 EA 116634

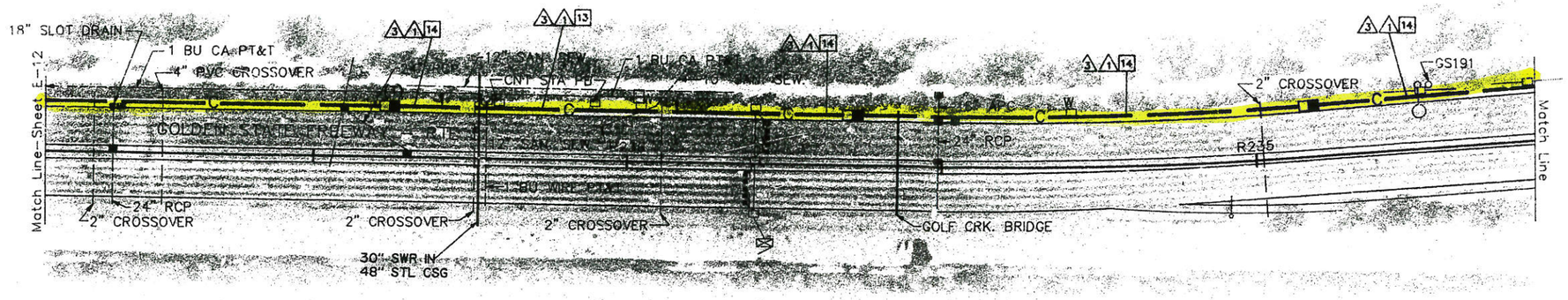
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,50.1	35	153

Joseph A. Kwak
REGISTERED ELECTRICAL ENGINEER

8-31-92
PLANS APPROVAL DATE

JOSEPH A. KWAK No. 10991 Exp 6/30/95 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

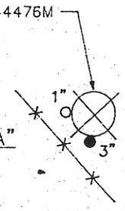
NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

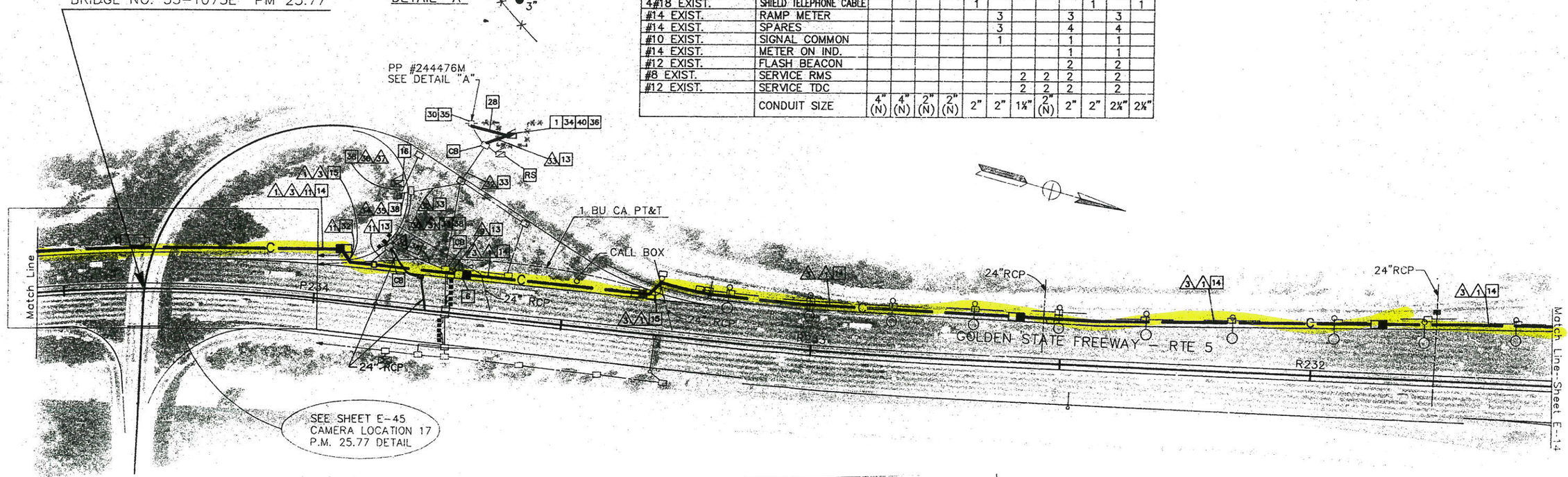


CONDUCTOR TYPE	FUNCTION	CONDUCTOR SCHEDULE RUN 1	3	9	11	30	31	32	33	34	35	36	37
50P22 CABLE	PHONE LINES	1											
12P22 CABLE	PHONE LINES			1		1(N)					1(N)		1(N)
48SMFO CABLE	MUX VID/DATA	1											
8MMFO CABLE	SHORT HAUL VIDEO	1											
#4	POWER				2		2(N)	2(N)	2				
#8	GROUND				1								
DLC EXIST.	DETECTOR LOOP CAB.					5	2			2	5		7
4#18 EXIST.	SHIELD TELEPHONE CABLE					1					1		1
#14 EXIST.	RAMP METER						3			3		3	
#14 EXIST.	SPARES						3			4		4	
#10 EXIST.	SIGNAL COMMON						1			1		1	
#14 EXIST.	METER ON IND.									1		1	
#12 EXIST.	FLASH BEACON									2		2	
#8 EXIST.	SERVICE RMS							2	2	2		2	
#12 EXIST.	SERVICE TDC							2	2	2		2	
	CONDUIT SIZE	4" (N)	4" (N)	2" (N)	2" (N)	2"	2"	1½"	2" (N)	2"	2"	2½"	2½"

COLORADO BL. ON/OFF RAMPS
BRIDGE NO. 53-1073E PM 25.77

DETAIL "A"





AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

APPROX. SCALE: 1"=100'
REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE CALIBRATIONS INDICATE APPROXIMATE RELATIVE DISTANCE IN THOUSANDS OF FEET.

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-13

FOR REDUCED PLANS 0 1 2 3

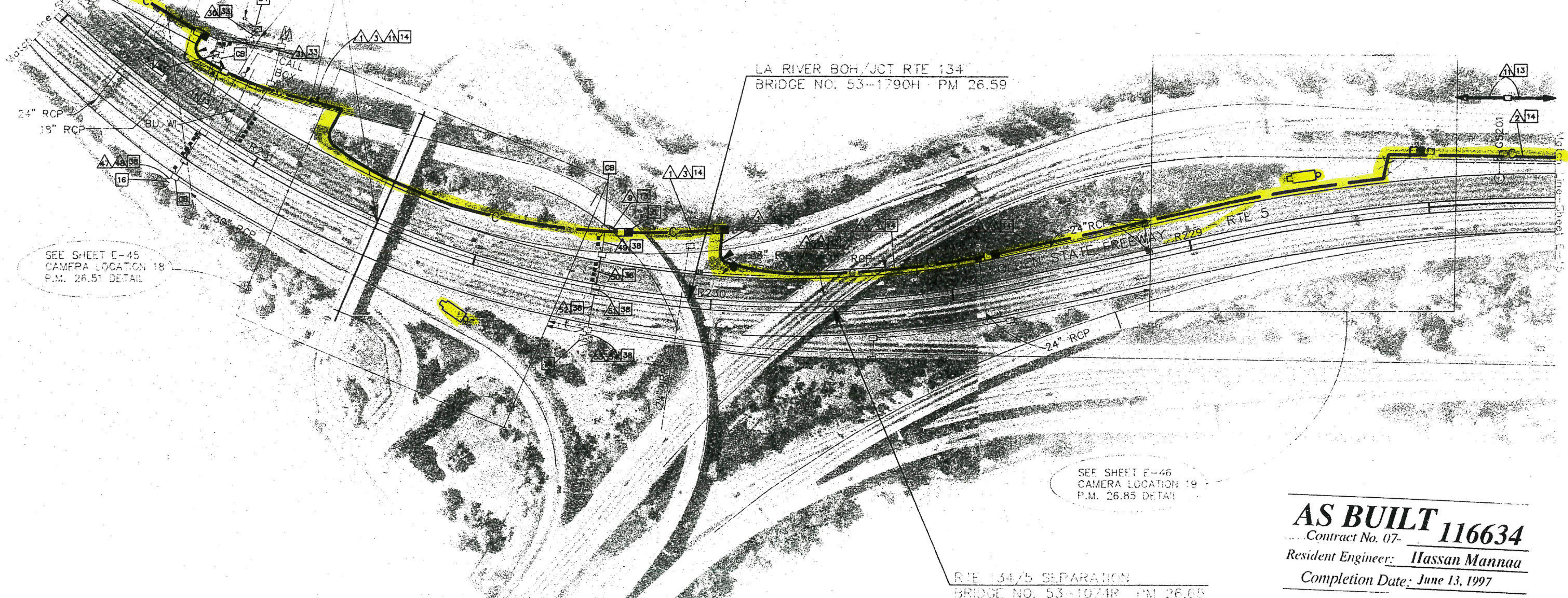
DESIGN OVER: GLORIA GWYNNE
CALCULATED/DESIGNED BY
CHECKED BY JK
DATE 3/23
REVISED BY
DATE REVISED
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
03/16/92
1166JC13.DWG

5,10 16.9/46.2,SO.I 36 153

Joseph A. Kwok

8-31-92

CONDUCTOR SCHEDULE																		
		RUN																
CONDUCTOR TYPE	FUNCTION	1	2	3	9	9	11	30	31	32	47	48	49	50	51	52	53	54
24SMFO CABLE	MUX VID/DATA		1															
50P22 CABLE	PHONE LINES	1	1															
12P22 CABLE	PHONE LINES				1	1						1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	
48SMFO CABLE	MUX VID/DATA	1																
2MMFO B/O CABLE	SHORT HAUL VIDEO				1													
8MMFO CABLE	SHORT HAUL VIDEO	1	1															
#4	POWER						2	2(N)	2(N)	2(N)								
#14 EXIST.	RAMP SIGNAL								3									
#14 EXIST.	METER ON																	
#14 EXIST.	SPARES								3									
2#12 EXIST.	COUNT DETECTOR								1	1		6	1	4	6	6	6	
2#12 EXIST.	RAMP DETECTOR								2									
#10 EXIST.	COMMON								1									
#8 EXIST.	SERVICE										2							2
#18 EXIST.	SHIELDED TEL. CABLE											1					2	
#8	GROU:'D						1											
#8	SERVICE (RMS) (SIGN)							4										
	CONDUIT SIZE	4" (N)	4" (N)	4" (N)	3" (N)	2" (N)	2" (N)	2"	2"	2"	2¼"	2¼"	2"	2"	2"	2"	3"	3"



AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

E-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT GLORIA GWYNNE

CHECKED BY JK 3/23

FOR REDUCED PLANS 0 1 2 3

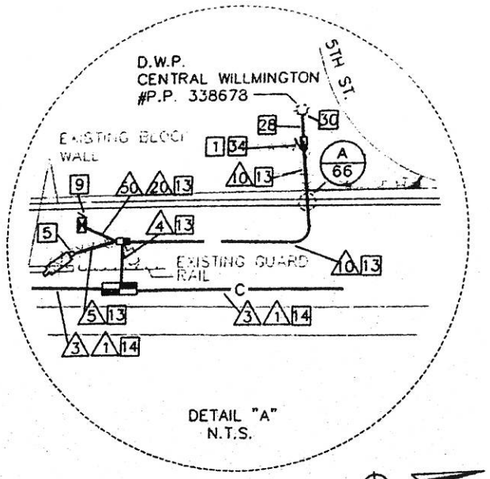
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,50.1	39	153

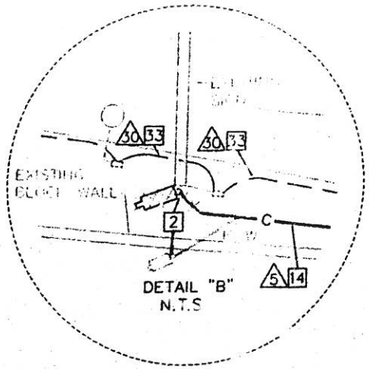
Joseph A Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

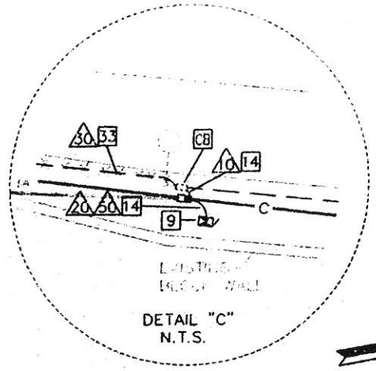
8-31-92
PLANS APPROVAL DATE

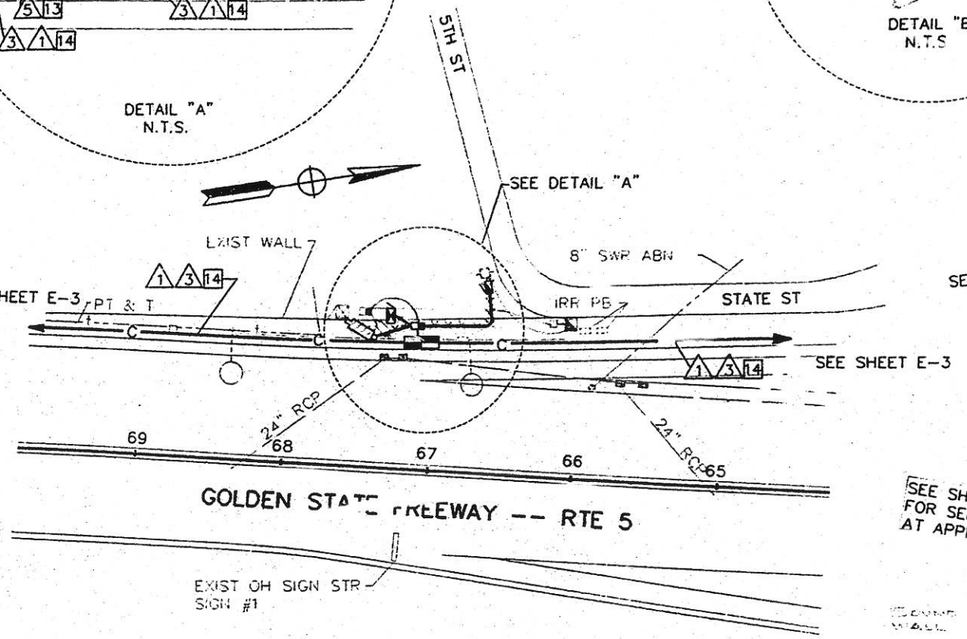
REGISTERED PROFESSIONAL ENGINEER JOSEPH A. KWAK No. 10991 Exp. 6/30/95 ELECTRICAL STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

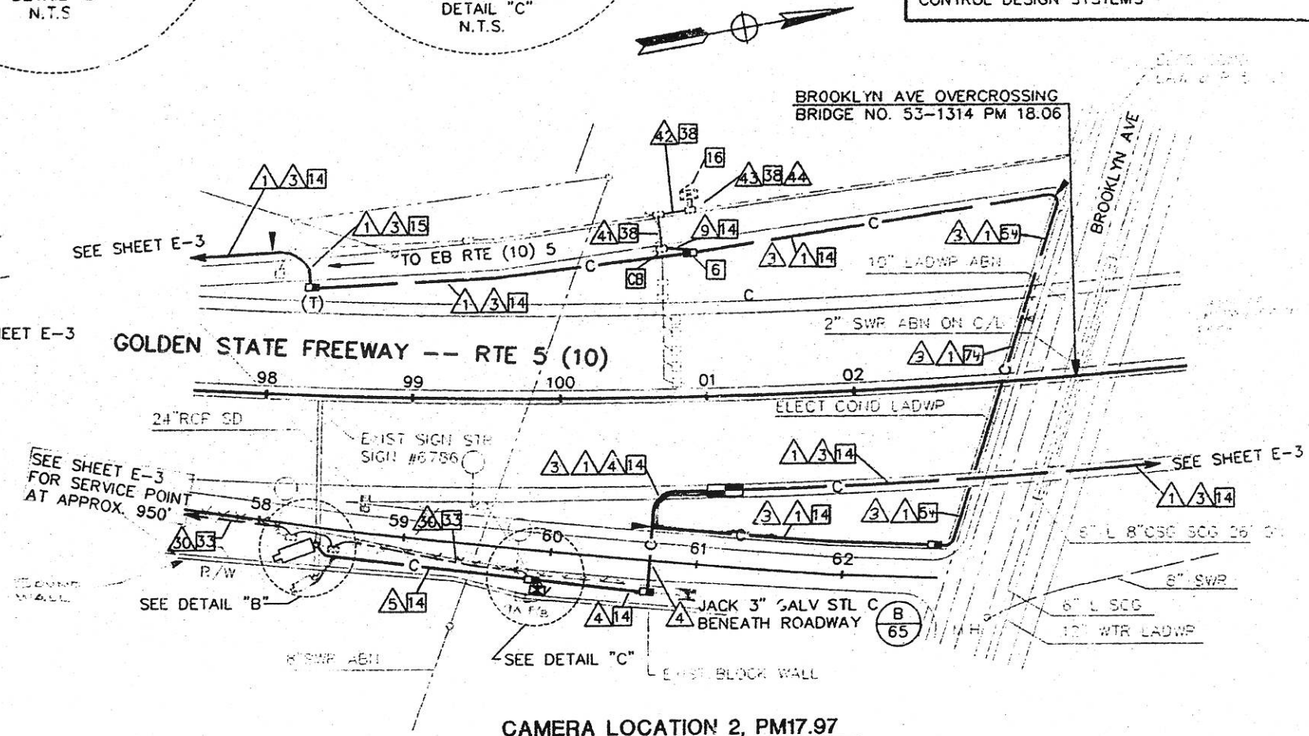








CAMERA LOCATION 1, PM17.22



CAMERA LOCATION 2, PM17.97

CONDUCTOR SCHEDULE CAMERA LOCATION 1

CONDUCTOR TYPE	FUNCTION	1	3	4	5	10	20	50
50P22 CABLE	PHONE LINES	1						
6P19 CABLE	PHONE LINES			1			1	
4ESMFO CABLE	MUX VID/DATA	1						
8MMFO CABLE	SHORT HAUL VIDEO	1						
2MMFO B/O CABLE	SHORT HAUL VIDEO			1			1	
RG-6A/U COAX	BASEBAND VIDEO				1		1	
27C18 CABLE	CONTROL				1		1	
#8	POWER					2		2
#8	GROUND				1	1		2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	3" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 2

CONDUCTOR TYPE	FUNCTION	1	3	4	5	9	11	17	20	30	41	42	43	44	50
50P22 CABLE	PHONE LINES	1						1							
6P19 CABLE	PHONE LINES			1					1						
12P22 CABLE	PHONE LINES					1		1			1(N)	1(N)	1(N)		
48SMFO CABLE	MUX VID/DATA	1						1							
8MMFO CABLE	SHORT HAUL VIDEO	1						1							
2MMFO B/O CABLE	SHORT HAUL VIDEO			1					1						
RG-6A/U COAX	BASEBAND VIDEO				1				1						
27C18 CABLE	CONTROL				1				1						
#4	POWER						2			2(N)					2
#6 EXIST										4					
2#14 DLC (EXIST)	COUNT DETECTOR										5	6	6		
2#14 DLC (EXIST)	DEMARD DETECTOR										1	2	2		
2#14 DLC (EXIST)	PASSAGE DETECTOR										1	2	2		
#14 (EXIST)	SIGNAL										3	6		6	
#14 (EXIST)	SPARES										3	6		6	
#10 (EXIST)	SIGNAL COMMON											1		1	
#8 (EXIST)	SIGNAL SERVICE													2	
2#14 (EXIST)	QUEUE DETECTOR												2		
#8	GROUND				1		1		1						3
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	2" (N)	4" (N)	3" (N)	1 1/2"	2"	2"	2-2 1/2"	2 1/2"	3" (N)

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES

AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 1 AND 2

SCALE: 1"= 50'

E-37

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU	07387	EA	116634

DESIGN O ENSIGHT
GLORIA C WYNNE
CALCULATED/DESIGNED BY
CHECKED BY
DATE REVISED BY
DATE REVISED
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
WES 05/15/92
116634E37.DGN

FORM DC-OE-92-PF (REV. 3/88)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5/10	16.9/41.2, 50.1	62	153

Joseph A Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

8-31-92
PLANS APPROVAL DATE

PROFESSIONAL ENGINEER — REGISTERED — JOSEPH A. KWAK — No. 10991 — Exp 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

DETAIL "A"
N.T.S.

GOLDEN STATE FREEWAY -- RTE 5

SEE DETAIL "A"

SEE SHEET E-4 FOR SERVICE POINT AT APPROX 850 FEET

TO NB RTE 5

TO EB RTE 10

TO EB RTE 10

ENCHANDIA STREET

DWP, CENTRAL/WILMINGTON
15A, 240V, SIGN
40A, 120V, CONT.
15A, DEMARC

PP#33896M

SAN BERNARDINO FREEWAY -- RTE 10

SEE SHEET E-5

SEE SHEET E-4

TO WB RTE 10

CAMERA LOCATION 3, PM18.33

CAMERA LOCATION 4, PM00.40 (10 SPUR)

CONDUCTOR SCHEDULE CAMERA LOCATION 3

CONDUCTOR TYPE	FUNCTION	/1	/3	/4	/5	/12	/56	/60	/62
50P22 CABLE	PHONE LINES	1							
6P19 CABLE	PHONE LINES			1				1	
48SMFO CABLE	MUX VID/DATA	1							
8MMFO CABLE	SHORT HAUL VIDEO	1							
2MMFO B/O CABLE	SHORT HAUL VIDEO			1				1	
RG-6A/U COAX	BASEBAND VIDEO				1			1	
27C18 CABLE	CONTROL				1			1	
#4	POWER						2		2
#2	POWER					2	2		
#8	GROUND				1	1	1		2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	2" (N)	3" (N)	3" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 4

CONDUCTOR TYPE	FUNCTION	/4	/5	/7	/30	/31	/32	/40	/42	/43	/44	/45
6P19 CABLE	PHONE LINES	1						1				
12P22 CABLE	PHONE LINES	1		1	1(N)	1(N)					1(N)	
2MMFO B/O CABLE	SHORT HAUL VIDEO	1						1				
RG-6A/U COAX	BASEBAND VIDEO		1					1				
27C18 CABLE	CONTROL		1					1				
#8	POWER											
#6	POWER			2	2(N)	2(N)	2(N)		2			2
#8 (EXIST)	POWER						4			2		
#10 (EXIST)	POWER						2					
2#12 DLC (EXIST)	DETECTORS				6	3					7	
#8	GROUND		1	1					2	1(N)		1
CONDUIT	SIZE	3" (N)	3" (N)	2" (N)	2"	1 1/2"	1 1/2"	3" (N)	3" (N)	2 1/2"	2 1/2"	2" (N)

AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 3 AND 4

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES

E-38

DESIGN OVERSIGHT — GLORIA GWYNNE
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Gilbane
CALCULATED/DESIGNED BY — CHECKED BY — DATE — REVISED BY — DATE REVISED
WES 03/21/92
116635E38.DGN

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

FORM DC-OE-92-PF (REV 3/88)

CU 07387 EA 116634

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, S0.1	61	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

8-31-92
PLANS APPROVAL DATE

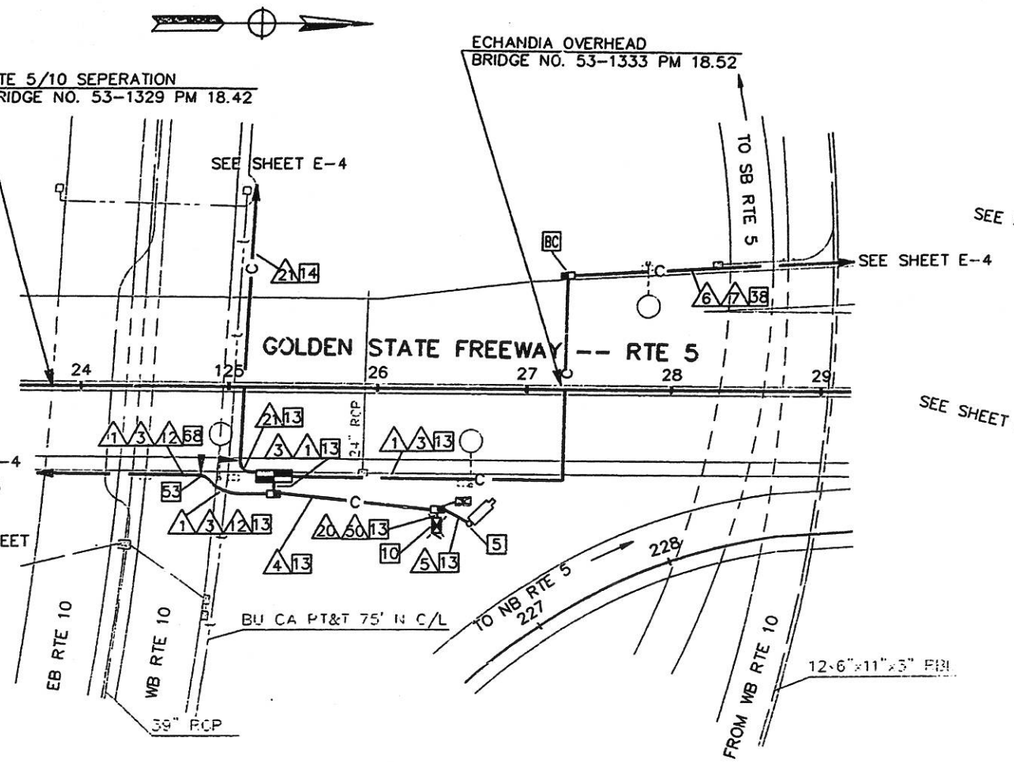
REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

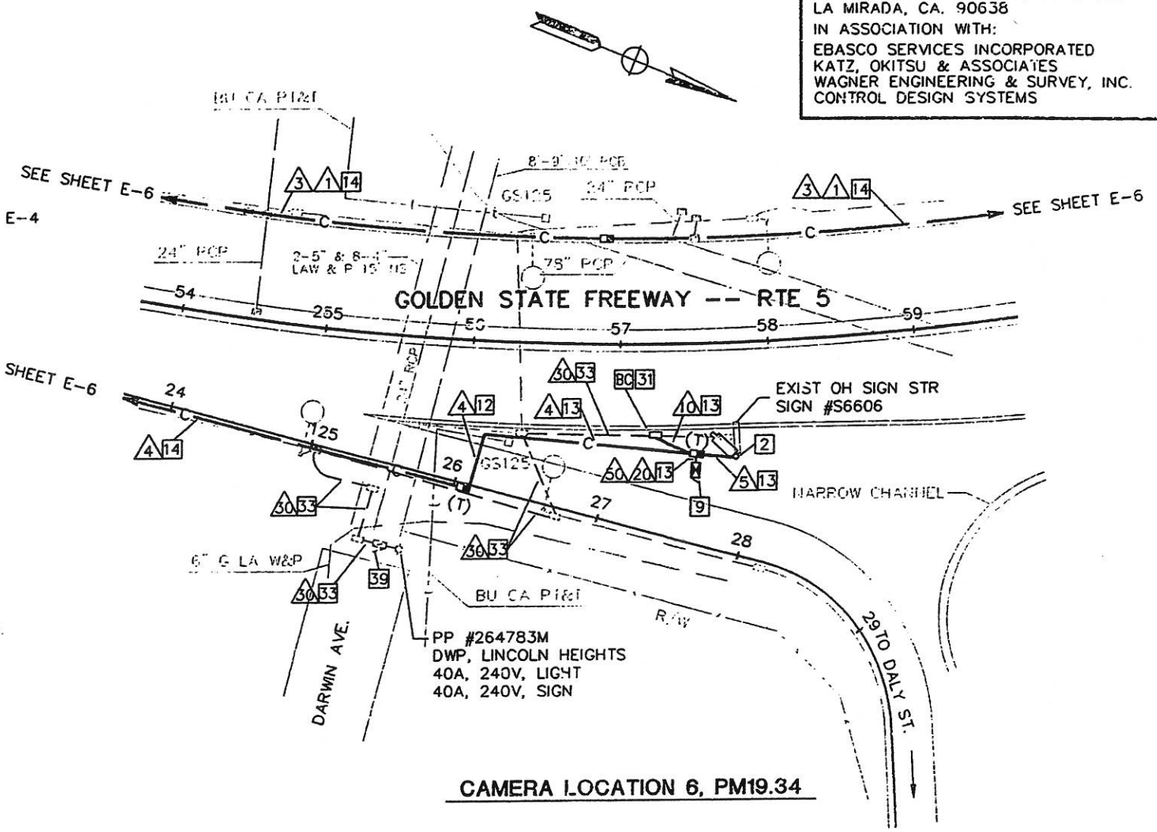
DESIGN OVERSIGHT: GLORIA GWYNNE

CALCULATED/DESIGNED BY | CHECKED BY | DATE | REVISED BY | DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
WES 05/15/92
11663E39.DV



CAMERA LOCATION 5, PM18.47



CAMERA LOCATION 6, PM19.34

CONDUCTOR SCHEDULE CAMERA LOCATION 5

CONDUCTOR TYPE	FUNCTION	1	3	4	5	6	7	12	20	21	50
50P22 CABLE	PHONE LINES	1		2		1(N)			2		
6P19 CABLE	PHONE LINES									1	
12P22 CABLE	PHONE LINES									1	
48SMFO CABLE	MUX VID/DATA	1				1(N)					
8MMFO CABLE	SHORT HAUL VIDEO	1				1(N)					
2SMFO B/O CABLE	MUX VID/DATA			2					2		
2MMFO B/O CABLE	SHORT HAUL VIDEO			1					1	1	
RG-6A/U COAX	BASEBAND VIDEO				1				1		
27C18 CABLE	CONTROL				1				1		
#2	POWER			2				2			2
#8	GROUND			1	1			1			2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	4"	4"	4" (N)	3" (N)	3" (N)	3" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 6

CONDUCTOR TYPE	FUNCTION	1	3	4	5	10	20	50	50
50P22 CABLE	PHONE LINES	1							
6P19 CABLE	PHONE LINES			1			1		
48SMFO CABLE	MUX VID/DATA	1							
8MMFO CABLE	SHORT HAUL VIDEO	1							
2MMFO B/O CABLE	SHORT HAUL VIDEO			1			1		
RG-6A/U COAX	BASEBAND VIDEO				1		1		
27C18 CABLE	CONTROL				1		1		
#8	POWER					2		2(N) 4	2
#8 (EXIST)									
#8	GROUND				1	1			2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	1 1/2"	3" (N)

AS BUILT
Contract No. 07-116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 5 AND 6

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES

E-39

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

FORM DC-OE-92-PF (REV. 3/88)

CU 07387 EA 116634

CONDUCTOR SCHEDULE CAMERA LOCATION 7

CONDUCTOR TYPE	FUNCTION	1	3	4	5	9	10	20	30	40	41	42	43	50	51
50P22 CABLE	PHONE LINES	1													
6P19 CABLE	PHONE LINES			1				1							
12P22 CABLE	PHONE LINES					1				1(N)	1(N)	1(N)			1(N)
48SMFO CABLE	MUX VID/DATA	1													
8MMFO CABLE	SHORT HAUL VIDEO	1		2				2							
2MMFO B/O CABLE	SHORT HAUL VIDEO														
RG-6A/U COAX	BASEBAND VIDEO				1			1							
27C18 CABLE	CONTROL				1			1							
#8	POWER						2		2(N)					2	
#6 (EXIST)	POWER								4						
#14 (EXIST)	SIGNAL											3	3		
#14 (EXIST)	SPARE											3	3		
#10 (EXIST)	SIGNAL COMMON											1	1		
#8 (EXIST)	SIGNAL SERVICE												2		
2#12DLC (EXIST)	COUNT DETECTOR											1			1
2#14 DLC (EXIST)	DEMAND DETECTOR											1			1
2#14 DLC (EXIST)	PASSAGE DETECTOR										1	2			2
2#14 DLC (EXIST)	QUEUE DETECTOR														1
2#14 DLC (EXIST)	COUNT DETECTOR									4	4	4			4
#8	GROUND				1		1							2	
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	2" (N)	3" (N)	1 1/2"	1 1/2"	2"	2"	2 1\2"	3" (N)	2 1\2"

CONDUCTOR SCHEDULE CAMERA LOCATION 8

CONDUCTOR TYPE	FUNCTION	1	3	5	17	20	30	31	32	40	50	51
50P22 CABLE	PHONE LINES	1										
6P19 CABLE	PHONE LINES				1	1						
12P22 CABLE	PHONE LINES				1			1(N)		1		1(N)
48SMFO CABLE	MUX VID/DATA	1										
8MMFO CABLE	SHORT HAUL VIDEO	1										
2MMFO B/O CABLE	SHORT HAUL VIDEO				1							
RG-5A/U COAX	BASEBAND VIDEO			1		1						
27C18 CABLE	CONTROL			1		1						
#4	POWER						2(N)	2(N)		2	2	
#6 (EXIST)	POWER						3		3			
2 #18 (EXIST)	SHIELDED TEL CABLE						1					1
2#12 (EXIST)	DLC							6				6
#14 (EXIST)	RAMP METER							4	4			
#8	GROUND			1						1	2	
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	3" (N)	2"	2"	2"	2" (N)	3" (N)	2"

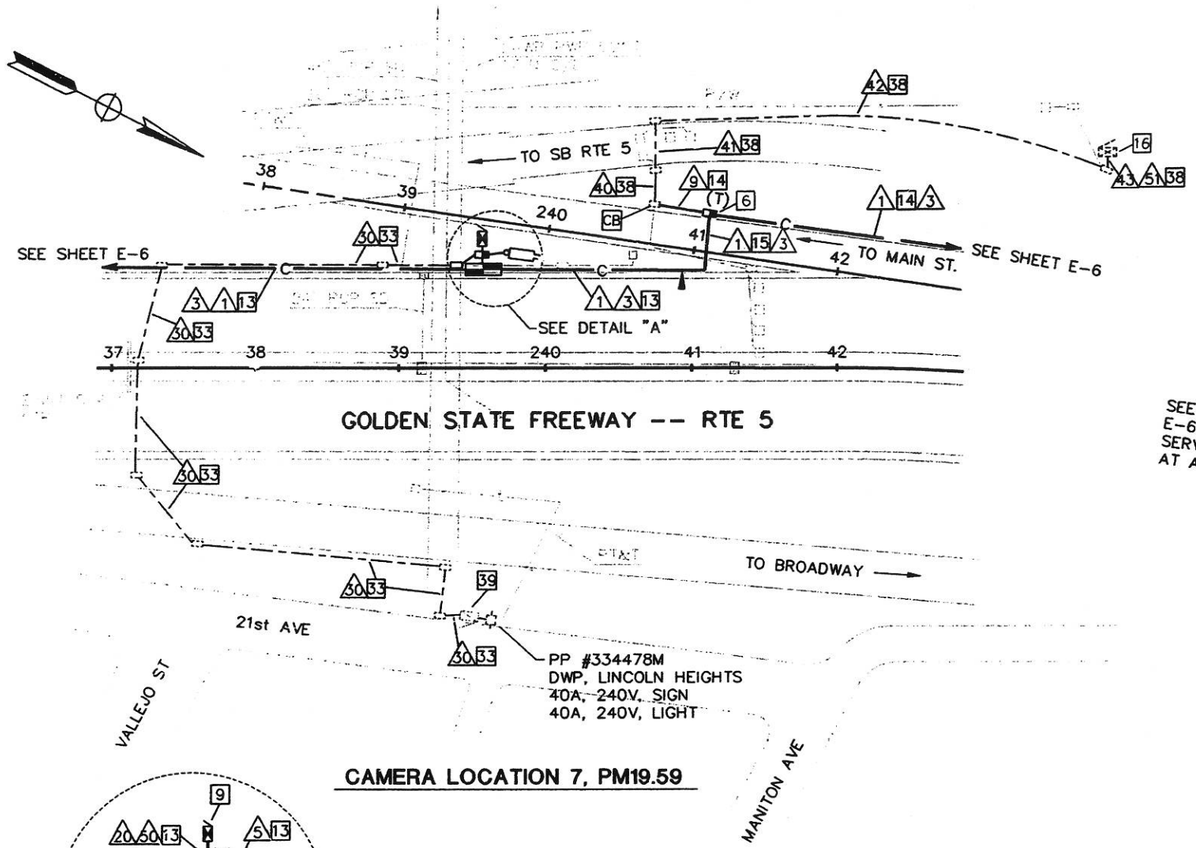
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, 50.1	62	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

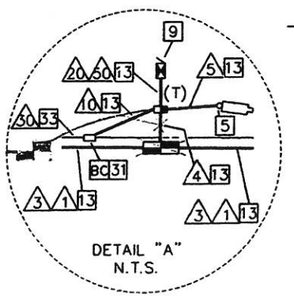
8-31-92
PLANS APPROVAL DATE

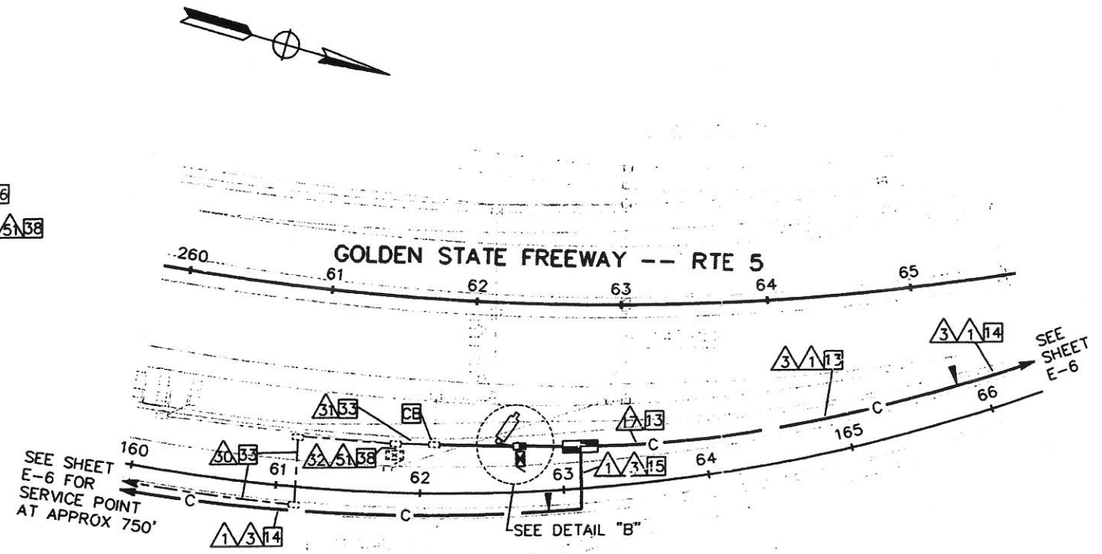
REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

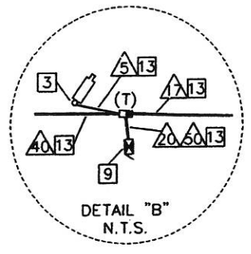
NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



CAMERA LOCATION 7, PM19.59







CAMERA LOCATION 8, PM20.01

AS BUILT 116634
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

AS BUILT 116634
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 7 AND 8

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES

E-40

DESIGN OVERSIGHT GLORIA GWYNNE
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans
CALCULATED/DESIGNED BY WES 03/21/92
CHECKED BY
DATE REVISED BY DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 07387 EA 116634

FORM DC-OE-92-PF (REV. 3/88)

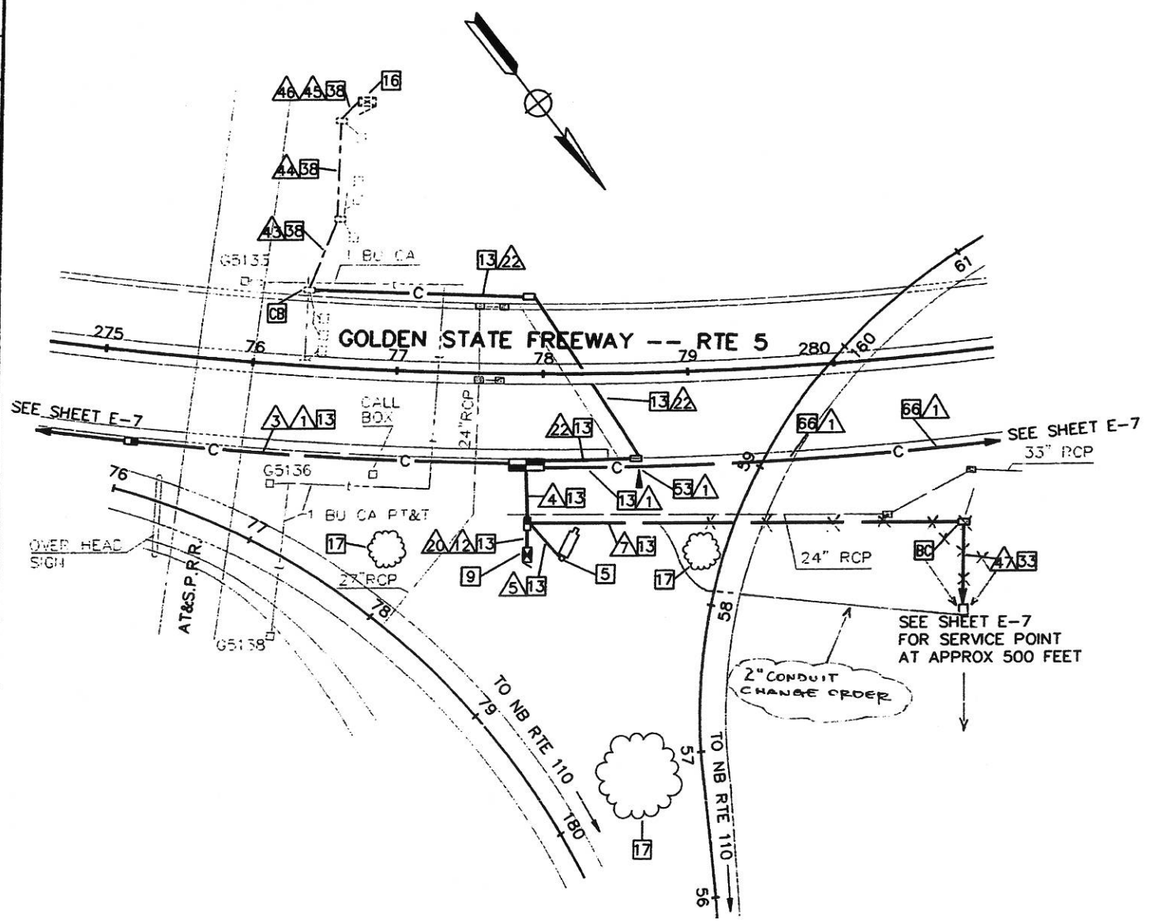
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, SO.I	63	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

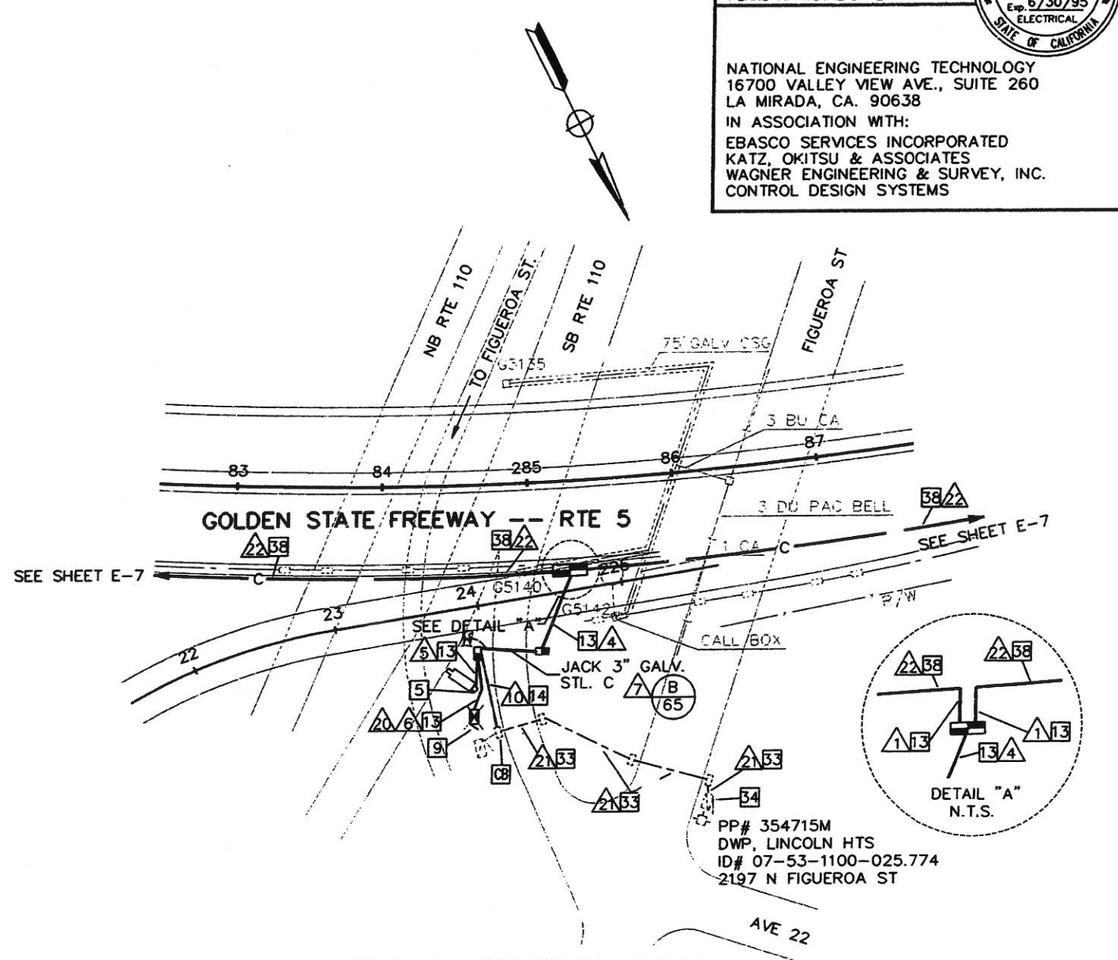
8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



CAMERA LOCATION 9, PM20.32



CAMERA LOCATION 10, PM20.44

CONDUCTOR SCHEDULE CAMERA LOCATION 9

CONDUCTOR TYPE	FUNCTION	1	3	4	5	7	12	20	22	43	44	45	46	47
50P22 CABLE	PHONE LINES	1												
6P19 CABLE	PHONE LINES			1				1						
12P22 CABLE	PHONE LINES			1		1			1	1(N)	1(N)	1(N)		1(N)
48SMFO CABLE	MUX VID/DATA	1												
8MMFO CABLE	SHORT HAUL VIDEO	1												
2MMFO B/O CABLE	SHORT HAUL VIDEO			1				1						
RG-6A/U COAX	BASEBAND VIDEO				1			1						
27C18 CABLE	CONTROL				1			1						
#6	POWER					2	2							2(N)
2-#12 (EXIST)	DETECTOR LOOP									3	6	7		4
#8 (EXIST)	RAMP METER SERVICE												2	
#8	GROUND				1	1	2							
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	3" (N)	2" (N)	2"	2"	2 1/2"	2 1/2"	1 1/2"

CONDUCTOR SCHEDULE CAMERA LOCATION 10

CONDUCTOR TYPE	FUNCTION	1	4	5	6	7	10	20	21	22
50P22 CABLE	PHONE LINES	1								1(N)
6P19 CABLE	PHONE LINES		1			1		1		
48SMFO CABLE	MUX VID/DATA	1								1(N)
8MMFO CABLE	SHORT HAUL VIDEO	1								1(N)
2MMFO B/O CABLE	SHORT HAUL VIDEO		1			1		1		
RG-6A/U COAX	BASEBAND VIDEO			1				1		
27C18 CABLE	CONTROL			1				1		
#8	POWER				2		2		2(N)	
#8	GROUND			1	2		1			
#10 (EXIST)	POWER								2	
CONDUIT	SIZE	4" (N)	3" (N)	3" (N)	3" (N)	3" (N)	2" (N)	3" (N)	2"	4"

AS BUILT
Contract No. 07- 116634
Resident Engineer: Hassan Mannaa
Completion Date June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 9 AND 10

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES.

E-41

DESIGN OVERSIGHT
GLORIA GWYNNE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DATE	REVISED BY	DATE REVISED
CALCULATED/DESIGNED BY	C.H.	7-10
CHECKED BY		

WES 07/10/92
11663E41.DV

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

FORM DC-OE-92-PF (REV. 3/88)

CU	07387	EA	116634

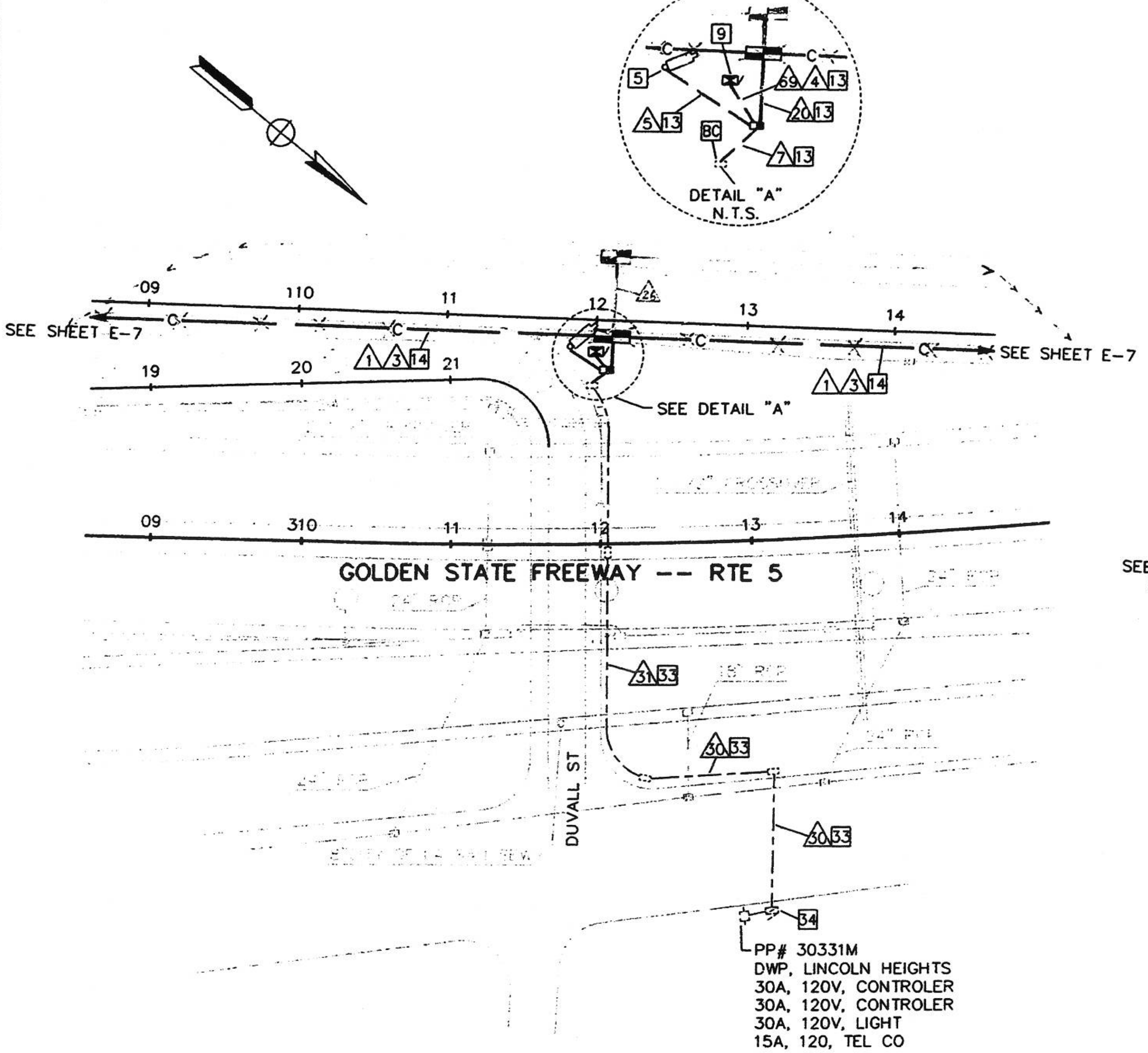
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, 50.1	64	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

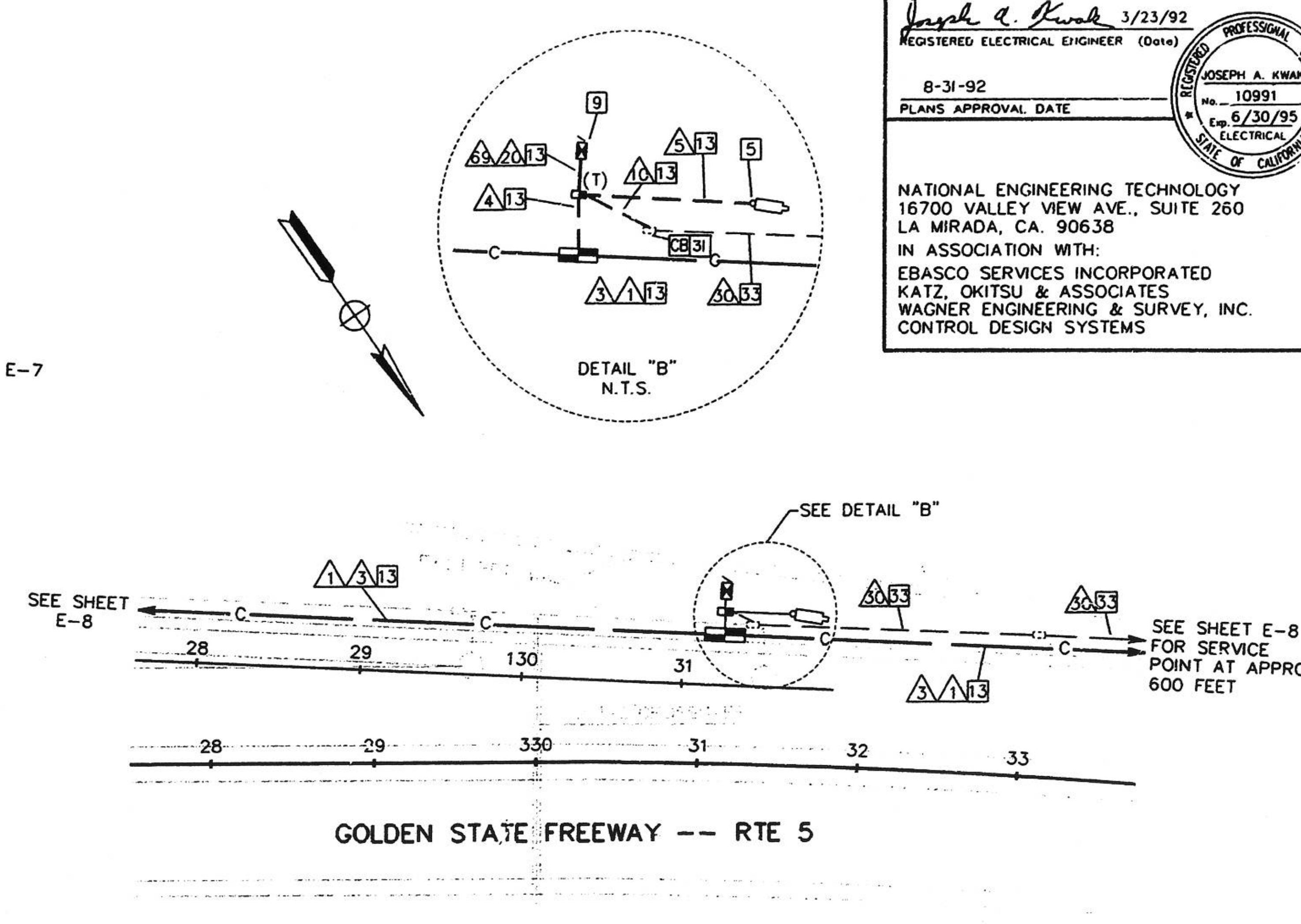
8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOSEPH A. KWAK
No. 10991
Exp. 6/30/95
ELECTRICAL
STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS



CAMERA LOCATION 11, PM20.94



CAMERA LOCATION 12, PM21.34

CONDUCTOR SCHEDULE CAMERA LOCATION 11

CONDUCTOR TYPE	FUNCTION	1	3	4	5	7	20	30	31	69
50P22 CABLE	PHONE LINES	1								
6P19 CABLE	PHONE LINES			1			1			
48SMFO CABLE	MUX VID/DATA	1								
8MMFO CABLE	SHORT HAUL VIDEO	1								
2MMFO B/O CABLE	SHORT HAUL VIDEO			1			1			
RG-6A/U COAX	BASEBAND VIDEO			1	1					
27C18 CABLE	CONTROL			1	1					
#8	POWER									
#6	POWER					2		2(N)	2(N)	2
#8 (EXIST)	POWER							2	2	
#6 (EXIST)	POWER RAMP							4	4	
#14 (EXIST)	RAMP METER								2	
#10 (EXIST)	COMMON								1	
#8	GROUND				1	1				2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	1 1/2"	2"	2" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 12

CONDUCTOR TYPE	FUNCTION	1	3	4	5	10	20	30	69
50P22 CABLE	PHONE LINES	1							
6P19 CABLE	PHONE LINES			1			1		
48SMFO CABLE	MUX VID/DATA	1							
8MMFO CABLE	SHORT HAUL VIDEO	1							
2MMFO B/O CABLE	SHORT HAUL VIDEO			1			1		
RG-6A/U COAX	BASEBAND VIDEO				1		1		
27C18 CABLE	CONTROL				1		1		
#8	POWER					2		2(N)	2
#6 (EXIST)	POWER							2	
#8	GROUND				1	1			2
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	2"	3" (N)

AS BUILT
Contract No. 07-116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 11 AND 12

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 FOR LEGEND AND GENERAL NOTES.

E-42

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: GLORIA GWYNNE

CALCULATED/DESIGNED BY | CHECKED BY | DATE REVISED BY | DATE REVISED

116634E42.D ...ES 03/21/92

FORM DC-OE-92-PF (REV. 3/88)

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 07387 | EA 116634

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/40.2, 50.1	65	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

8-31-92
PLANS APPROVAL DATE

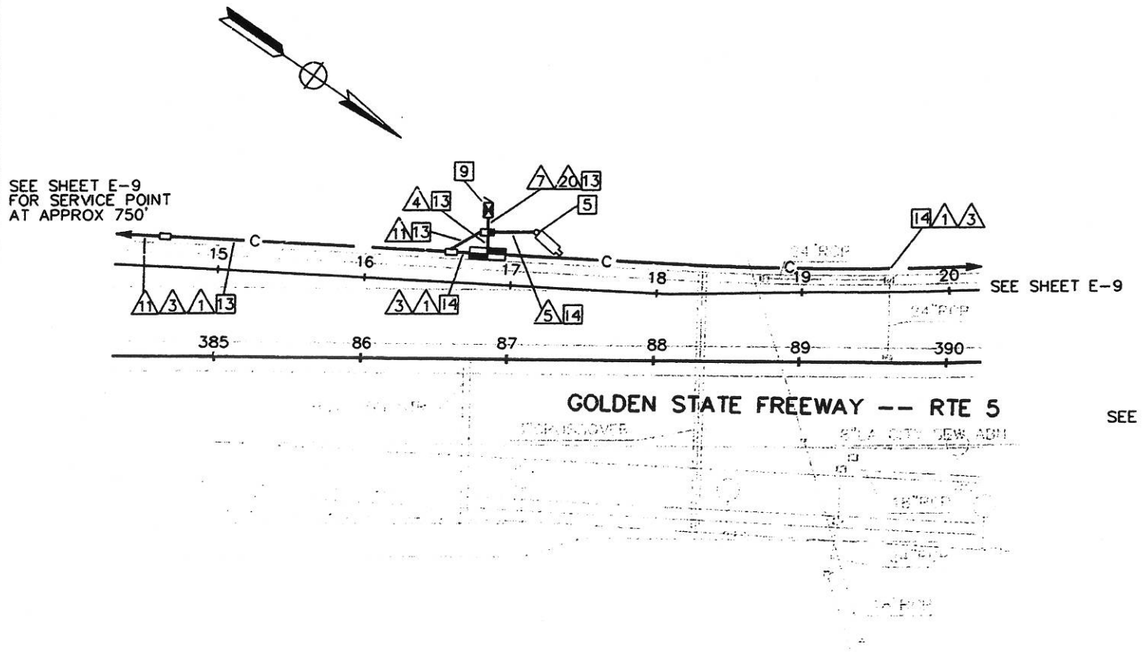
REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

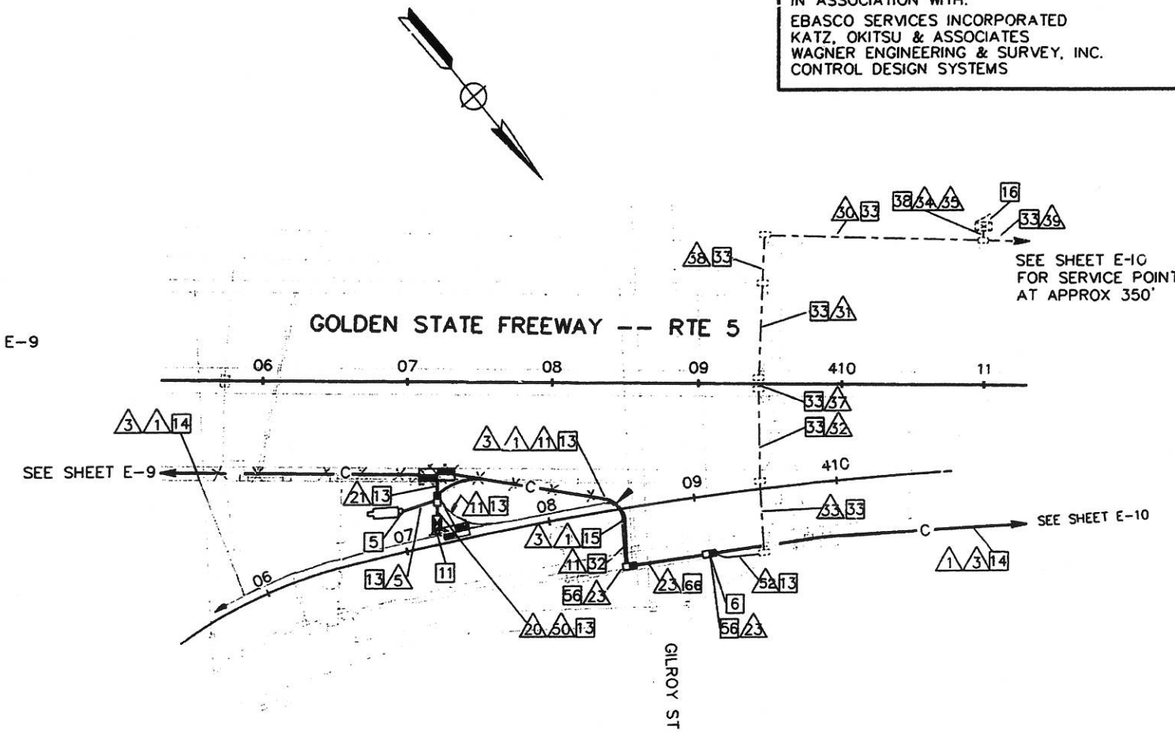
DATE | REVISED BY | DATE REVISED
CALCULATED/DESIGNED BY | CHECKED BY
DESIGN OVERSIGHT: GLORIA GWYNNE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

11663E43.DGN 3/21/92 WES



CAMERA LOCATION 13, PM22.36



CAMERA LOCATION 14, PM22.75

CONDUCTOR SCHEDULE CAMERA LOCATION 13

CONDUCTOR TYPE	FUNCTION	1	3	4	5	7	11	20
50P22 CABLE	PHONE LINES	1						
6P19 CABLE	PHONE LINES			1		1		
48SMFO CABLE	MUX VID/DATA	1						
8MMFO CABLE	SHORT HAUL VIDEO	1						
2MMFO B/O CABLE	SHORT HAUL VIDEO			1		1		
RG-6A/U COAX	BASEBAND VIDEO				1	1		
27C18 CABLE	CONTROL				1	1		
#8	POWER						2	2
#4	POWER						1	2
#8	GROUND				1			
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	3" (N)	3" (N)	2" (N)	3" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 14

CONDUCTOR TYPE	FUNCTION	1	3	5	11	20	21	23	50	51	52	53	54	55	57	58	59	50	52
50P22 CABLE	PHONE LINES	1						1											
6P19 CABLE	PHONE LINES					1	1												
12P22 CABLE	PHONE LINES								1(N)	1(N)	1(N)	1(N)	1(N)		1(N)	1(N)	1(N)		1
48SMFO CABLE	MUX VID/DATA	1						1											
8MMFO CABLE	SHORT HAUL VIDEO	1				2	2	1											
2SMFO B/O CABLE	SHORT HAUL VIDEO					1	1												
RG-6A/U COAX	BASEBAND VIDEO			1		1													
27C18 CABLE	CONTROL			1		1													
#8 (EXIST)	POWER													2			2		
#4	POWER				2			2	2(N)	2(N)	2(N)	2(N)			2(N)	2(N)	2(N)	2	2
2#8 (EXIST)	TEL. SHIELD CABLE								1	1	1		1						
2#12 CABLE EXIST	DLC								12	8	4	1	12		6	11			
#8	GROUND			1	1			1										2	1
CONDUIT	SIZE	4" (N)	4" (N)	3" (N)	2" (N)	3" (N)	3" (N)	4" (N)	3"	2 1/2"	2"	2"	2"	2"	2"	3"	2"	3" (N)	3" (N)

AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 13 AND 14

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEEY E-1 FOR LEGEND AND GENERAL NOTES

E-43

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 07387 EA 116634

FORM DC-OE-92-PF (REV. 3/85)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, 50.1	68	153

Joseph A. Kwak 3/23/92
REGISTERED ELECTRICAL ENGINEER (Date)

8-31-92
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. KWAK — No. 10991 — Exp. 6/30/95 — ELECTRICAL — STATE OF CALIFORNIA

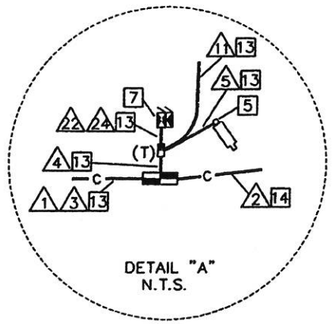
NATIONAL ENGINEERING TECHNOLOGY
16700 VALLEY VIEW AVE., SUITE 260
LA MIRADA, CA. 90638
IN ASSOCIATION WITH:
EBASCO SERVICES INCORPORATED
KATZ, OKITSU & ASSOCIATES
WAGNER ENGINEERING & SURVEY, INC.
CONTROL DESIGN SYSTEMS

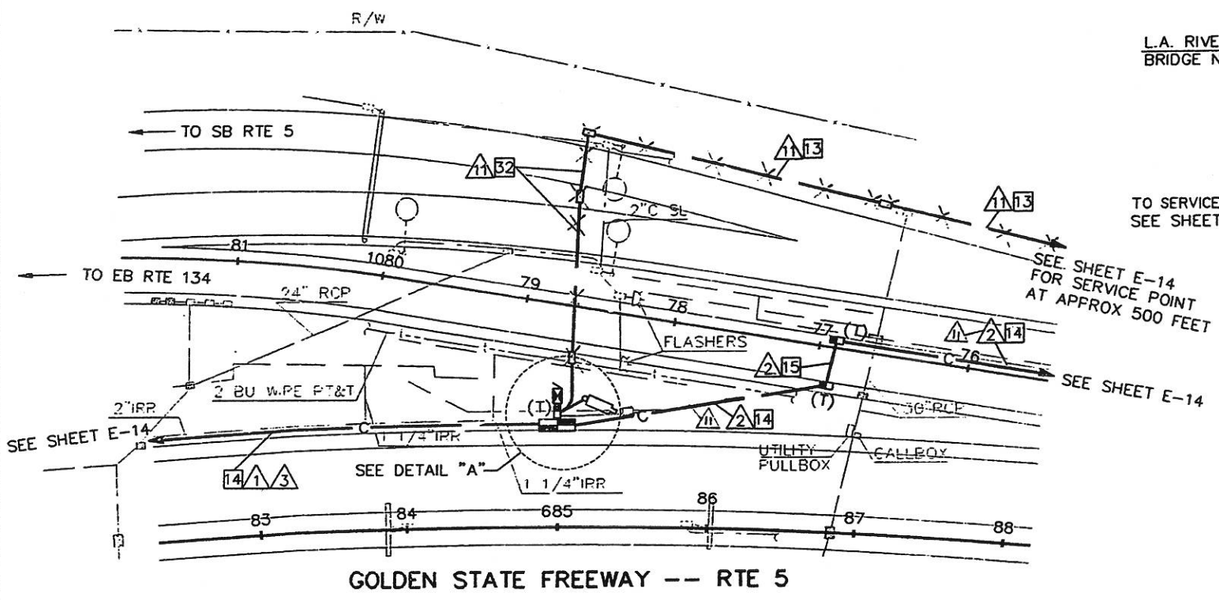
DESIGN OVERSIGHT — GLORIA GWYNNE

CALCULATED/DESIGNED BY
CHECKED BY
DATE
REVISED BY — K
DATE REVISED — 5/22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

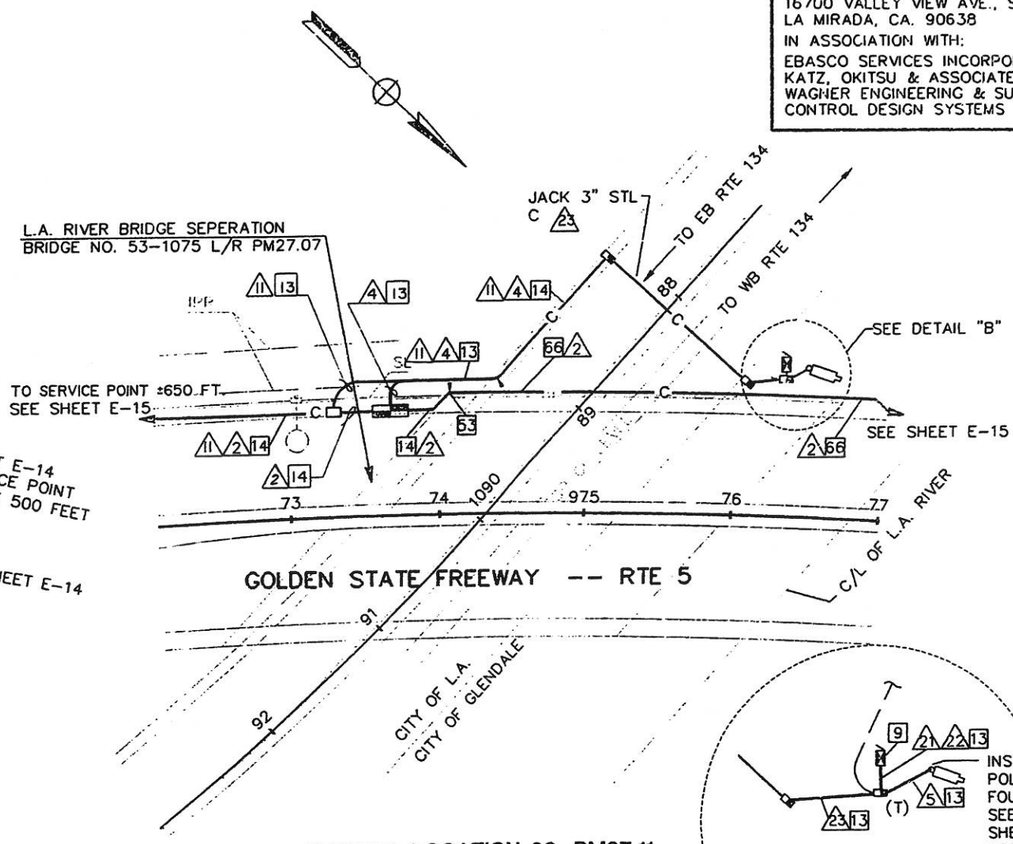
11663E46.DW VES 05/15/92





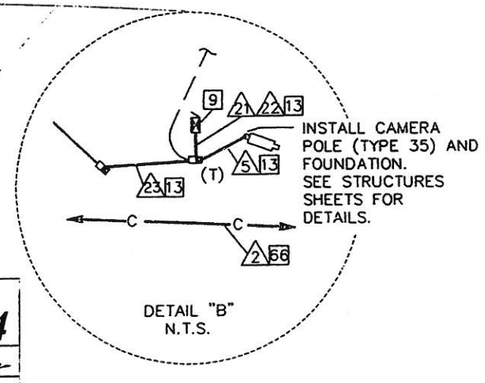
GOLDEN STATE FREEWAY -- RTE 5

CAMERA LOCATION 19, PM26.85



GOLDEN STATE FREEWAY -- RTE 5

CAMERA LOCATION 20, PM27.11



CONDUCTOR SCHEDULE CAMERA LOCATION 19

CONDUCTOR TYPE	FUNCTION	1	2	3	4	5	11	20	22	24
50P22 CABLE	PHONE LINES	1	1		2				2	
6P19 CABLE	PHONE LINES									
48SMFO CABLE	MUX VID/DATA	1								
24SMFO CABLE	SHORT HAUL VIDEO		1							
8MMFO CABLE	SHORT HAUL VIDEO	1	1		2				2	
2SMFO B/O CABLE	SHORT HAUL VIDEO				3				3	
RG-6A/U COAX	BASEBAND VIDEO					1			1	
27C18 CABLE	CONTROL					1			1	
#8	POWER									
#6	POWER									
#4	POWER						2	2		2
#8	GROUND					1	1			2
CONDUIT	SIZE	4" (N)	4" (N)	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	3" (N)	3" (N)

CONDUCTOR SCHEDULE CAMERA LOCATION 20

CONDUCTOR TYPE	FUNCTION	2	4	5	11	21	22	23
50P22 CABLE	PHONE LINES	1						
6P19 CABLE	PHONE LINES		1			1		1
24SMFO CABLE	MUX VID/DATA	1						
2MMMFO B/O CABLE	MUX VID/DATA		1			1		1
8MMFO CABLE	SHORT HAUL VIDEO	1						
RG-6A/U COAX	BASEBAND VIDEO			1		1		
27C18 CABLE	CONTROL			1		1		
#4	POWER				2		2	2
#8	GROUND			1	1		2	
CONDUIT	SIZE	4" (N)	3" (N)	3" (N)	2" (N)	3" (N)	3" (N)	3" (N)

AS BUILT 116634
Contract No. 07-
Resident Engineer: Hassan Mansour
Completion Date: June 13, 1997

CCTV AND COMMUNICATIONS SYSTEM LOCATIONS 19 AND 20

SCALE: 1"= 50'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY.
SEE SHEET E-1 LEGEND AND GENERAL NOTES

E-46

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU	07387	EA	116634

FORM DC-OE-92-PF (REV. 3/88)