ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
SR-91 Multi-Asset Project (12-0R311)

Resolution _____
(will be completed by CTC)

1. FUNDING PROGRAM

- ☐ Active Transportation Program
- ☐ Local Partnership Program (Competitive)
- ☐ Solutions for Congested Corridors Program
- ☒ State Highway Operation and Protection Program
- ☐ Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *SR-91 Multi-Asset Project (12-0R311)*, effective on, _____(will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Caltrans* , and the Implementing Agency, *Caltrans* , sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas at its May 13, 2020 meeting the Commission approved the State Highway Operation and Protection Program, and included in this program of projects the *SR-91 Multi-Asset Project (12-0R311)*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.

4.2 To adhere, as applicable, to the provisions of the Commission:

- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Local Partnership Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
- ☒ Resolution G-20-40, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated May 13, 2020
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

4.3 All signatories agree to adhere to the Commission's State Highway Operation and Protection Program, Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.

4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.

4.5 Caltrans agrees to secure funds for any additional costs of the project.

4.6 Caltrans agrees to report on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.

4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.

4.8 Caltrans agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.

5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.

5.3 Other Project Specific Provisions and Conditions

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

SR-91 Multi-Asset Project (12-0R311)

Resolution _____

_____ _____
Name Date

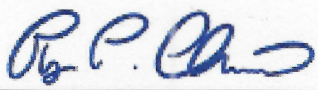
Title

Project Applicant

_____ _____
Name Date

Title

Implementing Agency



December 3, 2021
Ryan Chamberlain Date

District Director

California Department of Transportation

1.5.22
Toks Omishakin Date

Director

California Department of Transportation

2/2/22
Mitchell Weiss Date

Executive Director

California Transportation Commission

Baseline agreement information was extracted from Caltrans' project data systems. Project description, funding and performance measures are from CTIPS. Project delivery milestones are from PRSM. All information is current and accurate.

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

BASELINE AGREEMENT					Date:	12/13/21 03:15:14 PM
District	**EA**	**Project ID**		**PPNO**	**Project Manager**	
12	0R311	1220000021		4506F	SANTOS, BRIAN A	
County	**Route**	**Begin Postmile**	**End Postmile**	**Implementing Agency**		
ORA	91	R 0.0	4.8	PA&ED	Caltrans	
				PS&E	Caltrans	
				Right of Way	Caltrans	
				Construction	Caltrans	

Project Nickname

12-0R311 State Route 91 Multi-Asset Project

Location/Description

In La Palma, Buena Park, Anaheim, and Fullerton, from the Los Angeles County line to Acacia Street; also in Los Angeles County in the city of Los Angeles from 0.1 mile east of Carmenita Road to the Orange County line (PM R20.6/R20.7). Rehabilitate pavement, rehabilitate culverts, upgrade lighting, upgrade Transportation Management System (TMS) elements and make highway worker safety improvements. (G13 Contingency)

Legislative Districts

Assembly:	65, 69	**Senate:**	29, 32	**Congressional:**	38, 39, 46

PERFORMANCE MEASURES

	Primary Asset	Good	Fair	Poor	New	Total	Units
Existing Condition	Pavement		58.3			58.3	Lane-miles
Programmed Condition	Pavement	58.3				58.3	Lane-miles

Project Milestone	**Actual**	**Planned**
Project Approval and Environmental Document Milestone	10/29/21	
Right of Way Certification Milestone		03/01/24
Ready to List for Advertisement Milestone		03/29/24
Begin Construction Milestone (Approve Contract)		12/02/24

FUNDING (Allocated amounts are shaded)

Component	Fiscal Year	SHOPP					Total
PA&ED	19/20	2,150					2,150
PS&E	21/22	3,560					3,560
RW Support	21/22	540					540
Const Support	23/24	4,320					4,320
RW Capital	23/24	264					264
Const Capital	23/24	39,360					39,360
Total		50,194					50,194

7 – LA – 91 – PM R20.6/R20.7
12 - ORA - 91 - PM R0.0/4.8
EA 0R311– 120000021 – 4506F
201.121 – Pavement Rehabilitation
October 2021

Project Report

For

Project Approval

On Route State Route 91 from 0.1 Mile West of Los Angeles County Line (LA PM R20.6) to N Acacia Street (ORA PM 4.8)

In the Cities of Cerritos, La Palma, Buena Park, Fullerton, and Anaheim in Los Angeles County and Orange County, California

I have reviewed the right-of-way information contained in this report and the right-of-way data sheet attached hereto, and find the data to be complete, current, and accurate:

For SON NGUYEN
Acting Office Chief, District 12
Office of Right of Way and Right of Way Engineering

APPROVAL RECOMMENDED:

MONTASHEEMA AFROZE
Acting Chief, Design Branch D

BRIAN SANTOS
Project Manager

CONCURRED:

MONICA BENAVIDES
Acting Deputy District Director
Single Focal Point
Strategic Portfolio Management

PROJECT APPROVED:

MATTHEW CUGINI DATE 10-29-2021
Deputy District Director
Project Delivery

RYAN CHAMBERLAIN
District Director

Vicinity Map

This project report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

9 29 2021

REGISTERED CIVIL ENGINEER *DATE*

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Abbreviations and Acronym List

AADT Annual Average Daily Traffic
AC Asphalt Concrete
ACM Asbestos Containing Material
ADA American with Disabilities Act
ADL Aerially Deposited Lead
ASTM American Society for Testing and Materials
CAPM Capital Preventive Maintenance
CCTV Closed Circuit Television
CEQA California Environmental Quality Act
CFR Code of Federal Regulations
CHP California Highway Patrol
CMP Corrugated Metal Pipe
CMS Changeable Message Sign
COZEEP Construction Zone Enforcement Enhancement Program
DLC Loop Detector Lead-In Cable
DSMP District System Management Plan
EA Expenditure Authorization or Each Environmental Assessment
EAS Ethernet Access Switch
EB Eastbound
ECR Environmental Commitment Record
FHWA Federal Highway Administration
FTIP Federal Transportation Improvement Program
GP General Purpose
HD High Definition
HDM Highway Design Manual
HMA Hot Mix Asphalt
HOV High-Occupancy Vehicle
HQ Headquarters
ICM Integrated Corridor Management
INVEST Infrastructure Voluntary Evaluation Sustainability Tool
IP Internet Protocol
IRI International Roughness Index
ITS Intelligent Traffic System
JPCP Jointed Plain Concrete Pavement
LA Los Angeles
MFV Multi-Function Vehicle
MVP Maintenance Vehicle Pullout
NEPA National Environmental Policy Act
NPDES National Pollutant Discharge Elimination System
OCTA Orange County Transportation Authority
OH Overhead
ORA Orange County
PA/ED Project Approval and Environmental Document
PCC Portland Cement Concrete
PCP Precast Concrete Pavement
PIR Project Initiation Report
PJCP Precast Jointed Concrete Pavement
PM Post Mile
PR Project Report
PS&E Plans, Specification and Estimate
PTZ Pan-tilt-zoom
RAC Rubberized Asphalt Concrete
RCP Reinforced Concrete Pipe
RHMA-G Rubberized Hot Mix Asphalt-Gap Graded
RMS Ramp Metering System
RSC Rapid Strength Concrete
RTL Ready to List
RWQCB Regional Water Quality Control Board
SB Southbound
SCAG Southern California Association of Governments
SHOPP State Highway Operation Protection Program
SHS State Highway System
SR State Route
STAA Surface Transportation Assistance Act of 1982
TASAS Traffic Accident Surveillance and Analysis System
TMDL Total Maximum Daily Load
TMP Transportation Management Plan
TMS Traffic Management System
TS Traffic Signal
TSN Transportation System Network
UC Undercrossing
VIDS Video Image Detection System
WB Westbound
WIM Weigh-In-Motion

1. INTRODUCTION

Project Description

The California Department of Transportation (Caltrans) District 12 initiated a multi-asset management project to improve State Route 91 (SR-91) roadway conditions and traffic management system (TMS) elements. The project limits extend from PM R20.6 to PM R20.7 in Los Angeles County, and from PM R0.0 to PM 4.8 in Orange County, in the cities of Cerritos, La Palma, Buena Park, Anaheim, and Fullerton, a distance of approximately nine miles. A project location map is included as Attachment A.

The proposed project scope of work includes pavement rehabilitation, drainage improvements, operational improvement/widening at the eastbound (EB) Orangethorpe Avenue off-ramp terminus, installation of a weigh-in-motion (WIM) system, overhead panel and roadside sign replacements, landscaping improvements, lighting replacements, conduit replacements, approach and departure slab replacements, upgrade of existing closed circuit television (CCTV) cameras to high definition (HD) CCTV cameras, upgrade of fiber optic communication systems, installation of video detection cameras, installation of smart street lighting, installation of non-pan-tilt-zoom (non-PTZ) cameras, upgrade of switches at controller cabinets, installation of cabinet locking systems, and installation of locking pull boxes.

Table 1: Project Information

Project Limits	7-LA-91-PM R20.6/R20.7 12-ORA-91-PM R0.0/4.8	
Number of Alternatives	2 (1 Build and 1 No Build)	
	Current Cost Estimate ($1,000):	**Escalated Cost Estimate ($1,000)**
Capital Outlay Support	$10,504	$10,504
Capital Outlay Construction	$34,119	$39,360
Capital Outlay Right-of-Way	$264	$264
Funding Source	2020 SHOPP	
Funding Year	2023/2024	
Type of Facility	10-Lane Freeway	
Number of Structures	3 Retaining Walls	
SHOPP Project Output	58.3 Lane Miles	
Environmental Determination or Document	Categorical Exemption/Categorical Exclusion (CE/CE)	
Legal Description	In Los Angeles County and Orange County, in the cities of Cerritos, La Palma, Buena Park, Fullerton, and Anaheim, from 0.1 Mile west of the Los Angeles County Line to Acacia Street.	
Project Development Category	Category 5	

2. RECOMMENDATION

It is recommended that this project be approved based on the build alternative and that the project proceed to the design phase.

3. BACKGROUND

Project History

SR-91 in Orange County, also known as the Riverside Freeway, is a major east-west corridor located within Southern California. It is on the National Highway System (NHS) and is also part of the federal Surface Transportation Assistance Act (STAA) of 1982 National Network within Orange County. SR-91 is a freeway in Orange County connecting Los Angeles County to the west and Riverside County to the east. It has a total of ten lanes which include four general purpose (GP) lanes and one high-occupancy vehicle (HOV) lane in each direction.

Senate Bill 486, approved in September 30, 2014, requires Caltrans, in consultation with the California Transportation Commission, to prepare a robust Transportation Asset Management Plan to inform and guide the project selection process for the State Highway Operation Protection Program (SHOPP). The bill also requires Caltrans to develop an asset management plan by 2020 for the State Highway System (SHS) which is to include pavement, bridge, drainage, and TMS as anchor assets plus other supplementary assets on the SHS.

This multi-asset project was initiated under the Caltrans District 12 Asset Management Program with a Project Initiation Report (PIR) that included the entire length of SR-91 in Orange County, PM R0.0-18.9. The PIR was approved under EA 0R310K on June 27, 2019. A Supplemental PIR was approved in August 2019 to update the project cost estimate. A second Supplemental PIR was approved in November 2019 to update a project performance objective. A third Supplemental PIR was approved in April 2020 to split the project into five separate projects (EAs 0R311, 0R312, 0R313, 0R314, and 0R315) with limits coordinated to match those of the OCTA SR-91 improvement projects under EA 0K980. A fourth SPIR was approved in May 2020 to update the delivery schedule for EAs 0R312, 0R313, and 0R314.

During the Project Approval and Environmental Document (PA/ED) phase, additional drainage improvements were added into project scope of work. Through field investigation and engineering evaluation, the need for additional pipe lining was identified which expanded the project limits one tenth of a mile west into Los Angeles County.

The PIR considered the No Build alternative and one Build alternative. The No Build and Build alternatives have been carried forward and analyzed as part of this PA/ED phase under EA 0R311.

Community Interaction

There is no known opposition to the proposed project from local agencies nor the general public. All traffic handling and detours must be coordinated with the cities of Cerritos, La Palma, Buena Park, Fullerton, and Anaheim (as affected), California Highway Patrol (CHP), and other emergency responders prior to construction. Local transit routes and school districts with bus routes in and around the Orangethorpe Avenue undercrossing (UC) must also be notified of any temporary detours, lane closures, and established bus stops that may be temporarily impacted.

Existing Facility

SR-91 is an access-controlled freeway. Within the project limits there are four GP lanes and one contiguous HOV lane in each direction, except at the Interstate 5 interchange, where there are three GP lanes and one HOV lane. There are auxiliary lanes in both directions between Knott Avenue and Beach Boulevard and between East Street and Lemon Street. There are auxiliary lanes also in the westbound (WB) direction between Euclid Street and Brookhurst Street and between East Street and the project's easterly limit.

The EB Orangethorpe Avenue off-ramp is the first exit after the Los Angeles County line in Orange County. The off-ramp transitions from one lane to two lanes at the terminus section. The existing off-ramp consists of a left shoulder that varies from four to six feet, a 12-foot lane, a second 12-foot lane which widens to 25 feet at the terminus, and an eight-foot right shoulder. The off-ramp terminates at a signal-controlled intersection at Orangethorpe Avenue.

The structural section of the existing freeway is portland cement concrete (PCC) pavement on the inside lanes and asphaltic concrete (AC) pavement on the outside lane, except for the reach near the Interstate 5 interchange where all mainline lanes are rigid pavement. The inside and outside shoulders along the SR-91 mainline are AC, except for the segment near the Interstate 5 interchange where the shoulders are rigid pavement.

The following drainage facilities are located near the proposed work within the project limits along SR-91:

- Coyote Creek - flood control channel (PM 0.13)
- 48-inch RCP - storm drain crossing (PM 0.33)
- 66-inch RCP - storm drain crossing (near the EB Orangethorpe Avenue off-ramp)
- Double eight feet by six feet RCB – culvert crossing under Beach Blvd interchange (PM 1.91)
- 30-inch CMP – storm drain crossing (PM 2.37)
- Carbon Creek - flood control channel and box culvert – Raymond Ave interchange (PM 4.3)

In addition, there are pipes and smaller earthen and concrete lined drainage ditches within the State right-of-way to convey stormwater from the freeway drainage inlets to these larger drainage facilities.

4. PURPOSE AND NEED

Purpose

This project proposes to improve roadway conditions and upgrade the TMS elements on SR-91.

Roadway Improvements:
The primary purpose of the roadway improvements is to improve ride quality, achieve an efficient management of traffic movement, improve traffic operations, enhance traffic flow, reduce travel time, reduce recurrent maintenance, provide safe work locations for highway workers, and provide safe transportation facilities to motorists. To achieve these goals, a range of roadway improvements are proposed, including:

- Replacement of damaged concrete roadway slabs and rehabilitation of AC pavement
- Replacement or repair of bridge approach and departure slabs
- Drainage improvements
- Upgrade of existing and new lighting and conduit
- Landscape improvements
- Installation of a weigh-in-motion system
- Upgrade of overhead sign panels and roadside signs
- Widening of the EB Orangethorpe Avenue off-ramp terminus

TMS Improvements:
The primary purpose of the TMS program is to improve traffic flow within the project limits by connecting digital data and physical design to address system-wide recurrent and non-recurrent congestion through system management. The program aims to reduce the impacts of congestion and improve freeway efficiency and operations by increasing system performance and providing more accurate real-time traveler information on the freeway. To achieve these goals, a range of TMS improvements are proposed, including:

- Upgrade of existing CCTV to HD CCTV
- Installation of switches at various hubs and cabinets
- Upgrade and replacement of fiber optics and conduit
- Installation of video detection cameras
- Installation of smart lighting
- Installation of non-PTZ cameras along on-ramps to facilitate future dynamic ramp metering by monitoring congestion at mainline merging area and traffic flowing into on-ramps from arterial
- Installation of centrally locking cabinets
- Upgrade to locking pull boxes

Need

The existing SR-91 corridor has deteriorating roadway components and incomplete and disconnected technological infrastructure systems.

Deteriorating roadway components include:

- Mainline pavement
- Approach and departure slabs
- Drainage systems
- Lighting
- Irrigation systems
- Maintenance access locations for highway workers
- Visibility of existing overhead sign panels

Incomplete and disconnected technological infrastructure systems include:

- Need of real-time management of the corridor to detect traffic congestion, vehicle collisions, and incidents
- Need of internet protocol (IP) base Ethernet communications with field elements to allow for remote monitoring and management of Intelligent Transportation System (ITS) elements
- Need to save energy, improve visibility of sign panels and equipment, and enhance road safety with remote management to reduce maintenance costs and operating expenses
- Need of real-time management at the ramp merge areas to detect traffic congestion, vehicle collisions, and incidents
- Need of ITS to protect critical infrastructure systems
- Need of monitoring truck volumes along the corridor

4A. Problem, Deficiencies, Justification

Automated Pavement Condition Study (APCS) data from 2019 and field observation reveals a high percentage of cracking and damage to the SR-91 pavement. The continued deterioration of the pavement will decrease ride quality of the roadway and potentially negatively impact goods movement and the motoring public. Roadway deficiencies include drainage systems, lighting systems, irrigations systems, access for maintenance workers, and visibility of overhead and roadside signs which do not meet current standards.

In addition, operations on the existing EB Orangethorpe Avenue off-ramp are negatively impacted by queueing at the ramp terminus due to lack of dedicated lanes for right and left turn movements. There are heavy left-turn truck movements which require the use of the outside right-through-left lane for left turns. Due to their length, trucks contribute significantly to queuing on the ramp, and when combined with passenger vehicle use of the outside lane for right and left turn movements, there is heavy queuing of the outside lane.

This segment of SR-91 also has incomplete and disconnected technological infrastructure systems which affects the ability for real-time management of the corridor to detect traffic congestion, vehicle collisions and incidents; the need for IP based ethernet communication with field elements to allow for remote monitoring and management of ITS elements; and the need for ITS to protect critical infrastructure systems.

4B. Regional and System Planning

Identify System
SR-91 is part of the National Highway System, California Freeway and Expressway System, and the Federal STAA for oversized trucks. SR-91 is not identified as part of the Scenic Highway System, the Interregional Road System, or the Extralegal Load Network.

State Planning
This project is in alignment with Caltrans' mission, the purpose of the State's Strategic Highway Safety Plan which is expected to provide a safe transportation system, and the District System Management Plan (DSMP) which provides working guidelines aiming to enhance a safer, more sustainable, integrated, and efficient transportation system.

Regional Planning
This project is included in the Southern California Association of Governments (SCAG) adopted final 2021 Federal Transportation Improvement Plan (FTIP), amendment 1. The project is included in the Regional Transportation Improvement Plan (RTIP) Group Listing #ORA001103, Roadway Preservation.

Local Planning
Since this project generally involves improvements to the SR-91 mainline, local planning documents are not heavily influenced by the proposed project. The EB Orangethorpe Avenue off-ramp terminus widening is within a mixed-use area of the City of La Palma and is also within a planning area known as a *freeway overlay zone*. Freeway overlay zones are adjacent to the SR-91 freeway and are meant to help the City promote economic activity with signs. Orangethorpe Avenue is shown as a major arterial highway per City of La Palma General Plan and is noted as having primary travel modes of motor vehicles and transit (bus operations). Orangethorpe Avenue is also designated as a truck route.

Transit Operator Planning
Transit operations will generally not be affected by this project since all but the Orangethorpe Avenue off-ramp improvements are located within the mainline. The OCTA provides bus service within the City of La Palma and the region which includes a bus route along Orangethorpe Avenue (Route 30). This project is not anticipated to affect bus operations.

4C. Traffic

Existing Traffic
The traffic volume for the SR-91 corridor within the project limits is obtained from Caltrans' Traffic Census Program website. The most recent available traffic volume data are from 2019 and are presented as Annual Average Daily Traffic (AADT) and peak hour volumes for both

directions. The AADT and peak hour volumes are shown in Table 2. The WB direction traffic is shown under the column headings titled 'Back' and the EB direction traffic is shown under column headings titled 'Ahead'.

Table 2: SR-91 AADT and Peak Hour

SR-91 Location Description	Post Mile	Back			Ahead		
		Peak Hour	Peak Month	AADT	Peak Hour	Peak Month	AADT
Los Angeles/Orange County Line	0.000	-	-	-	25,000	300,000	275,400
Orangethorpe Avenue	R0.489	18,500	283,600	275,400	223,000	322,000	300,400
Valley View Street	R0.848	20,400	295,000	275,400	222,000	319,000	300,400
Knott Avenue	R1.842	22,300	321,000	300,400	242,000	333,000	312,700
Beach Boulevard/SR-39	R2.615	24,200	333,000	312,700	244,000	338,000	319,000
Junction I-5, Begin Right Alignment	R3.638R	12,200	169,000	159,500	9,000	126,000	120,200
Magnolia Boulevard, End Right Align	R3.851R	9,000	126,000	120,200	108,000	154,000	146,600
Begin Left Align	R3.221L	12,200	169,000	159,500	122,000	169,000	159,500
Magnolia Boulevard, End Left Align	R3.879L	9,000	126,000	120,200	108,000	154,000	146,600
Brookhurst Avenue	1.232	21,500	307,000	293,200	225,000	325,000	312,400
Euclid Avenue	2.234	22,400	325,000	312,400	229,000	330,000	317,000
Harbor Boulevard	3.258	22,900	330,000	317,000	221,000	319,000	306,600
Lemon Street	3.512	22,900	330,000	317,000	222,000	319,000	306,600
East Street	4.256	22,200	319,000	306,600	209,000	300,000	287,000

Source: Caltrans 2019 Traffic Volumes on California State Highways (https://dot.ca.gov/programs/traffic-operations/census)

Collision Analysis

Collision data for the SR-91 corridor within the project limits for a 36-month period between March 1, 2017 and February 29, 2020 were obtained from the Traffic Accident Surveillance and Analysis Plan - Transportation System Network (TASAS–TSN). Actual collision rates are compared with average collision rates for similar highway facilities throughout the State. Tables 3 and 4 present a summary of the TASAS-TSN data. Table 3 shows the collision data on SR-91 at each interchange location,

Table 3 indicates that actual collision rates at some on- and off-ramps are above the statewide average. A majority of the on- and off-ramps have actual collision rates that are below the statewide average collision rates.

Table 3: Collision Rates on SR-91 at On- and Off-ramps (3/1/2017 - 2/29/2020)

Location	SR-91 Postmile	Direction	No. of Collisions			Actual Collision Rates[1]			Statewide Avg. Collision Rates[1]		
			T	F	F+I	F	F+I	T	F	F+I	T
Orangethorpe Ave Off-ramp	R0.314	EB	4	0	1	0.000	0.09	0.36	0.006	0.39	1.25
Orangethorpe Ave On-ramp	R0.430	WB	3	0	0	0.000	0.00	0.22	0.004	0.24	0.70
Orangethorpe Ave On-ramp	R0.741	EB	3	0	1	0.000	0.09	0.26	0.004	0.24	0.70
Valley View St On-ramp	R1.006	EB	3	0	2	0.000	0.11	0.17	0.002	0.23	0.63
Valley View St Off-ramp	R1.015	WB	26	0	12	0.000	**0.53**	**1.15**	0.008	0.39	1.03
Knott Ave Off-ramp	R1.673	EB	10	0	7	0.000	**0.77**	**1.09**	0.008	0.39	1.03
Knott Ave Diagonal On-ramp	R1.687	WB	2	0	1	0.000	**0.31**	0.62	0.004	0.24	0.70
Knott Ave Loop On-ramp	R1.826	EB	3	0	1	0.000	**0.27**	**0.82**	0.002	0.24	0.75
Knott Ave Loop On-ramp	R1.885	WB	4	0	1	0.000	0.17	0.69	0.002	0.24	0.75
Knott Ave Off-ramp	R2.020	WB	6	0	1	0.000	0.06	0.39	0.008	0.39	1.03
Knott Ave Diagonal On-ramp	R2.028	EB	4	0	1	0.000	0.13	0.52	0.004	0.24	0.70
Beach Blvd Diagonal On-ramp	R2.451	WB	6	0	1	0.000	0.11	**0.64**	0.004	0.13	0.40
Beach Blvd Off-ramp	R2.454	EB	11	0	2	0.000	0.12	0.64	0.004	0.29	0.80
Beach Blvd Loop On-ramp	R2.578	EB	3	0	2	0.000	**0.43**	**0.65**	0.001	0.17	0.60
Beach Blvd Loop On-ramp	R2.651	WB	8	0	3	0.000	**0.38**	**1.00**	0.001	0.17	0.60
Beach Blvd Diagonal On-ramp	R2.778	EB	7	0	1	0.000	0.07	**0.51**	0.004	0.13	0.40
Beach Blvd Off-ramp	R2.797	WB	4	0	1	0.000	0.06	0.24	0.004	0.29	0.80
I-5/Magnolia St Off-ramp	R3.319R	EB	9	0	4	0.000	0.08	0.18	0.002	0.09	0.28
SR-91 HOV to SB I-5 HOV Connector	R3.324R	EB	1	0	0	0.000	0.00	0.07	0.003	0.14	0.43
Magnolia St Off-ramp	R3.596R	EB	1	0	0	0.000	0.00	0.14	0.003	0.14	0.43
NB I-5 HOV to SR-91 HOV Connector	R3.480L	WB	0	0	0	0.000	0.00	0.00	0.001	0.07	0.26
Magnolia St On-ramp	R3.797L	WB	2	0	0	0.000	0.00	0.26	0.002	0.23	0.63
SR-91 HOV to NB I-5 HOV Connector	R3.944L	WB	1	0	0	0.000	0.00	0.14	0.004	0.17	0.51

Location	SR-91 Postmile	Direction	No. of Collisions			Actual Collision Rates[1]			Statewide Avg. Collision Rates[1]		
			T	F	F+I	F	F+I	T	F	F+I	T
Magnolia St Off-ramp	R4.031L	WB	16	0	7	0.000	**0.70**	**1.59**	0.008	0.39	1.03
SR-91 to NB I-5 Connector	0.526	WB	4	0	0	0.000	0.00	0.13	0.004	0.17	0.51
Magnolia St/NB I-5 On-ramp	0.545	EB	7	0	2	0.000	**0.12**	**0.43**	0.001	0.10	0.32
Brookhurst St Off-ramp	1.062	EB	10	0	2	0.000	**0.39**	**1.96**	0.008	0.39	1.03
Brookhurst St On-ramp	1.072	WB	3	0	2	0.000	**0.42**	**0.63**	0.002	0.23	0.63
Brookhurst St Off-ramp	1.406	WB	14	0	5	0.000	0.35	0.98	0.008	0.39	1.03
Brookhurst St On-ramp	1.407	EB	5	0	2	0.000	0.17	0.42	0.002	0.23	0.63
Euclid St Off-ramp	2.051	EB	11	0	4	0.000	0.38	**1.03**	0.008	0.39	1.03
Euclid St On-ramp	2.064	WB	11	0	3	0.000	**0.29**	**1.07**	0.002	0.23	0.63
Euclid St Off-ramp	2.390	WB	16	0	8	0.000	**0.72**	**1.44**	0.008	0.39	1.03
Euclid St On-ramp	2.430	EB	20	0	8	0.000	**0.44**	**1.10**	0.002	0.23	0.63
Harbor Blvd Off-ramp	3.078	EB	9	0	6	0.000	0.32	0.48	0.008	0.39	1.03
Harbor Blvd On-ramp	3.094	WB	5	0	2	0.000	0.11	0.28	0.002	0.23	0.63
Frontage Rd Connector On-ramp	3.268	EB	16	0	8	0.000	0.56	1.12	0.022	0.75	1.37
Frontage Rd Connector On-ramp	3.502	WB	11	0	6	0.000	0.52	0.96	0.022	0.75	1.37
Lemon St Off-ramp	3.644	WB	36	0	18	0.000	**1.05**	**2.10**	0.008	0.39	1.03
Lemon St On-ramp	3.678	EB	23	0	13	0.000	**0.58**	**1.03**	0.002	0.23	0.63
East St/Raymond Ave Off-ramp	4.110	EB	13	0	2	0.000	0.12	0.77	0.008	0.39	1.03
East St/Raymond Ave On-ramp	4.144	WB	2	0	0	0.000	0.00	0.13	0.002	0.23	0.63
East St/Raymond Ave On-ramp	4.363	EB	3	0	1	0.000	0.09	0.28	0.002	0.23	0.63
East St/Raymond Ave Off-ramp	4.418	WB	7	0	2	0.000	0.26	0.91	0.008	0.39	1.03

Notes:
[1] For mainline sections, the collision rate is the number of collisions per million vehicle-miles.
Bold and shaded indicates actual collision rate higher than average collision rate.
T= Total; F = Fatalities; F+I = Fatalities + Injuries
Source: Caltrans District 12, TASAS

Table 4 shows the total collision data for the mainline within the project limits on SR-91 between PM R0.0/4.8. Table 4 indicates that the actual fatal collision rates on both WB and

EB are equal to or less than the statewide average, but the actual total collision rates are higher than the statewide average on both directions within the SR-91 project limits.

Table 4: Collision Rates on SR-91 Mainline (3/1/2017 through 2/29/2020)

Direction	SR-91 Postmile	No. of Collisions			Actual Collision Rates[1]			Statewide Avg. Collision Rates[1]		
		T	F	F+I	F	F+I	T	F	F+I	T
EB	R0.0/4.8	1364	5	342	0.004	0.28	**1.12**	0.003	0.32	1.02
WB	R0.0/4.8	1384	5	359	0.004	0.29	**1.13**	0.003	0.32	1.02

Notes:
[1] For mainline sections, the collision rate is the number of collisions per million vehicle-miles.
Bold and shaded indicates actual collision rate higher than average collision rate.
T= Total; F = Fatalities; F+I = Fatalities + Injuries
Source: Caltrans District 12, TASAS

There were a total of four collisions recorded at the EB Orangethorpe Avenue off-ramp per TASAS Selective Record Retrieval data. Of the four collisions, one was a sideswipe, two were rear-end, and one was a hit object type collision. All of the collisions were located at the EB Orangethorpe Avenue off-ramp terminal.

The addition of a dedicated right-turn lane at the EB Orangethorpe Avenue off-ramp is expected to improve the congested-related collisions at the ramp intersection.

5. ALTERNATIVES

5A. Viable Alternative

The Build Alternative satisfies the need and purpose of the project and is recommended to be the programmable project alternative. The proposed scope of improvements is listed below and shown in Attachment B.

A discussion of the relevant proposed engineering features follows the list of proposed scope of improvements.

Roadway Improvements:

- Replacement of damaged concrete panels with precast concrete pavement (PCP) or cast in place rapid strength concrete (RSC) panels (see Pavement Rehabilitation section for additional discussion)
- Rehabilitation of AC pavement
- Replacement or repair of bridge approach and departure slabs
- Drainage improvements
- Upgrade of existing and new lighting and conduits
- Landscape improvements
- Installation of a weigh-in-motion system
- Upgrade of overhead sign panels and roadside signs
- Widening of the EB Orangethorpe Avenue off-ramp terminus to provide a dedicated right-turn lane

TMS Improvements:

- Upgrade of existing CCTV to HD CCTV
- Installation of switches at various hubs and cabinets
- Upgrade and replacement of existing fiber optics and conduits
- Installation of video detection cameras
- Installation of smart lighting
- Installation of non-PTZ cameras along on-ramps
- Installation of centrally locking cabinets
- Upgrade to locking pull boxes
- Installation of census stations

Proposed Engineering Features

Below is a list of the relevant project technical features by topic.

Pavement Rehabilitation

Considerations

Given the high traffic volumes and critical nature of SR-91 within the project limits, accelerated construction is necessary and will likely be performed during night-time closures. It is anticipated that all lanes will need to be reopened to traffic the following morning. The exact method of traffic handling and staging will be further developed during PS&E phase. According to Chapter 620 of the Caltrans Highway Design manual (HDM), RSC and PCP are candidate treatments for short lane closure times.

PCP panels are prefabricated off-site and then delivered to the jobsite at the appropriate time for installation. Similar to jointed plain concrete pavement (JPCP), dowel bars and tie bars are required at transverse joints and longitudinal joints, respectively. The primary advantages of PCP include:

- Better control over mixing and curing as they are constructed in a precast yard.
- Shorter lane closure times than conventional JPCP that needs several days to cure.

The main disadvantage of using PCP is high cost. The width of slabs is limited to the maximum allowable transport width on local streets and highways. PCP construction also requires an under-slab leveling system (typically screw-type leveling feet), bedding grout, and polymer concrete to fill dowel and tie bar slots. Despite concerns of faulting, settlement, and/or premature cracking, the HDM states the designer should consider PCP.

RSC is also used for rapid construction (three days or less) and when accelerated opening to traffic is needed. RSC achieves desired strength rapidly by using high amounts of portland cement and an ASTM C494 accelerating admixture. RSC can also be produced with proprietary cements. The advantages of RSC include reopening to traffic in a very short time after placement (less than four hours in some cases) and the ability to use similar equipment used for JPCP, with the addition of mobile mixing equipment.

The disadvantages of RSC include durability problems and risk of shorter service life as workmanship can suffer during accelerated construction. In addition, RSC is prone to shrinkage, resulting in early development of distress.

Pavement Condition Assessment

Pavement condition data and roughness were collected using a multi-function vehicle (MFV). The MFV collected geo-referenced data while driving at freeway speeds so the data collection process did not impact traffic operations. Data collected included a high-resolution laser scan, 3D downward images, high resolution right-of-way camera images, rutting, and International Roughness index (IRI). The pavement distresses were obtained by analyzing the downward images. Data were collected on all lanes within the project limits and bridges were excluded from the analysis.

For AC pavement, the following were reported for 0.1-mile segments.

- IRI
- Rutting greater than 0.2 in
- Transverse and longitudinal cracking
- Fatigue cracking
- Other distresses (e.g., delamination, potholes, etc.)

Table 5 provides the initial triggers used to identify AC areas in need of pavement rehabilitation.

Table 5: Initial AC Treatment Triggers

AC Rehabilitation Triggers (0.1-mile segments)	
Distress	**Action**
IRI > 170 in./mi.	AC repair prior to overlay
Rutting >0.2 in.	Full-width mill & overlay*
Medium and high severity alligator cracking	AC repair prior to overlay
Medium and high severity cracking (transverse or longitudinal)	AC repair prior to overlay
Raveling	Full-width mill & overlay*

**Distresses will be addressed with 2-inch RHMA-G mill and overlay.*

A 0.1-mile segment may have multiple distresses and so mill and overlay may be triggered even though the IRI is less than 120 in/mi.

For JPCP pavement, IRI was reported for each 0.1-mile segment. The following were reported on a per slab basis:

- Divided slab
- Cracking (transverse or longitudinal)
- Faulting greater than 0.2 in
- Joint spalling / deterioration
- Corner breaks
- Patches

Table 6 provides the initial triggers to identify JPCP slabs for rehabilitation.

Table 6: Initial JPCP Treatment Triggers

JPC Rehabilitation Triggers (per slab, unless noted)	
Distress	**Action**
Divided slab	Replace slab
High severity crack	Replace slab
High severity large patch	Replace slab
Faulting > 0.4 inches	Replace slab
Corner break and any severity crack	Replace slab
Corner break	Full-depth repair or candidate for slab replacement*
Medium severity patch	Candidate for slab replacement*
Medium severity crack	Candidate for slab replacement*
Faulting 0.2 – 0.4 inches	Diamond grinding
Joint spalling / deterioration	Partial-depth repair
Low severity crack	No action**
Any severity small patch	No action
IRI > 170 inches/mile	Diamond grinding

**Flagged for slab replacement if part of a group of 3 or more consecutive slabs that warrant replacement.*
***Groups of consecutive slabs with sealed cracks (typically rated as low severity) were marked for replacement.*

A slab may have multiple distresses and slab replacement may be triggered even though the slab exhibits distresses that are listed as 'no action'. For example, a slab with a low severity crack and a high severity large patch will trigger slab replacement.

Existing Thickness

Record drawings were reviewed to document the existing pavement thickness. Table 7 and Table 8 provide a summary of the existing pavement thicknesses and approximate stationing for EB and WB directions, respectively. Note that multiple diamond grind treatments may have reduced these thicknesses, especially in the concrete slabs in the originally constructed lanes. It is recommended that these thicknesses be verified using ground penetrating radar and selective calibration coring.

Table 7: EB Thickness Summary from Caltrans Record Drawings

Lane	Alignment	From Station	To Station	PCC Pavement	AC Pavement (if split lane)
1	A	218+50	369+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67 AS	--
1	E	93+50	308+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	--
2	A	218+50	369+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	--
2	E	93+50	250+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	--
2	E	250+00	308+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB
3	A	218+50	369+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	--
3	E	93+50	130+00	0.67' PCC, 0.35' CTB, 0.35' AB, 0.67' AS	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB

Lane	Alignment	From Station	To Station	PCC Pavement	AC Pavement (if split lane)
3	E	130+00	165+00	--	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB
3	E	165+00	231+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB
3	E	231+00	250+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
3	E	250+00	308+00	--	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB
4	A	218+50	272+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.65' AC, 0.25' ATPB, 0.75 AB
4	A	272+00	306+00	--	0.65' AC, 0.25' ATPB, 0.75 AB
4	A	306+00	369+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.65' AC, 0.25' ATPB, 0.75 AB
4	E	93+50	308+00	--	0.2' RHMA, 0.45' AC, 0.25 ATPB, 0.75 AB
1-4	B	369+00	178+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
ALL	D	178+00	226+00	0.85' PCC, 0.35' ATPB, 0.35 AB, 0.35 AS	--
ALL	E	226+00	93+50	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	A	218+50	272+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.95 AB, 1.1 AS
HOV	A	272+00	306+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	A	306+00	369+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.95 AB, 1.1 AS
HOV	B	369+00	178+00	0.7' PCC, 0.4' LCB, 0.35 AB	--
HOV	E	93+50	130+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.65' AB, 0.5' AS
HOV	E	130+00	165+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	E	165+00	231+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.65' AB, 0.5' AS
HOV	E	231+00	250+00	--	0.5' AC, 0.65' AB, 0.5' AS
HOV	E	250+00	308+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.65' AB, 0.5' AS

Table 8: WB Thickness Summary from Caltrans Record Drawings

Lane	Alignment	From Station	To Station	PCC Pavement	AC Pavement (if split lane)
1	A	218+50	316+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
1	A-B	316+00	178+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
1	E	93+00	220+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
1	E	220+00	308+00	0.3' RHMA, 0.67' PCC, 0.33' AB, 0.33 CTS, 0.67 SM	--
2	A	218+50	316+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
2	A-B	316+00	178+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
2	E	93+00	220+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
2	E	220+00	308+00	0.3' RHMA, 0.67' PCC, 0.33' AB, 0.33 CTS, 0.67 SM	--
3	A	218+50	316+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
3	A-B	316+00	178+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
3	E	93+00	106+50	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.65' AC, 0.25' ATPB, 0.75 AB
3	E	106+50	132+00	1.05' PCC, 0.35 LCB, 0.7 AB	--
3	E	132+00	158+00	--	0.65' AC, 0.25' ATPB, 0.75 AB

Lane	Alignment	From Station	To Station	PCC Pavement	AC Pavement (if split lane)
3	E	158+00	184+00	1.05' PCC, 0.35 LCB	--
3	E	184+00	276+00	--	0.65 AC, 0.25 ATPB, 0.7 AB
3	E	276+00	289+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
3	E	289+00	308+00	--	0.3' RHMA, 0.65 AC, 0.25 ATPB, 0.7-2.2' AB
4	A	218+50	272+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.65' AC, 0.25' ATPB, 0.75 AB
4	A	272+00	316+00	--	0.65' AC, 0.25' ATPB, 0.75 AB
4	A	316+00	369+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.65' AC, 0.25' ATPB, 0.75 AB
4	B	369+00	178+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
4	E	93+00	106+50	--	0.65' AC, 0.25' ATPB, 0.75 AB
4	E	106+50	132+00	1.05' PCC, 0.35 LCB, 0.7 AB	--
4	E	132+00	158+00	--	0.65' AC, 0.25' ATPB, 0.75 AB
4	E	158+00	184+00	1.05' PCC, 0.35 LCB	--
4	E	184+00	276+00	--	0.65 AC, 0.25 ATPB, 0.7 AB
4	E	276+00	289+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
4	E	289+00	308+00	--	0.3' RHMA, 0.65 AC, 0.25 ATPB, 0.7-2.2' AB
ALL	C	178+00	225+00	0.85' PCC, 0.35' ATPB, 0.35 AB, 0.35 AS	--
ALL	E	225+00	93+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	A	218+50	272+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.95 AB, 1.1 AS
HOV	A	272+00	316+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	A	316+00	369+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.95 AB, 1.1 AS
HOV	B	369+00	178+00	0.7' PCC, 0.4' LCB, 0.35 AB	--
HOV	E	93+00	125+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.65' AB, 0.5' AS
HOV	E	125+00	165+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	--
HOV	E	165+00	220+00	0.67' PCC, 0.35’ CTB, 0.35’ AB, 0.67’ AS	0.5' AC, 0.65' AB, 0.5' AS
HOV	E	220+00	308+00	0.3' RHMA, 0.67' PCC, 0.33' AB, 0.33 CTS, 0.67 SM	0.3' RHMA, 0.5' AC, 0.65 AB

Initial Estimate for Concrete Pavement Rehabilitation

Table 9 provides a summary of the initial estimate of slabs needing replacement using RSC and PCP. PCP was selected for replacement of consecutive slabs in the truck lanes (typically the outer two lanes). RSC was chosen for random slab replacements as well as those in radii, and non-truck lanes. A slab thickness of 0.71 foot was assumed for PA/ED phase of the project. Using a standard 12 feet by 15 feet slab dimension, each slab is approximately 4.73 cubic yards.

The areas to receive pavement rehabilitation are shown in Attachment B, Conceptual Project Plans.

Table 9: Initial PCP and RSC Quantity Estimate

Item	Volume (cu. yds.)	Est. Number of Slabs*
Precast Concrete Pavement	310	65
Rapid Strength Concrete	17,700	3,742

**Assume 12 ft. x 15 ft x 0.71 ft slab dimension.*

Table 10 provides the quantities for diamond grinding with the assumption that 20% of the project will receive this treatment to restore ride quality.

Table 10: Initial JPCP Diamond Grind Quantity Estimate

Item	Area (sq. yds.)
JPCP Diamond Grinding	83,650

Initial Estimate for AC Pavement Rehabilitation

Table 11 provides an initial estimate of the quantities for AC pavement repair and 2-inch overlay with rubberized hot mix asphalt - gap graded (RHMA-G). The quantity of RHMA-G assumes mill and overlay of all AC pavement, minus off-ramps and shoulders.

Table 11: Initial AC Quantity Estimate

Item	Tons
3 in. AC Pavement Repair, HMA-Type A	5,490
2 in. RHMA-G Overlay	26,800

Some of the concrete pavement on SR-91 WB was overlaid with AC in the past (see Table 8 for general areas). The condition of these underlying slabs is unknown, and a provision should be included in design documents as some slabs may need to be replaced after the AC is milled. Slabs needing replacement after milling will fall within the bid item contingency.

The quantity of RHMA-G overlay does not include outside shoulder pavement. The inside shoulder is included in areas where the travel lane is to receive mill and overlay. At a minimum, the outside shoulder should be considered for a surface treatment to slow the rate of deterioration.

EB Orangethorpe Avenue Off-ramp Terminus Widening

Existing operations on EB Orangethorpe Avenue off-ramp are impacted by queueing at the ramp terminus, particularly at the outside right-through-left lane. The project proposes to add a dedicated right-turn lane which would alleviate queuing of the proposed left-through lane. The work begins at station 15+40.00 with a 10:1 taper and transitions the off-ramp from one to three 12-foot lanes approaching the ramp terminus. The lanes are widened to 16, 25, and

25 feet, from left to right, respectively, approaching the intersection with Orangethorpe Avenue to accommodate truck turning movements. The left shoulder width of the off-ramp will begin at four feet, transition to six feet between station 17+64.87 and 18+68.84, and remain at six feet to the intersection with Orangethorpe Avenue. The right shoulder will maintain an eight-foot width throughout the length of the ramp.

To accommodate the proposed dedicated right-turn lane, the existing concrete barrier adjacent to the right shoulder will be removed and replaced with a new retaining wall and barrier. The height of the retaining wall varies from approximately six feet at the beginning of the off-ramp, to a maximum height of approximately 14 feet, and then reduces in height to zero as it approaches the intersection. It is approximately 460 feet long measuring from station 15+40.00 to station 19+92.00. The intersection of the EB off-ramp and Orangethorpe Avenue will be modified which includes reconstructing traffic signals, sidewalks, curb ramps, modifying median noses, modifying crosswalks, and pavement delineation. To accommodate the proposed off-ramp, a two-post overhead sign structure will be constructed approximately 250 feet from the intersection.

New curb ramps are proposed at each corner of the ramp intersection to meet current Americans with Disabilities Act (ADA) requirements. The meandering sidewalk on the south side of Orangethorpe Avenue will also be reconstructed to meet ADA requirements within Caltrans' jurisdiction. The reconstructed sidewalk straddles Caltrans right-of-way and private property, and the work will be constructed under a temporary construction easement (TCE) on private property. The curb ramps serving the driveway on the south side of the intersection will be replaced and a permanent roadway easement will be required to provide Caltrans ownership of the curb ramp area.

Weigh-In-Motion Systems

A WIM system is one of the satellite assets proposed by District 12 Traffic Operations Northeast Branch. The WIM system will provide the accurate and timely monitoring of truck data collection which is sent to the District central computer for analysis. The WIM system will measure the per-axle weight and gross weight of vehicles to detect axle-spacing so that vehicles can be identified by class and recorded speeds.

The proposed location for the WIM system is between Coyote Creek and the Walker Street undercrossings in the EB direction. This location has been identified as the best location in relation to the existing on- and off-ramps and has been vetted with the Caltrans WIM system design group and the HQ WIM specialist. This location will allow for the gathering of all truck traffic data entering Orange County in the EB direction prior to the EB Orangethorpe Avenue off-ramp. A maintenance vehicle pullout (MVP) area is proposed immediately adjacent to the WIM within the Caltrans right-of-way. The proposed MVP will be 12-foot wide and taper back to the edge of shoulder on the downstream side at a rate of 20:1. Concrete barrier on retaining wall is proposed along the outside edge of the MVP. The retaining wall will join an existing concrete barrier and retaining wall on either end and have a height ranging from eight to 16 feet and a length of approximately 325 feet.

The WIM system will monitor the weight of commercial vehicles traveling on the three outer most lanes. The system will be placed within a 300-foot long section of precast concrete panels with the scales located 200 feet from the approach and 100 feet of departure. The scales must be located within a 12-foot width of the concrete slabs, so in these locations the slabs will need to be replaced as the existing panels do not align with the lane lines.

Drainage System Upgrades and Maintenance

The proposed drainage work along SR-91 corridor consists of rehabilitation or replacement of existing drainage facilities within Caltrans' right-of-way. Drainage facility improvement locations are located throughout SR-91 mainline outside shoulders and ramp shoulders. The improvement work begins one tenth of a mile west of the Los Angeles County line and ends near Raymond Avenue in Orange County. Aging corrugated metal drainage pipes are proposed to be replaced with reinforced concrete pipe or rehabilitated with cured-in-place-pipe lining based on the location and severity of the pipe damage. Flared end sections and rock slope protection are proposed to be replaced where missing or damaged. Headwalls are proposed at two locations where slope erosion is compromising the drainage outlet.

Relocation of drainage inlets and a new drainage inlet are proposed with the widening and reconfiguration of the EB Orangethorpe Avenue off-ramp. The off-ramp outside shoulder drainage inlets are proposed to be partially removed and capped for the storm drain lines that cross the ramp. The remaining drainage inlets are proposed to be fully removed and relocated. An additional drainage inlet will be added to the northeast corner of the intersection with Orangethorpe Avenue to capture runoff before entering the intersection.

Overhead and Roadside Signs

A visual assessment of overhead and roadside signs along the mainline of SR-91 was conducted within the project limits. The visual assessment consisted of collecting an inventory of signs using Google street view and then supplementing this with a drive through video. From these two sources, overhead signs were identified for replacement if they were not in compliance with California Manual on Uniform Traffic Control Devices. This list was cross checked with data provided in the PIR. For overhead panels, it is assumed that replaced panels will be sized so that sign structures will not be upgraded or replaced. For roadside signs, the number of signs needing replacement were estimated based on counting the single post and double posts type sign types. The sign improvements for the project include:

1. Replacing 58 OH sign panels
2. Replacing 73 roadside sign panels
    - 11 locations using strap and saddle mounting
    - 21 on existing posts
    - 30 single post type with new post
    - 11 two post type with new posts

TMS and Lighting

The build alternative will upgrade various existing TMS system components including fiber optic communication system, mainline CCTV, non-PTZ camera for ramp metering, vehicle detection and surveillance CCTV for traffic signals, replacing detection loops, installing EASs, upgrading existing cabinets with central locking system, improving lighting, retrofitting existing lighting to a smart lighting system, and upgrading existing pull boxes. All devices will be built and installed within the state right-of-way. See Attachment B for device locations to be upgraded and installed.

Specifically, the proposed TMS features include:

1. Upgrade Communication System.
   - Installation of new type A, B, and C cables in existing conduit from Stanton Avenue to Acacia Avenue.
   - Installation of new type D cables in existing conduit from existing splice vaults to TMS cabinets including RMS, CCTV, Traffic Signal, and CMS.
   - Splicing new type D cables in exiting splice vaults.

2. Upgrade existing mainline CCTV Cameras.
   - Upgrade existing CCTV cameras to HD-IP cameras.
   - These CCTVs will be installed on existing poles, using existing MVP, conduit, pull boxes, and connected to existing cabinet and energized by existing service cabinet.

3. Install Non-PTZ for RMS.
   - Installation of two CCTVs per metered ramp with one monitoring the ramp merging and another monitoring the turning movements from the arterial onto the on-ramp.
   - The two CCTVs with fix views are to be mounted on a new pole and the pole height shall be determined during field work in the PS&E phase.
   - Installation of new conduit and additional CAT-6 cable for each ramp.

4. Upgrade Caltrans traffic signals.
   - Install video image detection system (VIDS) for each approach at selected intersections.
   - At EB Orangethorpe Avenue off-ramp, VIDS will be installed on new pole/mast arm.
   - At other intersections, VIDS camera will be installed on existing poles/mast arms using existing conduits, power, and communication. Conduit fill rates will be verified during PS&E phase.
   - Install one surveillance camera at each intersection.

5. Smart lighting system.
   - Retrofit existing freeway lighting luminaire to an IP lighting system with the status of each light reported to the central system for speedy maintenance.
   - Installation consists of plugging a smart lighting node into a standard National Electrical Manufacturers Association socket on top of the existing luminaire.

- Modification of existing service cabinet to provide constant power for smart lighting system.
- If there is existing sign illumination on the same circuit with street lighting, modify existing sign illumination control type to add photoelectric control.

6. Replace existing detection loops for TMS or RMS.
   - Replacement of detection loops that will be demolished by pavement rehabilitation.
   - Replacement of any DLC that is impacted by pavement work.
   - New loops are connected to existing TMS or RMS cabinets.

7. Installing EAS.
   - Installation of EAS at existing TMS cabinets including TMS, RMS, CCTV, CMS, and TS.

8. Installing centrally locking system.
   - Installation of centrally locking system at existing TMS cabinets including TMS, RMS, CCTV, CMS, and traffic signals (TS).

9. Improve freeway lighting.
   - Replacement of conduits, bases, poles and lighting at various locations.
   - Addition of new lighting at various locations.

10. Upgrade existing pull box.
    - Upgrade of existing pull boxes on ramps to tamper resistant pull boxes.

11. Census stations.
    - Installation of census stations in both directions between interchanges at selected locations

Landscaping

Most of the proposed landscape improvement is located east of the SR-91/I-5 interchange, with the rest located at the EB Orangethorpe Avenue off-ramp in-fill. Overall, the improvements will increase worker safety by adding approximately 4,344 linear feet of maintenance access trails and relocating ten MVPs which provide safe work locations for workers by minimizing highway maintenance crew's exposure to traffic. In addition, approximately 22,000 square feet of slope paving will be added to narrow areas that are beyond the existing shoulder and 300 cubic yards of slope paving concrete and 8,200 square feet of rock blanket are proposed at the in-fill areas to reduce the need for maintenance activities.

Planting and irrigation will be impacted by the proposed work of underground lighting conduit and modification of drainage facilities. All existing landscape and irrigation facilities impacted by the project will be repaired or replaced. Planting and design efforts will be coordinated with the Caltrans Landscape Architectural Maintenance and Design functional units during the PS&E phase. The landscape work will take safety and maintainability into consideration. Where possible, the irrigation will be updated to utilize water efficient components such as utilization of SMART controllers. Utilization of a recycled water supply may also be

incorporated where possible.

Maintenance trails will be installed within interchanges along with MVPs for improved access and safety at the interchanges. An allowance has been provided for replacement of irrigation lines that will be impacted by conduit installation for lighting and TMS equipment.

See Attachment B for the proposed improvements.

Nonstandard Design Features

SR-91 Mainline

The project proposes to maintain exiting nonstandard features along SR-91 mainline within the project limits as this project does not alter the existing roadway geometry along the mainline.

SR-91 EB Orangethorpe Avenue Off-ramp

There are boldface and underlined nonstandard design features associated with the build alternative. A Design Standard Decision Document was approved for this project on October 28th, 2021. A total of ten nonstandard features have been identified, five of which are boldface exceptions and five are underlined exceptions. The nonstandard features are summarized in Table 12 and 13 for boldface and underlined exceptions, respectively. Most of the proposed nonstandard featuresmaintain existing nonstandard features.

Table 12: Build Alternative Deviations from Boldface Design Standards

HDM Topic	Location	HDM Standard	Existing Condition	Proposed Condition
201.1 Vertical Stopping Sight Distance	EB Orangethorpe Avenue Off-ramp Line "ORA-1" Sta 17+00.00 PVI of 300' VC	430’ (50 mph)	250’ (Crest Vert, 35 mph)	250’ (Crest Vert, 35 mph)
202.2(1) Standard for Superelevation	EB Orangethorpe AvenueOff-ramp Line "ORA-1" Sta 17+00.00 to 20+46.38	R=5000’ e=2% (40 mph)	R=5000’ e=-2% (70 mph)	R=5000’ e=-2% (70 mph)
	EB Orangethorpe AvenueOff-ramp Line "ORA-1" Sta 20+46.38 to 21+55.51	R=119’ e=12% (25 mph)	R=100’ e=2% (20 mph)	R=100’ e=2% (20 mph)
309.1(3)(b) Horizontal Clearances	EB Orangethorpe Avenue Off-ramp, Line "ORA-1" Sta 18+69.05 to 21+03.01	10’	6’	6’
504.8 Access Rights Opposite Ramp Terminals	Orangethorpe Avenue Line "ORA" Sta 14+23.12 to 15+60.80	500’	300’	300’

Table 13: Build Alternative Deviations from Underlined Design Standards

HDM Topic	Location	HDM Standard	Existing Condition	Proposed Condition
201.7 Decision Sight Distance	EB Orangethorpe Avenue Off-ramp Line "A" Sta 225+35.00 to 236+40.00	1105' (70 mph)	715' (47 mph)	715' (47 mph)
304.1 Side Slope Standards	EB Orangethorpe Avenue Off-ramp Line "A" Sta 236+39.94 to 242+50.00	4:1 or flatter	2:1	2:1
504.2(2) Ramp Entrance and Exit Standards	EB Orangethorpe Avenue Off-ramp Line "ORA-1" Sta 16+40.49 to 21+45.67	525'	505'	505'
504.3(3) Intersection Spacing	Orangethorpe Avenue Line "ORA" Sta 10+66.16 to 15+09.27	500'	467'	443'
504.8 Access Control at Ramp Terminals	Orangethorpe Avenue Line "ORA" Sta 14+23.12 to 15+09.27	100'	110'	86'

Interim Features

There are no interim features included in the proposed improvements.

HOV (Bus and Carpool) Lanes

There is one HOV lane in each direction of SR-91 within the project limits. The continuous-access HOV lane has a width of 12 feet. The proposed pavement improvement would maintain the existing roadway geometry, maintaining the inside shoulder and HOV lane widths.

Ramp Metering

There are ramp metering systems located along all on-ramps within the project limits. These existing ramp metering systems will be maintained as part of this project, and no new ramp metering will be added with this project. The ramp metering systems are located on the following on-ramps:

- WB Orangethorpe Avenue On-ramp
- EB Orangethorpe Avenue On-ramp
- EB Valley View Street On-ramp
- WB Knott Avenue Diagonal On-ramp
- WB Knott Avenue Loop On-ramp
- EB Knott Avenue Loop On-ramp
- EB Knott Avenue Diagonal On-ramp
- WB Beach Boulevard Diagonal On-ramp
- WB Beach Boulevard Loop On-ramp

- EB Beach Boulevard Loop On-ramp
- EB Beach Boulevard Diagonal On-ramp
- EB Magnolia Street Diagonal On-ramp
- WB Brookhurst Street Diagonal On-ramp
- EB Brookhurst Street Diagonal On-ramp
- WB Euclid Street Diagonal On-ramp
- EB Euclid Street Diagonal On-ramp
- WB Harbor Boulevard Diagonal On-ramp
- EB Lemon Street Diagonal On-ramp
- WB Raymond Avenue Diagonal On-ramp
- EB East Street Diagonal On-ramp

Upgrade and expansion of the TMS features associated with ramp metering systems is discussed in the Alternatives section of this report.

California Highway Patrol Enforcement Areas

There are existing CHP Enforcement Areas within the project limits which are listed below. No new CHP Enforcement Areas will be added as part of this project and the existing CHP Enforcement Areas will be maintained.

HOV lane enforcement areas:

- In the median between Valley View Street and Knott Avenue
- In the median between Brookhurst Street and Euclid Street

Ramp-meter enforcement areas:

- WB Orangethorpe Avenue On-ramp Shoulder
- EB Knott Avenue On-ramp Shoulder
- WB Beach Boulevard On-ramp Shoulder
- EB Beach Boulevard On-ramp Shoulder
- WB Brookhurst Street On-ramp Shoulder
- WB Euclid Street On-ramp Shoulder
- EB Euclid Street On-ramp Shoulder
- WB Harbor Boulevard On-ramp Shoulder
- WB Raymond Avenue On-ramp Shoulder

Park-and-Ride Facilities

The Fullerton park-and-ride lot is located adjacent to SR-91, at the corner of Magnolia Avenue and Orangethorpe Avenue. Proposed improvements will not impact the park-and-ride lot or hinder future improvements. No new park-and-ride facility is proposed with this project.

Utility and Other Owner Involvement

Existing utility facilities have been reviewed and shown on the plan sheets. They are not in conflict with the construction of the project and will remain in place. No public utility relocations are required. A Utility Management Matrix is included in Attachment E.

Facilities owned by the utility companies listed below have been identified within the project limits and include overhead and underground lines. These include:

- AT&T
- Chevron
- City of Anaheim
- City of Cerritos Water District
- City of Buena Park
- City of Buena Park Municipal Water
- City of Fullerton
- City of La Palma
- Comcast Cable Television
- Copley/Colony Cablevision
- Gilbert
- Kinder Morgan
- MCI/Verizon
- Metropolitan Water District
- Multivision
- US Navy
- Orange County Sanitation District
- Paramount Petroleum Corporation
- Southern California Edison
- Southern California Gas
- Southern California Regional Rail Authority
- Sprint
- Texaco
- Time Warner

Twelve test holes listed for the facilities listed below are proposed for positive utility identification. These work activities will be located on the EB and WB direction of SR-91. The cost of test holes is included in the Right-of-Way Data Sheet in Attachment D.

- Southern California Edison owned 12kV underground electrical – two test holes for potential physical conflict
- AT&T owned 6-4” underground telephone ducts – four test holes for potential physical conflict
- Southern California Gas owned 2” gas line – one test hole for potential physical conflict
- Southern California Gas owned 10” CSP gas line – two test holes to meet Caltrans

high priority utility policy
- Southern California Edison owned 66kV electrical ducts – three test holes to meet Caltrans high priority utility policy

Railroad Involvement

The railroad crossings listed below are located within the project limits. No railroad involvement is necessary as there is no proposed work within 25 feet of any railroad track. However, a Railroad Clearance Memo is required which contains clauses that must be inserted into the specifications during PS&E.

- SR-91: Union Pacific Railroad- W91/5 Separation OH, Bridge #55-293L, PM R3.50/R3.64, City of Fullerton
- SR-91: Union Pacific Railroad- 91/5 HOV Connector OH, Bridge #55-835H, PM R3.56, City of Anaheim
- SR-91: Union Pacific Railroad- E91/S5 Separation OH, Bridge #55-502R, PM R3.57/R3.67, City of Fullerton
- SR-91: Union Pacific Railroad- N5/W91 Connector OH, Bridge #55-830G, PM R3.60, City of Anaheim
- SR-91: Union Pacific Railroad – E91/S5 Connector OH, Bridge #55-503G, PM R3.61, City of Fullerton
- SR-91: Union Pacific Railroad – S5/E91 Connector OC & OH, Bridge #55-831F, PM 3.60, City of Anaheim
- SR-91: SCRRA/Metrolink – North Anaheim OH, Bridge #55-216, PM 3.99/4.04, City of Anaheim

Highway Planting

Highway planting is proposed along the EB SR-91 mainline adjacent to the Acacia Street Undercrossing. Vines will be planted at these locations and will extend approximately 800 feet east and west of the existing Acacia Undercrossing structure.

Erosion Control

Narrow area paving is proposed along the WB collector road between Lemon Avenue and Harbor Boulevard, along the Harbor Boulevard on-ramp, and near the entrance of the EB on-ramp at Lemon Avenue. This measure reduces erosion and decreases the maintenance requirements, but also increases the impervious area. A Storm Water Data Report has been prepared for the project which addresses the increase in impervious area.

Light duty vehicle trails are proposed within various interchanges in this segment. These trails will be constructed of aggregate base to provide maintenance personnel with increased access to interchange infield areas during a wider variety of weather conditions.

Noise Barrier

There are no noise barriers proposed as part of this project.

Nonmotorized and Pedestrian Features

Existing curb ramps and sidewalks located near the intersection of the EB Orangethorpe Avenue off-ramp and Orangethorpe Avenue are proposed to be upgraded to meet current standards. Pedestrian access through the intersection during construction will remain open and be accommodated with construction staging and advanced signing.

There are no other pedestrian facilities affected other than Orangethorpe Avenue. No bike facilities exist within the project limits.

Needed Roadway Rehabilitation and Upgrading

Pavement rehabilitation is the anchor asset of this project. The work includes replacing damaged concrete pavement on GP lanes, replacing approach and departure slabs at bridges, mill and overlay of existing AC on GP lanes and inside shoulders. Specific improvements are discussed in Section 5a of this PR and shown in Attachment B, Conceptual Project Plans.

Structure Rehabilitation and Upgrading

There are four locations along SR-91 where the approach and departure slabs were identified by HQ Structures Maintenance for replacement subsequent to the PIR. The locations and proposed work include the following:

- Coyote Creek Bridge (Br 55-0306) - Sawcut and remove spalls on departure slab and deck
- Walker Street UC (Br 55-0308) - Sawcut and patch spalls WB direction
- Western Avenue UC (Br 55-0299) - Replace approach slabs WB lanes 3, 4, and 5 and replace joint seals
- Gilbert Street UC (Br 55-0287) - Replace approach slabs EB lanes 1, 2, and 3 and replace joint seals

Other locations proposed in the PIR have been eliminated since the work is included in project EA 12-0T100.

Cost Estimates

A detailed cost breakdown for the build alternative is provided in Attachment C. The current year and escalated to the mid-point of construction and right-of-way capital costs for the build alternative are summarized below.

	Current year	Escalated Cost
Construction	$34.1 million	$39.36 million
Right-of-way	$0.26 million	$0.26 million
Total Estimated Capital Costs:	**$34.36 million**	**$39.62 million**

Right-of-Way Data

Proposed improvements of sidewalks and curb ramps in the intersection of EB Orangethorpe Avenue off-ramp and Orangethorpe Avenue that are inside private property will need permanent easements. Reconstruction of the sidewalk on the south side of Orangethorpe Avenue will also require a temporary construction easement. See Section 6D of this PR and Attachment B for details.

5B. Rejected Alternative

The No Build Alternative retains the existing conditions. This alternative does not satisfy the need and purpose of the project and is not recommended.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

Aerially Deposited Lead (ADL) could be present along the project corridor due to the age of the facility and use of leaded fuels in the past. ADL will be studied during the PS&E phase as the specific locations of excavations are finalized and study locations are accurately determined. Asbestos Containing Material (ACM) may be present in the joint seals of the approach/departure slabs according to a preliminary review. As with ADL, the final determination of ACM in approach/departure slab joint seals will be studied during PS&E upon final selection of the joints to be replaced.

6B. Value Analysis

A Value Analysis study will be scheduled and conducted during the PS&E phase. The results of that study will be included in the final PS&E.

6C. Resource Conservation

Building and maintaining a sustainable highway system is one of the resource conservation programs that Caltrans employees to preserve and enhance California's resources and assets. The FHWA has developed a tool that identifies the characteristics of sustainable highways and provides information and techniques to agencies to integrate sustainability into highway projects. This tool is called INVEST.

Two areas of focus have been identified from the INVEST Project Development criteria that might be applicable for this project and studied further during PS&E phase include:

1) Rubberized Asphalt Concrete (RAC)
   RAC is made by blending recycled tires with asphalt to produce a binder which is then mixed with conventional aggregate materials. The RAC provides several benefits including, cost effectiveness, durability, safety, quietness, and an environmentally friendly alternative to traditional road paving materials. A portion of the proposed pavement rehabilitation involves AC on the SR-91 mainline. RAC may be incorporated with a cold planing process to rehabilitate the AC pavement in-place. A 3-piece equipment train may be used which consists of a cold planning machine, a screening/crushing/mixing unit, and conventional laydown and rolling equipment. This train would occupy only one lane, thus reducing impacts to traffic; and,

2) Construction Activities
   Construction and demolition waste haul-off to landfills may be reduced during construction by encouraging concepts such as recycle, reuse, and reduce.

6D. Right-of-Way Issues

Right-of-Way Acquisitions

The proposed work is within the state right-of-way except for a segment of sidewalk located on the south side of Orangethorpe Avenue near the EB off-ramp intersection. Right-of-way acquisition is required to obtain a total permanent easement of approximately 1,230 square-feet and a total temporary construction easement of approximately 3,095 square-feet. Additionally, a Mitigation and Compliance Cost Estimate will not be required as there are no permit or mitigation costs associated with this project. The Right-of-Way Data Sheet is included in Attachment D.

Table 14: Right-of-way Requirements Table

Assessor's Parcel Number	**Property Owner Name**	**Square Feet**		**Location**
		Permanent Easement (Type)	Temporary Construction Easement	
263-071-03	Huntington-Humbolt	1,030 (Highway)	700	L-2
263-071-04	Casa La Veta Associates	10 (Highway)	2,200	L-2
263-071-05	Century Properties Fund 71-3	190 (Highway)	195	L-2

Airspace Lease Area

No potential airspace lease areas have been identified for this project.

Relocation Impact Studies

It has been determined there are no impacts to owners, tenants, businesses or persons in possession of real property to be acquired who would quality for relocation assistance benefit or entitlement under the Uniform Relocation Assistance and Real Property Act of 1970. Therefore, a Relocation Impact Document is not needed.

6E. Environmental Compliance

Effective March 30, 2017, Caltrans continues to assume FHWA responsibilities under National Environmental Policy Act (NEPA), pursuant to the 23 USC 326 Memorandum of Understanding, and as otherwise assumed under the Pilot Program, with minor changes. The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being or has been carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327. Caltrans is the NEPA Lead Agency for this project and has determined this project is Categorically Excluded per 23 CFR 771.177 (C), Activity (C) (21). Additionally, Caltrans is the Lead Agency for this project under the California Environmental Policy Act (CEQA). It is determined, this project is Categorically Exempt per Class 15301 (1-d).

No significant environmental consequences are anticipated with the proposed project. In addition to the Caltrans standards and measures relating to construction noise, air pollution control, erosion control and hazardous waste, the following measures are required:

- An Environmental Commitment Record (ECR) has been prepared. The ECR contains Measures that will be addressed and implemented during design and construction phases.
- A multi-modal TMP is required
- Permission to enter private property in advance of construction is needed

Seasonal restrictions (work windows) may apply, per ECR measures. Design and Project Manager must track and consider schedule implications. FTIP ID No. ORA-001103, applies.

On August 24th, 2021 this project was reviewed by SCAG Transportation Conformity Working Group. An Air Quality Technical Report and Conformity Checklist have been approved.

The CE/CE is included as Attachment G.

<u>Stormwater Compliance</u>

The majority of project falls under the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB). A small portion of the work, involving only pipe lining and pavement rehabilitation, is within the jurisdiction of the Los Angeles RWQCB.

The receiving water bodies that the project area discharges to are identified as Coyote Creek for the west end of the project, Fullerton Creek/Houston Storm Channel in the middle portion of project, and Carbon Creek for the east end of project.

All of these water bodies are part of the Lower San Gabriel River Watershed.

Both Fullerton Creek and Carbons Creek drain to Coyote Creek which flows to the San Gabriel River Reach 1 (Estuary to Firestone), then into the San Gabriel River Estuary, and then into San Pedro Bay Near/Off Shore Zones of the Pacific Ocean.

The following description of impairments for these waterbodies is based on the State Water Quality Control Board's 2014-2016 Integrated Report. Fullerton Creek/Houston Storm Channel and Carbon Creek are not 303(d) listed. Coyote Creek is 303(d) listed and is impaired with Indictor Bacteria, Copper-Dissolved, Iron, Malathion, Toxicity, and pH. The San Gabriel River Estuary is 303(d) listed and is impaired with Indictor Bacteria, Copper-Dissolved, Dioxin, Nickel, and Oxygen-Dissolved. Copper- Dissolved and Indicator Bacteria are being addressed with US EPA approved total maximum daily load (TMDL)s. Iron, Malathion, pH, and Toxicity require TMDLs. The San Gabriel River Reach 1 (Estuary to Firestone) is 303(d) listed and is impaired with pH and Temperature-water. Both require TMDLs. The San Gabriel River Estuary is 303(d) listed and is impaired with Copper, Dioxin, Indicator Bacteria, Nickel, and Oxygen-Dissolved. Copper and Indicator Bacteria are being addressed with US EPA approved TMDLs. Caltrans is listed as a responsible stakeholder for the Indicator Bacteria TMDL and is assigned a WLA. Dioxin, Nickel, and Oxygen-Dissolved require TMDLs. San Pedro Bay Near/Off Shore Zones is 303(d) listed and is impaired with Chlordane, PCBs, Total DDT, and Toxicity. All are being addressed with US EPA approved TMDLs. There are established TMDLs in San Gabriel River for Metals (Cu, Pb, Zn) and Selenium within the project limits per Caltrans TMDL Reach Prioritization Ranking table which is incorporated in the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit.

The project must conform to all applicable water quality regulations and/or permit requirements of the California State Water Resources Control Board (SWRCB), and the Santa Ana RWQCB, which include, but are not limited to, the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003 as amended in Order WQ 2014-0006-EXEC, in Order WQ 2014-0077-DWQ, in Order WQ 2015-0036-EXEC, and in Order WQ 217-0026-EXEC), the Statewide General Permit for Storm Water Discharge Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended in Order No. 2010-0014-DWQ and in Order No. 2012-0006-DWQ, NPDES No. CAS000002), the Caltrans SWMP and any subsequent revisions and/or additional requirements at the time of construction. Work outside Caltrans right-of-way (Orangethorpe Avenue at the SR-91 eastbound exit ramp terminus) within the City of La Palma is subject to Orange County Municipal NPDES Storm Water Permit (Order No. R8-2009-0030 NPDES No. CAS618030 as amended by Order No. R8-2010-0062 and in accordance with Water Code Section 13383. Should dewatering be required, dewatering must comply with Santa Ana RWQCB Order No. R8-2020-0006, NPDES Permit No. CAG998001.

The Caltrans Statewide Trash Implementation Plan was published in April 2019; the Trash Implementation Plan shows portions of this project are within Significant Trash Generating Areas (STGAs). The limits of STGAs within the project limits are on SR-91 from east of Valley View to west of I-5 and from east of Euclid to the eastern project limits.

There are no new drainage inlets proposed for this project within STGAs; therefore, trash capture devices will not be installed. However, future projects proposing new drainage inlets within the STGAs will require trash capture devices in accordance with Trash Net Caltrans Guidance dated November 2020.

The estimated DSA for this project is 13.83 acres which will require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to comply with the NPDES Statewide Construction General Permit (CGP). The SWPPP will identify and implement temporary Best Management Practices (BMPs) during construction to address the temporary impacts to water quality. Specific temporary BMPs will be detailed during the PS&E phase. Since the project New Impervious Surface area is greater than one acre, consideration of permanent treatment BMPs are required. The Storm Water Data Report cover sheet is included as Attachment F.

If requested by the Water Board (either Regional or State), the project may be required to develop RUSLE2 Calculations, in addition to the 70% Cover Method to demonstrate soil stabilization for CGP compliance and permit coverage termination.

6F. Air Quality Conformity

This project involves widening SR-91 EB off-ramp to Orangethorpe Avenue terminus from two lanes to three lanes. It will resolve the safety issues. According to Table 2 of the Title 40 of the Code of Federal Regulations (CFR) Part 93 Subsection 126 (§93.126), safety projects are exempt from conformity requirement.

Conformity Exemption form was submitted to the SCAG for interagency consultation. The Transportation Conformity Working Group members meeting on August 24, 2021 concurred that the project is exempt from conformity analysis requirement. Operational Emission Analysis is not required for this exempt project. Air quality conformity analysis is not required.

Construction work will generate fugitive dust emissions and construction equipment emissions, which can be controlled by compliance with Caltrans Standard Specification in Section 14-9 (2018) and South Coast Air Quality Management District Rules and regulation during construction. The total estimated equivalent CO_2 (CO_2e) emission from the construction of this project is 2,460 MT.

6G. Title VI Considerations

Caltrans, under Title VI of the Civil Rights Act of 1964 and related statues, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers. This project is not anticipated to have impacts on the surrounding area and facilities in regard to this requirement.

6H. Noise Abatement Decision Report

According to FHWA CFR 23 772 this project does not qualify as a Type I project and therefore a Traffic Noise Report and Noise Abatement Decision Report are not required.

6I. Life Cycle Cost Analysis

A Life-Cycle Cost Analysis is not required for this project. The structural section for the mainline pavement will be developed specifically for the purpose of rehabilitation. The new pavement associated with the EB Orangethorpe Avenue off-ramp terminus widening will be designed to match the existing pavement material, HMA, and designed per Section 630 of the HDM.

6J. Reversible Lanes

This project is not a capacity-increasing or a major highway lane realignment, therefore, reversible lanes do not apply to the mainline.

7. OTHER CONSIDERATIONS

Public Hearing Process

A public hearing is not required since the project was cleared with a Categorical Exclusion/Categorical Exemption.

Route Matters

No cooperative agreement, relinquishment or access control revision is anticipated for this project.

Permits

It is anticipated the following permits will be required:

- State Water Resources Control Board Clean Water Act Section 402 NPDES General Permit for Strom Water Discharges Associated with Construction and Land Disturbance Activities pursuant to Order No. 2009-009-DWQ, NPDES No. CAS000002, as amended under Order No. 2010-0014-DWQ and 2012-0006-DWQ
- Caltrans Statewide NPDES General Permit pursuant to Order No. 2012-0011-DWQ, NPDES No. CAS000003, as amended under Order No. 2014-0077-DWQ

Cooperative Agreements

No cooperative agreements are anticipated for this project.

Other Agreements

No other agreements are anticipated for this project.

Report on Feasibility of Providing Access to Navigable Rivers

There are no navigable rivers within or directly adjacent to the project limits, so this section does not apply.

Public Boat Ramps

There are no public boat ramps within or directly adjacent to the project limits, so this section does not apply.

TMP

A multi-modal TMP will be required for this project due to the expected impact on vehicular and pedestrian traffic during construction. The TMP will identify methods to reduce traffic delay, maintain traffic flow, and provide a safe environment for the work force and all modes of transportation. Where sidewalks will be closed during construction, the TMP will address pedestrian detours which will accommodate the ADA community.

Elements expected to be recommended or discussed in the project TMP include:

- Public Awareness Campaign
- Traffic Detour for all travelers including pedestrians and the ADA community
- Temporary Pedestrian Access Route (TPAR)
- Fixed and Portable Changeable Message Signs
- Traffic Signal Modifications (if applicable)
- Traffic Management Center (TMC)
- COZEEP/CHP and/or Local agencies support
- TMP Coordination & Review
- Traffic Management Team

Weekend closures and night work will be considered to avoid traffic delay. Final traffic management details and lane closure charts will be developed during the PS&E phase. The cost of the TMP is shown as a separate item in the cost estimate.

Stage Construction

Stage construction traffic handling plans and lane closure charts will be prepared in the PS&E phase to show the sequence of work activities and provide for the maintenance of traffic through the work zone on the mainline and on Orangethorpe Avenue. Nighttime lane closures would be required to allow for replacement of concrete slabs, overhead sign structures and panels. Reduced lane widths and shoulder closures may be required to cold plane and overlay asphalt pavement areas. Closures are anticipated to be short term.

Impacts to pedestrian access on local streets are anticipated to be limited to Orangethorpe Avenue during construction although TMS improvements at ramp intersections could cause

minor delays. One direction of sidewalk will remain open on Orangethorpe Avenue during construction of ramp terminus widening and curb ramps.

The project is not anticipated to impact bicycle facilities.

Accommodation of Oversize Loads

The Caltrans Transportation Permit office will be apprised of the project to ensure oversize and overweight loads are coordinated during lane closures. SR-91 is included in the Federal STAA National Network route for oversized trucks. There is no planned improvement which will affect the vertical clearance of existing bridge crossing.

Graffiti Control

The project is within a graffiti-prone area. During the design phase, applicable graffiti deterrents will be considered. For example, areas such as the retaining wall along the proposed EB Orangethorpe Avenue off-ramp terminus widening with a large smooth vertical surface will be considered for an aesthetic architectural treatment such as fractured rib. This treatment provides texture which would increase the difficulty of placing graffiti and reduce the clarity of messages both of which would help to deter graffiti.

The design of this feature would be further developed during the PS&E phase.

Asset Management

The project achieves the performance objectives as shown in Attachment I, SHOPP Tool Post Performance Tables, which is also available in the third addendum of the PIR attachment. The performance objectives are consistent with the Transportation Asset Management Plan, Ten Year SHOPP Plan, Ten-Year Project Book, and Five-Year Maintenance Plan.

Complete Streets

A complete street is a transportation facility that is planned, operated and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists appropriate to the function and context of the facility. The extent of the improvements related to the four types of user are provided in the following:

Pedestrian Facilities

There are no pedestrian facilities on the mainline of SR-91 within the project limits. The proposed improvement at the EB Orangethorpe Avenue off-ramp would impact the pedestrian access at the ramp intersection with Orangethorpe Avenue as well as the sidewalk on the south side of the intersection. The existing curb ramps in the intersection would be reconstructed to meet the requirements of the current ADA standards. ADA compliant sidewalks would replace about 150 feet of non-compliant sidewalk west of the intersection along the south side of Orangethorpe Avenue.

Bicycle Facilities

There are no existing bicycle facilities within the project limits. The scope of the project is to improve existing assets, and no new bicycle facilities will be studied as part of this report.

Transit Facilities

Orange County Transportation Authority Bus route 30 runs along Orangethorpe Avenue and bus stops are located west of the intersection with Walker Street and east of intersection with Valley View Street. The proposed widening work at the ramp terminus would not interfere with bus operations and riders' access.

Park-and-Ride Facilities

The Fullerton park-and-ride lot is located near the project at Magnolia Avenue and Orangethorpe Avenue. Proposed improvements will not impact the park-and-ride lot or hinder future improvements. No new park-and-ride facility is proposed with this project.

Climate Change Considerations

A Climate Change/Green House Gas Emission Analysis will be considered as part of the environmental review of the project. The recommended measures from the analysis include the following:

- Reduction of demolition waste
- Energy efficient construction methodologies
- Water efficient construction methodologies
- Fuel efficient measures both for construction equipment and traffic management during delays or detours
- Materials use/choice, including source distance from site
- Construction methods and materials with lower Green House Gas than standard specifications

Broadband and Advance Technologies

Wired broadband accommodations are anticipated in this project. District 12 Electrical Design Branch has reviewed and provided the estimate for wired broadband conduits. The associated cost is included in the detailed cost estimate, see Attachment C, Cost Estimates, sub-section titled Fiber Optic Communication System. The exact locations and limits of the wired broadband facility will be determined at the PS&E phase. Positive location(s) of existing underground utilities found during construction will be preserved and remain in place. Unforeseen underground utilities might occur during installation of conduits.

Accommodation of fueling opportunities for zero-emission vehicles is not included in this project. Construction of any charging stations would require extensive right-of-way acquisition as it needs to be constructed outside the state right-of-way. There are no charging stations within project proximity, however, travelers can use four local charging stations, which are in the Cities of Anaheim and Yorba Linda.

Accommodation of the vehicle-to-infrastructure (V2I) technologies is not included in this project. Construction of the back-office system development center as well as the communications backhaul infrastructure necessary for the installation of the V2I technologies would require extensive right-of-way acquisition.

Coordination with Other Projects

The ready to list (RTL) date for this project is scheduled for March 2024. There are other projects in the vicinity with overlapping construction windows that are currently in project development and need to be carefully coordinated with this project. OCTA has three projects in the PS&E phase along SR-91. One of these projects, SR-91 Segment 3 Improvements (EA 0K983) abuts this project at Acacia Street. In addition, the neighboring SR-91 multi-asset project to this one, Segment 2 (EA 0R312), will be combined with OCTA's project and contracted as one project. The TMP and traffic handling for the pavement rehabilitation work could temporarily affect SR-91 east of Acacia Street. Quarterly coordination meetings between the Caltrans and OCTA design teams are ongoing, but focused meetings will be required during PS&E between this project's team, the OCTA Segment 3 team, and the multi-asset Segment 2 design team to carefully coordinate the improvements. Permanent improvements do not overlap but temporary impacts will require coordination during PS&E.

Team members for this project must also coordinate with other planned and programmed projects within the project limits. The other projects proposed on SR-91 are shown in Table 15.

Table 15: Programmed Improvement Projects on SR-91

EA	PM	Project Description	Ready to List	Asset Required Coordination
0Q310	R1.8/R3.4	Safety – OH Sign	2021	OH Signs
0P670	R2.36/R4.1	ICM – Integration	2025	TMS
0Q690	Entire	TMS – Various on Route 5, 405, 605, 22, 55, 57, 73, 91, 133, 261	2022	TMS
0K983	4.7/6.4	SR-91 Widening Project Segment 3 - Acacia Street to La Palma Ave - OCTA Project	2024	TMS, OH Signs, Pavement
0R312	4.8/6.4	SR-91 Multi-Asset project - Segment 2 (Acacia Street to La Palma Ave)	2023	TMS

EA	PM	Project Description	Ready to List	Asset Required Coordination
0P42U0	R2.6/R4.1	Install additional lighting at interchange 91/55	2025	TMS
0R190	5.4/5.8	Install new OH sign structures and remove and replace existing guide sign panels on SR-91	2022	OH Signs
0R730	R0.8/R1.8	Install new OH sign structures with high-reflective sign panels, replace existing sign panels, and upgrade guardrails on SR-91	2022	OH Signs and Roadway

8. FUNDING, PROGRAMMING, AND ESTIMATE

Funding

This project is eligible for state and federally funding through the SHOPP and will be programmed for a funding year of 2023/2024.

It has been determined that this project is eligible for Federal-aid funding.

Programming

The project is included in the 2020 SHOPP. It is also included in the RIP Group Project No. ORA 001103.

Table 16: Programming Cost

Fund Source	Fiscal Year Estimate							
20.10.201.121	Prior	20/21	21/22	22/23	23/24	24/25	Future	Total
Component	In thousands of dollars ($1,000)							
PA/ED Support			2,150					2,150
PS&E Support			3,560					3,560
Right-of-Way Support			474					474
Construction Support					4,320			4,320
Right-of-Way					264			264
Construction					39,360			39,360
Total			6,184		43,944			50,128

The support cost ratio is 26.5%.

Estimate

The project construction cost and right-of-way cost estimates are provided in Attachment C. Construction is currently anticipated to occur from approximately November 2024 to May 2026, which is reflected in the escalated values of the cost estimates.

The total project cost for the current year is approximately $38.8 million. The construction cost has been escalated at until the mid-point of the construction period, May 2026.

9. DELIVERY SCHEDULE

The anticipated project schedule is provided in Table 17 below.

Table 17: Project Schedule

Project Milestones		Milestone Date (Month/Day/Year)
PA & ED	M200	10/1/2021
FINAL R/W REQUIREMENTS	M265	6/1/2022
PS&E TO DOE	M377	6/1/2023
DRAFT STRUCTURES PS&E	M378	6/1/2023
RIGHT-OF-WAY CERTIFICATION	M410	3/1/2024
READY TO LIST	M460	3/29/2024
HEADQUARTERS ADVERTISE	M480	8/1/2024
AWARD	M495	11/1/2024
APPROVE CONTRACT	M500	12/2/2024
CONTRACT ACCEPTANCE	M600	12/1/2027
FINAL PROJECT CLOSEOUT	M900	12/1/2028

10. RISKS

A project Risk Register is included in Attachment H. Total of 17 risks were identified during PIR and three have been retired during the PA/ED phase.

11. EXTERNAL AGENCY COORDINATION

FHWA

This project is an Assigned Project in accordance with the current FHWA and Caltrans Joint Stewardship and Oversight Agreement. It is exempt from FHWA review.

The project requires coordination with the following agencies:

City of Cerritos

City of La Palma

City of Buena Park

City of Fullerton

City of Anaheim

12. PROJECT REVIEWS

District Maintenance Hazel Lam Date 9/16/2021
Project Manager Brian Santos Date 9/16/2021
District Safety Review Thuan Nguyen Date 9/16/2021
Constructability Review Adil Mujtaba Date 9/16/2021

13. PROJECT PERSONNEL

NAME	TITLE, FUNCTIONAL UNIT	PHONE NUMBER
Brian Santos	Project Manager	657-328-6624
Montasheema Afroze	Acting Chief, Design Branch D	657-328-6112
Farzane Sarpoolaki	Design Oversight	657-328-6619
Adam Siddiqui	Traffic Operations	949-279-4617
Smita Deshpande	Senior Environmental Planner	657-328-6151
Hazel Lam	Maintenance Engineer	657-328-6609
Reza Aurasteh	Branch Chief, Environmental Engr.	657-328-6138
Phi Dinh	Branch Chief, Hydraulics	657-328-6172
Vanesa Truong	Branch Chief, Electrical Design	657-328-6130
Evangelina Washington	Branch Chief, Right of Way Project Coordination and Planning and Management	657-328-6349
Greg Hefter	Project Manager, AECOM	949-285-6198
Mike Tammen	Project Engineer, AECOM	310-279-7604

Attachment A

Location Map

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

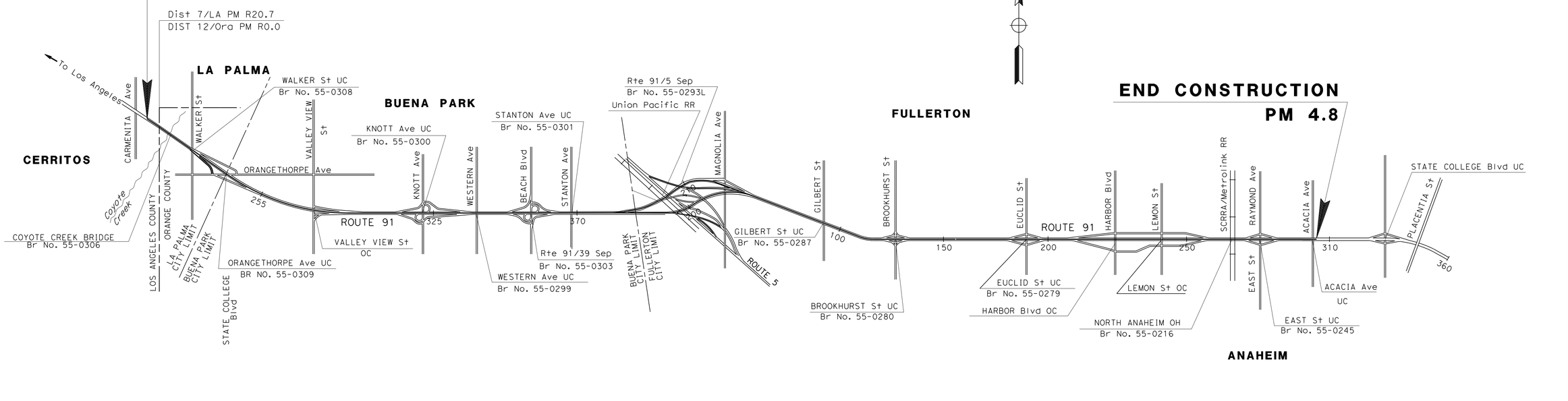
STATE HIGHWAY

IN LOS ANGELES AND ORANGE COUNTIES
IN CERRITOS, LA PALMA, BUENA PARK, FULLERTON, AND ANAHEIM
FROM 0.1 MILE WEST OF THE LOS ANGLES COUNTY LINE
TO ACACIA AVENUE UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

LOCATION MAP

BEGIN CONSTRUCTION
PM R20.6



END CONSTRUCTION
PM 4.8

ATTACHMENT A
STRIP MAP

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

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Attachment B

Conceptual Project Plans

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER	DATE	$USER
-	-	$TIME

CALTRANS DESIGN OVERSIGHT APPROVAL	REGISTRATION No.	DATE SIGNED
-	XXXXX	XX/XX/XX

LICENSE Exp DATE
XX/XX/XX

$FILE$

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

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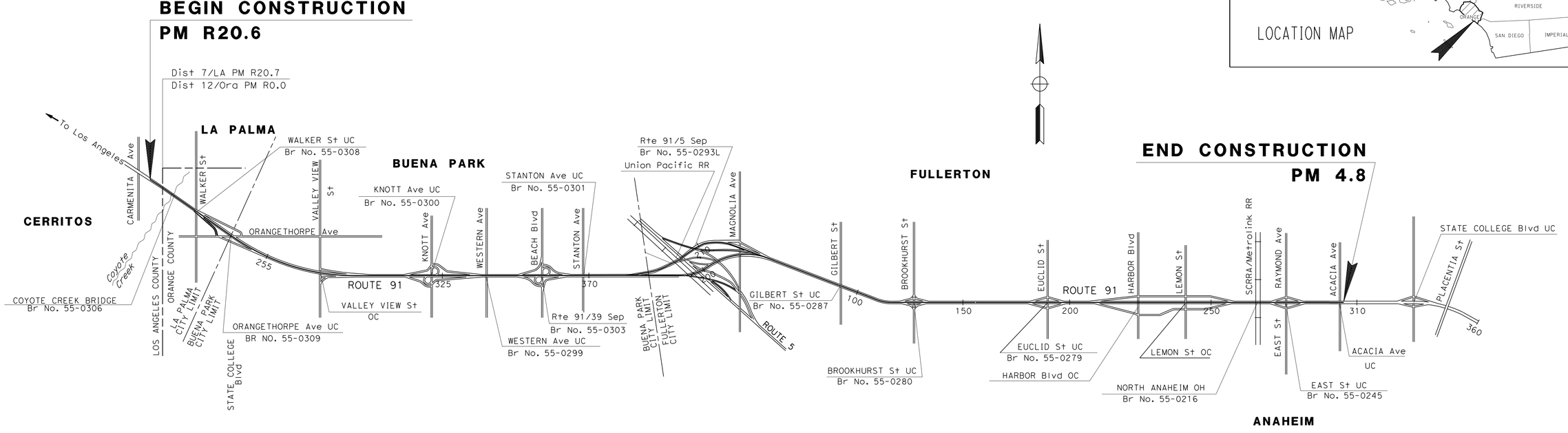
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	1	92

LOCATION MAP



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CONTRACT No.	**12-0R3110**
PROJECT ID	**120000021**

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NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS ARE SHOWN ON THE SUPERELEVATION DIAGRAMS.
3. FOR LOCATIONS OF REPLACE CONCRETE PAVEMENT, SEE LAYOUT SHEETS. THE EXACT LOCATIONS AND DIMENSIONS OF CONCRETE SLABS TO BE PARTIALLY REPLACED WILL BE DETERMINED BY THE ENGINEER. PARTIAL SLABS ARE CONSIDERED AS 1/3 FULL SLAB AT EITHER END.
4. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

ABBREVIATIONS:

HMA-A	HOT MIX ASPHALT (TYPE A)
JPCP-RSC	JOINTED PLAIN CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)
LCB-RC	LEAN CONCRETE BASE RAPID SETTING
RHMA-G	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
RSC	RAPID STRENGTH CONCRETE

PROPOSED PAVEMENT STRUCTURAL SECTIONS

1 — ASPHALTIC EMULSION (FOG SEAL COAT)

2 — 0.20′ RHMA-G; 0.20′ COLD PLANE Exist AC

3 — GRIND Exist Conc Pvmt

4 — 0.20′ RHMA-G; 0.65′ HMA-A; 1.65′ CLASS 2 AB

5 — X.XX′ HMA-A; X.XX′ CLASS 2 AB

6 — X.XX′ PRECAST CONCRETE PAVEMENT (PCP); BASE BOND BREAKER; X.XX′ LCB-RS

7 — 0.67′-0.85′ INDIVIDUAL SLAB REPLACEMENT (RSC) (MATCH Exist); BASE BOND BREAKER; REPLACE BASE AS NEEDED

8 — 0.20′ RHMA-G; 0.25′ HMA-A; 0.45′ COLD PLANE Exist AC

9 — X.XX′ JPCP-RSC; X.XX′ LCB-RS

EXISTING PAVEMENT STRUCTURAL SECTIONS

A — 0.50′ AC (TYPE B); 0.95′ CLASS 2 AB

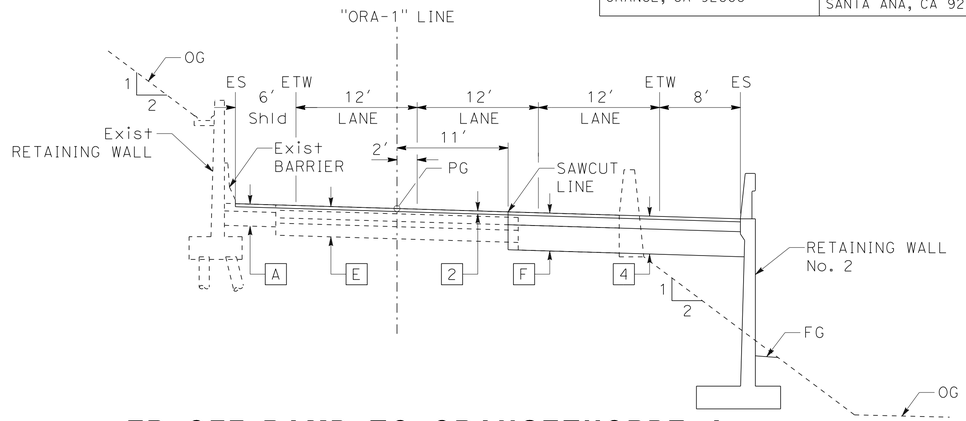
B — 0.67′ PCC; 0.35′ CTB (CLASS B); 0.XX′ CLASS 3 AB; 0.63′ CLASS 4 AS

C — 0.75′ PCC; 0.50′ CTB (CLASS B); 0.XX′ CLASS 3 AB; 0.40′ CLASS 4 AS

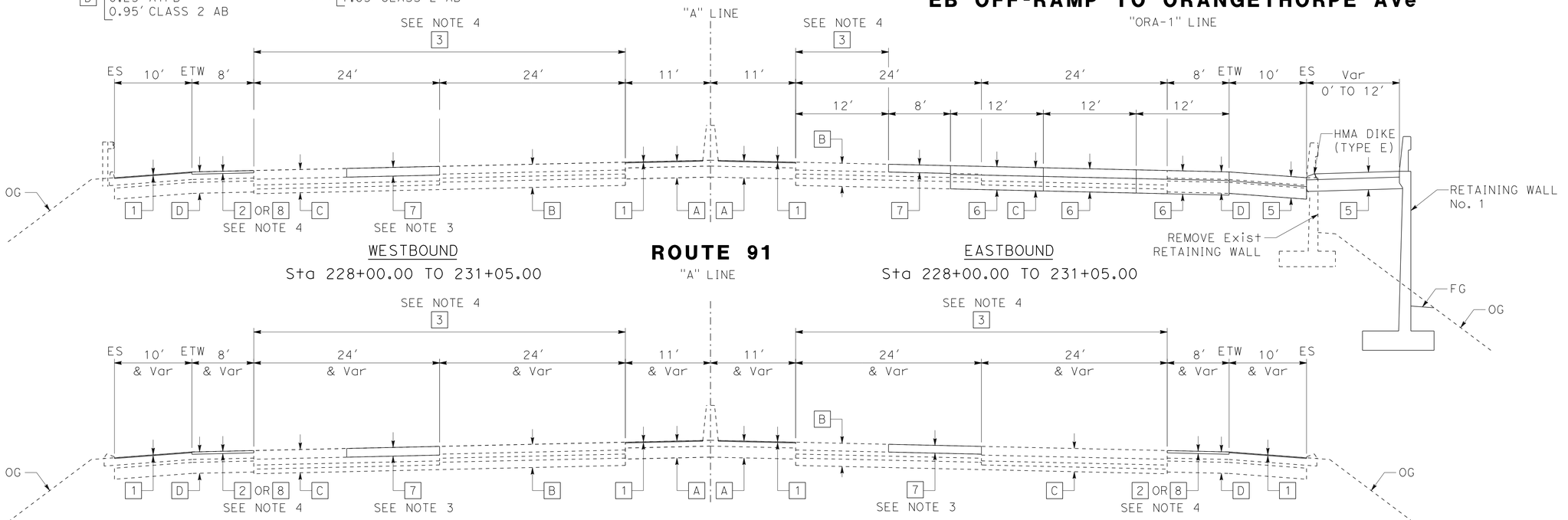
D — 0.65′ AC (TYPE B); 0.25′ ATPB; 0.95′ CLASS 2 AB

E — 0.35′ AC (TYPE B); 0.50′ CTB; 0.XX′ AB, CLASS 3; 0.80′ AS, CLASS 4

F — 0.85′ HMA (TYPE A); 1.65′ CLASS 2 AB



EB OFF-RAMP TO ORANGETHORPE Ave



TYPICAL SECTIONS

NO SCALE

X-1

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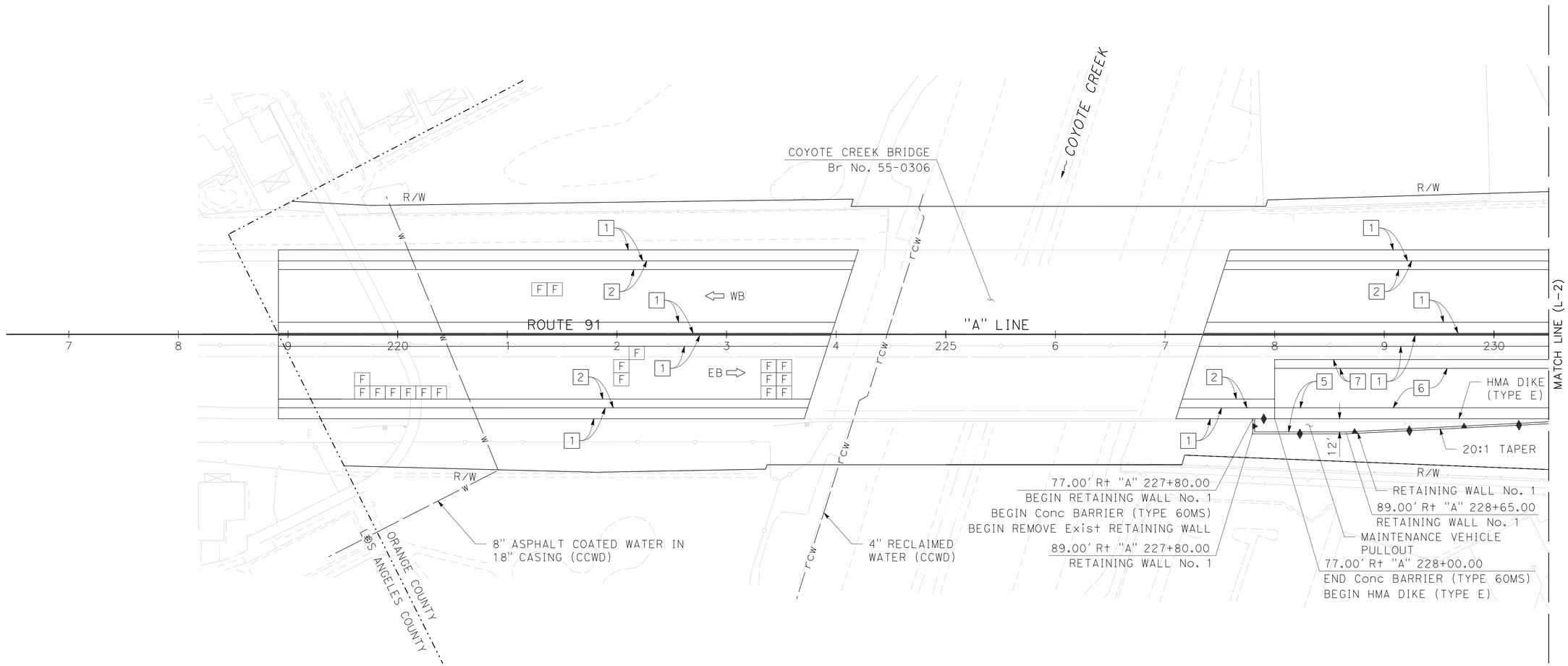
LEGEND:

- [F] RAPID STRENGTH CONCRETE (RSC) SLAB REPLACEMENT, USE STRUCTURAL SECTION TYPE [7]
- PERMANENT EASEMENT (PE), SEE L-2
- TEMPORARY CONSTRUCTION EASEMENT (TCE), SEE L-2
- (#) TEST HOLE LOCATION, SEE L-2, L-4 & L-8

ABBREVIATIONS:

AT&T	AMERICAN TELEPHONE AND TELEGRAPH
BPMW	CITY OF BUENA PARK MUNICIPAL WATER
CCT	COMCAST CABLE TELEVISION
CCWD	CITY OF CERRITOS WATER DISTRICT
MWD	METROPOLITAN WATER DISTRICT
OCSD	ORANGE COUNTY SANITATION DISTRICT
OCTA	ORANGE COUNTY TRANSPORTATION AUTHORITY
PPC	PARAMOUNT PETROLEUM CORPORATION
SCE	SOUTHERN CALIFORNIA EDISON
SCG	SOUTHERN CALIFORNIA GAS



SCALE: 1"=50'

LAYOUT
L-1

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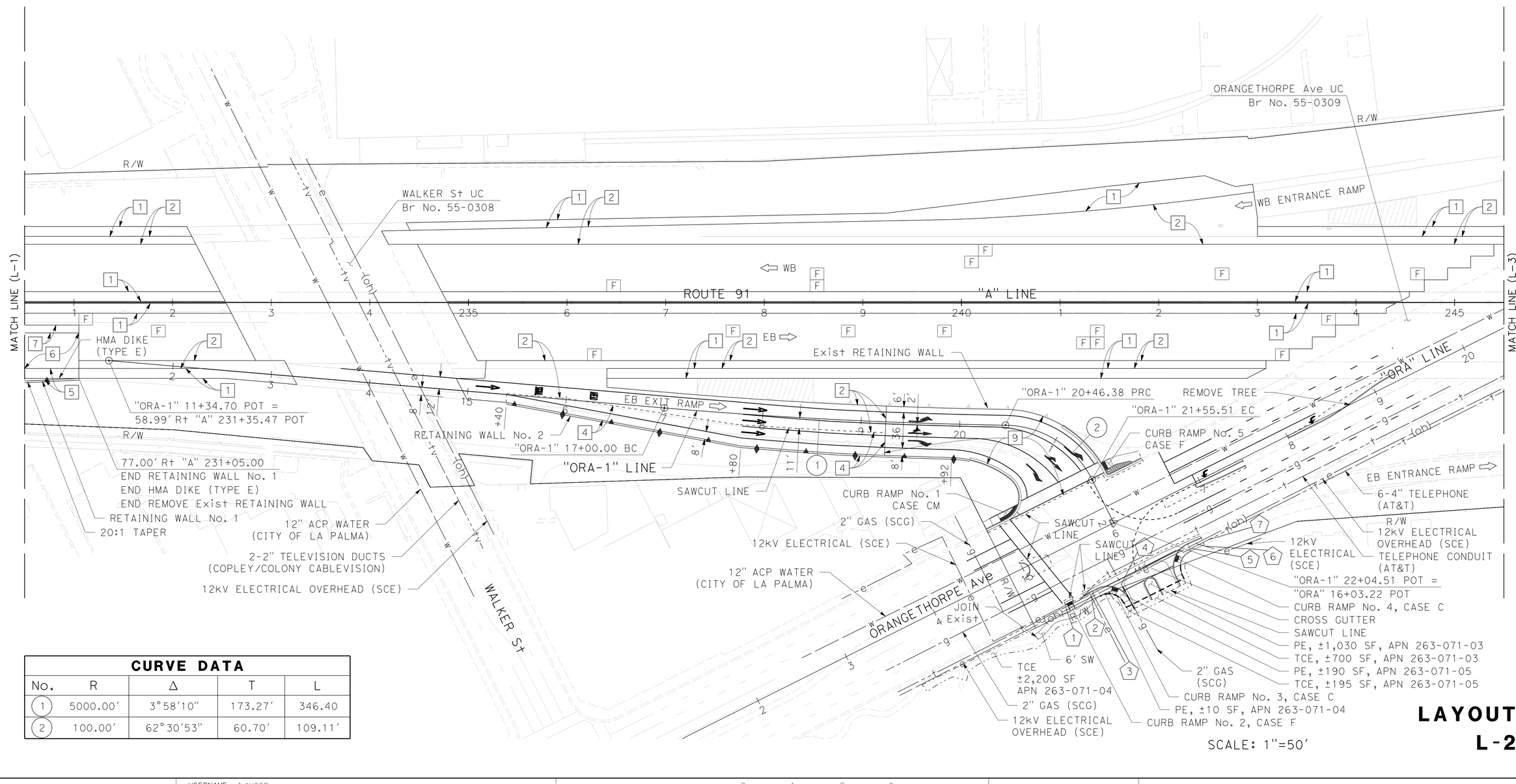

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LAYOUT
L-2

CURVE DATA

No.	R	Δ	T	L
1	5000.00'	3°58'10"	173.27'	346.40
2	100.00'	62°30'53"	60.70'	109.11'

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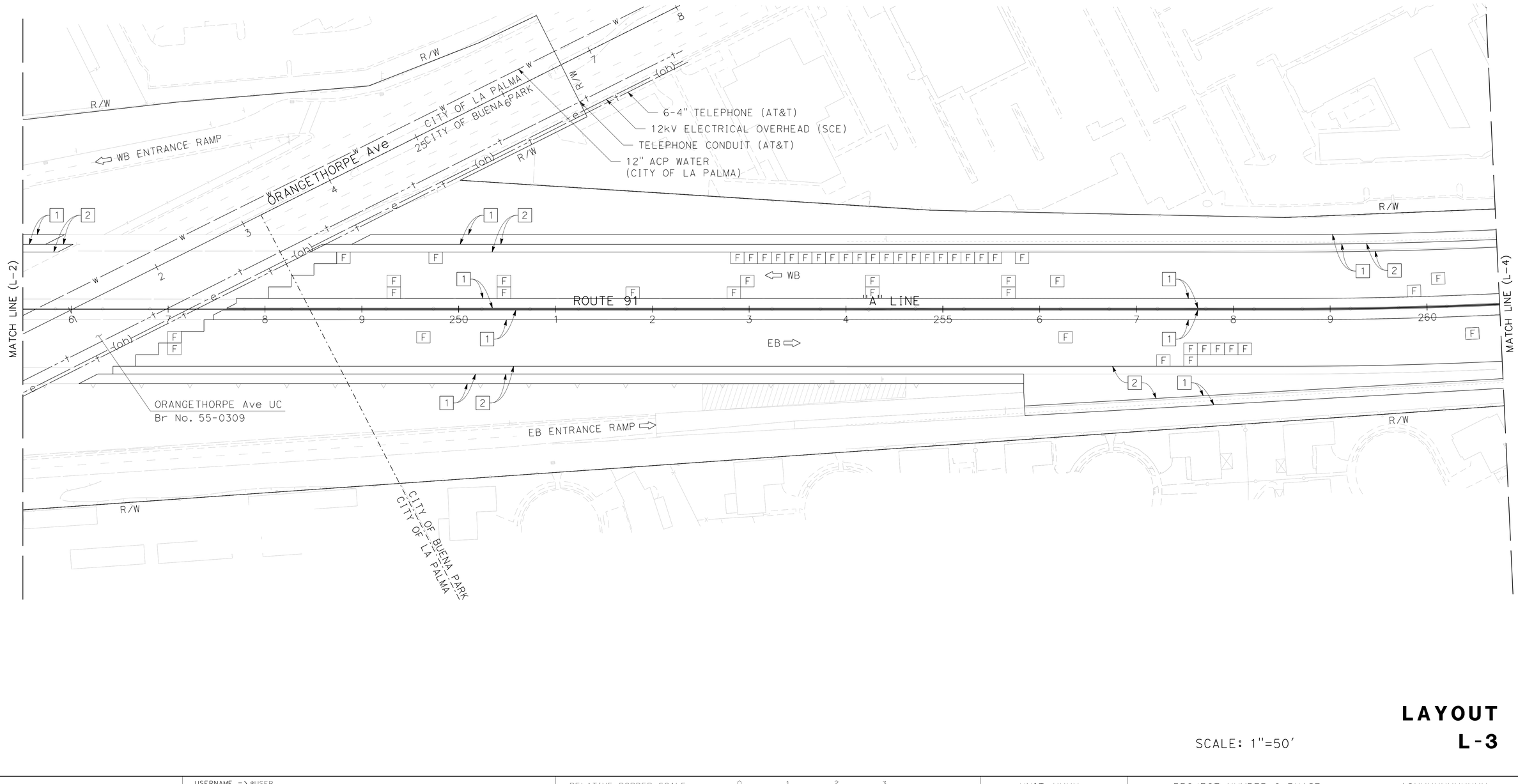

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LAYOUT
L-3

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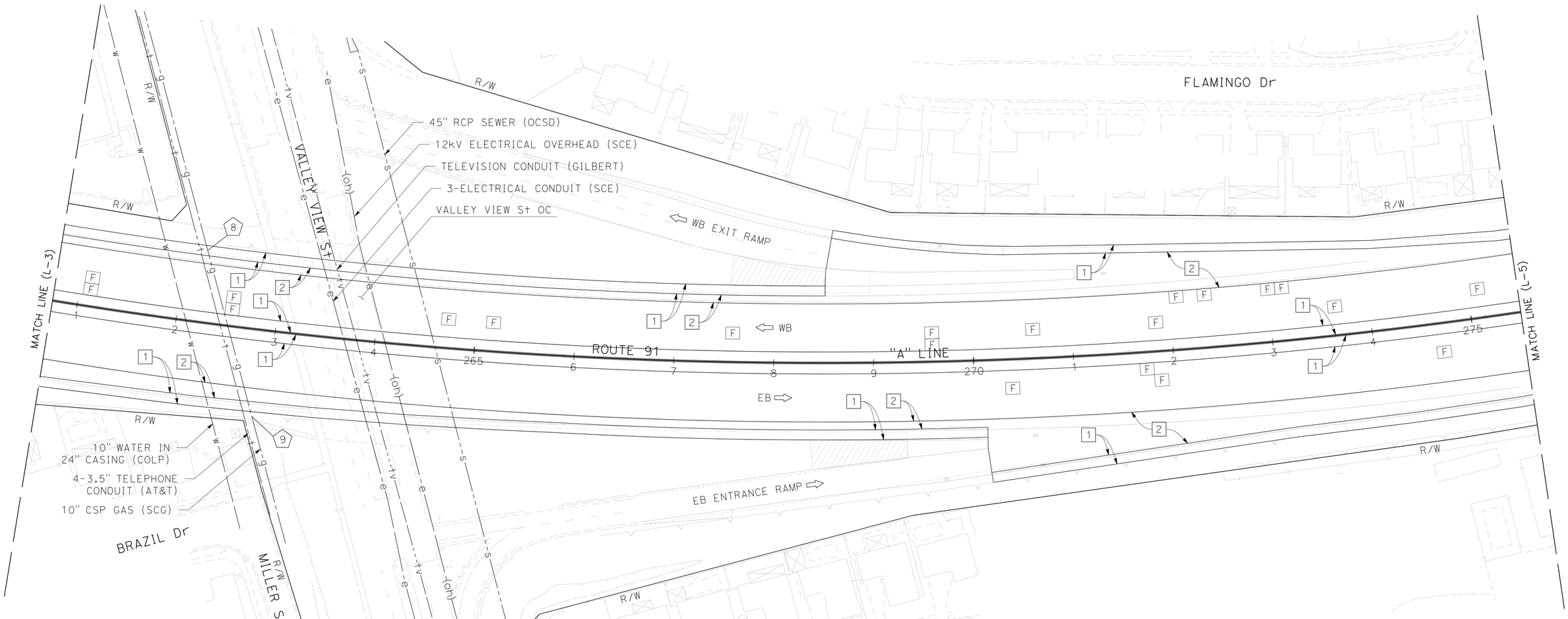

LAYOUT
L-4

SCALE: 1"=50'

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6028935 $DATE $TIME $USER #FILE#

LAST REVISION: DATE PLOTTED => $DATE
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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER, DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	7	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

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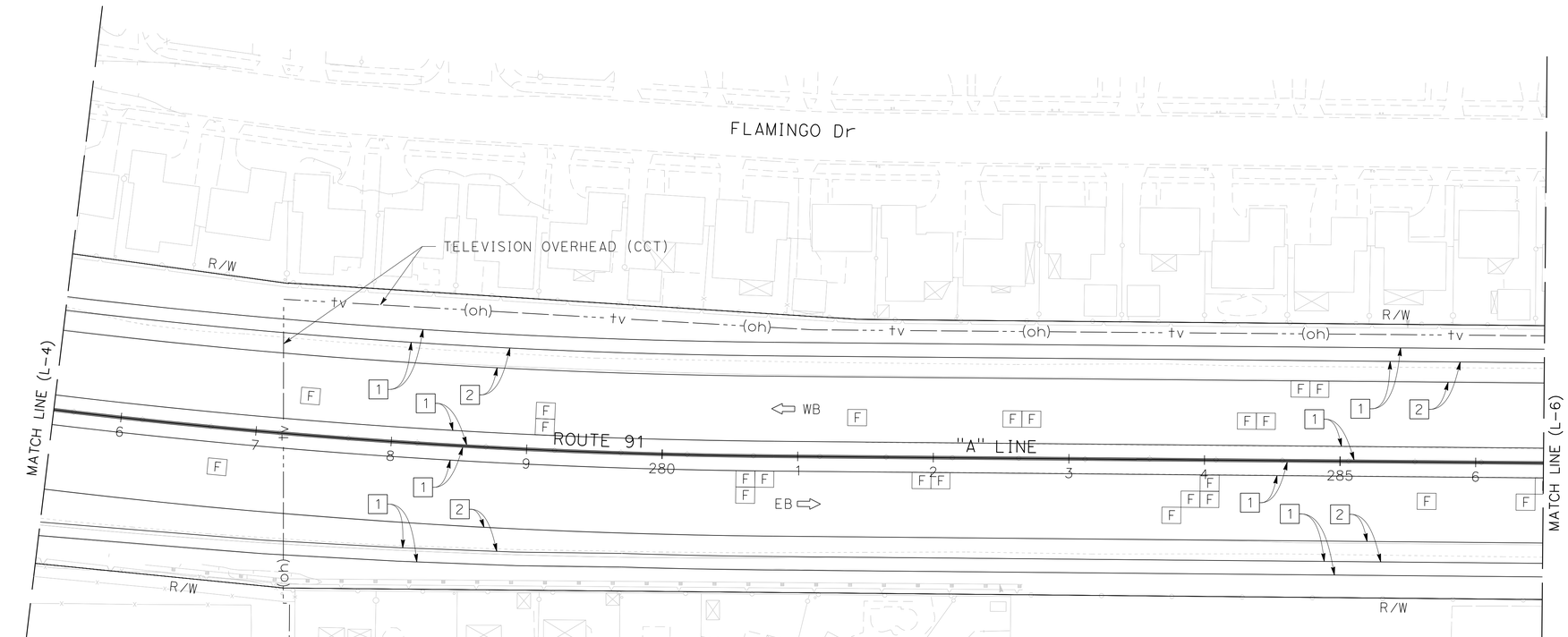

SCALE: 1"=50'

LAYOUT
L-5

REVISED BY	DATE REVISED
-	-

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	8	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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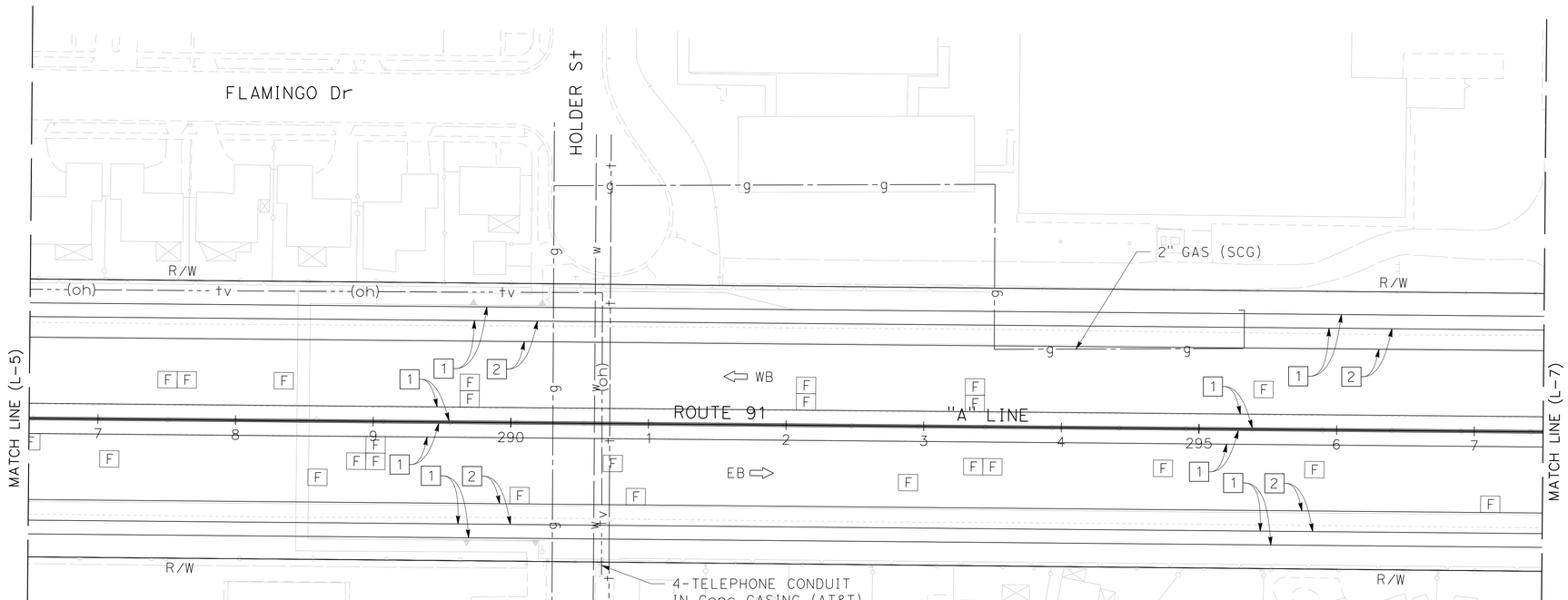

SCALE: 1"=50'

LAYOUT
L-6

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- | -

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	9	92

NOTE:

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XX-XX-XX
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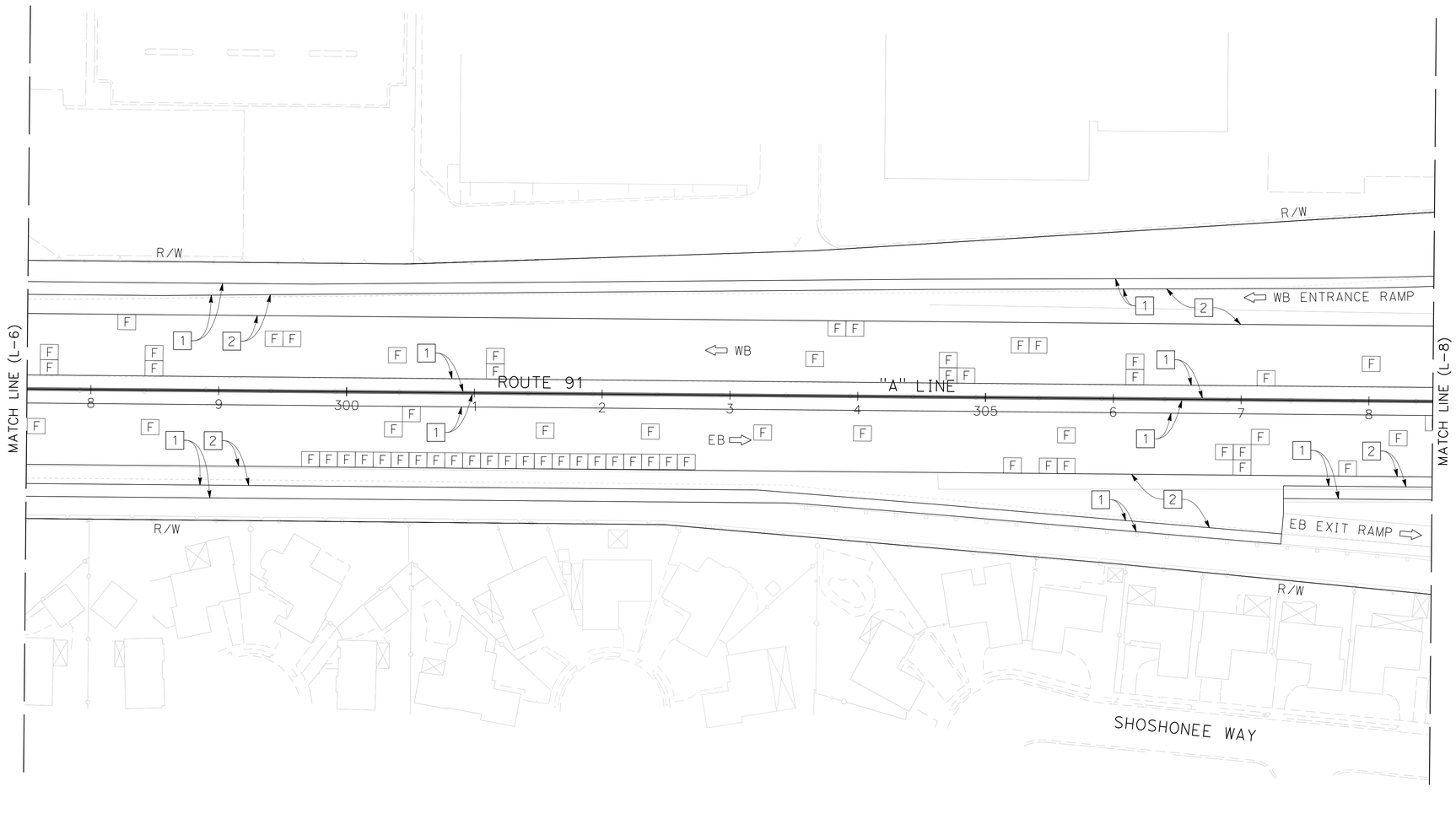

SCALE: 1"=50'

LAYOUT
L-7

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	10	92

XX-XX-XX
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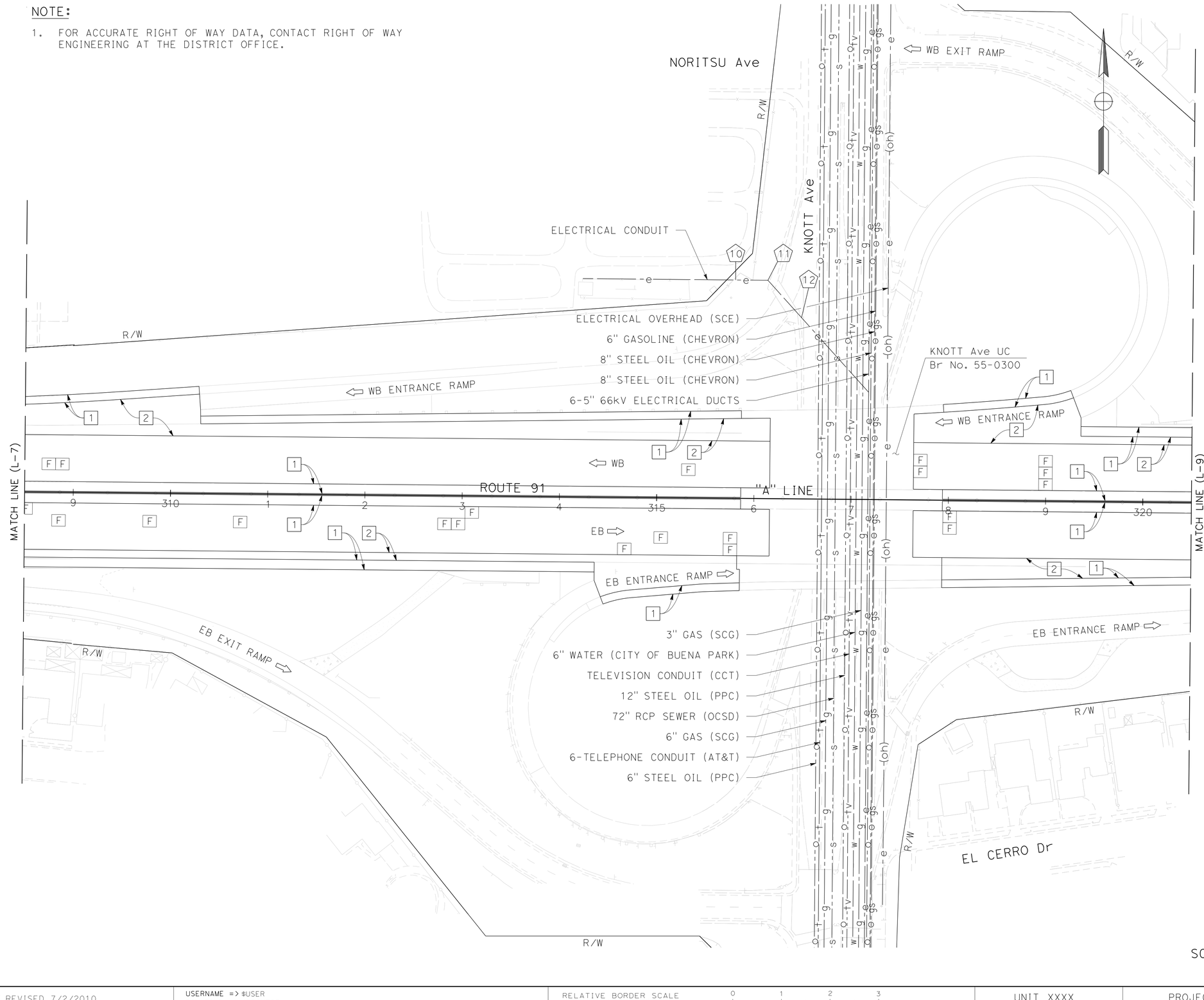

SCALE: 1"=50'

LAYOUT
L-8

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DATE PLOTTED => $DATE
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BORDER LAST REVISED 7/2/2010
USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	11	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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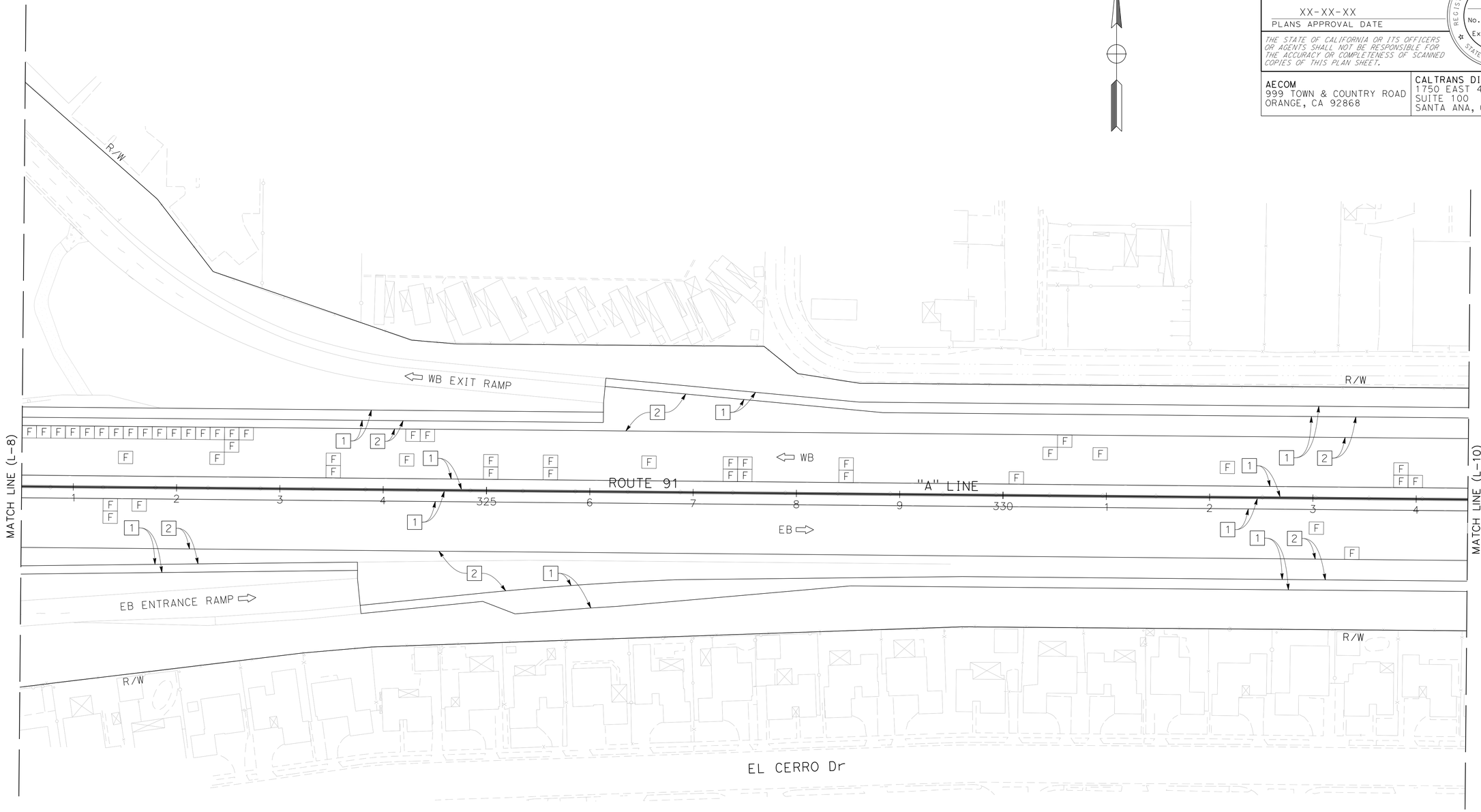

LAYOUT
L-9

SCALE: 1"=50'

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	12	92

XX-XX-XX
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XX-XX-XX
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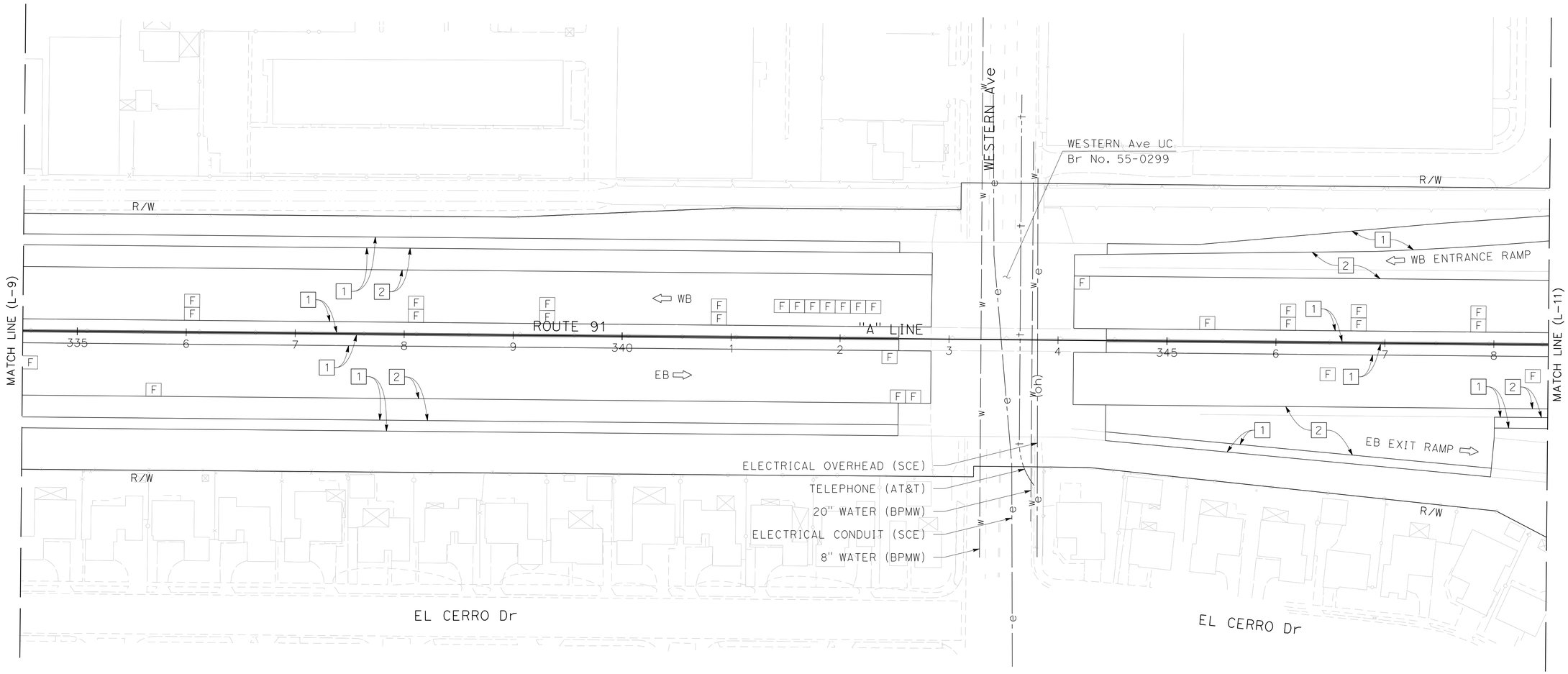

LAYOUT
L-10

SCALE: 1"=50'

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	13	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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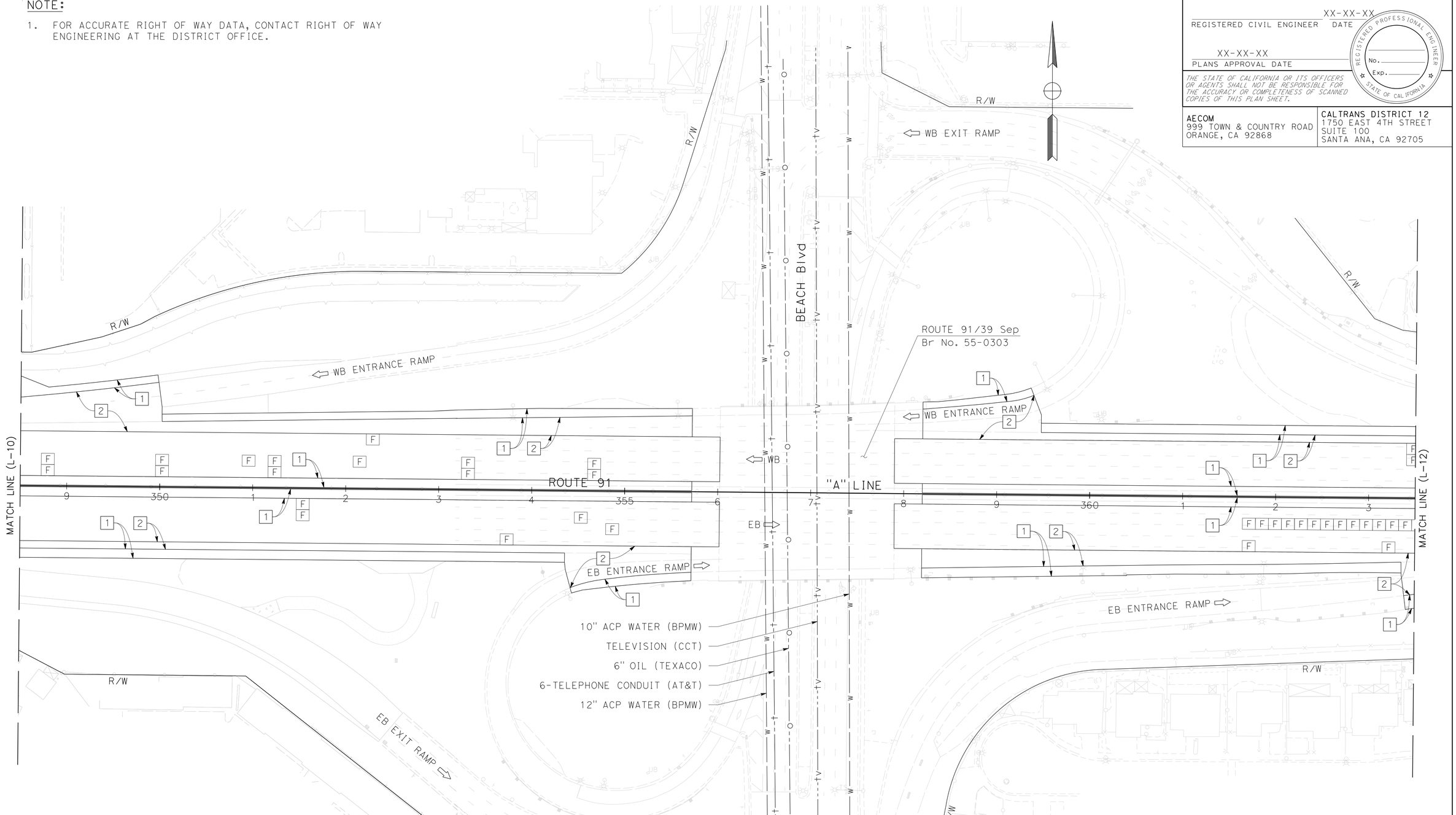

SCALE: 1"=50'

LAYOUT
L-11

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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	14	92

XX-XX-XX
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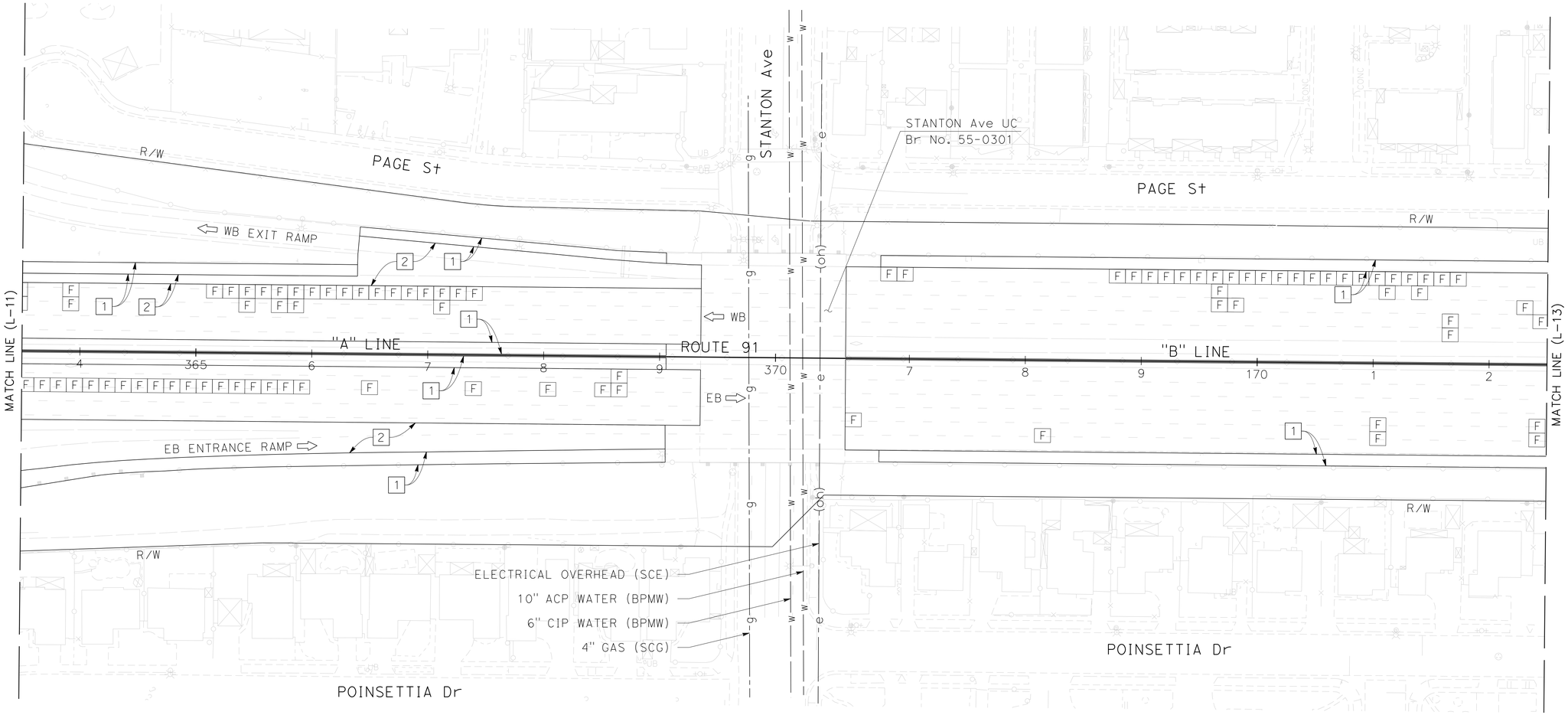

SCALE: 1"=50'

LAYOUT
L-12

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	15	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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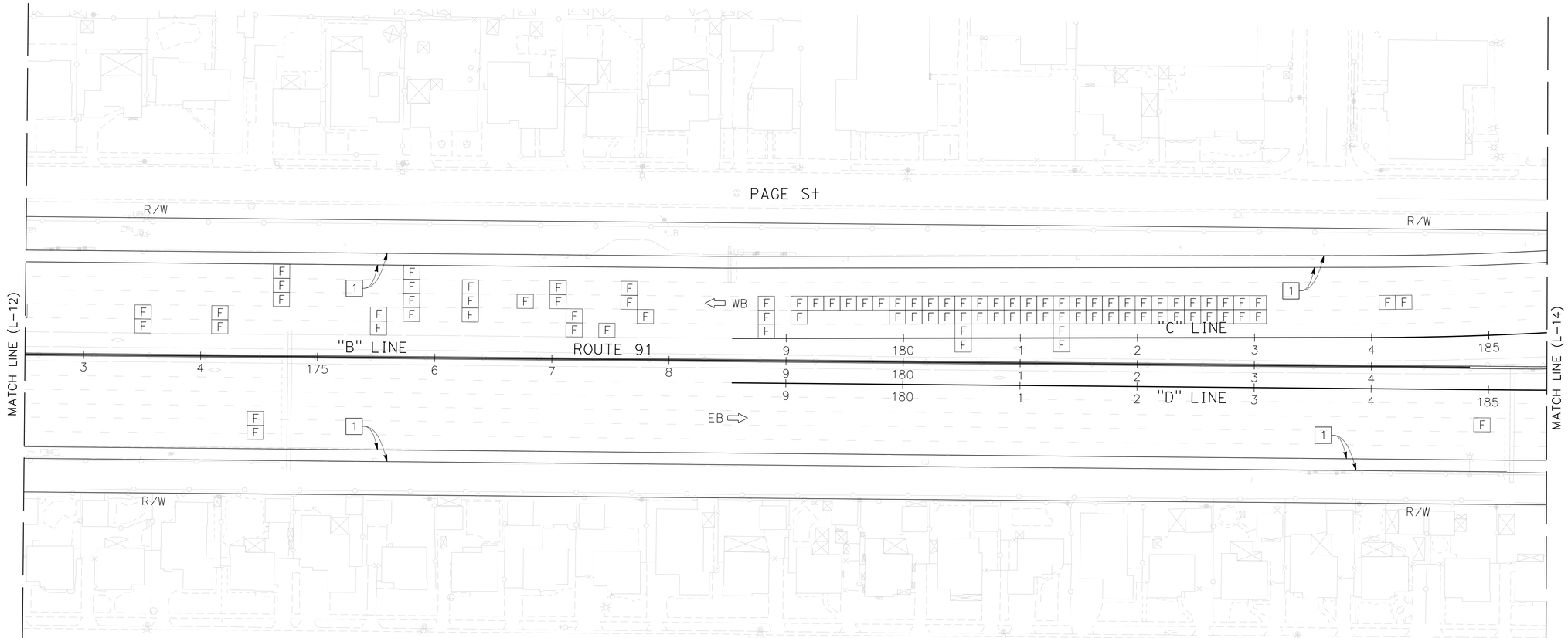

SCALE: 1"=50'

LAYOUT
L-13

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	16	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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SUITE 100
SANTA ANA, CA 92705

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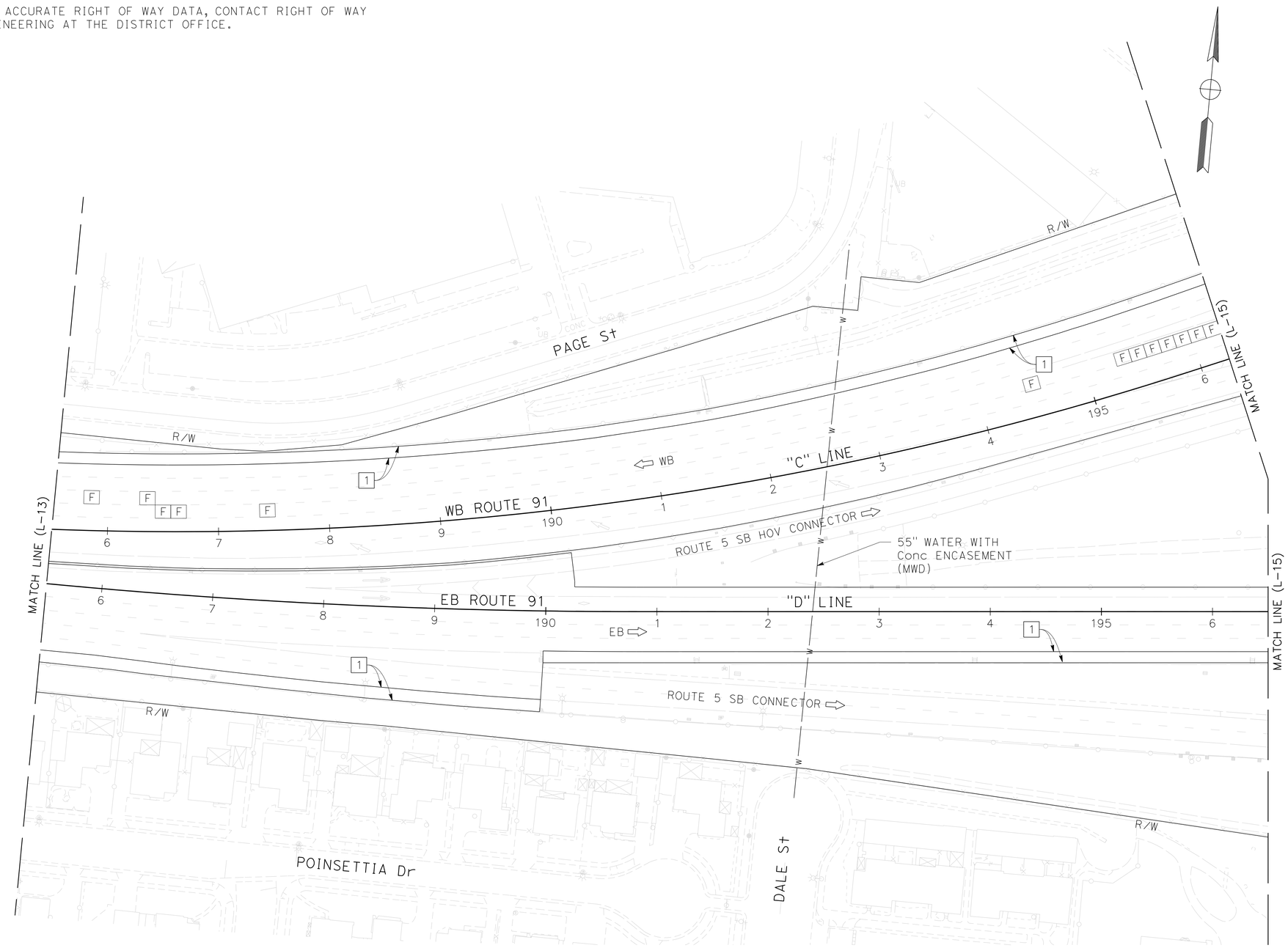

SCALE: 1"=50'

LAYOUT
L-14

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

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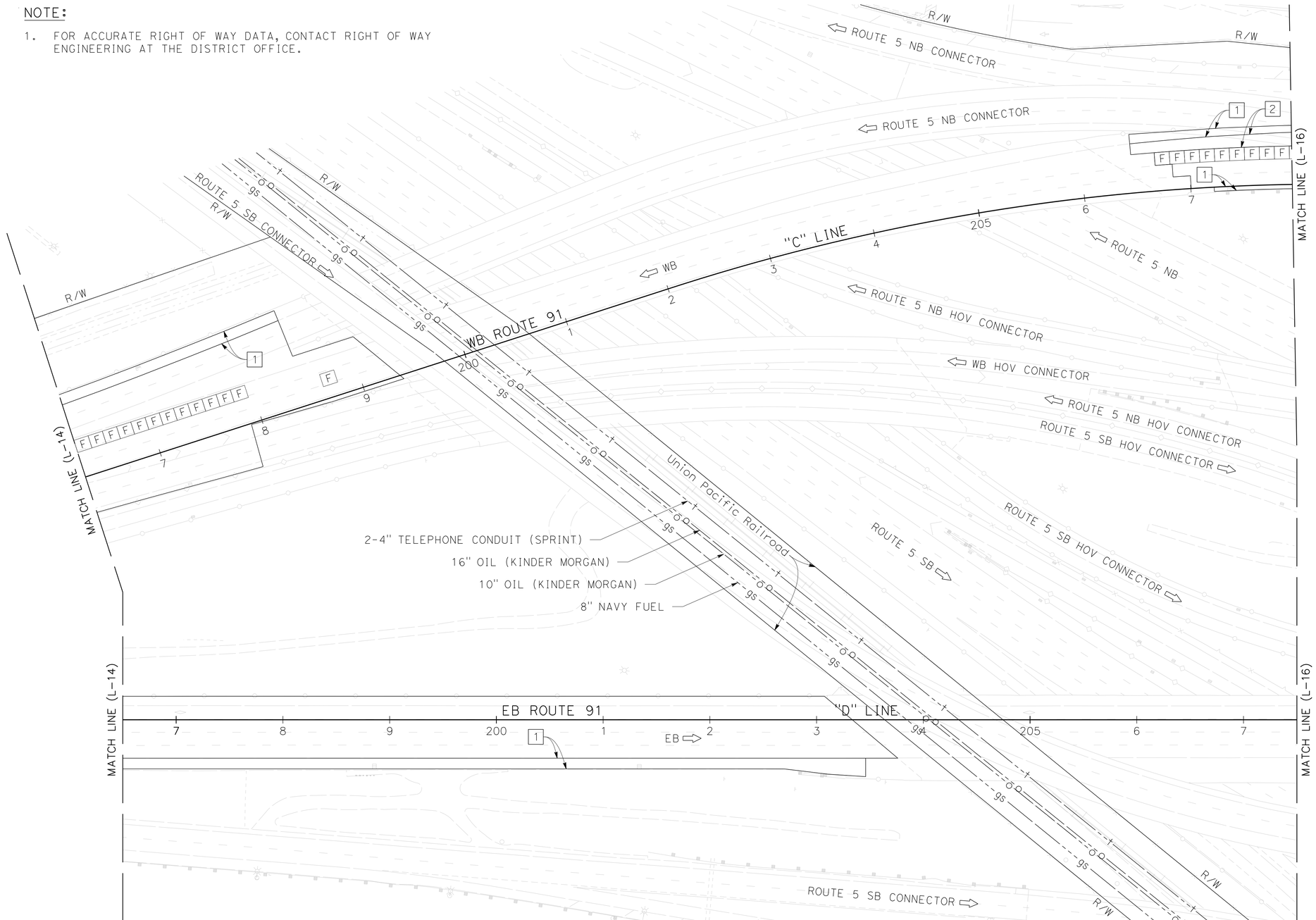

SCALE: 1"=50'

LAYOUT
L-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	17	92

XX-XX-XX
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XX-XX-XX
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	18	92

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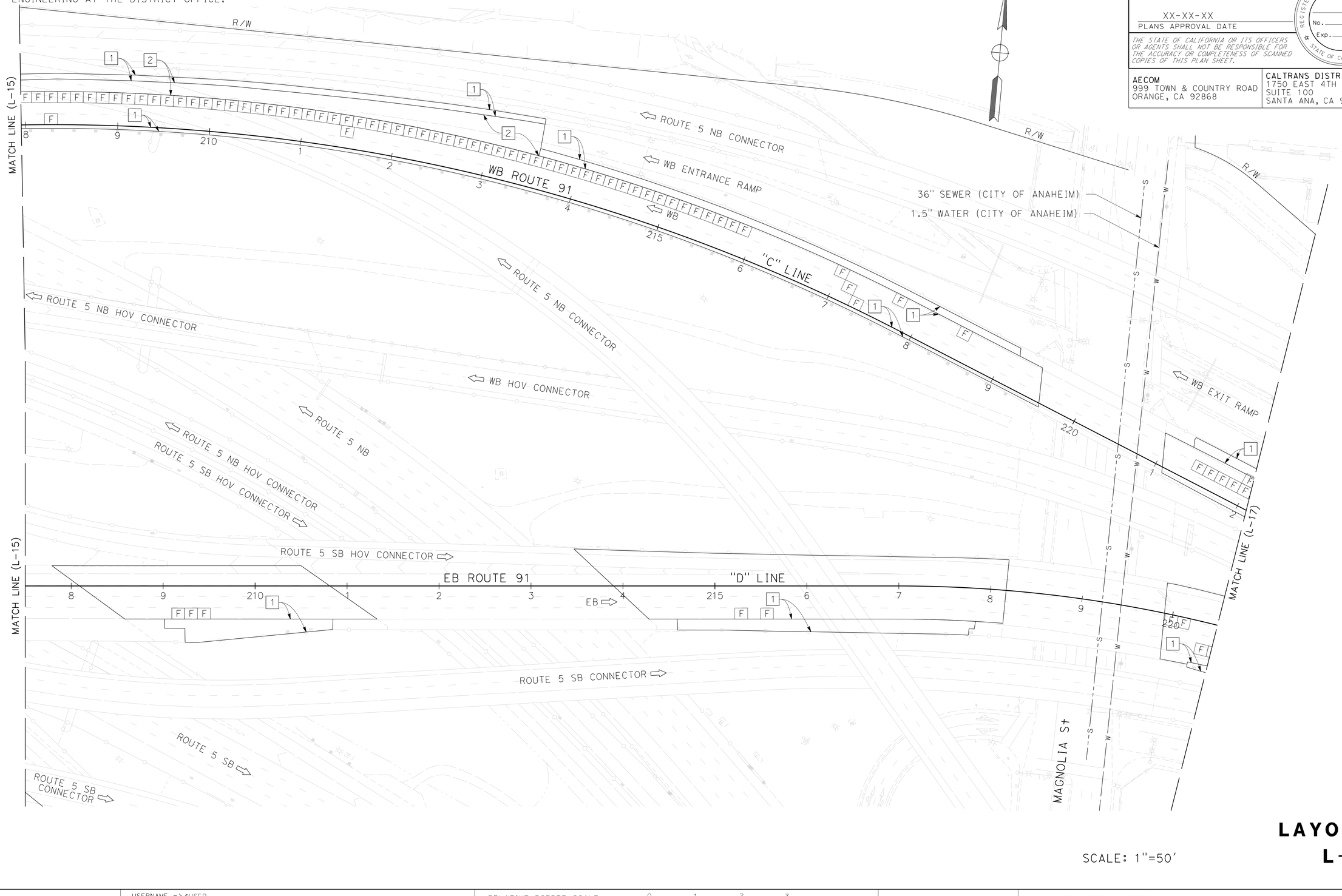

SCALE: 1"=50'

LAYOUT
L-16

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USERNAME => $USER
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UNIT XXXX

PROJECT NUMBER & PHASE 12XXXXXXXXXXX

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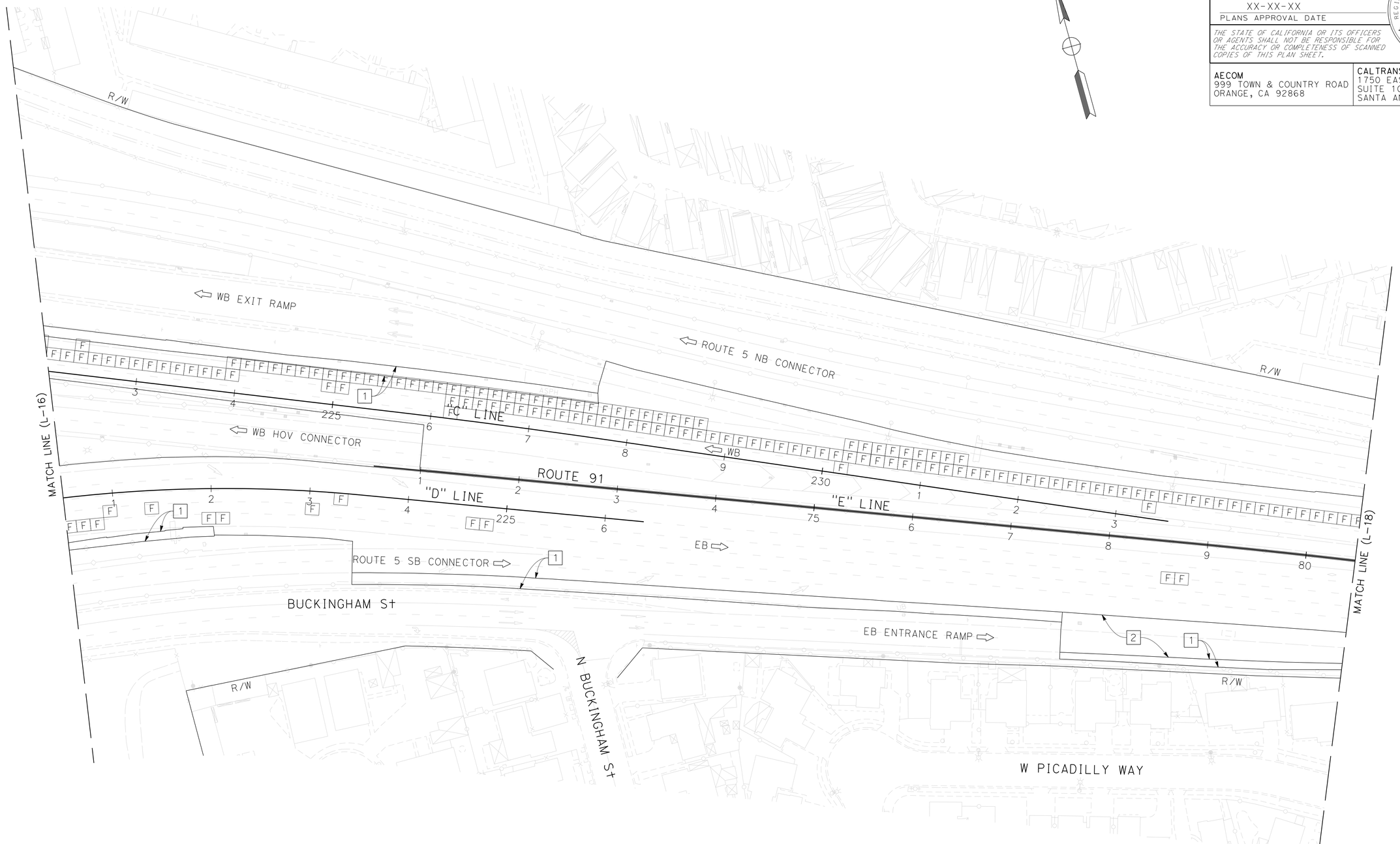

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	19	92

XX-XX-XX
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SCALE: 1"=50'

LAYOUT
L-17

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	20	92

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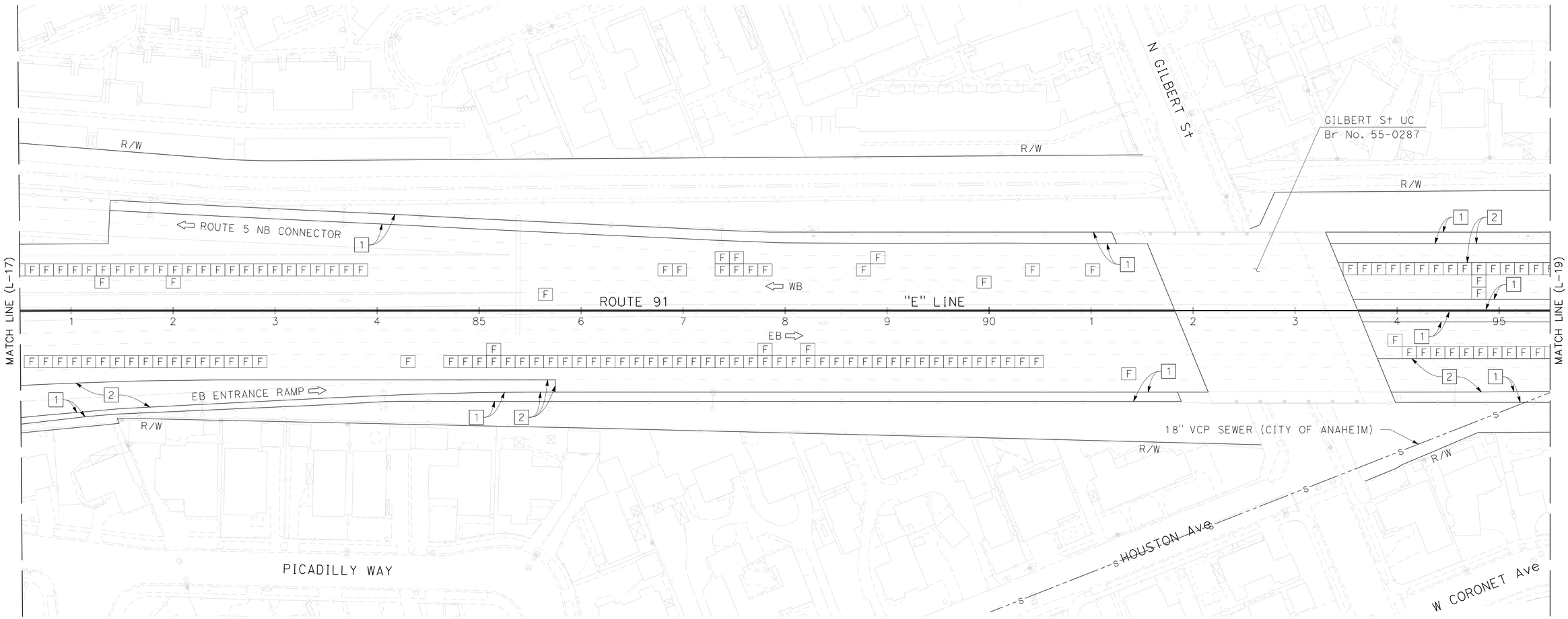
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



SCALE: 1"=50'

LAYOUT
L-18

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$DATE $TIME $USER $FILE$
62098935

LAST REVISION DATE PLOTTED => $DATE 00-00-00
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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	21	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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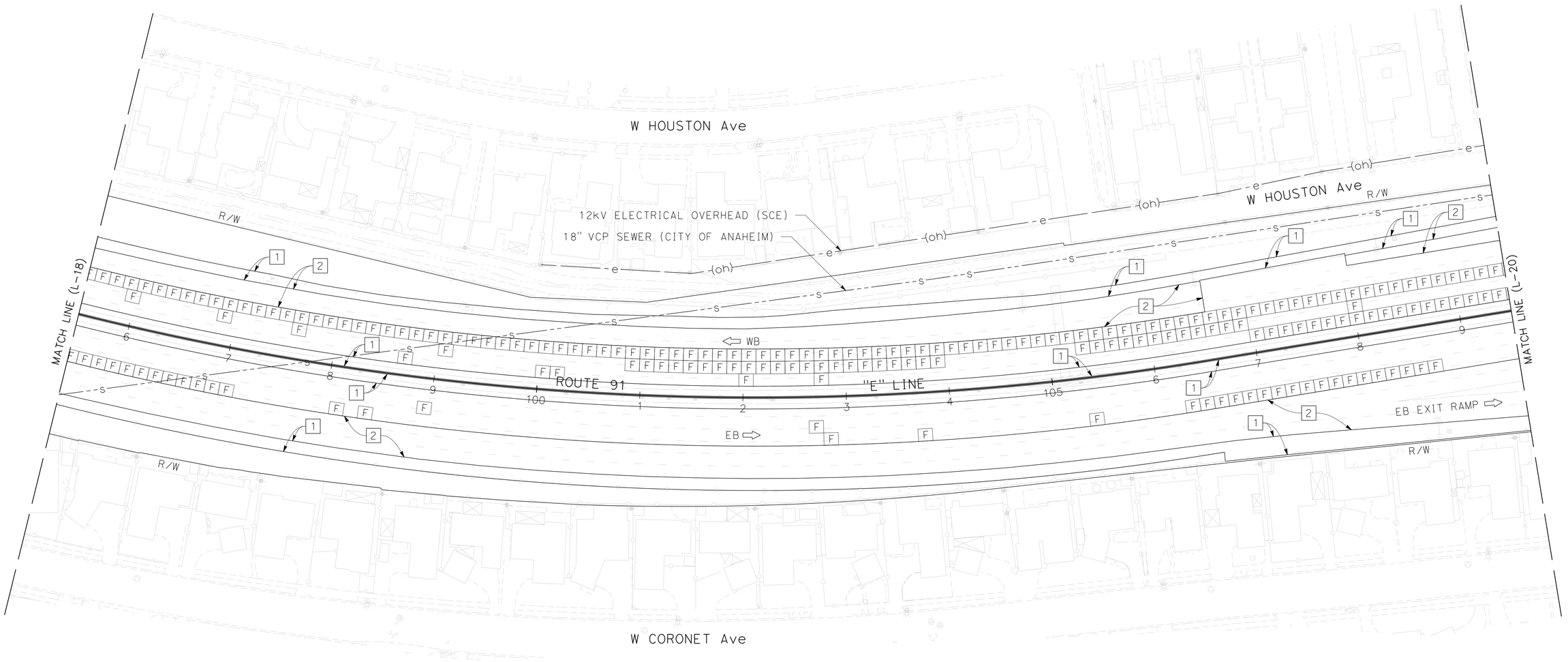

LAYOUT
L-19

SCALE: 1"=50'

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

1. 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 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	22	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. STATE OF CALIFORNIA

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1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

8" VCP SEWER (CITY OF FULLERTON)
12kV ELECTRICAL OVERHEAD (SCE)
12kV ELECTRICAL OVERHEAD (SCE)
W HOUSTON Ave
R/W
WB ENTRANCE RAMP
12" HIGH PRESSURE GAS (SCG)
18" VCP SEWER (CITY OF ANAHEIM)
BROOKHURST St
BROOKHURST St UC
Br No. 55-0280
WB EXIT RAMP
MATCH LINE (L-19)
ROUTE 91
"E" LINE
WB
EB
MATCH LINE (L-21)
EB EXIT RAMP
EB ENTRANCE RAMP
W CORONET Ave

SCALE: 1"=50'

LAYOUT
L-20

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LAST REVISION DATE PLOTTED => $DATE
00-00-00 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	23	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

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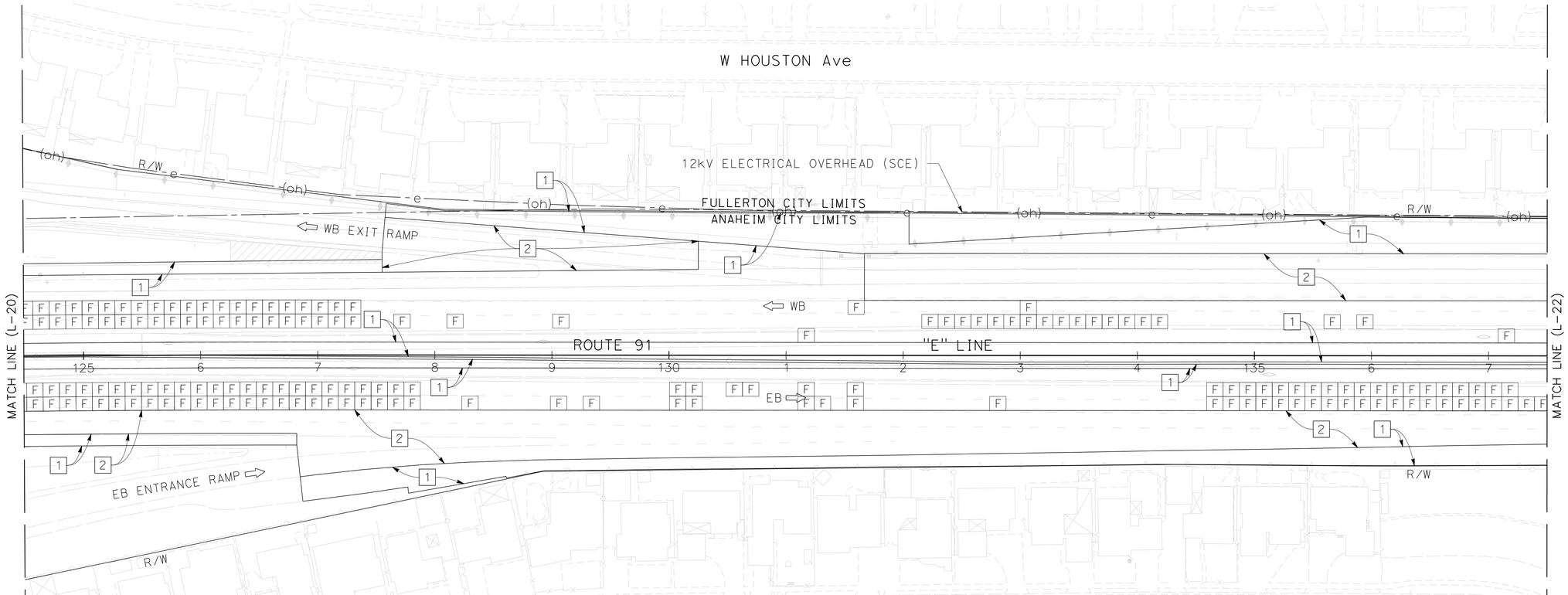

SCALE: 1"=50'

LAYOUT
L-21

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
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Caltrans
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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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	24	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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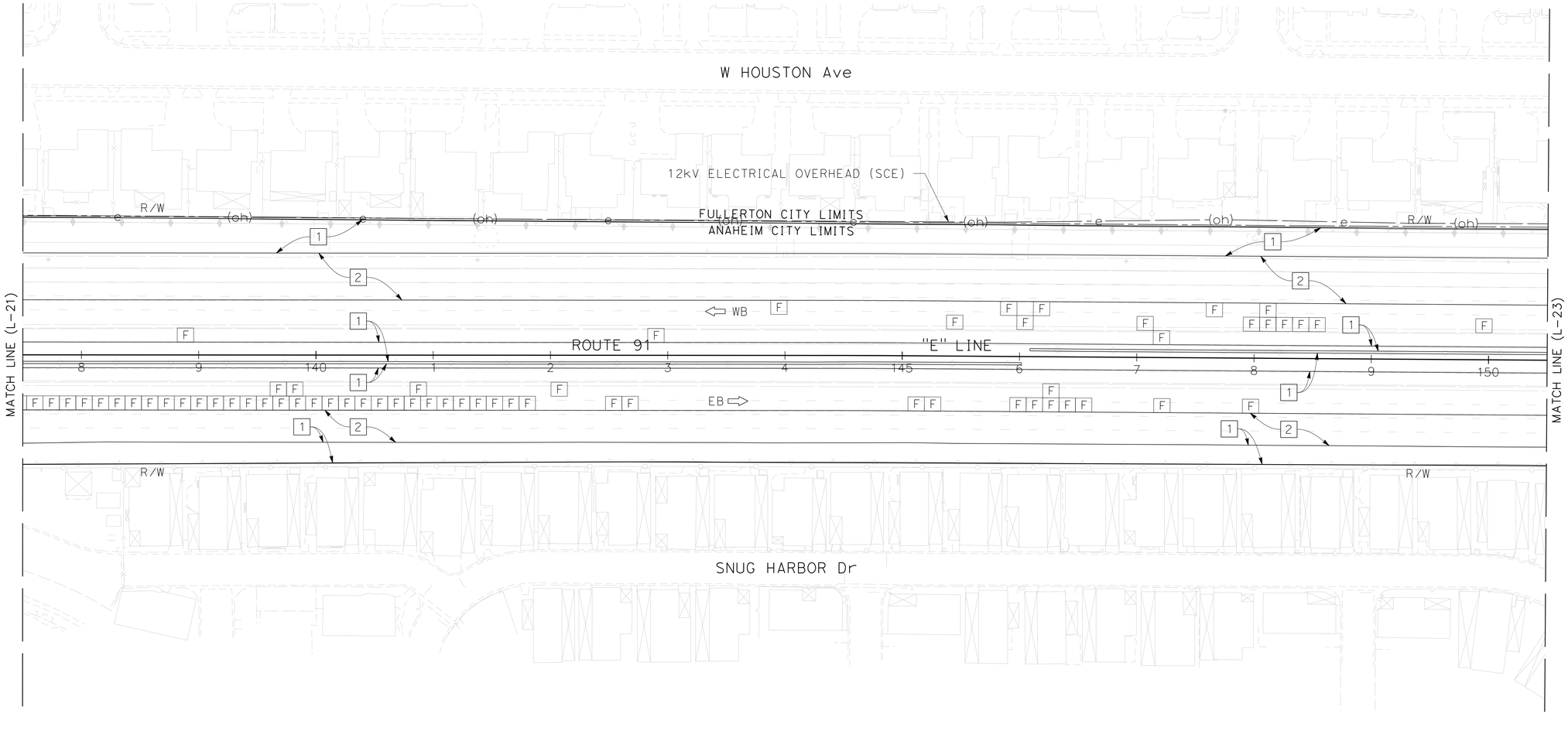

SCALE: 1"=50'

LAYOUT
L-22

REVISED BY | DATE REVISED
- | -

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CONSULTANT FUNCTIONAL SUPERVISOR
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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	25	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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SUITE 100
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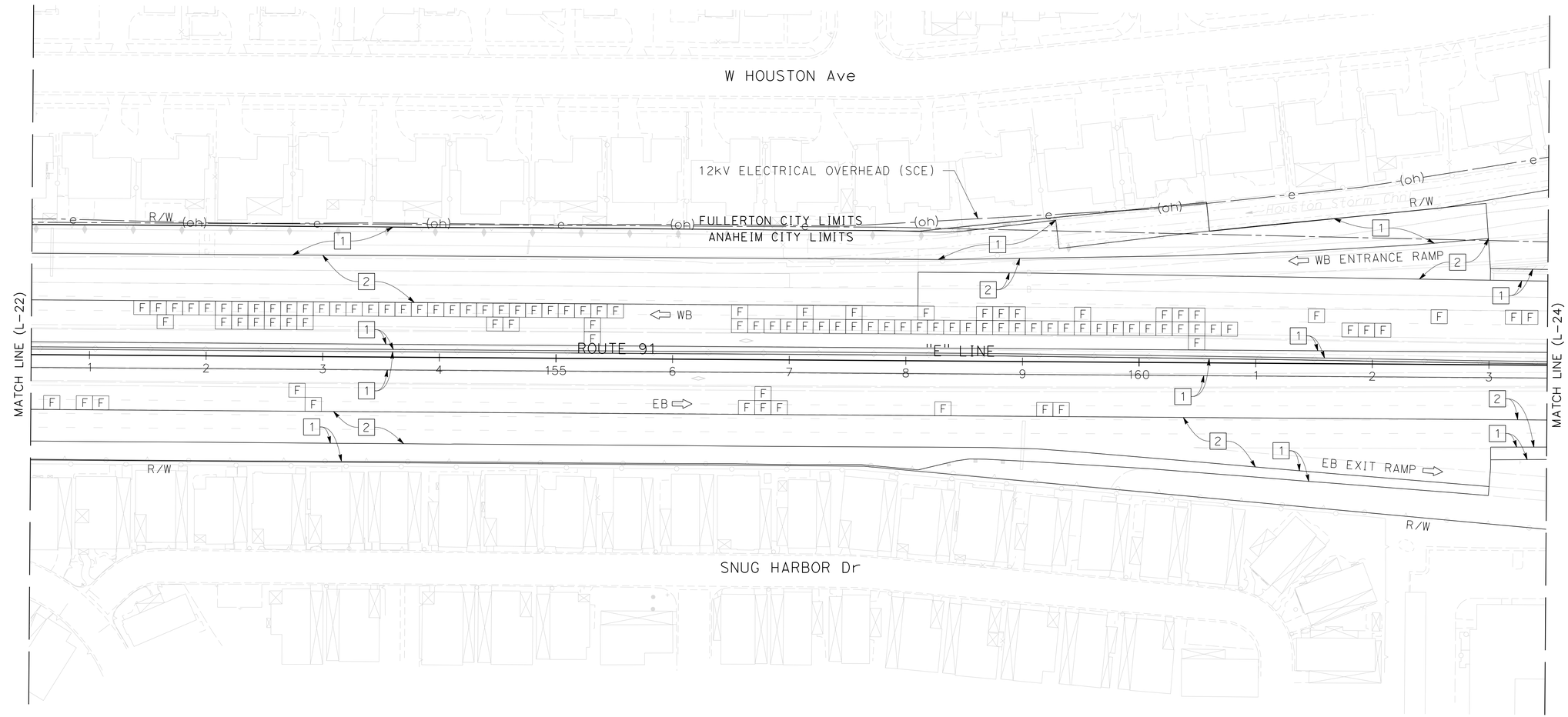

SCALE: 1"=50'

LAYOUT
L-23

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DATE REVISED
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

1. 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 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	26	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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SUITE 100
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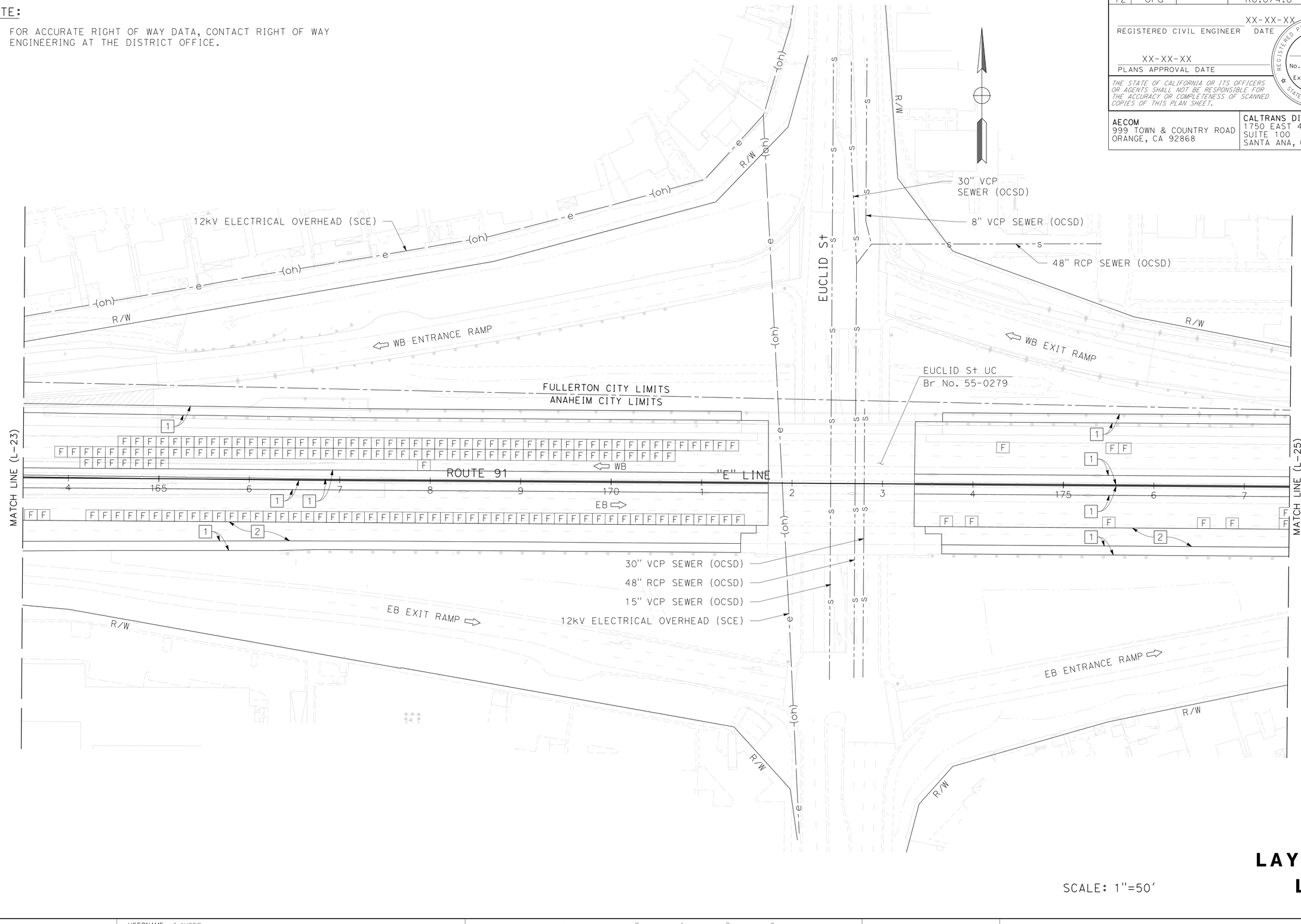

SCALE: 1"=50'

LAYOUT
L-24

REVISED BY | DATE REVISED
- | -

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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	27	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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SUITE 100
SANTA ANA, CA 92705

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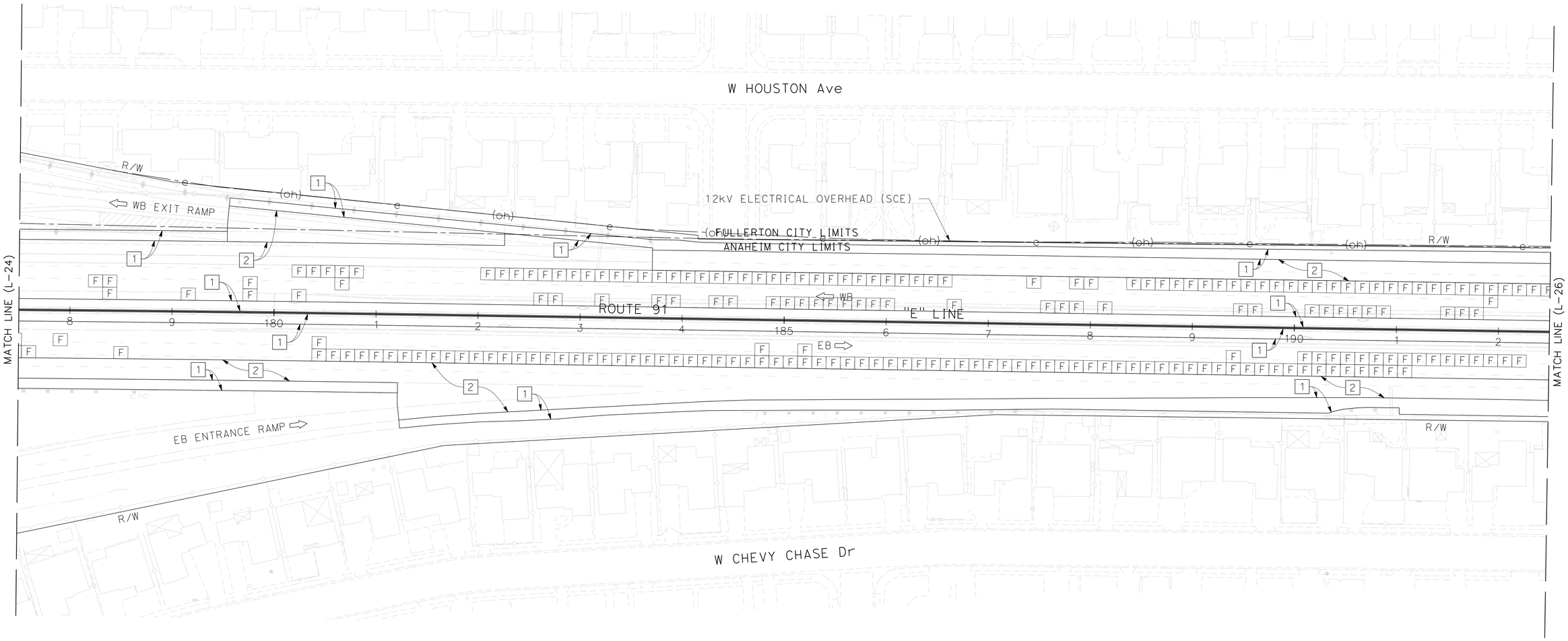

LAYOUT
L-25

SCALE: 1"=50'

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60208935

LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME
00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

1. 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 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	28	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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SUITE 100
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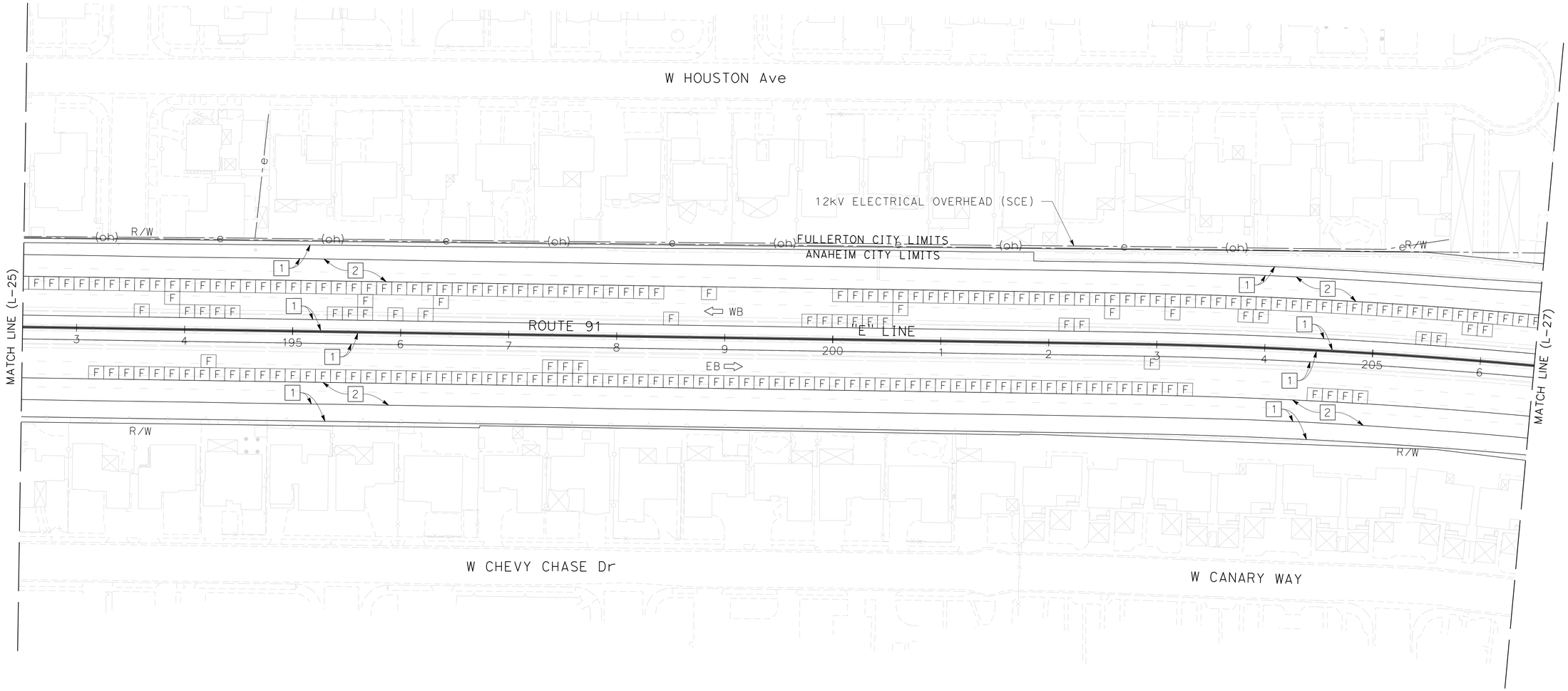

SCALE: 1"=50'

LAYOUT
L-26

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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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	29	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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1750 EAST 4TH STREET
SUITE 100
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NOTE:

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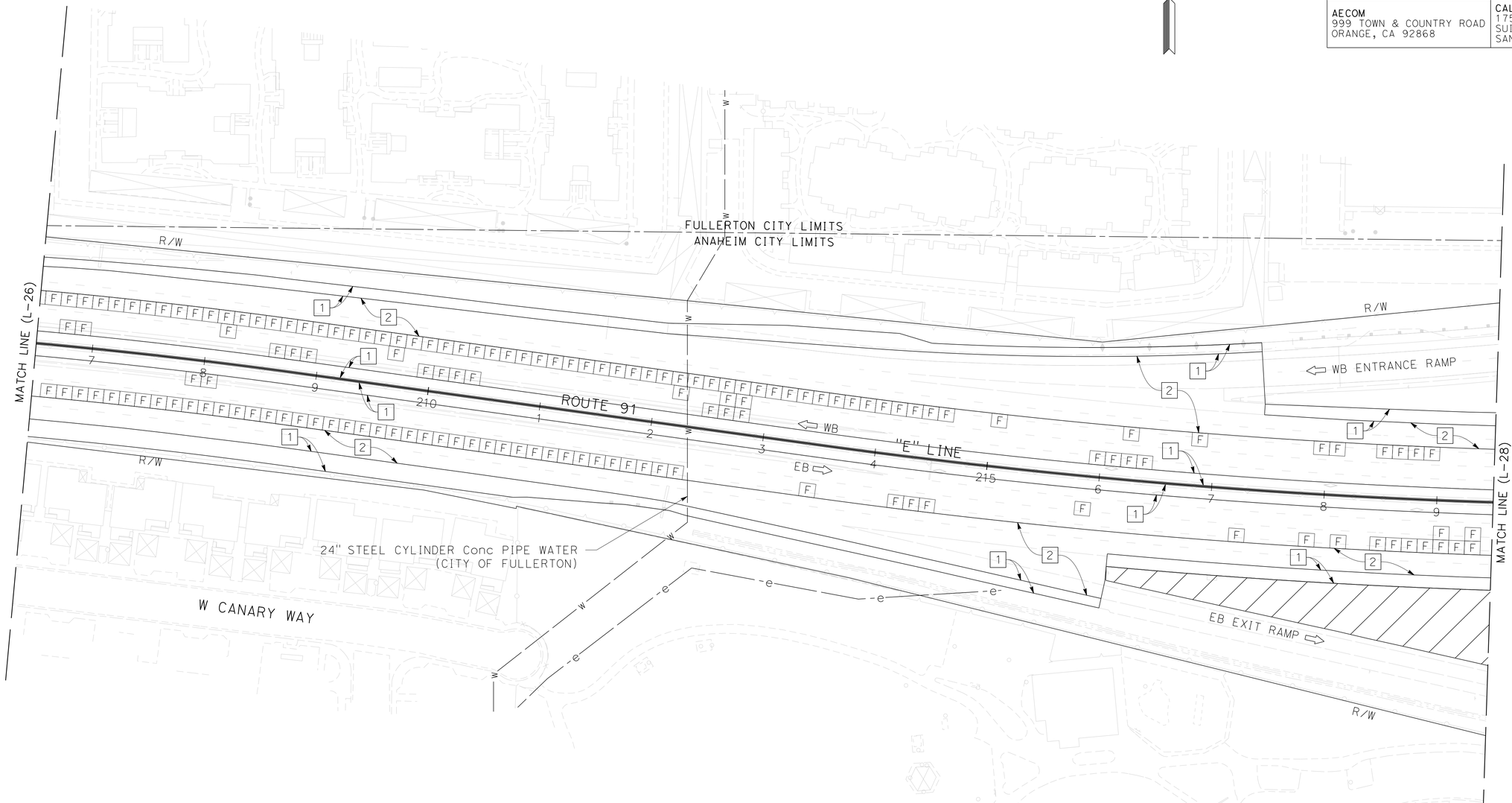
LEGEND:

POTENTIAL EQUIPMENT STAGING AREA



SCALE: 1"=50'

LAYOUT
L-27

REVISED BY | DATE REVISED
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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	30	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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

XX-XX-XX
PLANS APPROVAL DATE

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CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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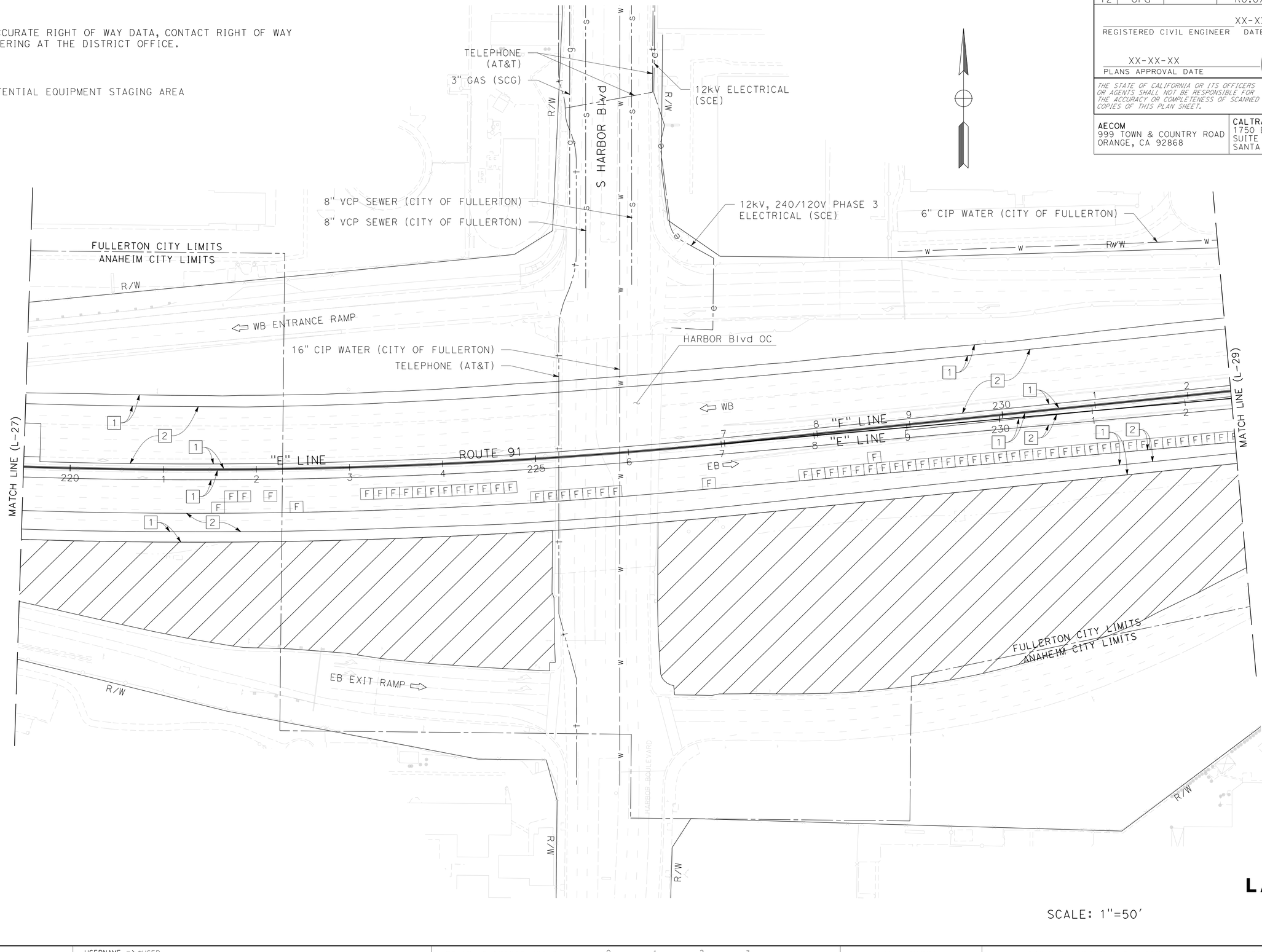
LEGEND:

POTENTIAL EQUIPMENT STAGING AREA



SCALE: 1"=50'

LAYOUT
L-28

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	31	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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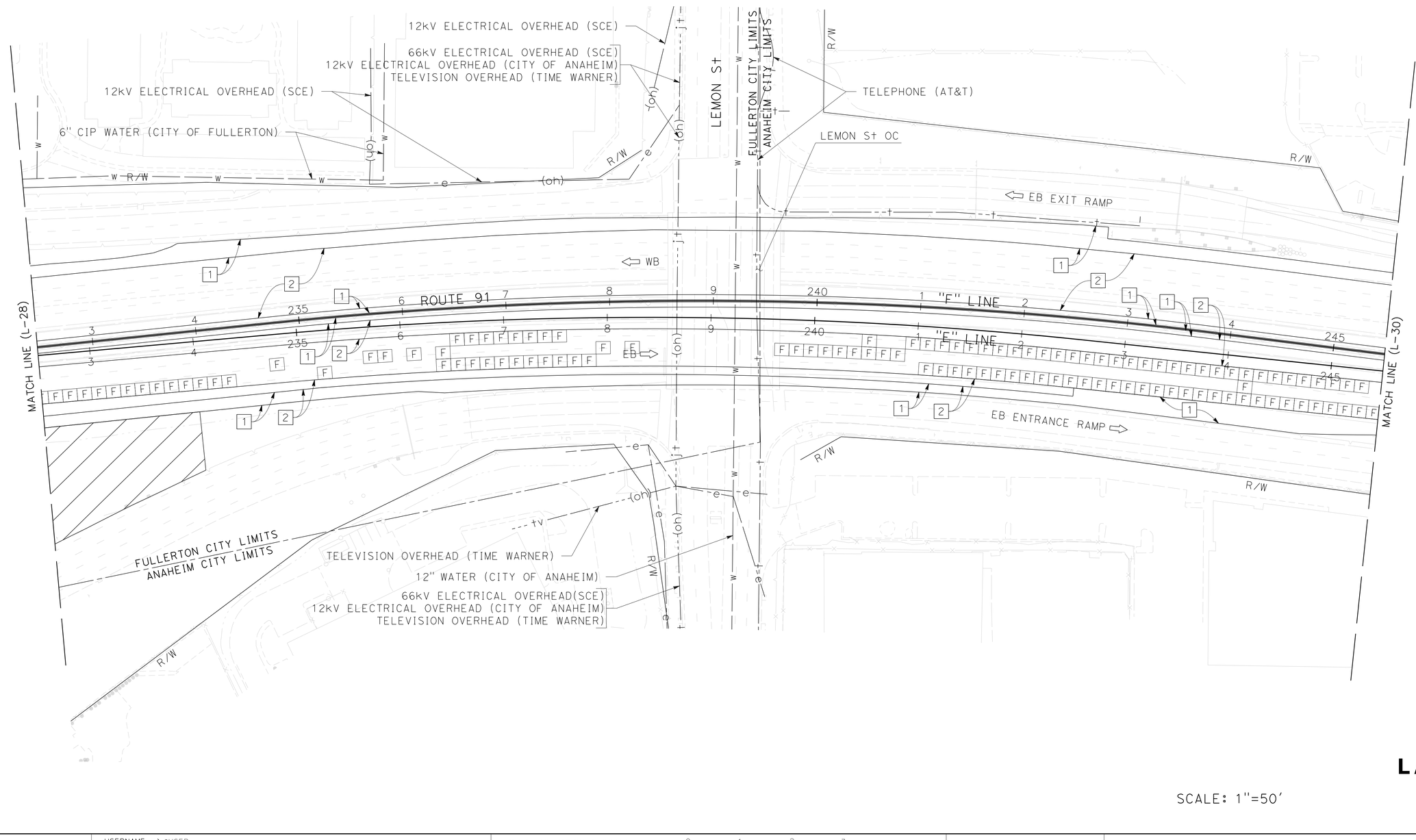
LEGEND:

POTENTIAL EQUIPMENT STAGING AREA



SCALE: 1"=50'

LAYOUT
L-29

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00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

NOTE:

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	32	92

XX-XX-XX
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XX-XX-XX
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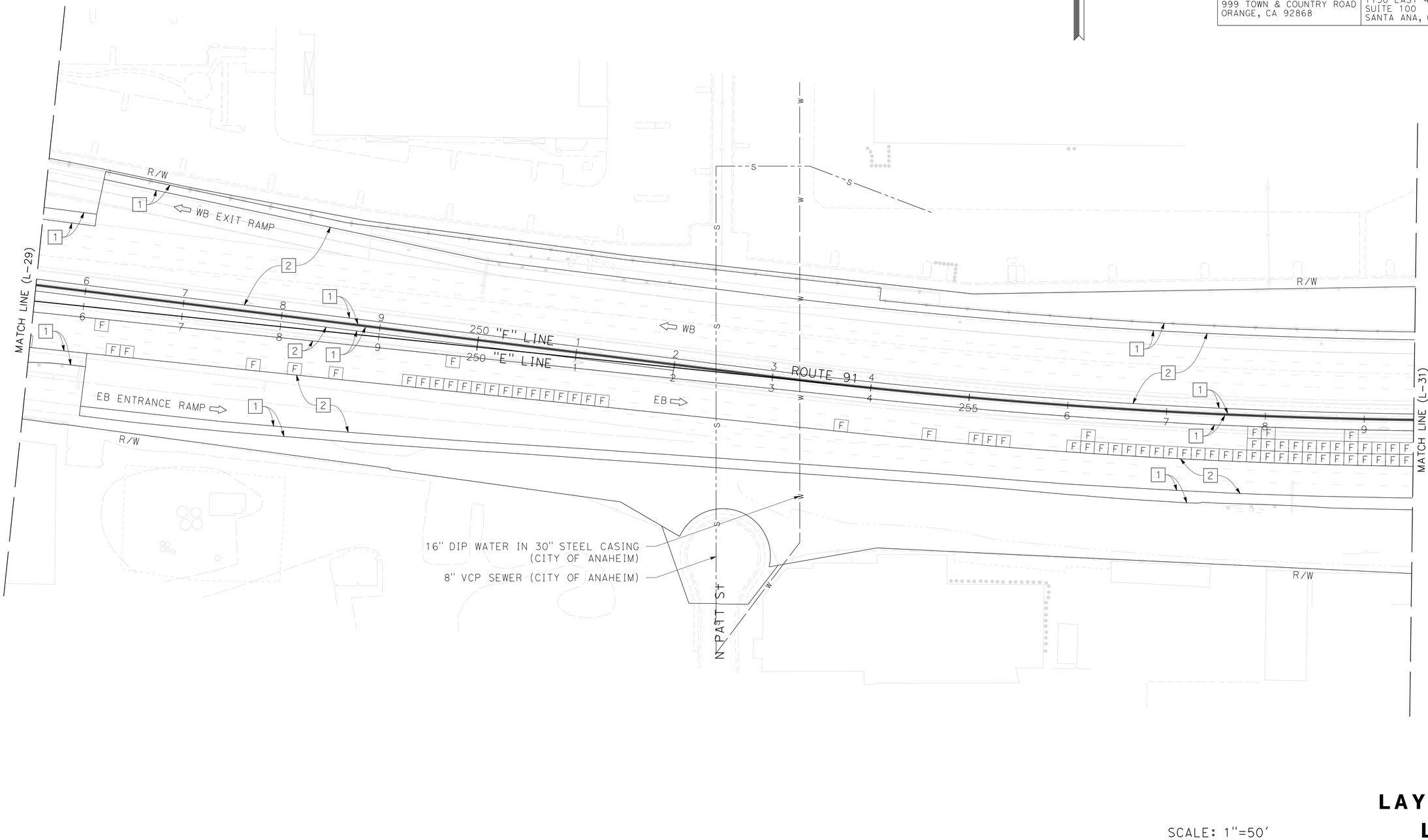

SCALE: 1"=50'

LAYOUT
L-30

REVISED BY | DATE REVISED
- | -

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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	33	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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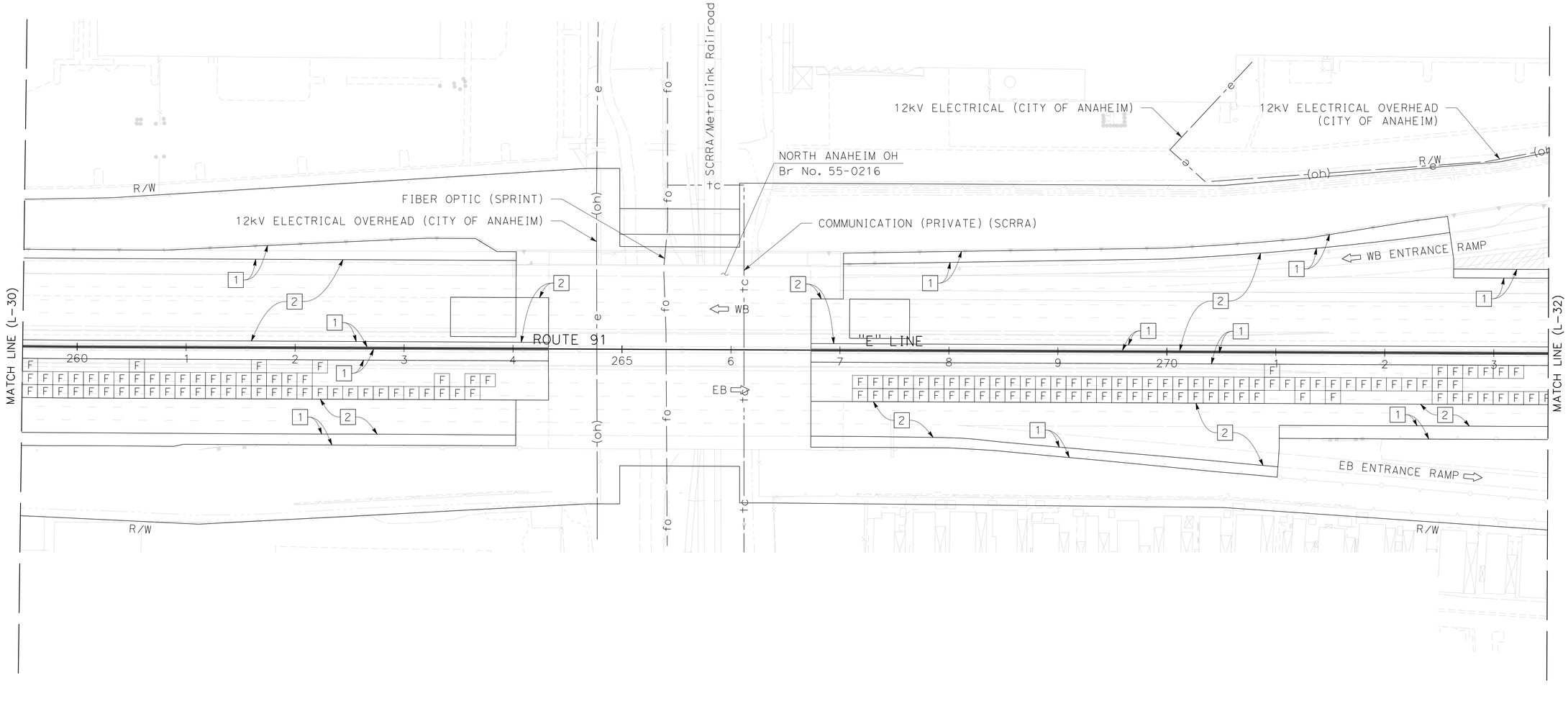

SCALE: 1"=50'

LAYOUT
L-31

CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER

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DATE REVISED: -

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Caltrans

LAST REVISION: DATE PLOTTED => $DATE
00-00-00 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	34	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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SUITE 100
SANTA ANA, CA 92705

NOTE:

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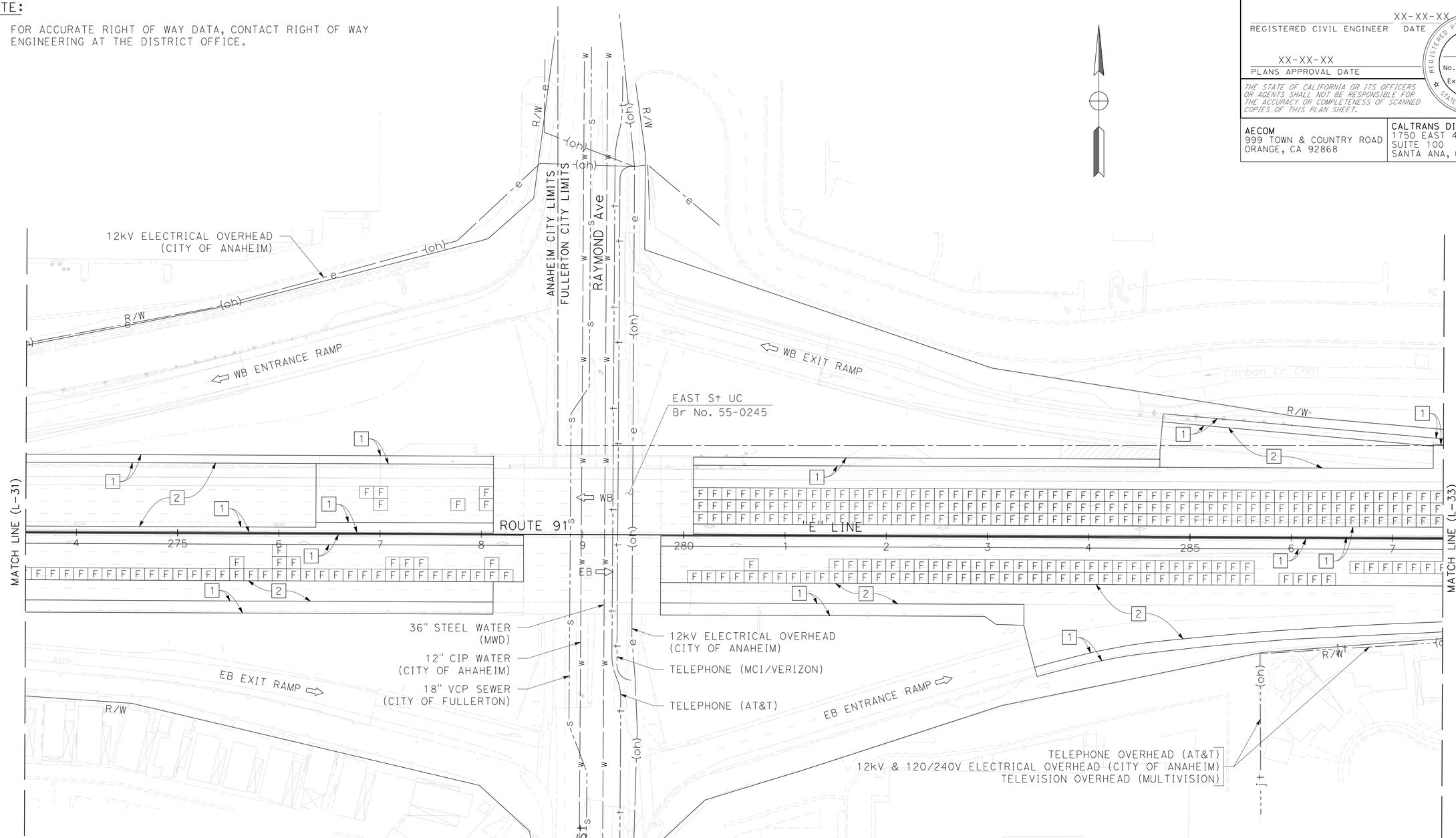

SCALE: 1"=50'

LAYOUT
L-32

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- | -

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60208355 $DATE $TIME $USER $FILE$

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	35	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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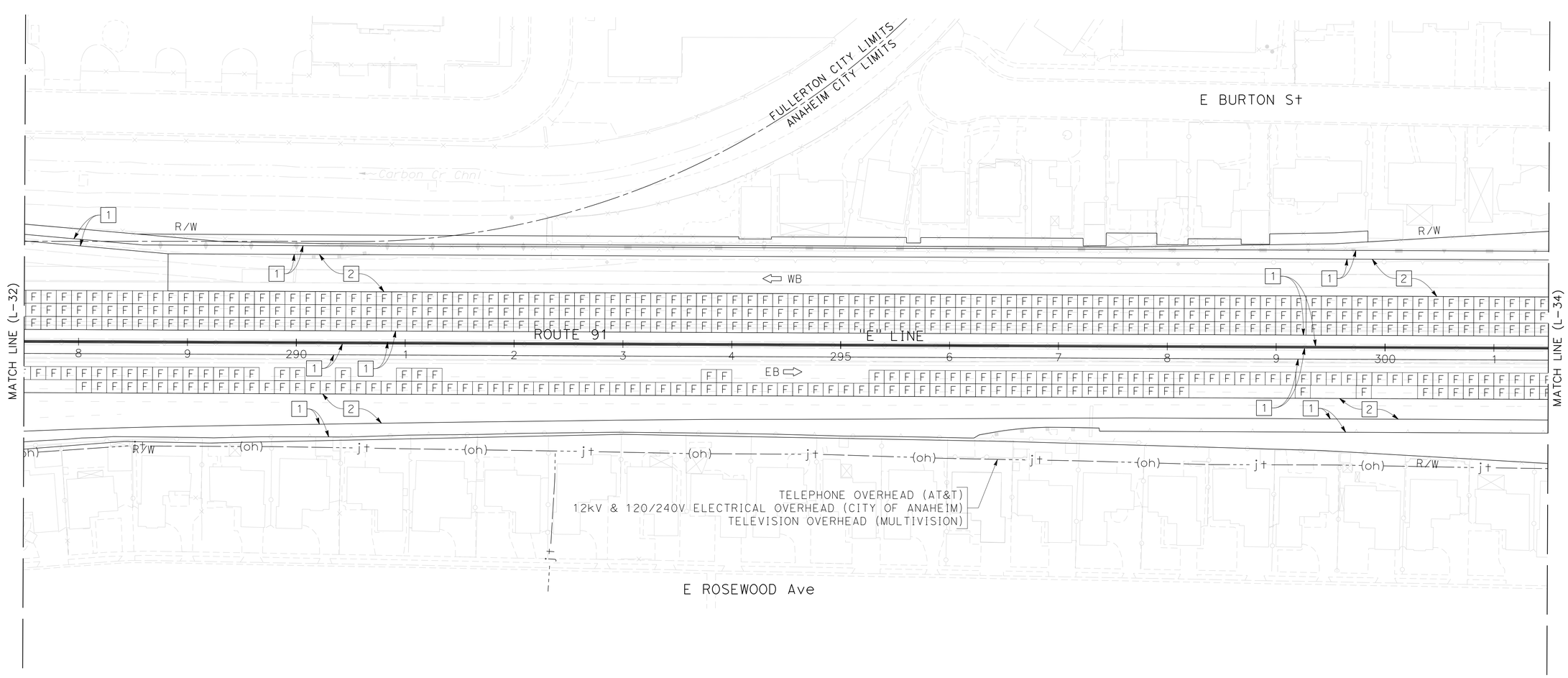

SCALE: 1"=50'

LAYOUT
L-33

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-	-

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6028935 $DATE $TIME $USER $FILE$

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX

PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	36	92

XX-XX-XX
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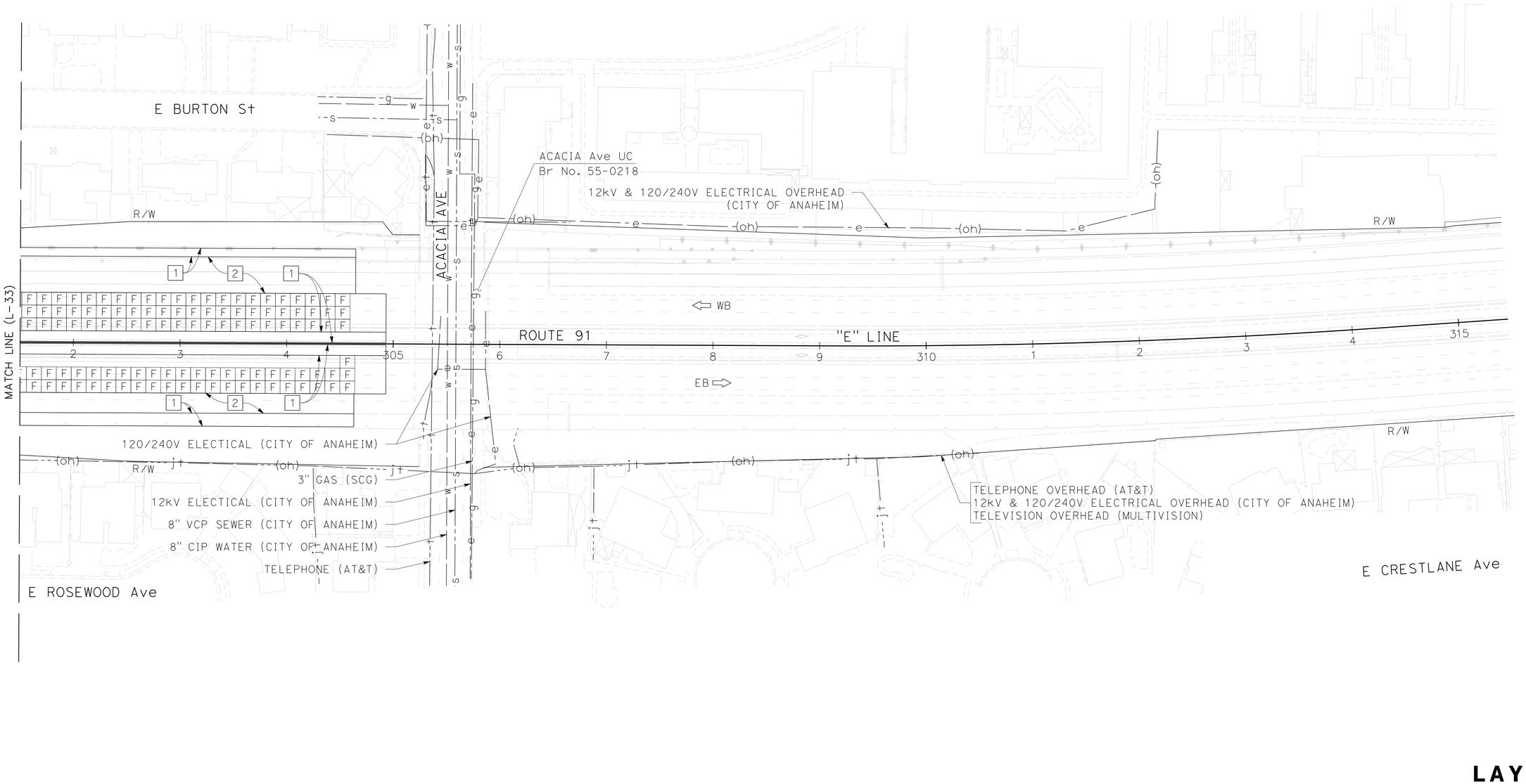

SCALE: 1"=50'

LAYOUT
L-34

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620B935

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX
PROJECT NUMBER & PHASE
12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	37	92

XX-XX-XX
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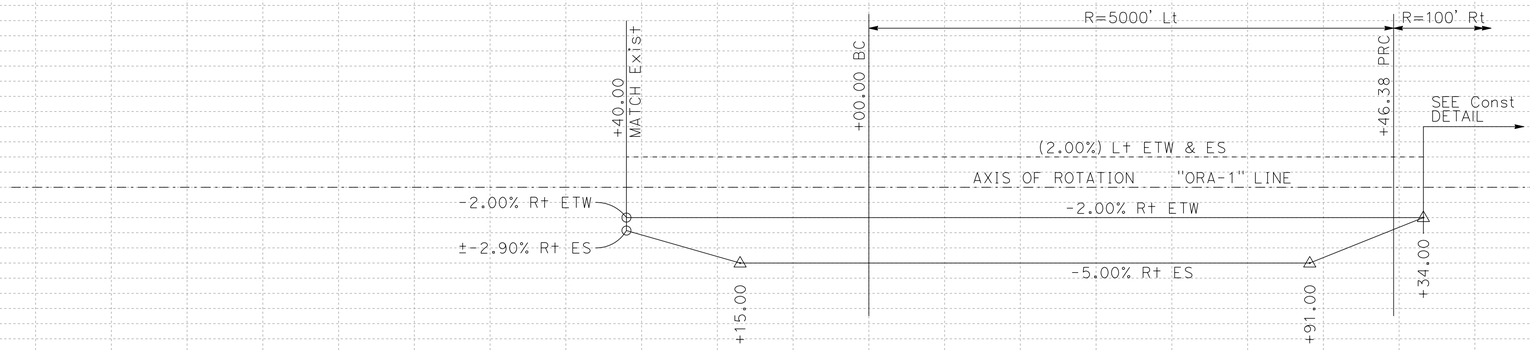
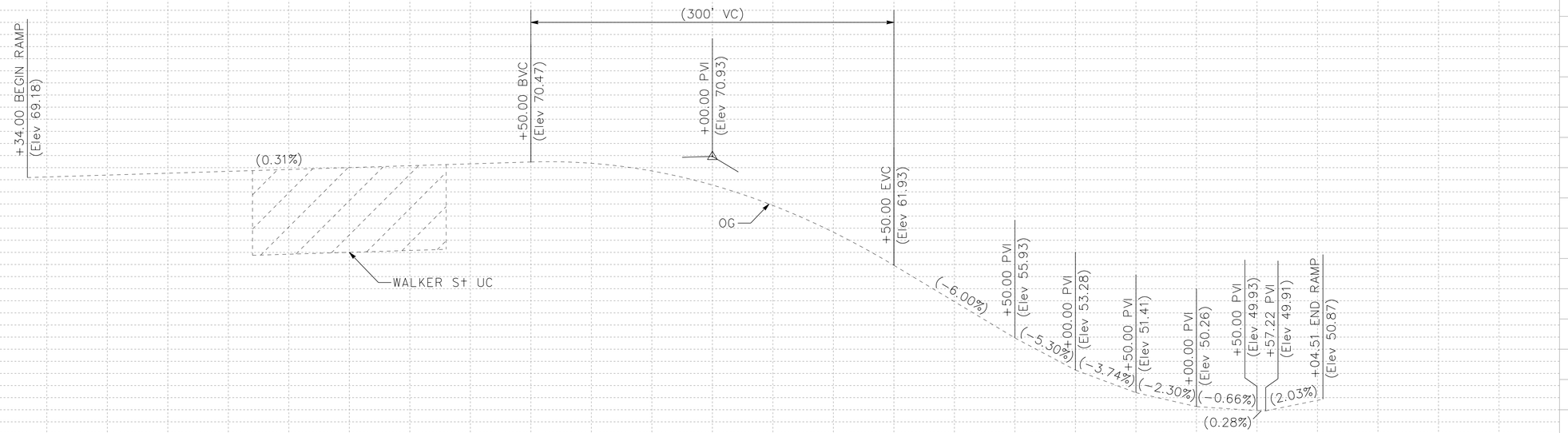


SUPERELEVATION DIAGRAM



PROFILE

EB OFF-RAMP TO ORANGETHORPE Ave

"ORA-1" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

PS-1

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STATION | 11+00 | 12+00 | 13+00 | 14+00 | 15+00 | 16+00 | 17+00 | 18+00 | 19+00 | 20+00 | 21+00 | 22+00 | TOTAL
CY Exc
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LAST REVISION 00-00-00
DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

$DATE $TIME $USER $FILES
6028935

BORDER LAST REVISED 7/2/2010
USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	38	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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SUITE 100
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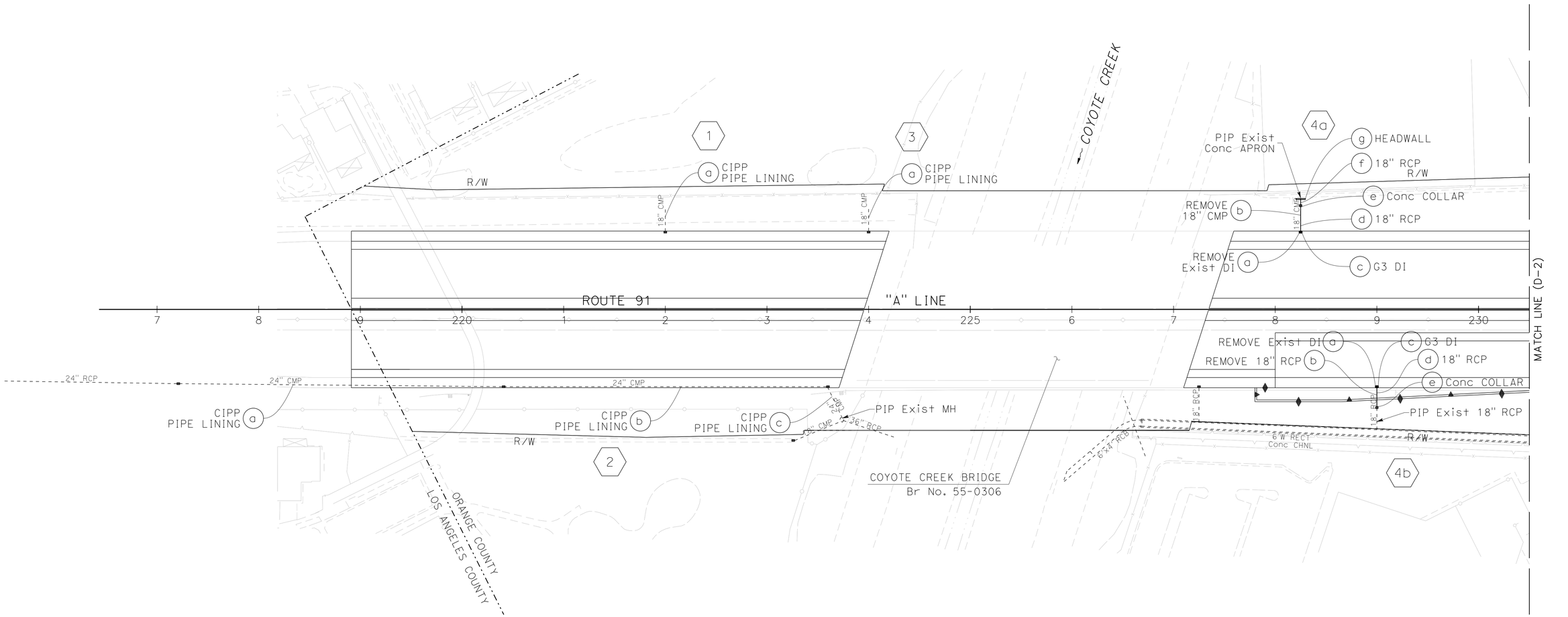
LEGEND:

- (1) DRAINAGE SYSTEM NUMBER
- (x) DRAINAGE ITEM
- DIRECTION OF FLOW
- FLOWLINE OF DITCH
- GRATE INLETS
- ROCK SLOPE PROTECTION

ABBREVIATIONS:

CIPP	CURE IN PLACE PIPE
PIP	PROTECT-IN-PLACE
W/	WITH



1 2 3 4a 4b

DRAINAGE PLAN

SCALE: 1"=50'

D-1

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LAST REVISION | DATE PLOTTED => $DATE
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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	39	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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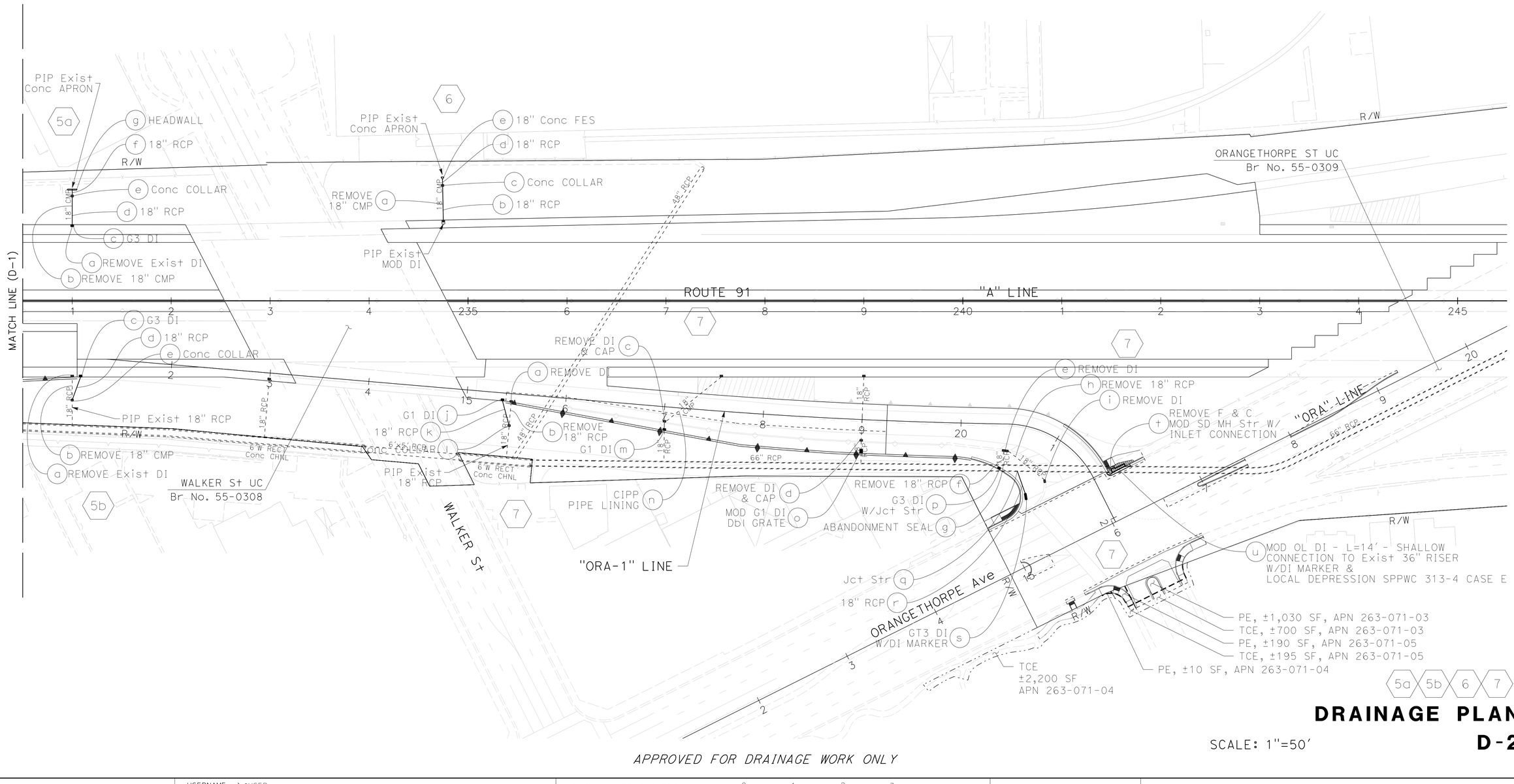

DRAINAGE PLAN

SCALE: 1"=50'

D-2

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LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME
00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	40	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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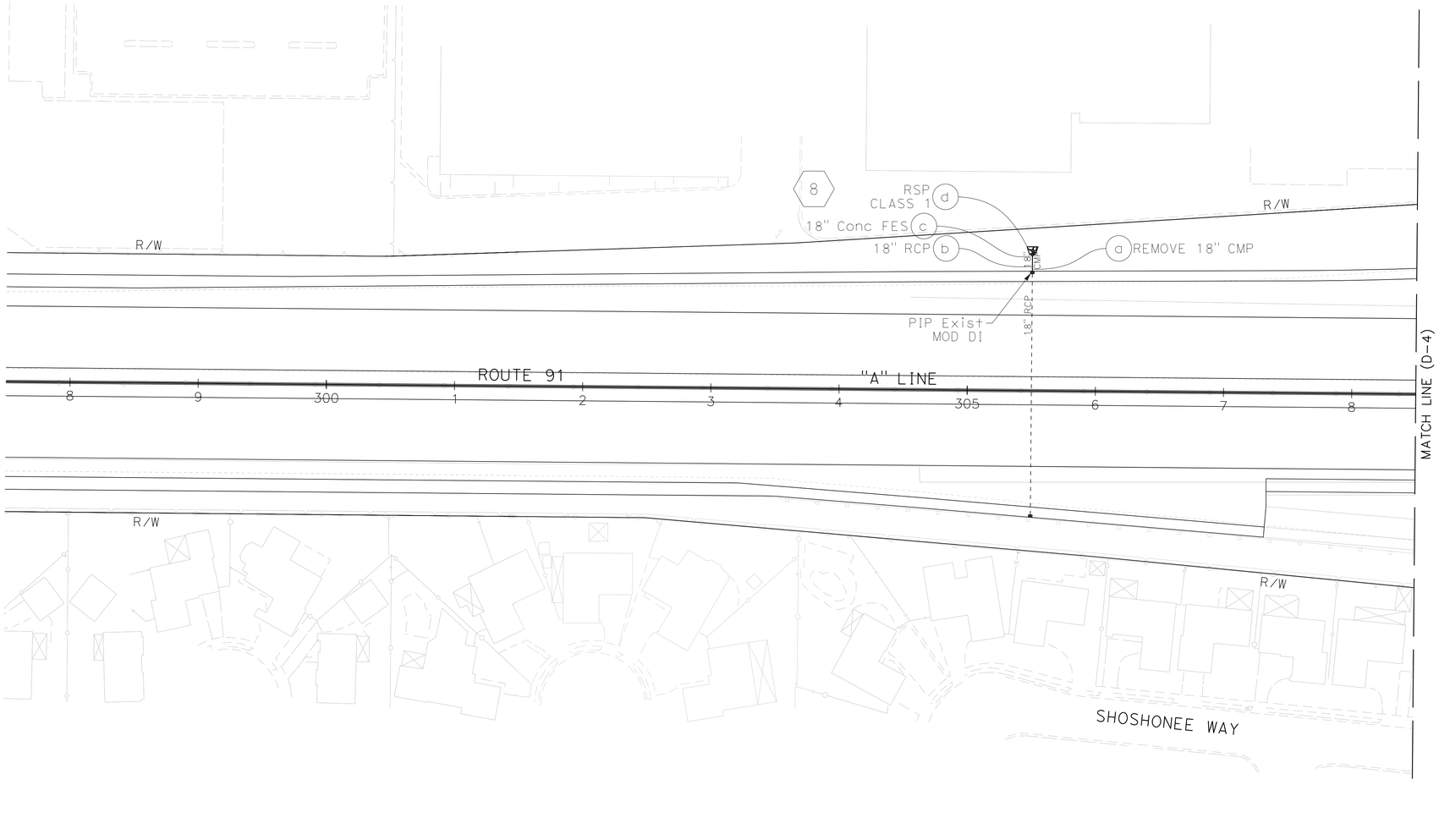

8

DRAINAGE PLAN D-3

SCALE: 1"=50'

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LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	41	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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PLANS APPROVAL DATE

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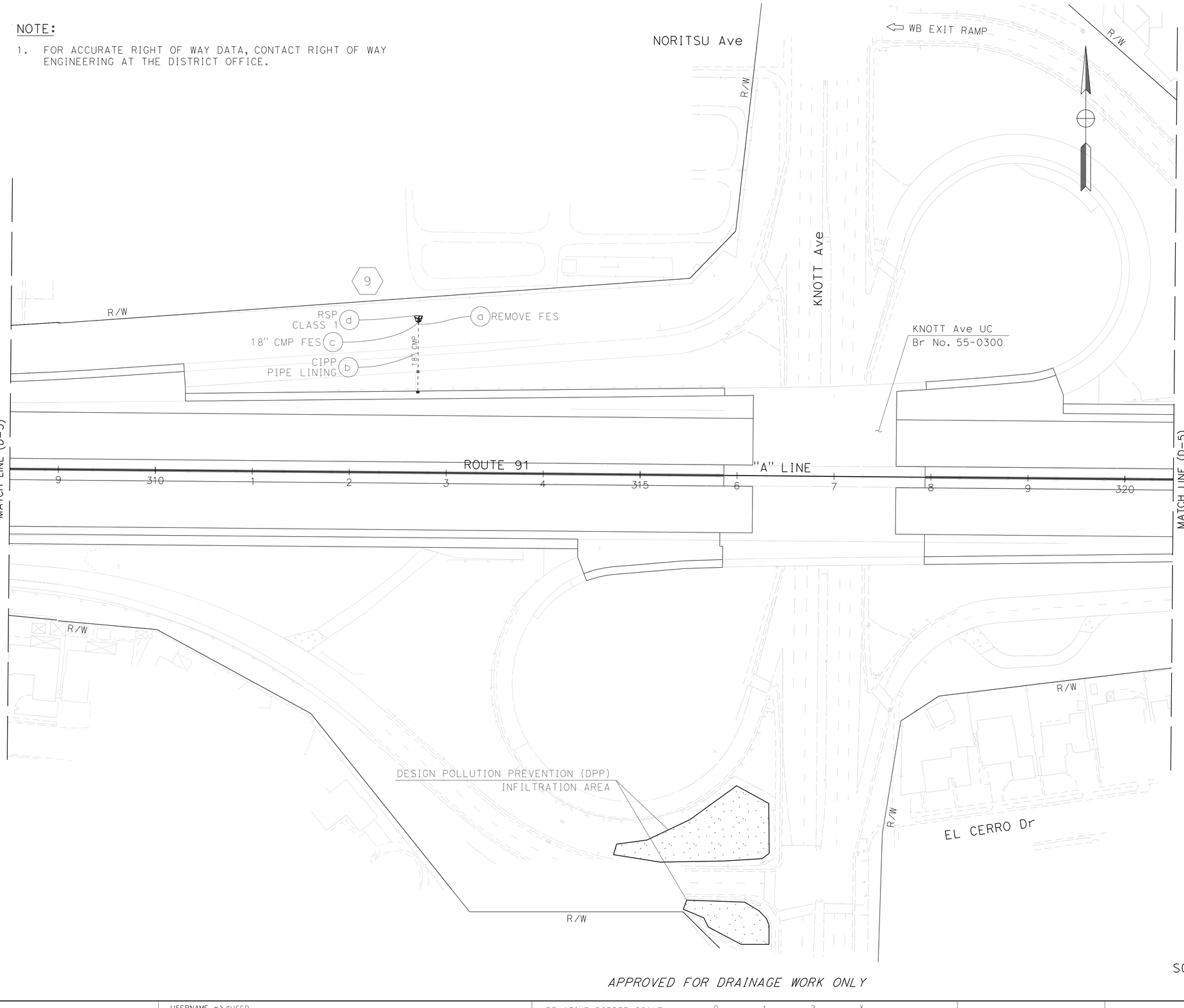

9

DRAINAGE PLAN

SCALE: 1"=50'

D-4

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60208935 $DATE $TIME $USER $FILE$

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	42	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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SANTA ANA, CA 92705

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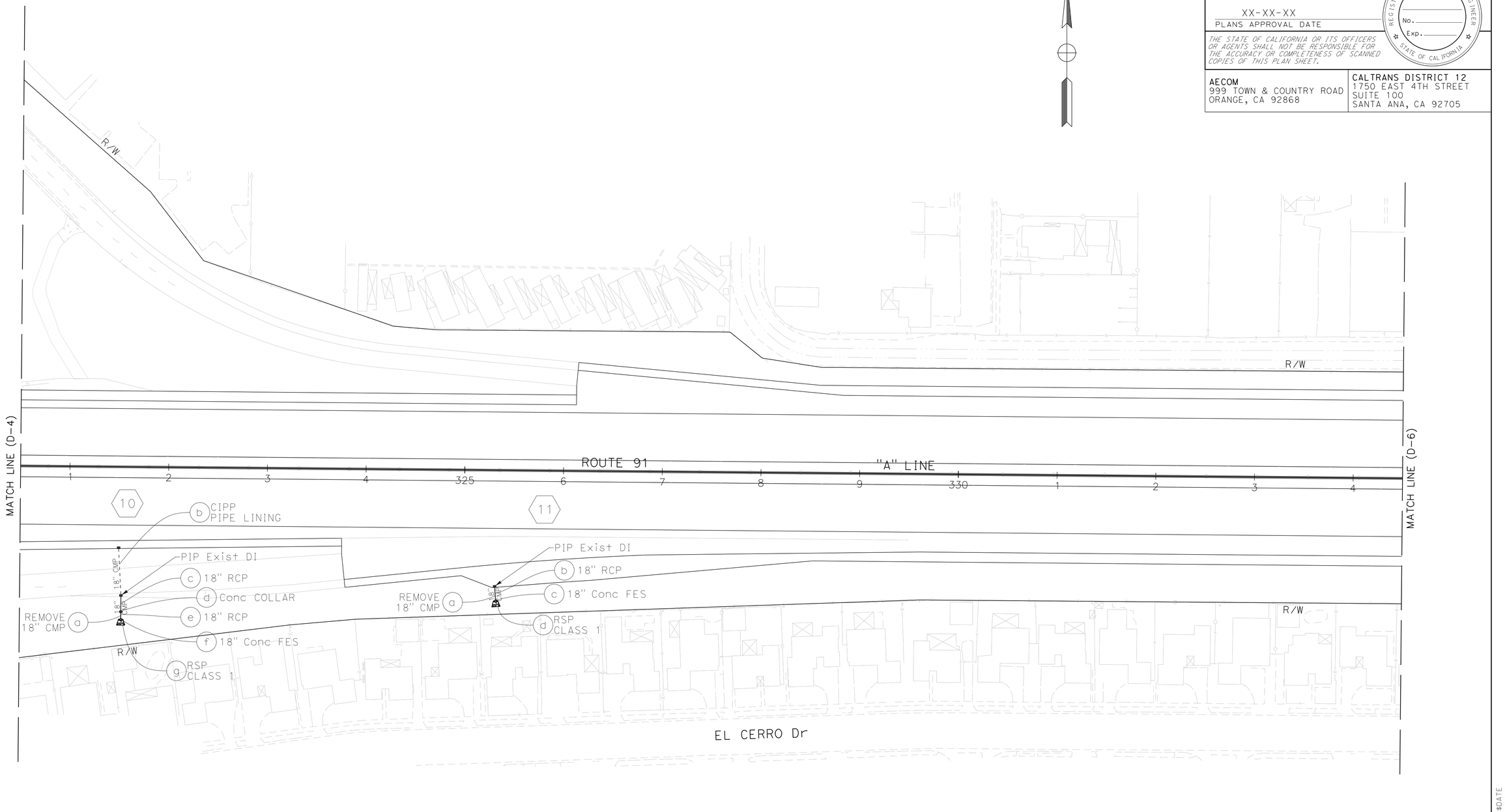

10 11

DRAINAGE PLAN

SCALE: 1"=50'

D-5

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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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	43	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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SUITE 100
SANTA ANA, CA 92705

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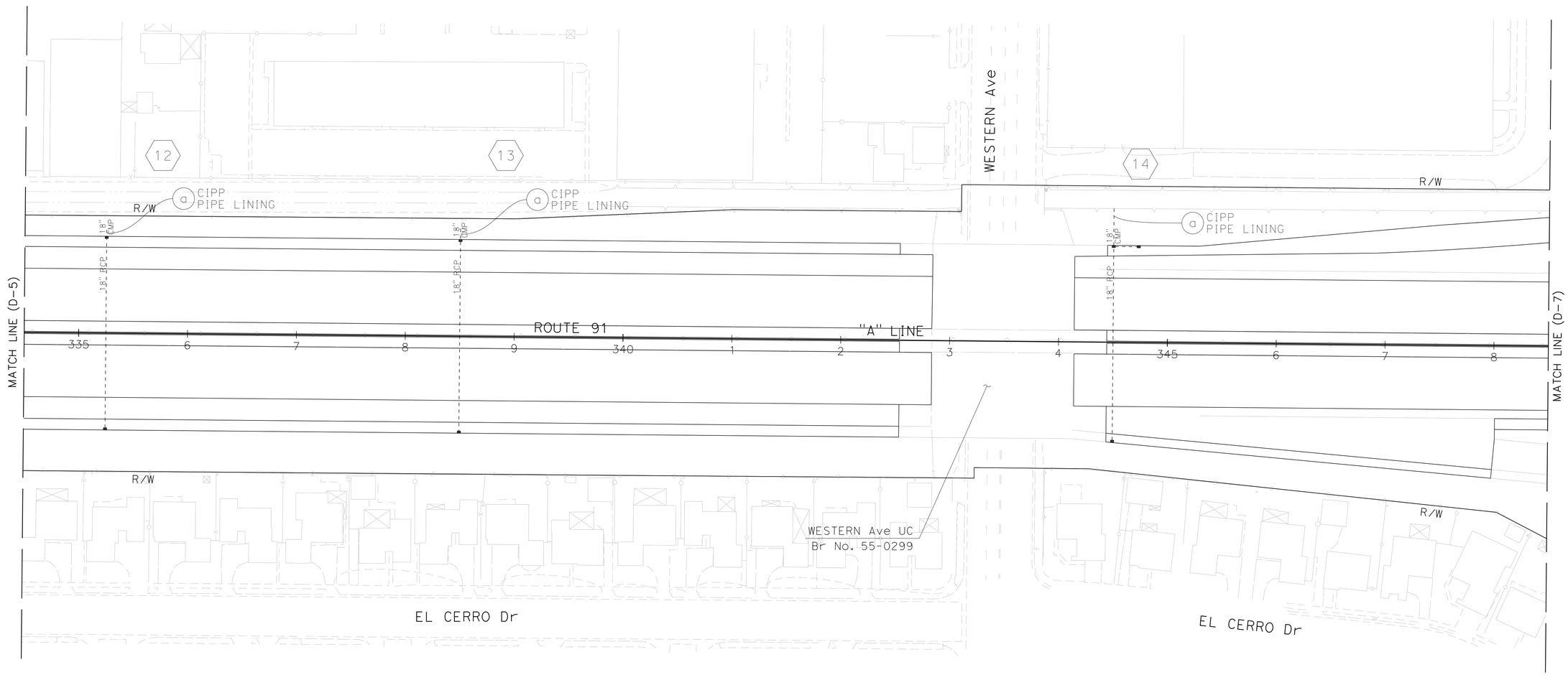

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12 13 14

DRAINAGE PLAN

SCALE: 1"=50'

D-6

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LAST REVISION: DATE PLOTTED => $DATE
00-00-00 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	44	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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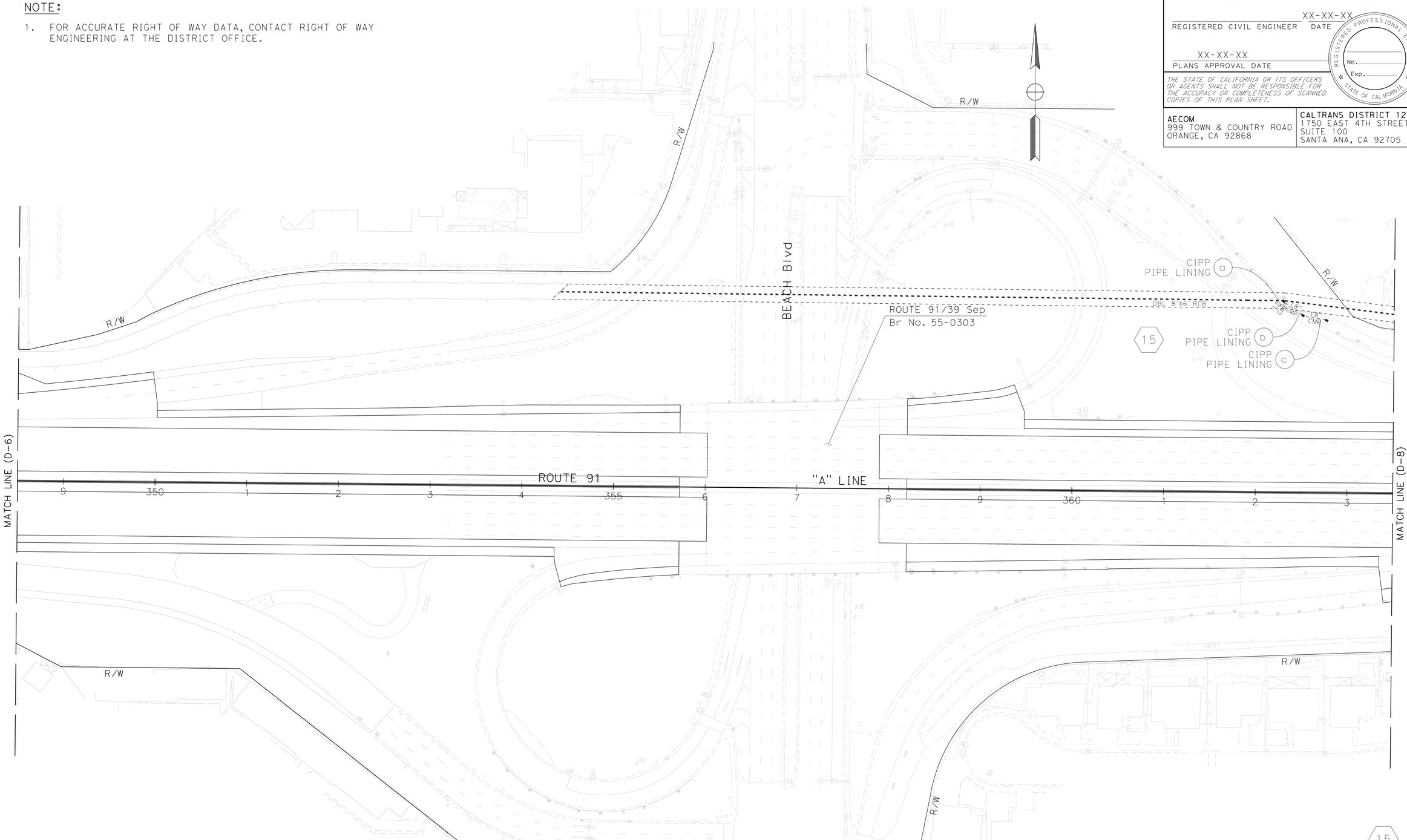

15

DRAINAGE PLAN

SCALE: 1"=50'

D-7

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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	45	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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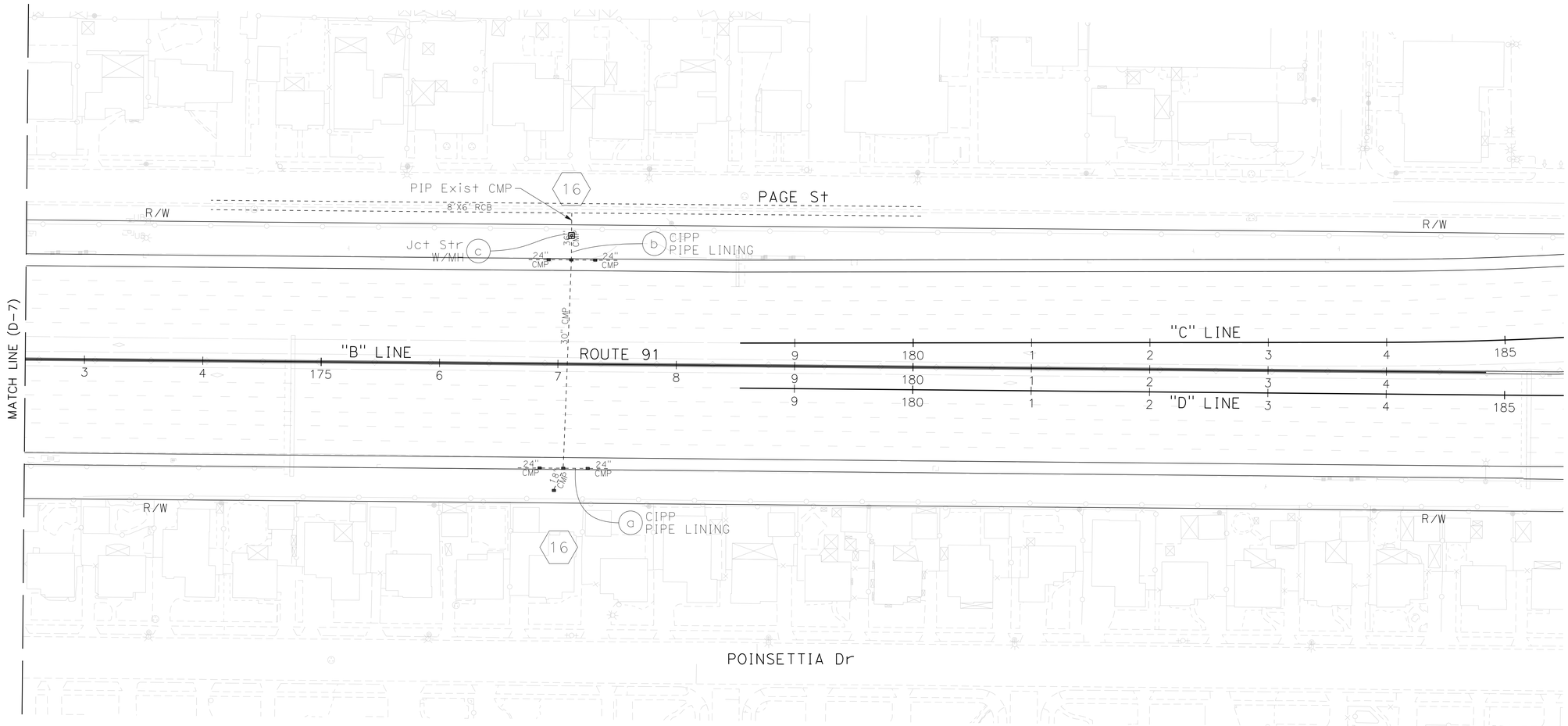

16

DRAINAGE PLAN

SCALE: 1"=50'

D-8

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CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
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CHECKED BY
REVISED BY
DATE REVISED
$DATE $TIME $USER $FILE$
6028935
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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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	46	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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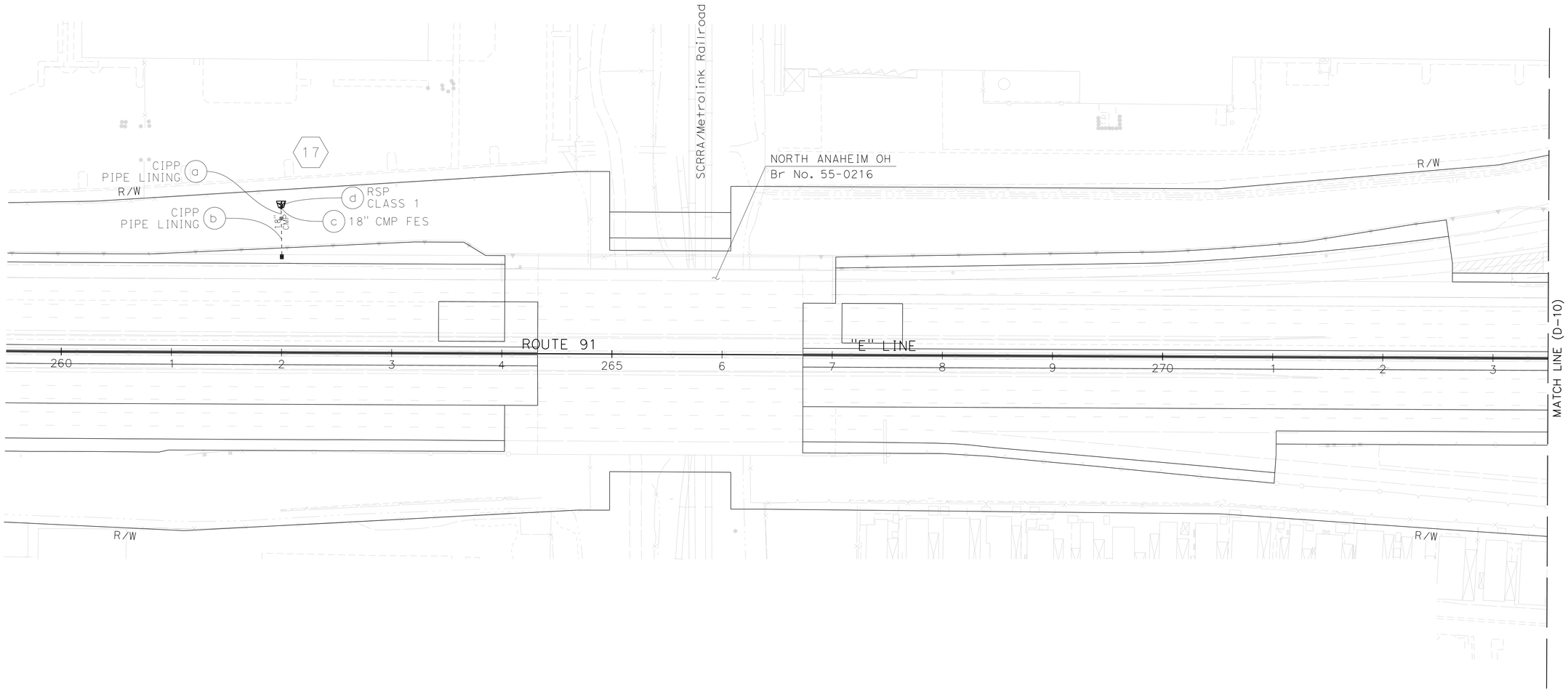

17

DRAINAGE PLAN

SCALE: 1"=50'

D-9

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0208935

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	47	92

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NOTE:

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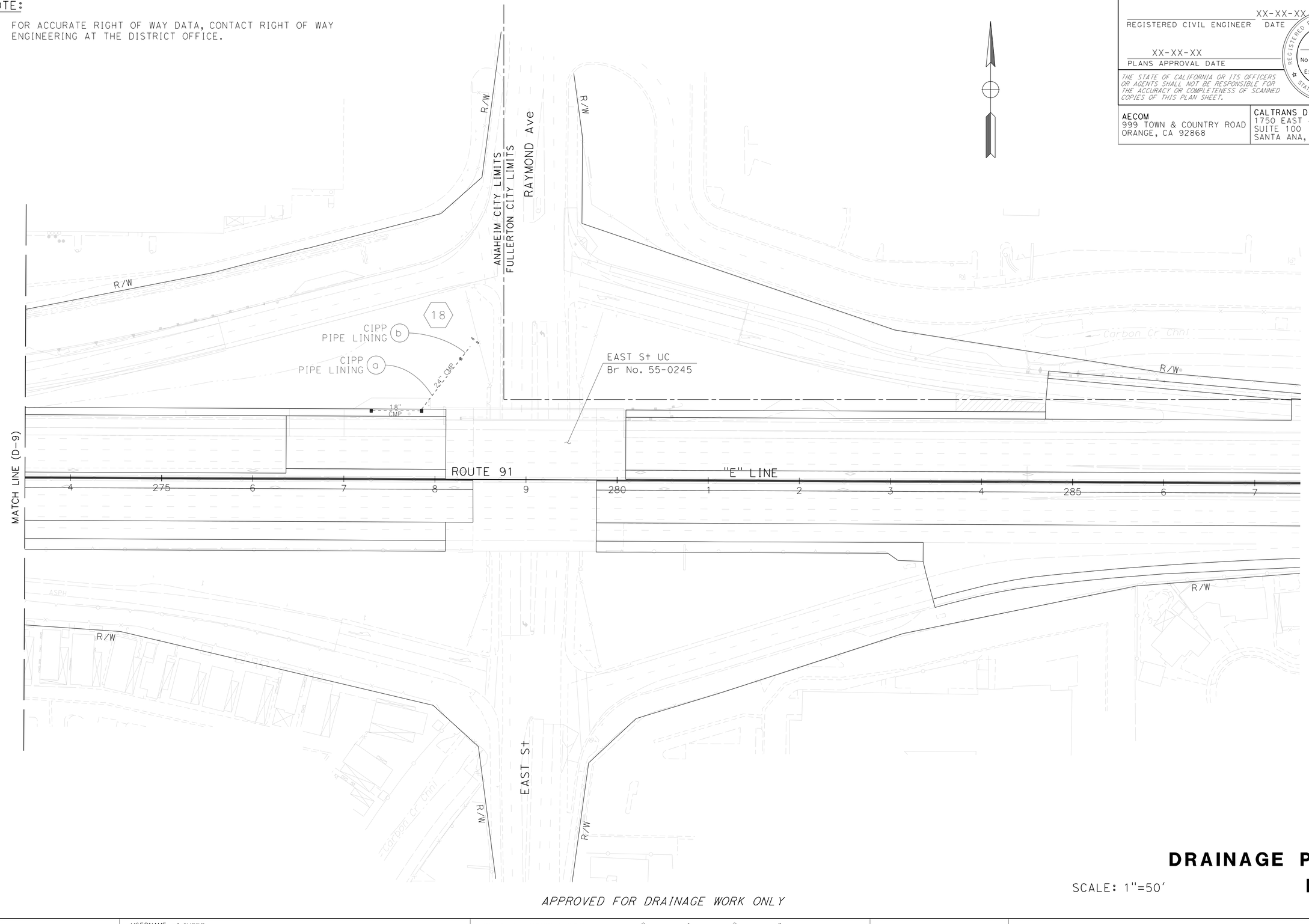


APPROVED FOR DRAINAGE WORK ONLY

18

DRAINAGE PLAN
D-10

SCALE: 1"=50'

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
$DATE $TIME $USER $FILE$
Caltrans

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	48	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

XX-XX-XX
PLANS APPROVAL DATE

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

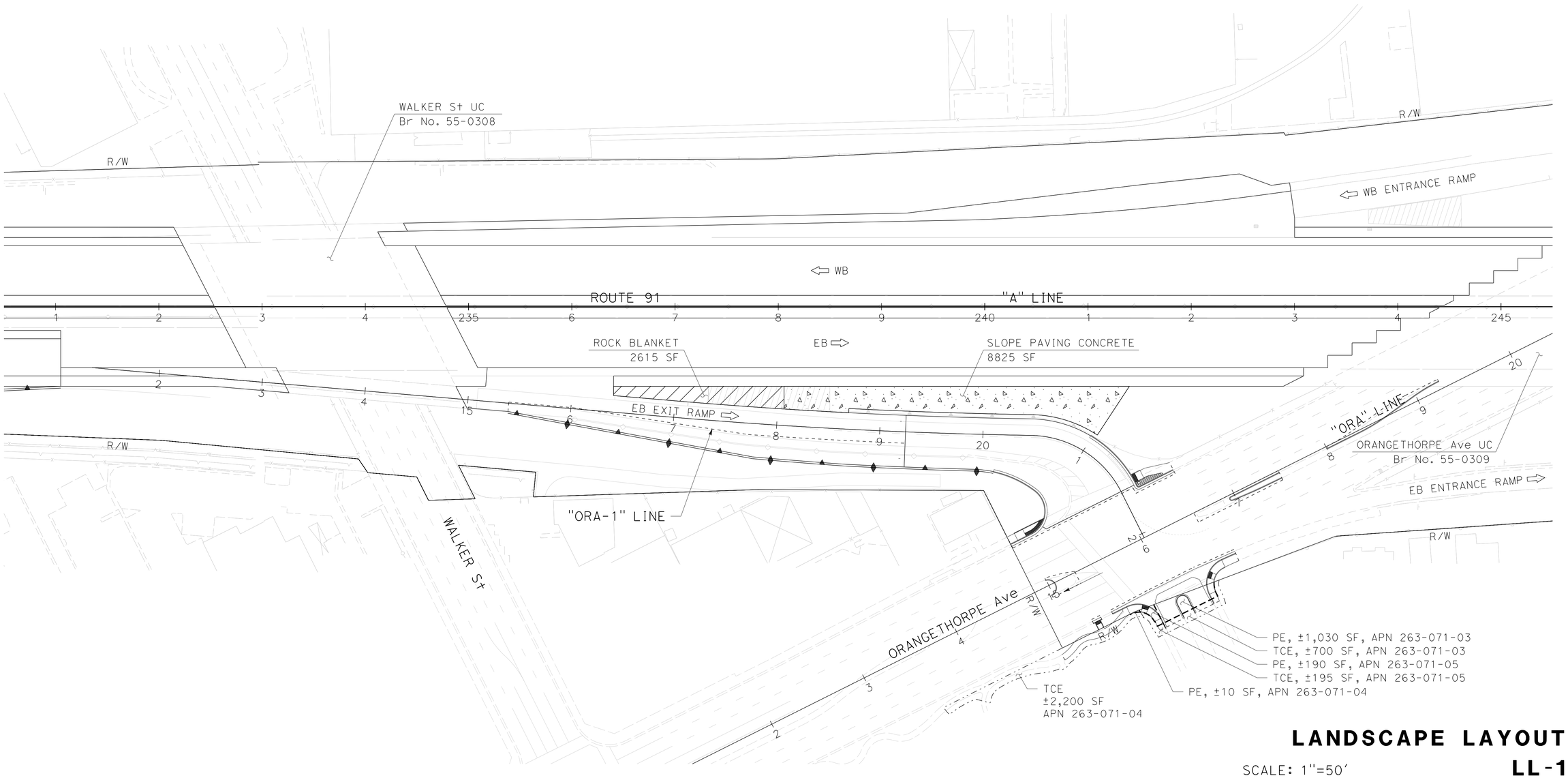
CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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

LEGEND:

- ROCK BLANKET
- SLOPE PAVING CONCRETE
- MAINTENANCE VEHICLE PULLOUT
- LIGHT DUTY VEHICULAR TRAIL
- NARROW AREA PAVEMENT
- VINE PLANTING



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-1

APPROVED FOR HARDSCAPE WORK ONLY

REVISED BY	DATE REVISED
-	-

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

$DATE $TIME $USER $FILE$
60208335

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	49	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

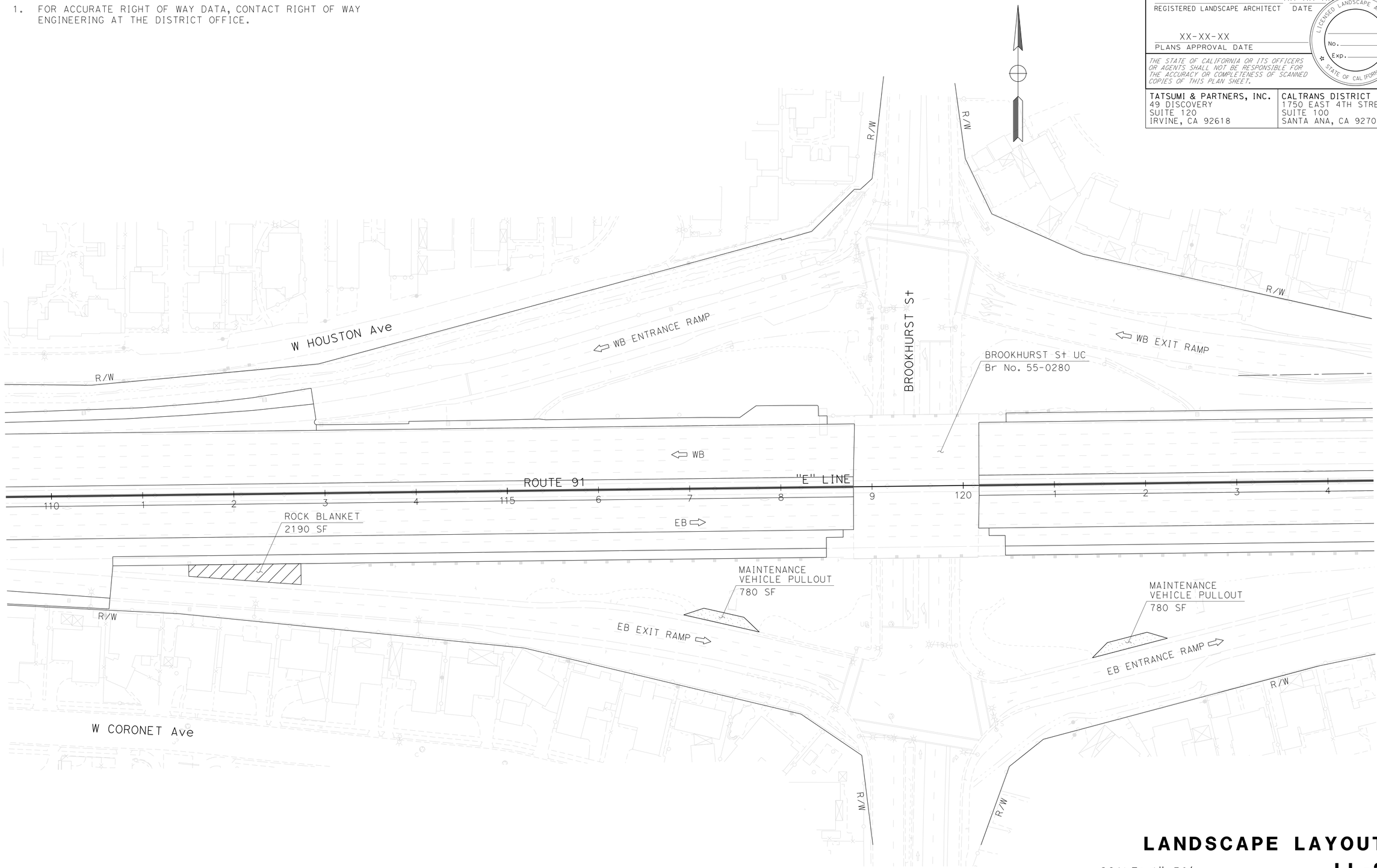
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-2

APPROVED FOR HARDSCAPE WORK ONLY

REVISED BY - | DATE REVISED -
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
6028935 $DATE $TIME $USER $FILE$
LAST REVISION: DATE PLOTTED => $DATE 00-00-00 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	50	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

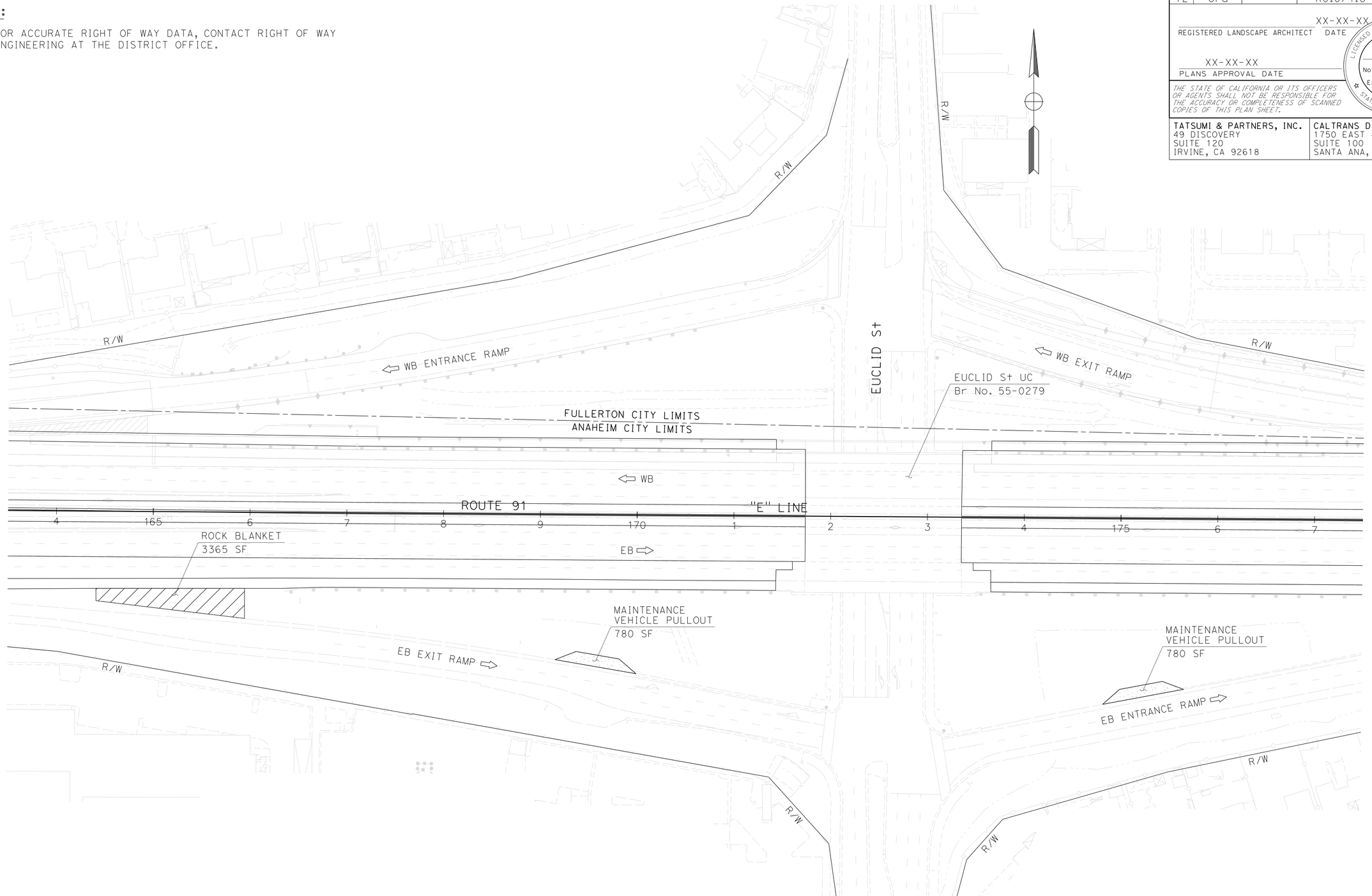
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



APPROVED FOR HARDSCAPE WORK ONLY

LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-3

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

6028935 $DATE $TIME $USER $FILE$

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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	51	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

XX-XX-XX
PLANS APPROVAL DATE

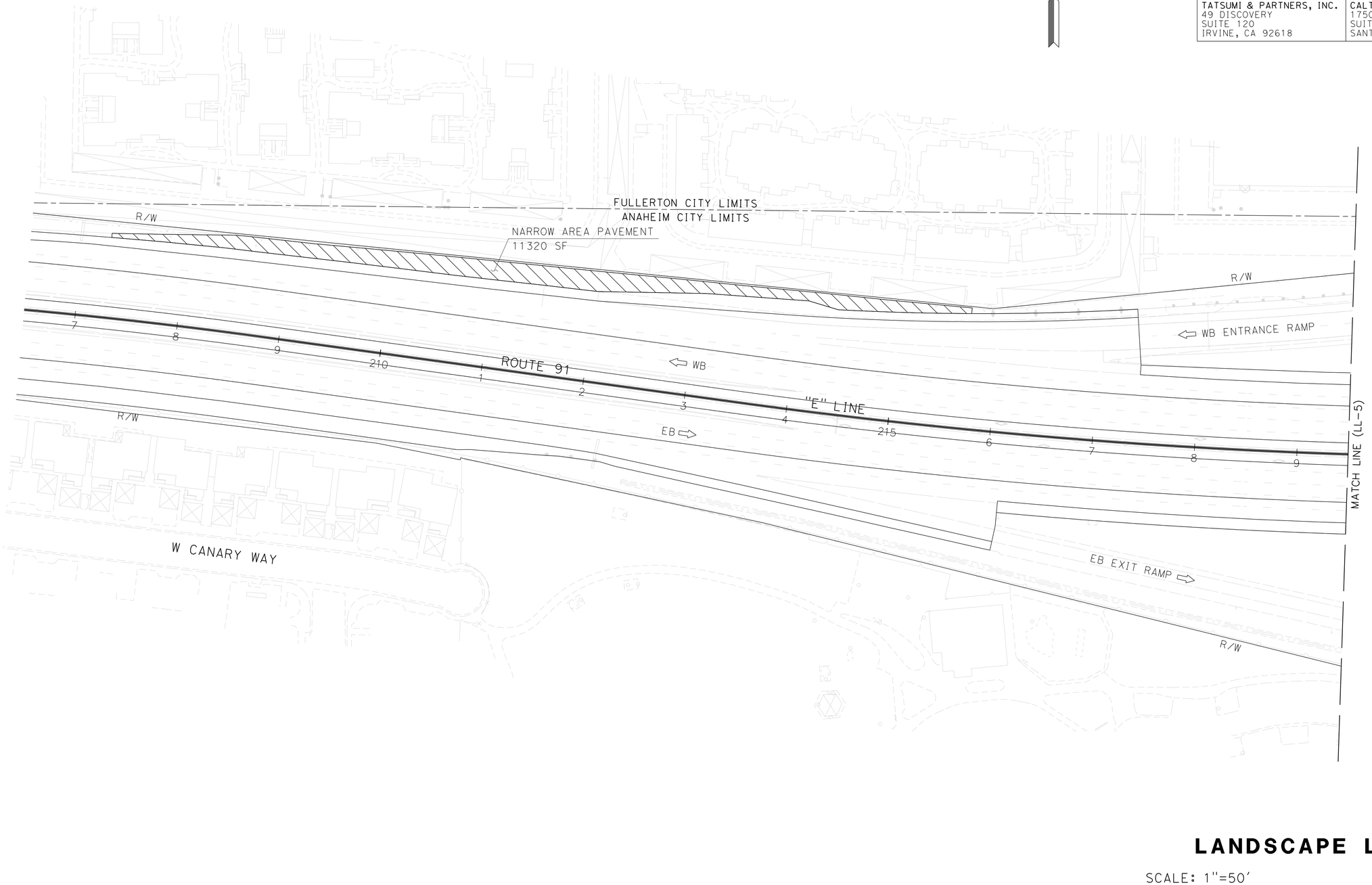
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-4

APPROVED FOR HARDSCAPE WORK ONLY

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- | -

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CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
$DATE $TIME $USER $FILE$
62D9935

Caltrans

LAST REVISION DATE PLOTTED => $DATE
00-00-00 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	52	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

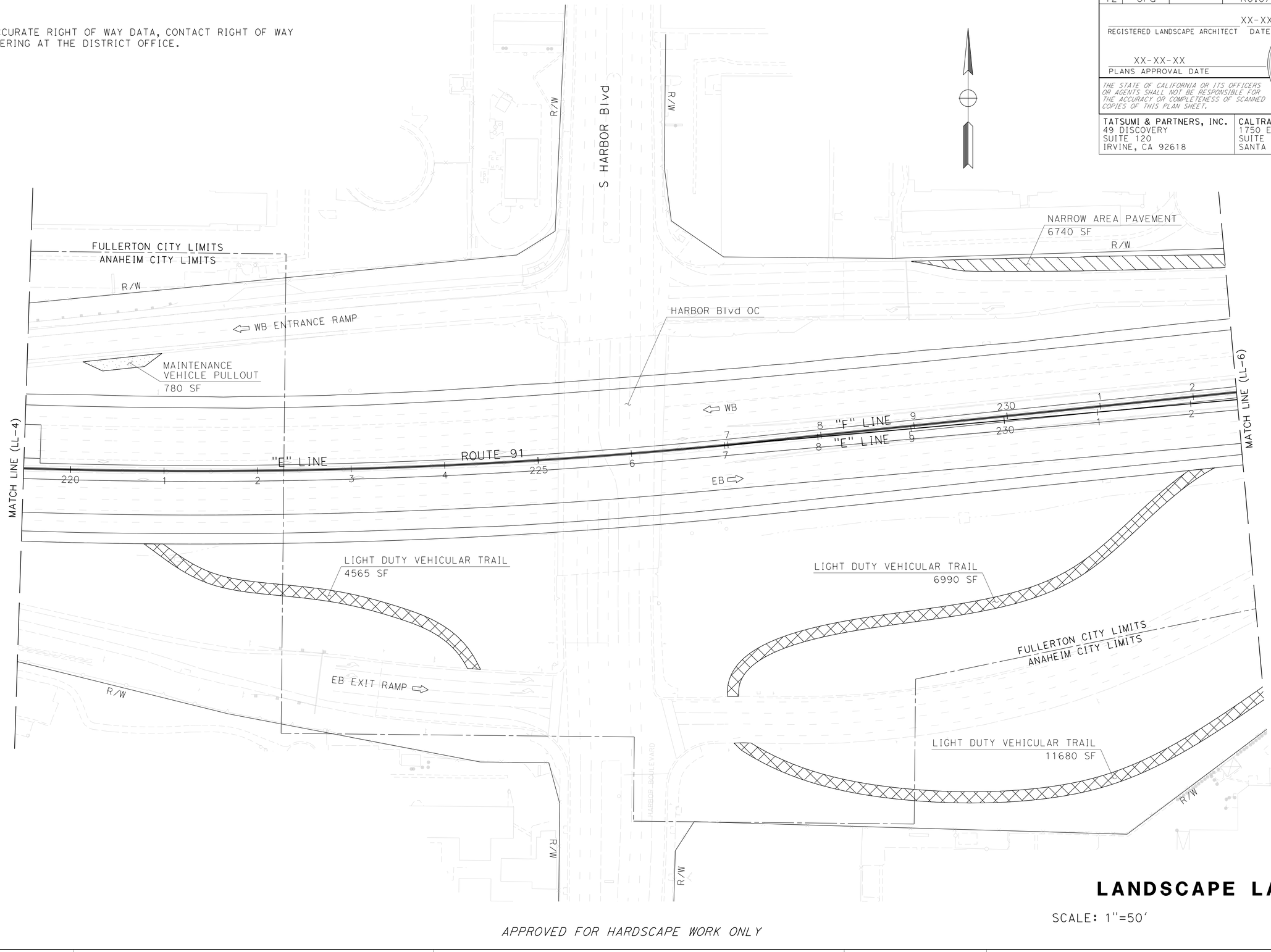
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-5

APPROVED FOR HARDSCAPE WORK ONLY

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- | -

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CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®

6028935 $DATE $TIME $USER $FILE$

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	53	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

XX-XX-XX
PLANS APPROVAL DATE

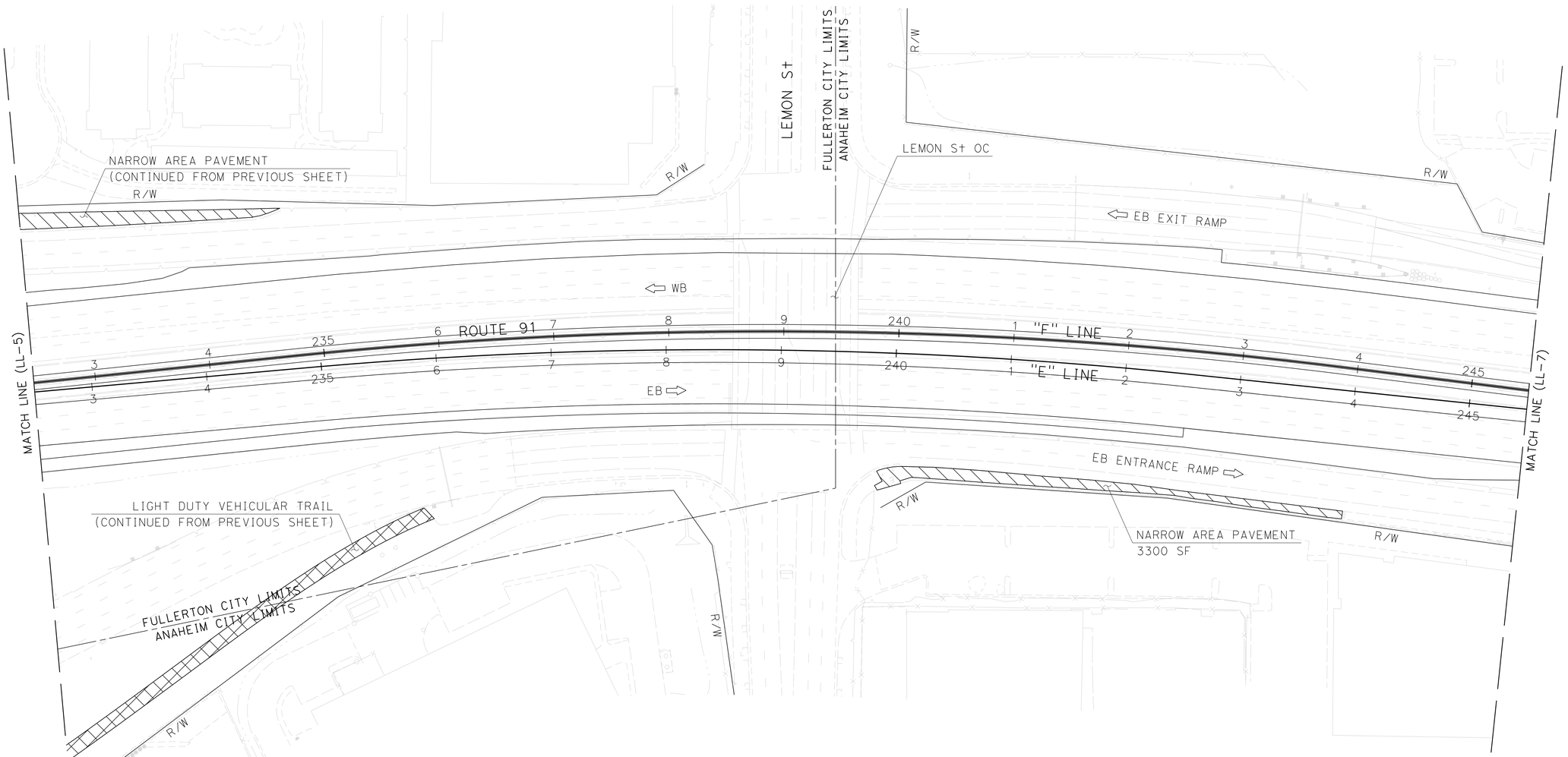
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-6

APPROVED FOR HARDSCAPE WORK ONLY

REVISED BY | DATE REVISED
- | -
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
6028935 $DATE $TIME $USER $FILE$

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

1. 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 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	54	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

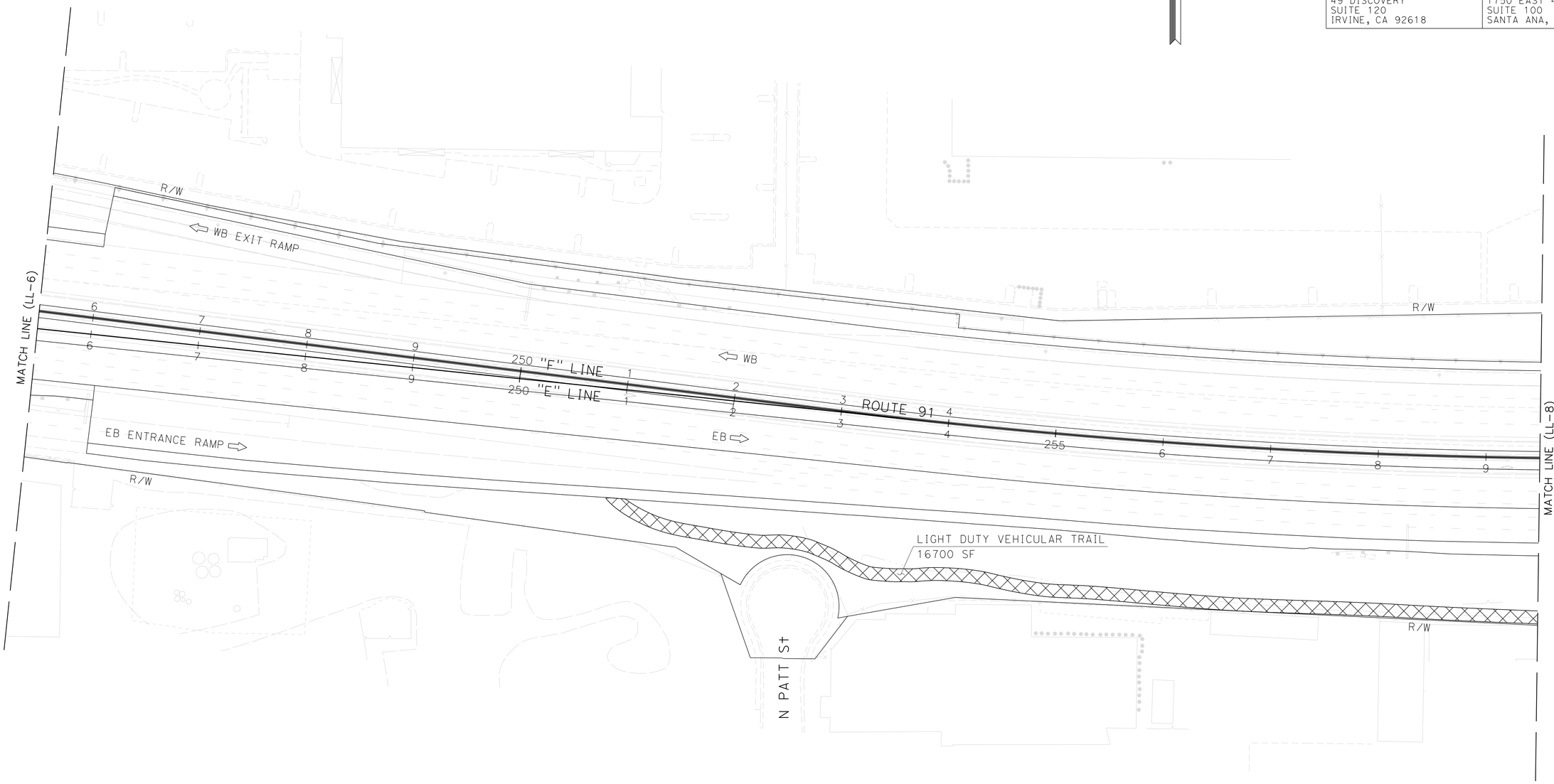
XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
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.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705



APPROVED FOR HARDSCAPE WORK ONLY

LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-7

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

$DATE $TIME $USER $FILE$
6028935

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	55	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

XX-XX-XX
PLANS APPROVAL DATE

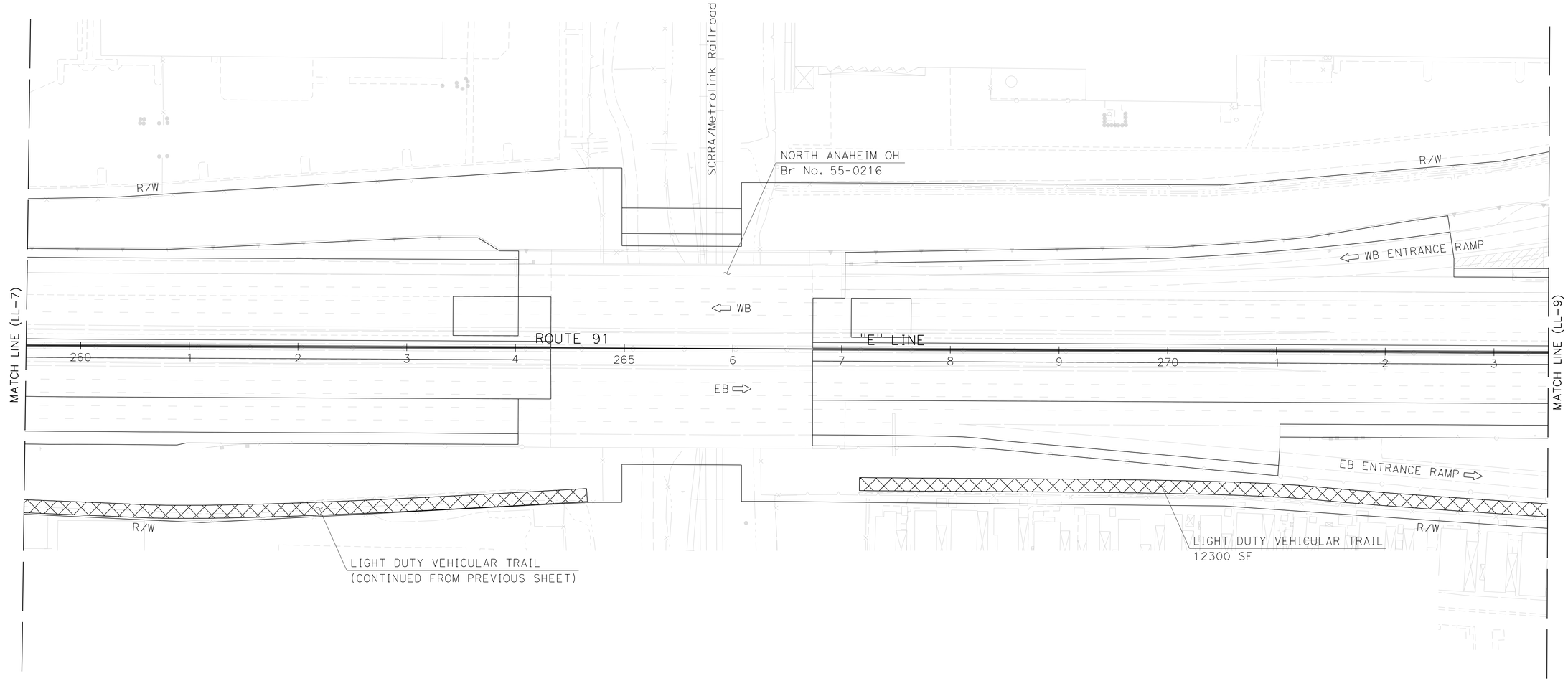
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-8

APPROVED FOR HARDSCAPE WORK ONLY

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

62098935 $DATE $TIME $USER $FILE$

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	56	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

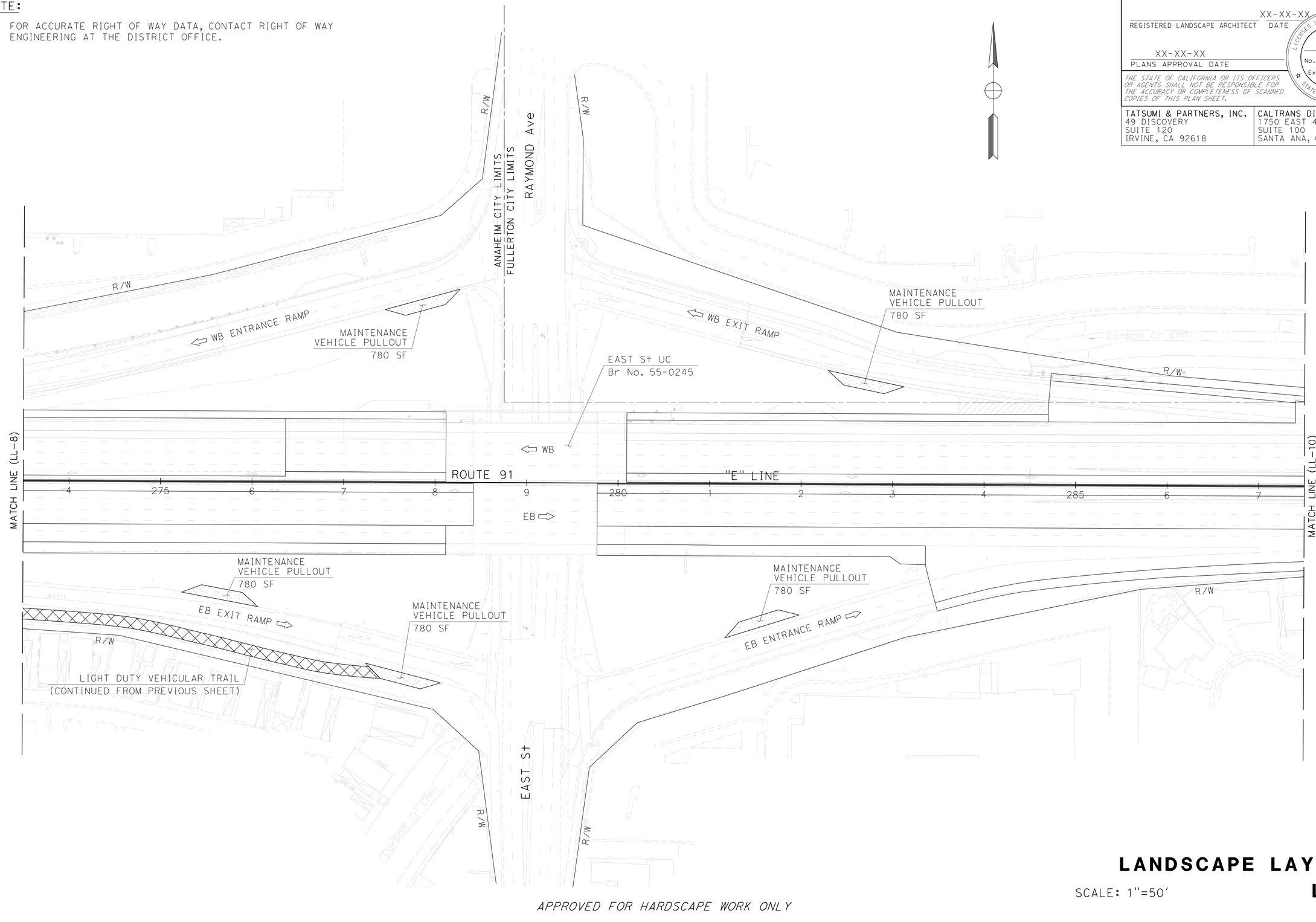
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



APPROVED FOR HARDSCAPE WORK ONLY

LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-9

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
$DATE $TIME $USER $FILE$
62098335

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

NOTE:

1. 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 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	57	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

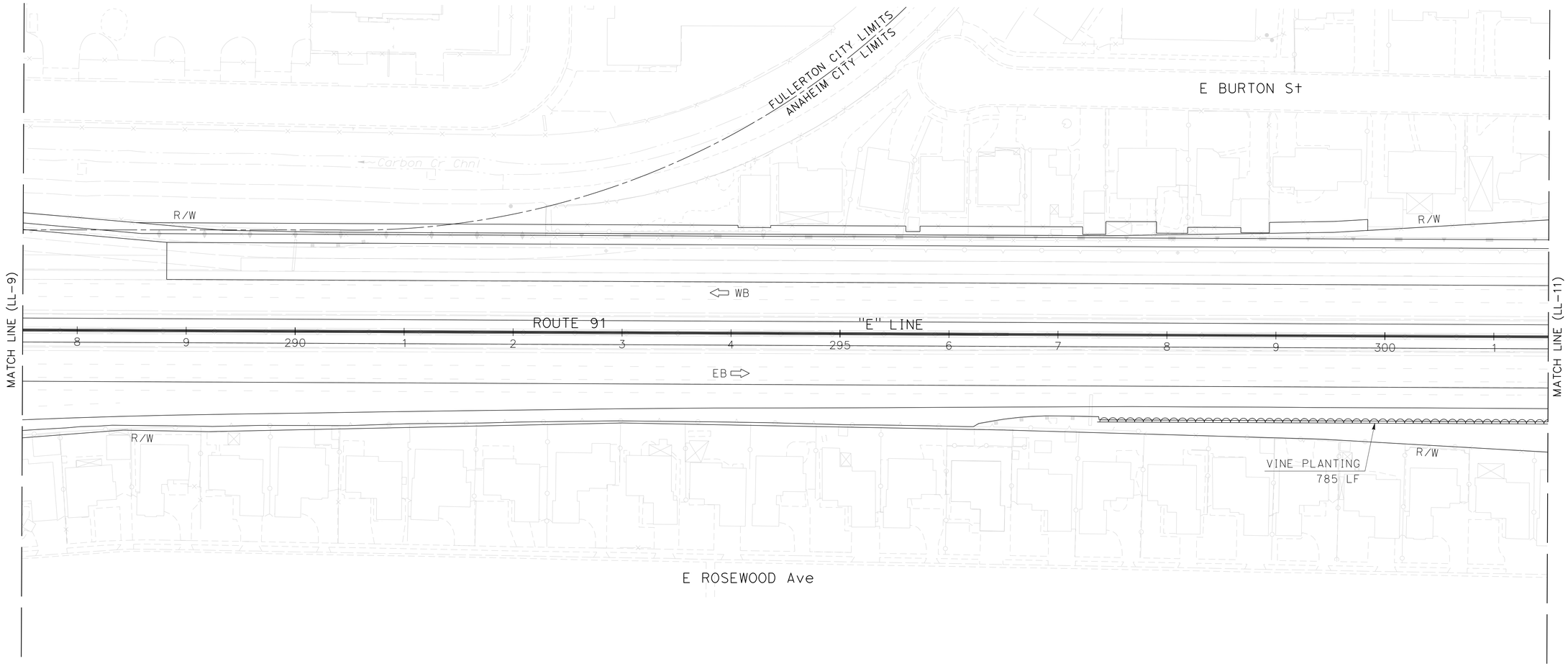
XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
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.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705



LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-10

APPROVED FOR PLANTING WORK ONLY

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

6028935 $DATE $TIME $USER $FILE$

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	58	92

XX-XX-XX
REGISTERED LANDSCAPE ARCHITECT DATE

XX-XX-XX
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
No.
Exp.
STATE OF CALIFORNIA

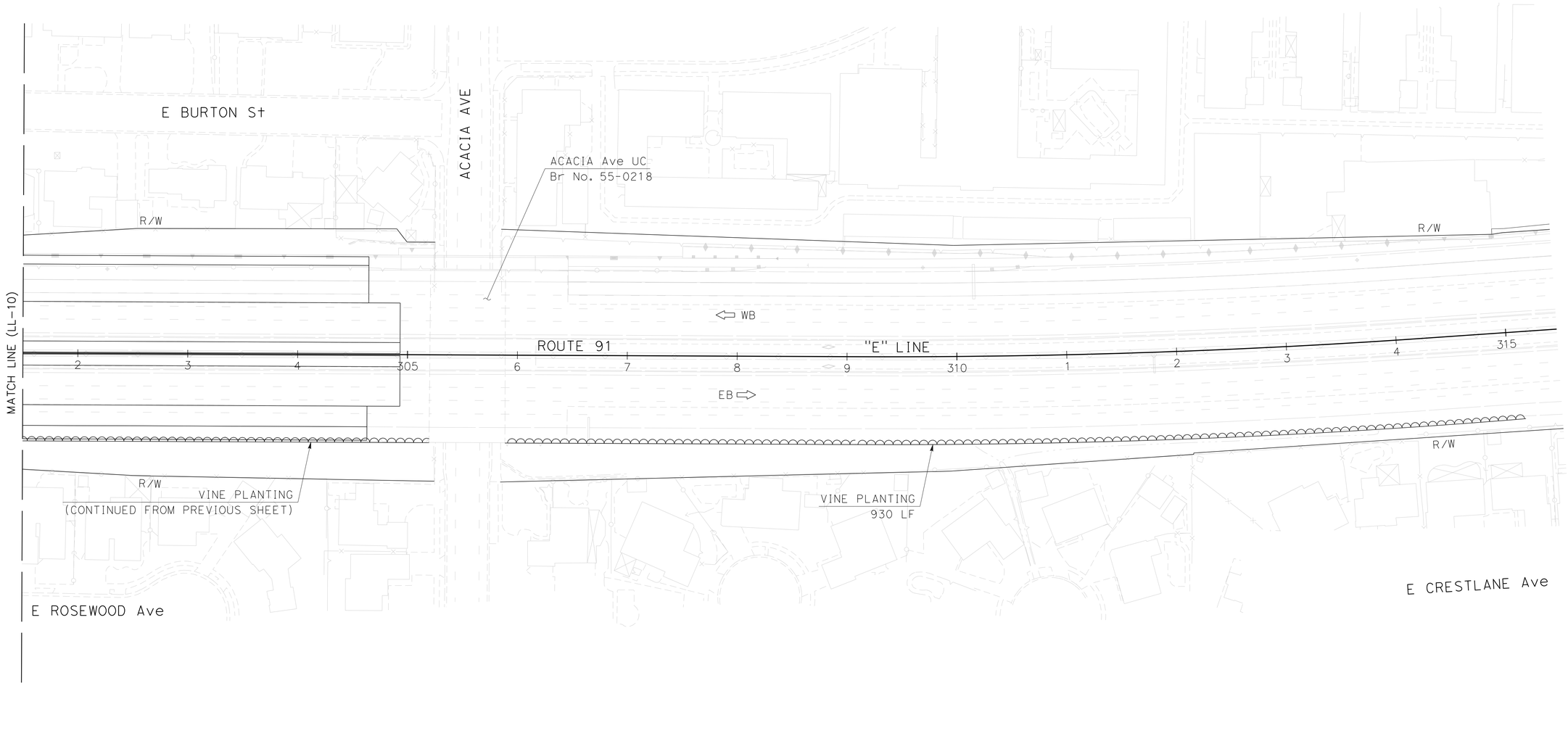
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TATSUMI & PARTNERS, INC.
49 DISCOVERY
SUITE 120
IRVINE, CA 92618

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTE:

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



APPROVED FOR PLANTING WORK ONLY

LANDSCAPE LAYOUT

SCALE: 1"=50'

LL-11

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
60208935 $DATE $TIME $USER $FILE$

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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	59	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — 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.

ITERIS, INC.
1700 CARNEGIE AVENUE
SUITE 200
SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

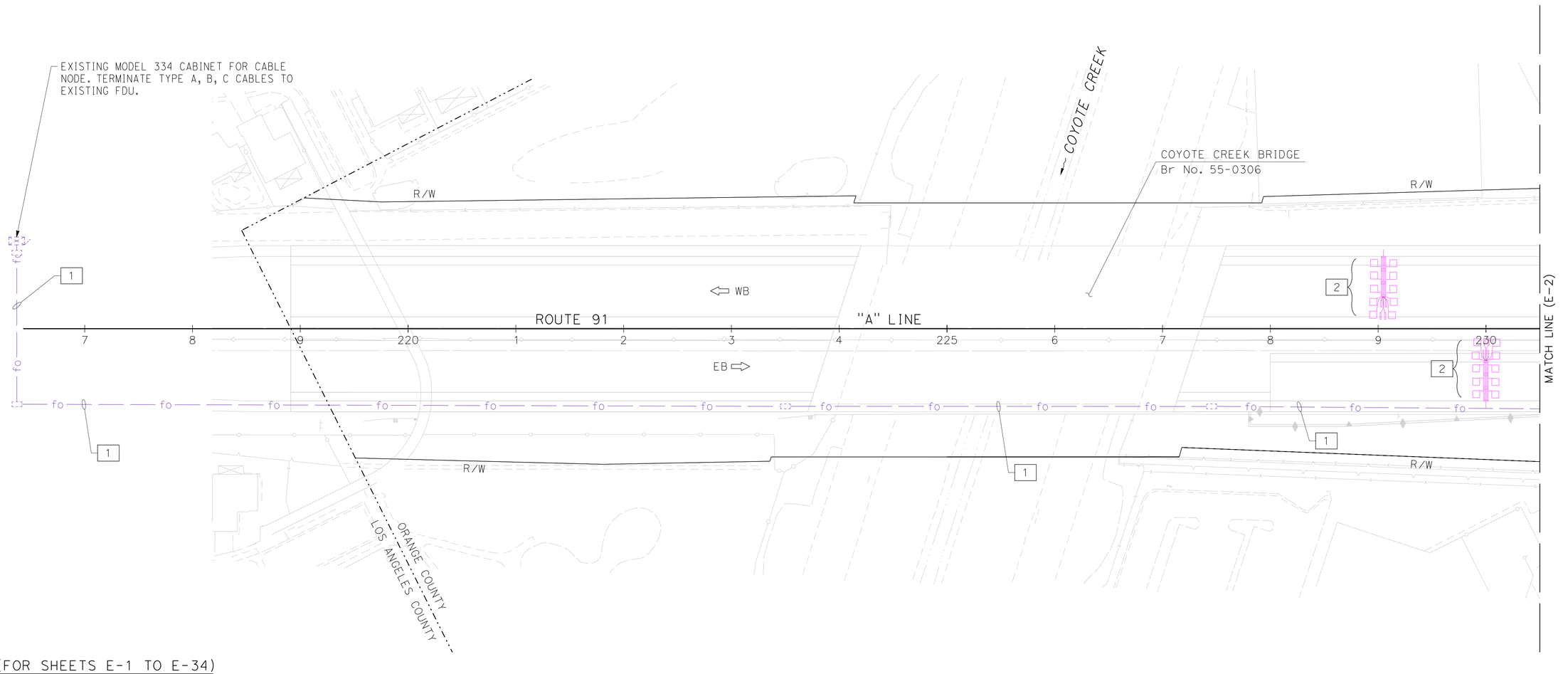
NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL ELECTRICAL SYSTEMS ARE EXISTING UNLESS NOTED OTHERWISE.

ANNOTATION: (THIS SHEET ONLY)

1 [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

2 INSTALL WEIGH-IN-MOTION SYSTEM.



LEGEND: (FOR SHEETS E-1 TO E-34)

- LIGHTING SYSTEM
- TRAFFIC SIGNAL SYSTEM
- TRAFFIC MONITORING STATION SYSTEM
- RAMP METERING SYSTEM
- FIBER OPTIC SYSTEM
- CHANGEABLE MESSAGE SIGN SYSTEM
- CCTV SYSTEM
- WEIGH-IN-MOTION SYSTEM

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-1

REVISED BY | DATE REVISED
- | -

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®

6028935 $DATE $TIME $USER $FILE$

LAST REVISION | DATE PLOTTED => $DATE
00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	60	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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ITERIS, INC.
1700 CARNEGIE AVENUE
SUITE 200
SANTA ANA, CA 92705

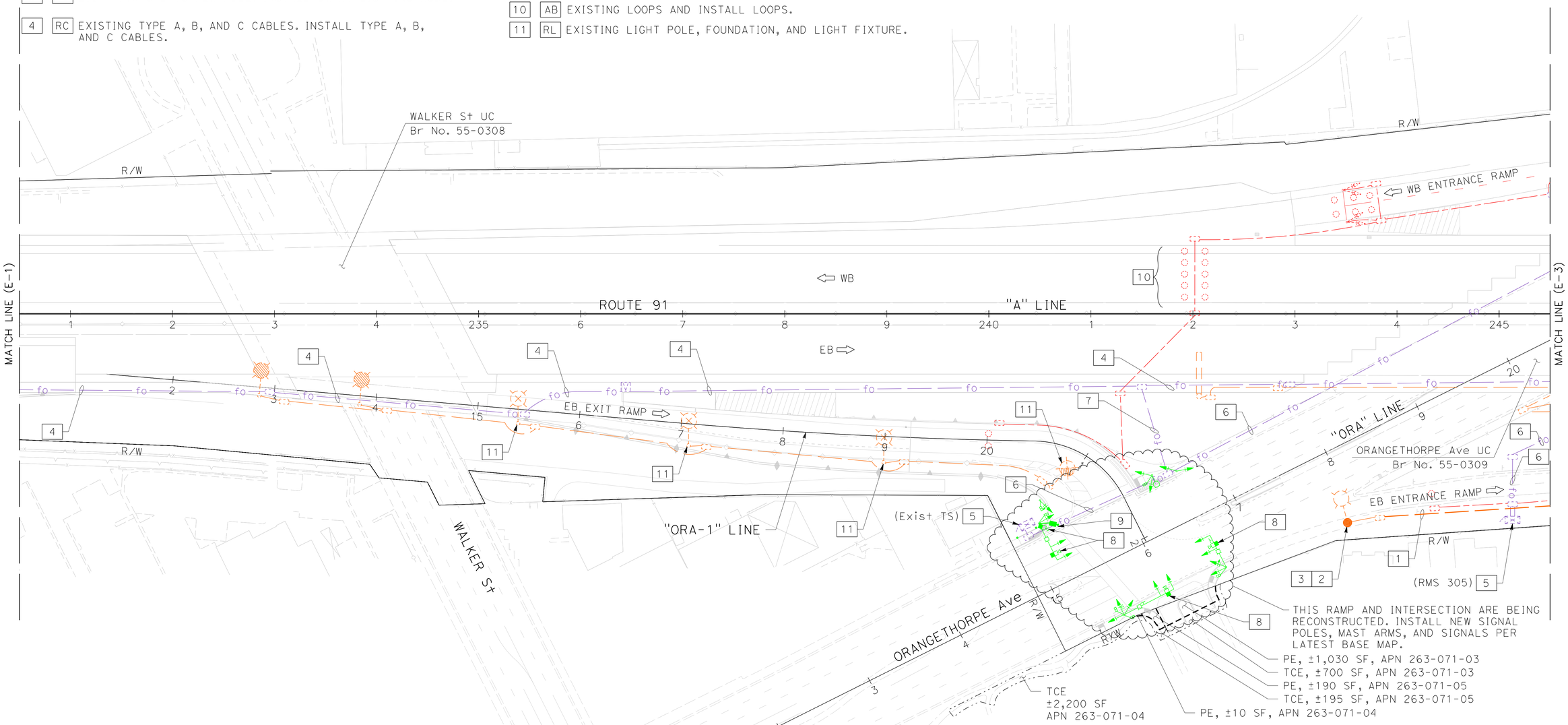
CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL ELECTRICAL SYSTEMS ARE EXISTING UNLESS NOTED OTHERWISE.
3. [RC] ALL EXISTING RAMP METERING SYSTEM PULL BOXES, AND INSTALL NEW (TR) TAMPER RESISTANT AND TRAFFIC RATED PULL BOXES TO GRADE.

ANNOTATION: (THIS SHEET ONLY)

[1] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
[2] [RC] EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE. FURNISH AND INSTALL FOUNDATION AND POLE.
[3] [RL] LIGHT FIXTURE TO NEW POLE. INSTALL SMART LIGHTING NODE.
[4] [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.
[5] INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM
[6] [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.
[7] [RC] EXISTING 3 TYPE D CABLE. INSTALL 3 TYPE D CABLE.
[8] INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM.
[9] INSTALL PAN-TILT-ZOOM CAMERA ON SIGNAL POLE.
[10] [AB] EXISTING LOOPS AND INSTALL LOOPS.
[11] [RL] EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-2

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CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	61	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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

XX-XX-XX
PLANS APPROVAL DATE

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SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
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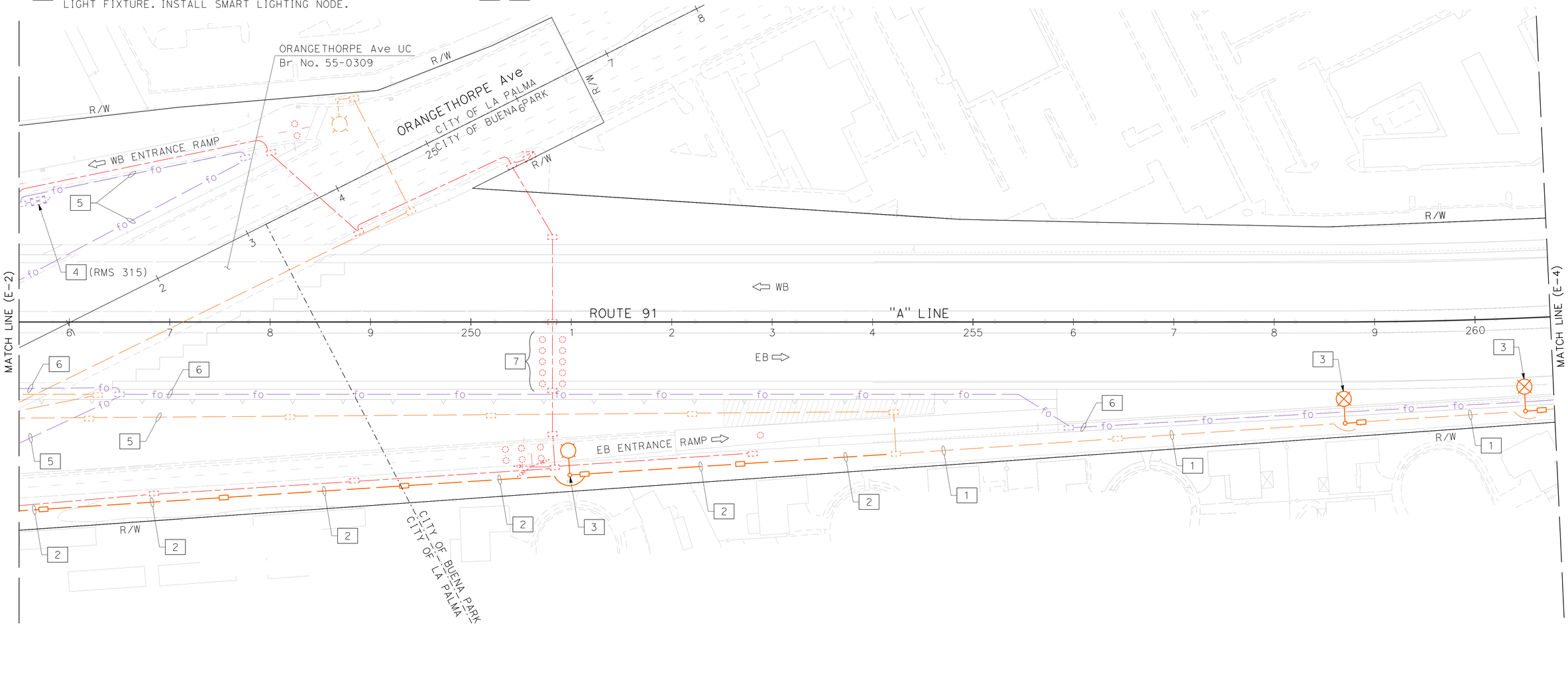
ANNOTATION: (THIS SHEET ONLY)

[1] [RC] EXISTING CONDUIT. INSTALL CONDUIT.
[2] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
[3] FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.
[4] INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY LOCKING SYSTEM.
[5] [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.
[6] [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, C CABLES.
[7] [AB] EXISTING LOOPS AND INSTALL LOOPS.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-3

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	62	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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

XX-XX-XX
PLANS APPROVAL DATE

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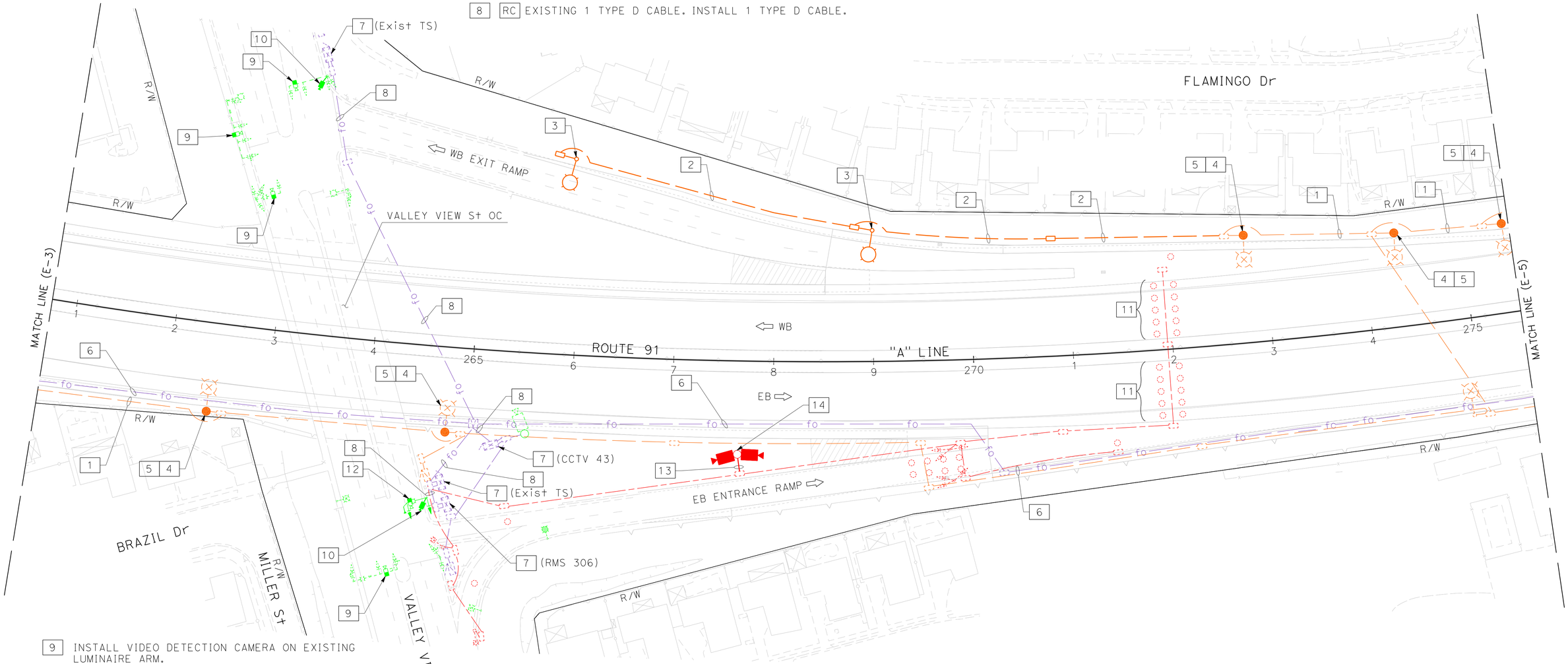
ANNOTATION: (THIS SHEET ONLY)

1. [RC] EXISTING CONDUIT. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
2. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
3. FURNISH AND INSTALL LIGHT POLE ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.
4. [RC] EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE. FURNISH AND INSTALL FOUNDATION AND POLE.
5. [RL] LIGHT FIXTURE TO NEW POLE. INSTALL SMART LIGHTING NODE.
6. [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.
7. INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY LOCKING SYSTEM.
8. [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.



9. INSTALL VIDEO DETECTION CAMERA ON EXISTING LUMINAIRE ARM.
10. INSTALL PAN-TILT-ZOOM CAMERA ON SIGNAL POLE.
11. [AB] EXISTING LOOPS AND INSTALL LOOPS.
12. INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE ARM.
13. INSTALL 2" CONDUIT AND CCTV CABLE.
14. INSTALL NEW FIXED CCTV CAMERA INCLUDING CABLING AND MOUNTING ON NEW POLE.

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-4

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	63	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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ANNOTATION: (THIS SHEET ONLY)

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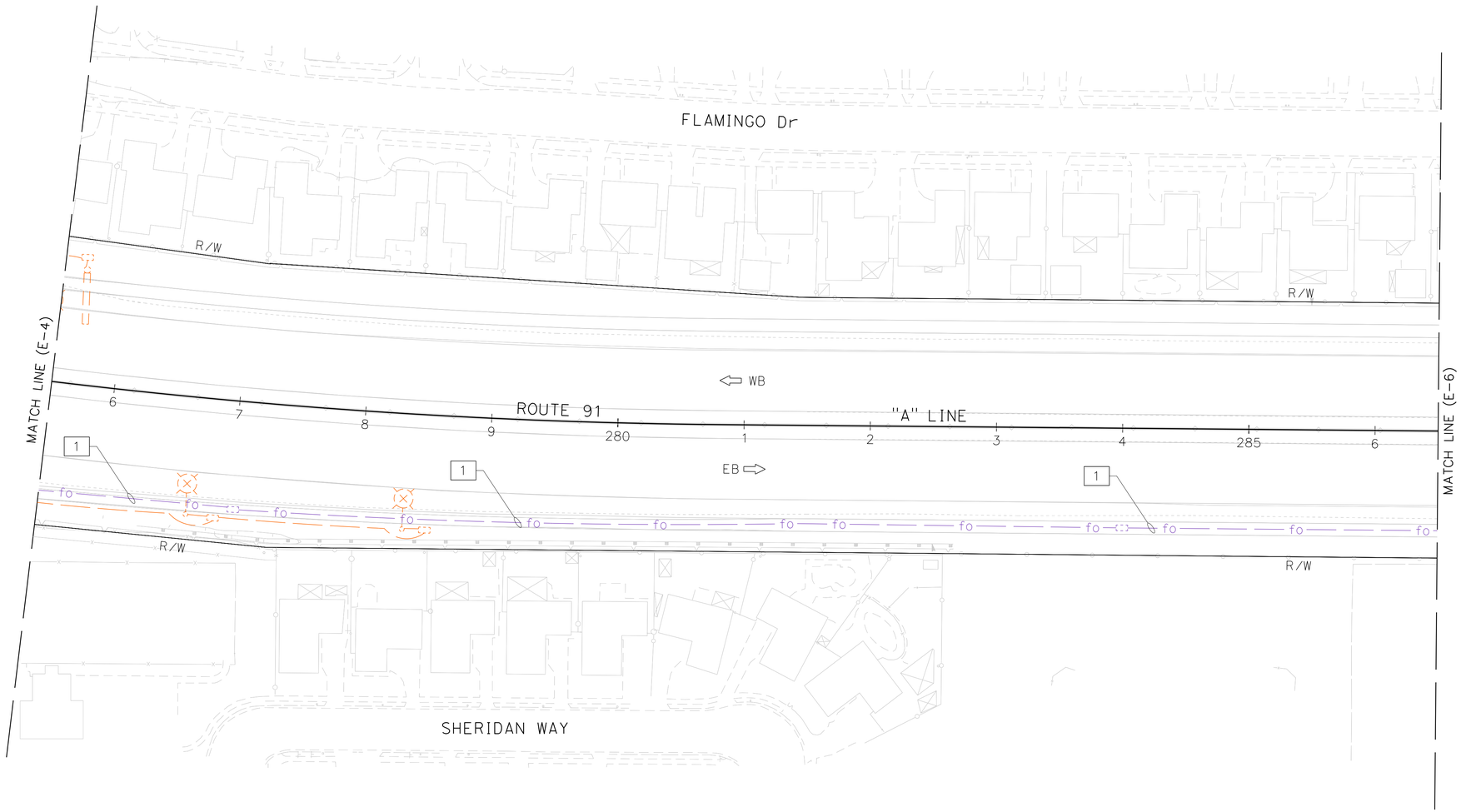

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-5

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	64	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
STATE OF CALIFORNIA

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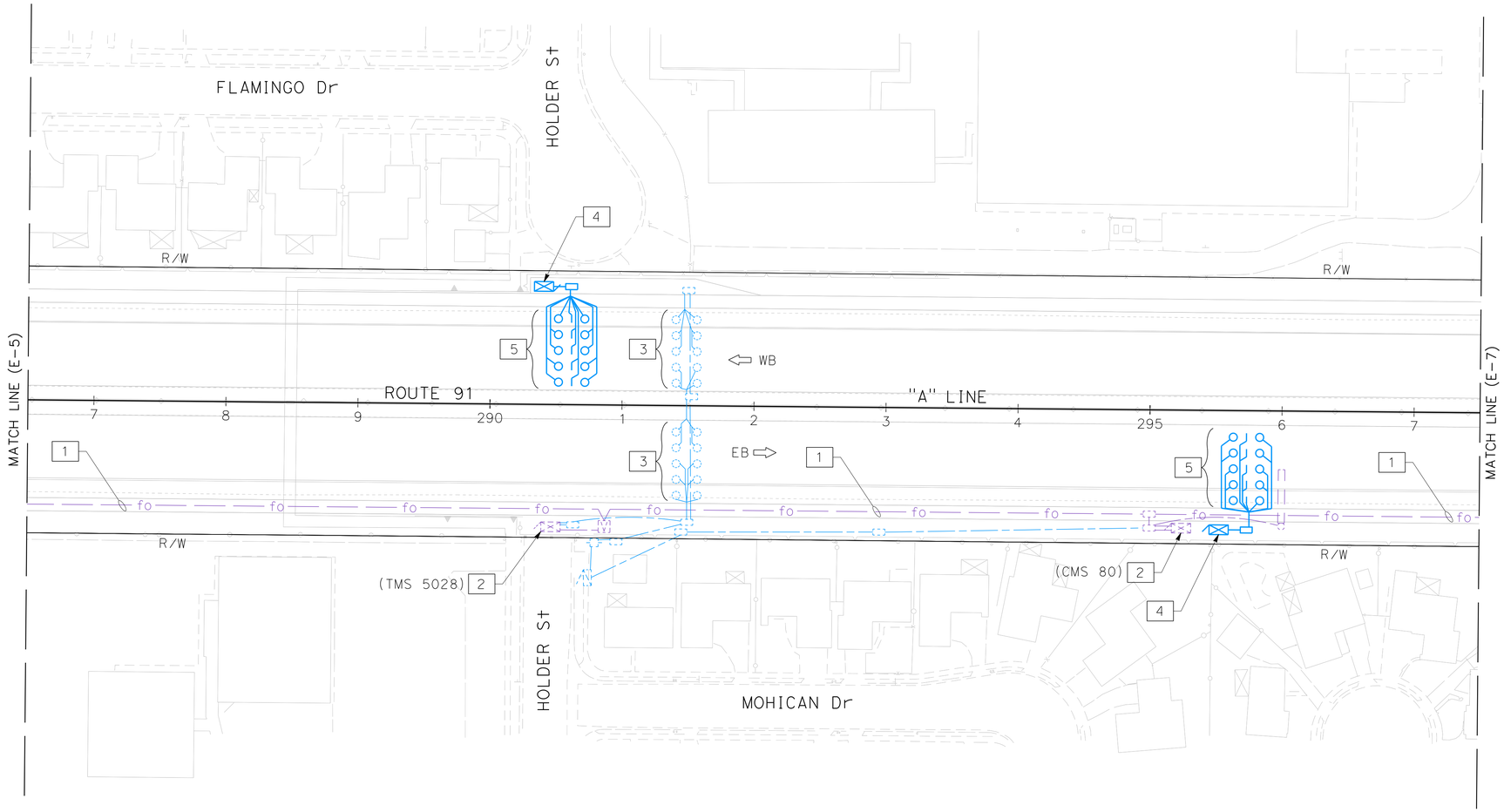
2 INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

3 [AB] EXISTING LOOPS AND INSTALL LOOPS.

4 INSTALL CENSUS STATION CABINET.

5 INSTALL TYPE E LOOP DETECTOR(S) AND PIEZOELECTRIC AXEL SENSORS FOR CENSUS STATION.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-6

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00-00-00 TIME PLOTTED => $TIME

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USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	65	92

XX-XX-XX
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XX-XX-XX
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REGISTERED PROFESSIONAL ENGINEER
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2 INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

3 RC EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE. FURNISH AND INSTALL FOUNDATION AND POLE.

4 RL LIGHT FIXTURE TO NEW POLE. INSTALL SMART LIGHTING NODE.

5 RC EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-7

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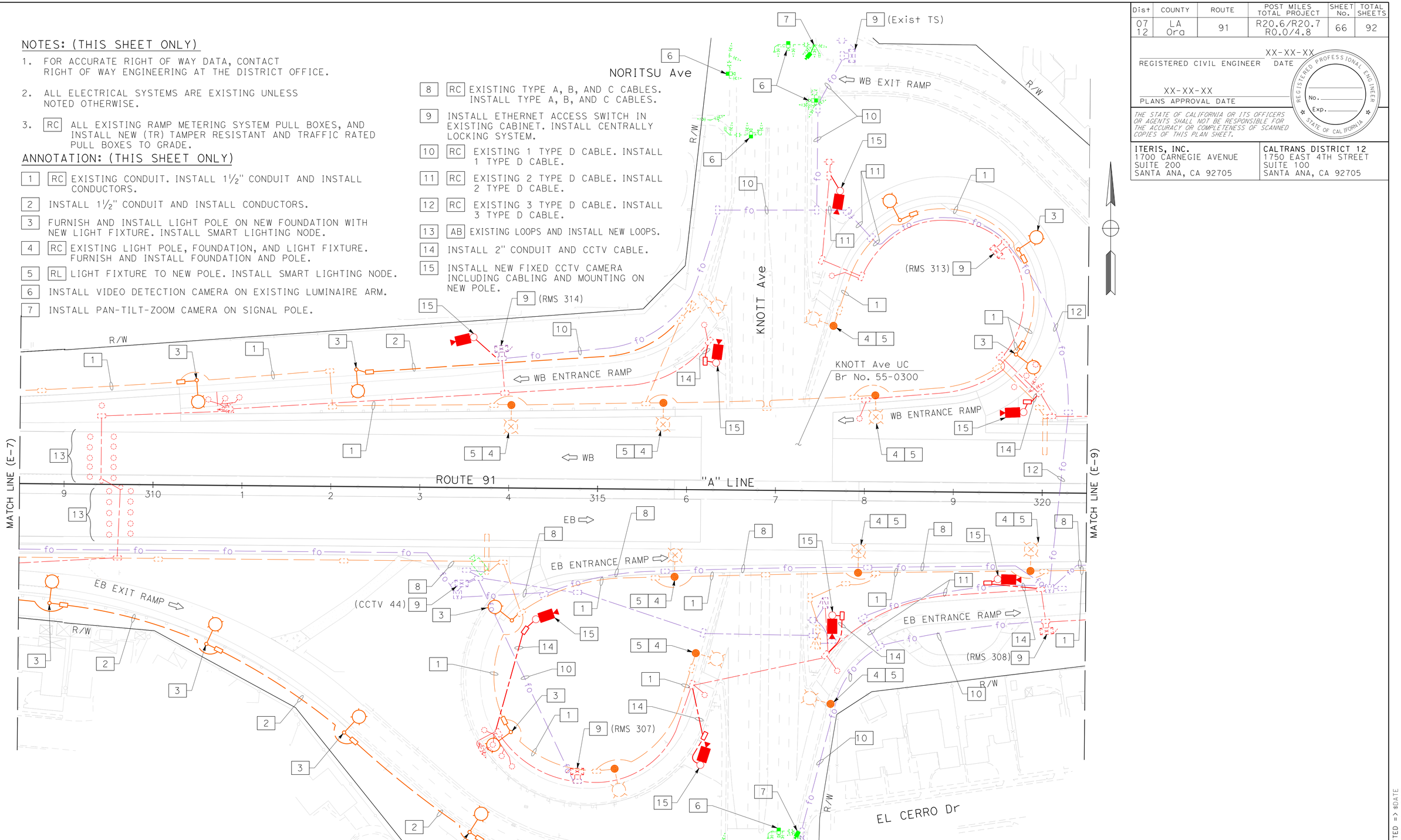
11. [RC] EXISTING 2 TYPE D CABLE. INSTALL 2 TYPE D CABLE.
12. [RC] EXISTING 3 TYPE D CABLE. INSTALL 3 TYPE D CABLE.
13. [AB] EXISTING LOOPS AND INSTALL NEW LOOPS.
14. INSTALL 2" CONDUIT AND CCTV CABLE.
15. INSTALL NEW FIXED CCTV CAMERA INCLUDING CABLING AND MOUNTING ON NEW POLE.



APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	66	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	67	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. STATE OF CALIFORNIA

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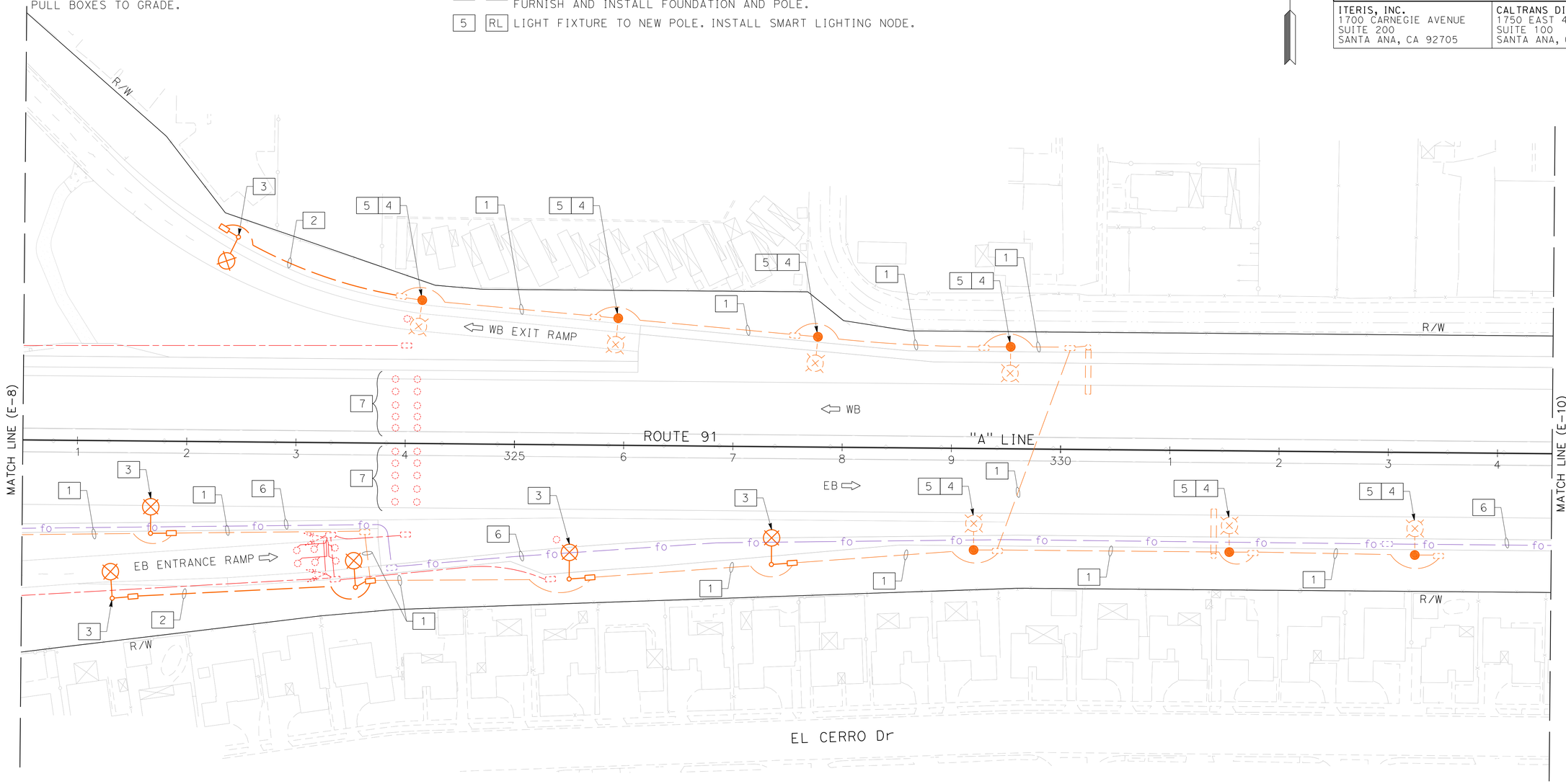

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-9

APPROVED FOR ELECTRICAL WORK ONLY

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07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	68	92

XX-XX-XX
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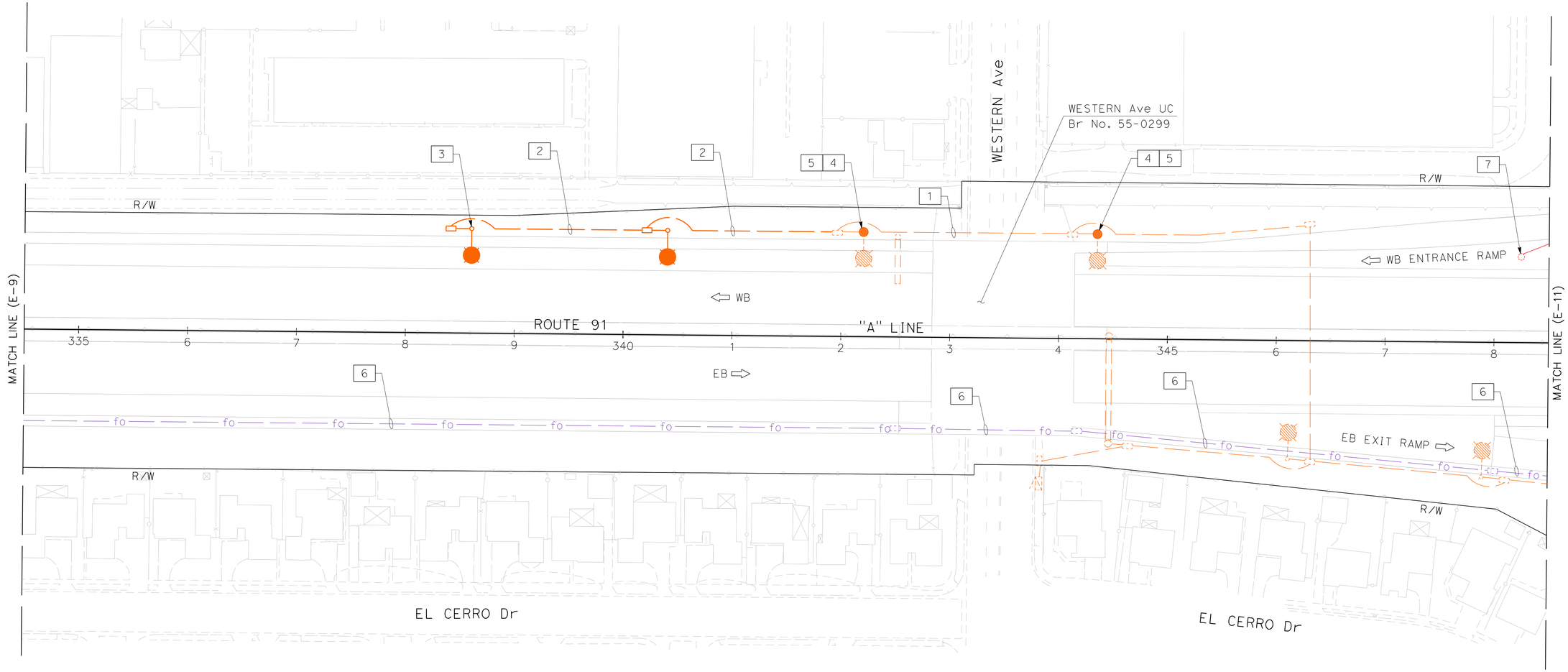

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-10

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SANTA ANA, CA 92705

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1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL ELECTRICAL SYSTEMS ARE EXISTING UNLESS NOTED OTHERWISE.
3. [RC] ALL EXISTING RAMP METERING SYSTEM PULL BOXES, AND INSTALL NEW (TR) TAMPER RESISTANT AND TRAFFIC RATED PULL BOXES TO GRADE.

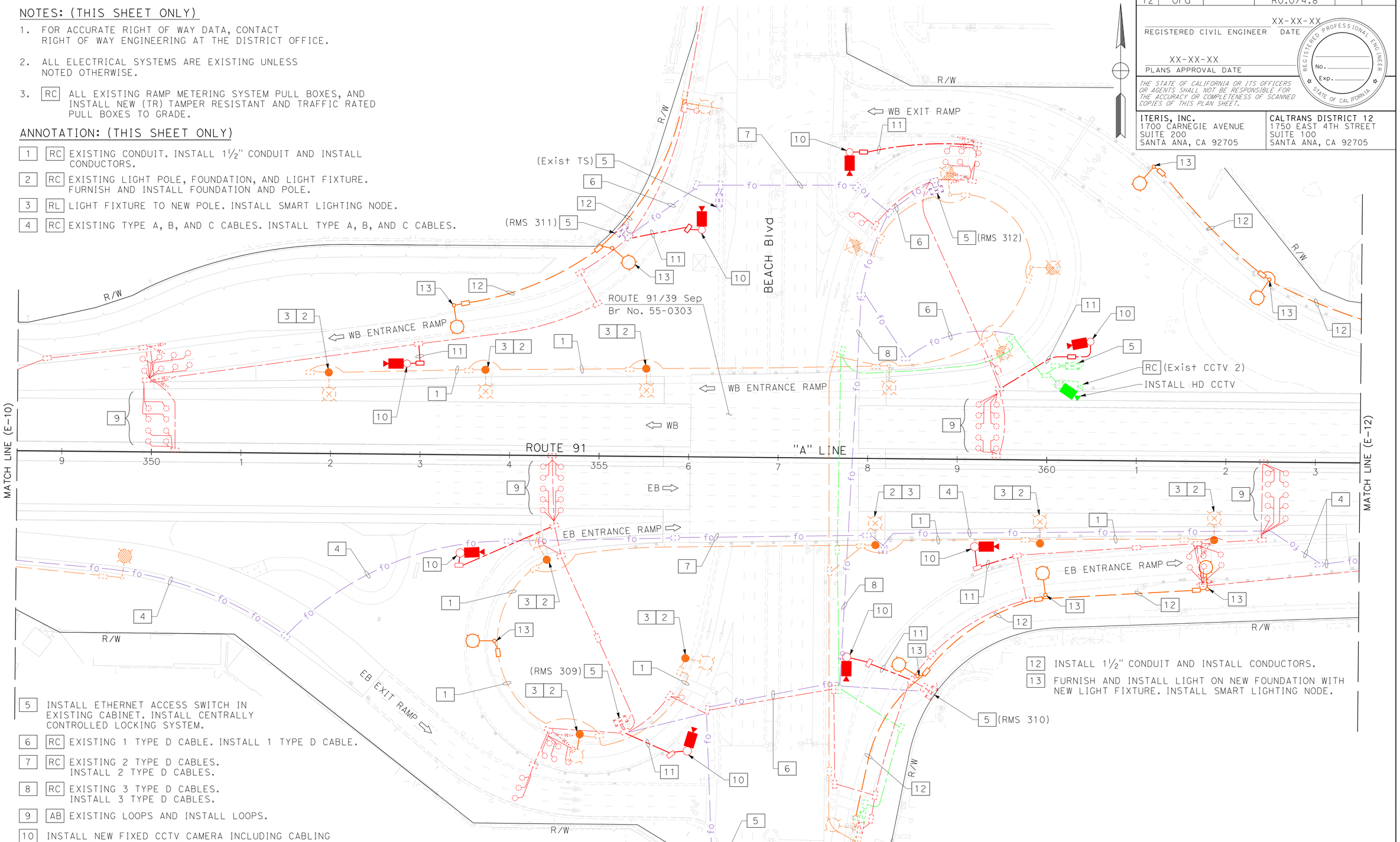
ANNOTATION: (THIS SHEET ONLY)

1 [RC] EXISTING CONDUIT. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

2 [RC] EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE. FURNISH AND INSTALL FOUNDATION AND POLE.

3 [RL] LIGHT FIXTURE TO NEW POLE. INSTALL SMART LIGHTING NODE.

4 [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.



5 INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

6 [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.

7 [RC] EXISTING 2 TYPE D CABLES. INSTALL 2 TYPE D CABLES.

8 [RC] EXISTING 3 TYPE D CABLES. INSTALL 3 TYPE D CABLES.

9 [AB] EXISTING LOOPS AND INSTALL LOOPS.

10 INSTALL NEW FIXED CCTV CAMERA INCLUDING CABLING AND MOUNTING ON NEW POLE.

11 INSTALL 2" CONDUIT AND INSTALL CCTV CABLE.

12 INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

13 FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-11

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	70	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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

XX-XX-XX
PLANS APPROVAL DATE

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ITERIS, INC.
1700 CARNEGIE AVENUE
SUITE 200
SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

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2 [RC] EXISTING LIGHT POLE, FOUNDATION, AND LIGHT FIXTURE. FURNISH AND INSTALL FOUNDATION AND POLE.

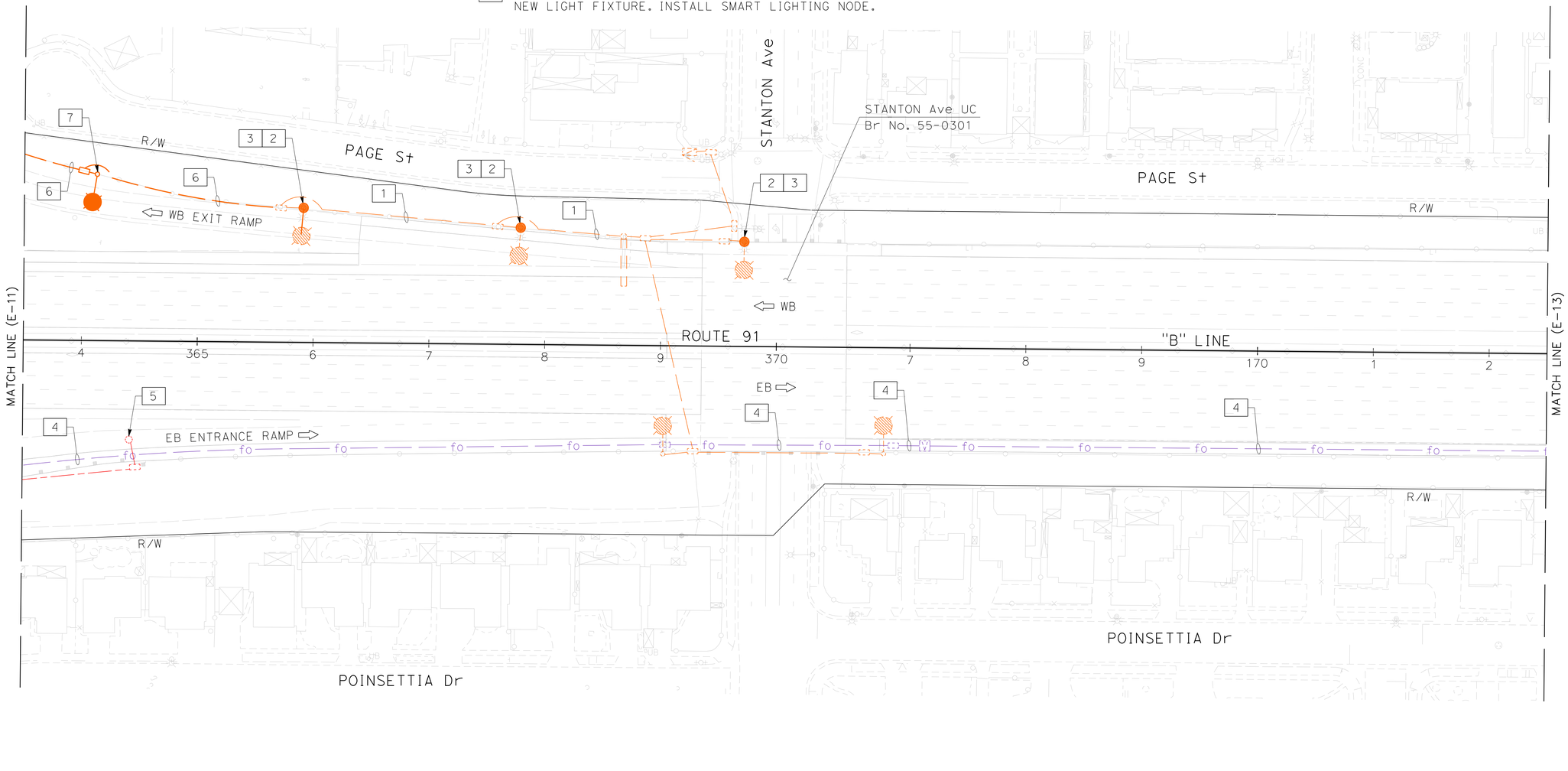
3 [RL] LIGHT FIXTURE TO NEW POLE. INSTALL SMART LIGHTING NODE.

4 [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

5 [AB] EXISTING LOOPS AND INSTALL LOOPS.

6 INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

7 FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-12

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	71	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

ITERIS, INC.
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1 RC EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

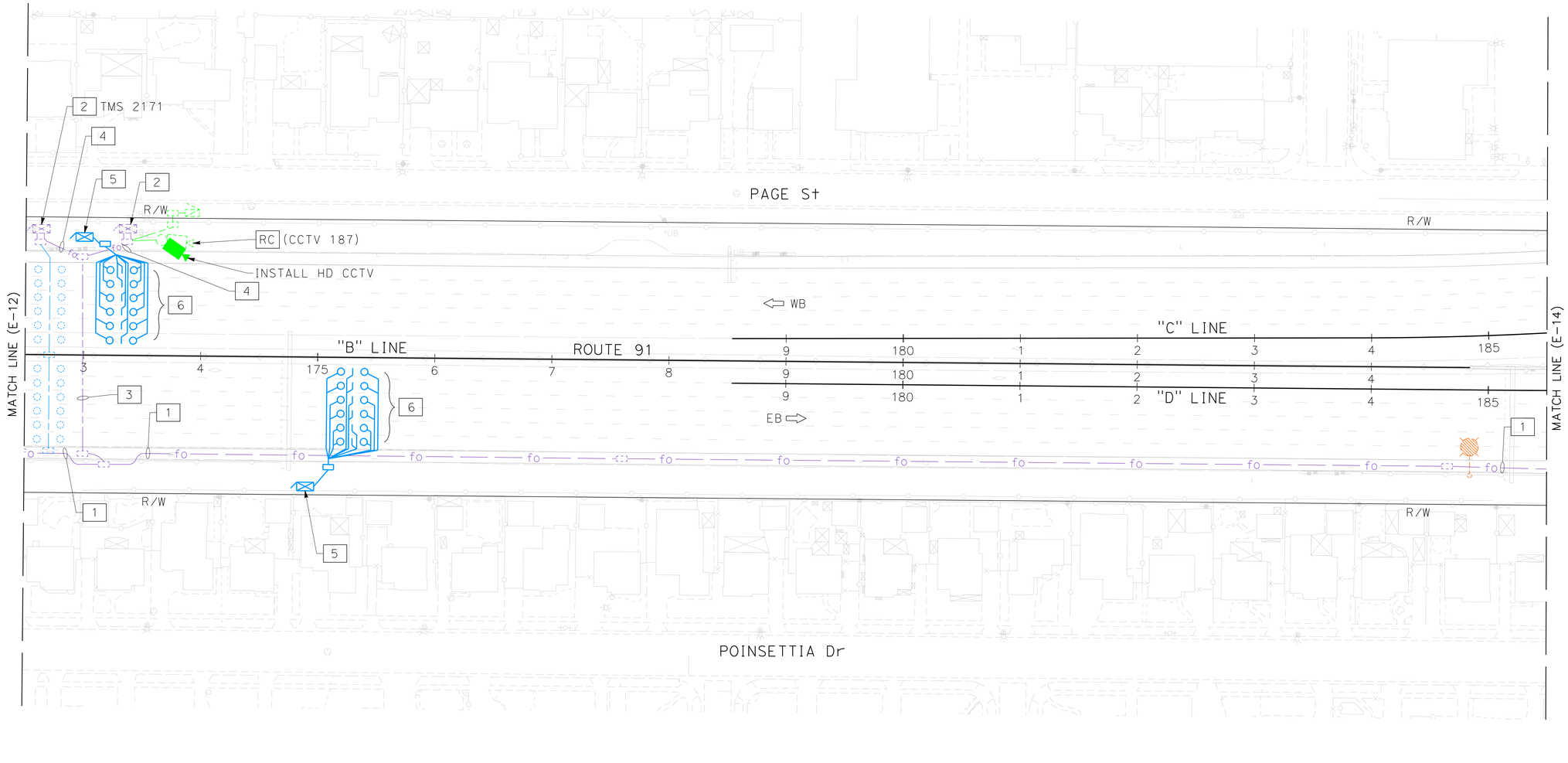
2 INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

3 RC EXISTING 2 TYPE D CABLES. INSTALL 2 TYPE D CABLES.

4 RC EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.

5 INSTALL CENSUS STATION CABINET.

6 INSTALL TYPE E LOOP DETECTOR(S) AND PIEZOELECTRIC AXEL SENSORS FOR CENSUS STATION.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-13

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	72	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
STATE OF CALIFORNIA

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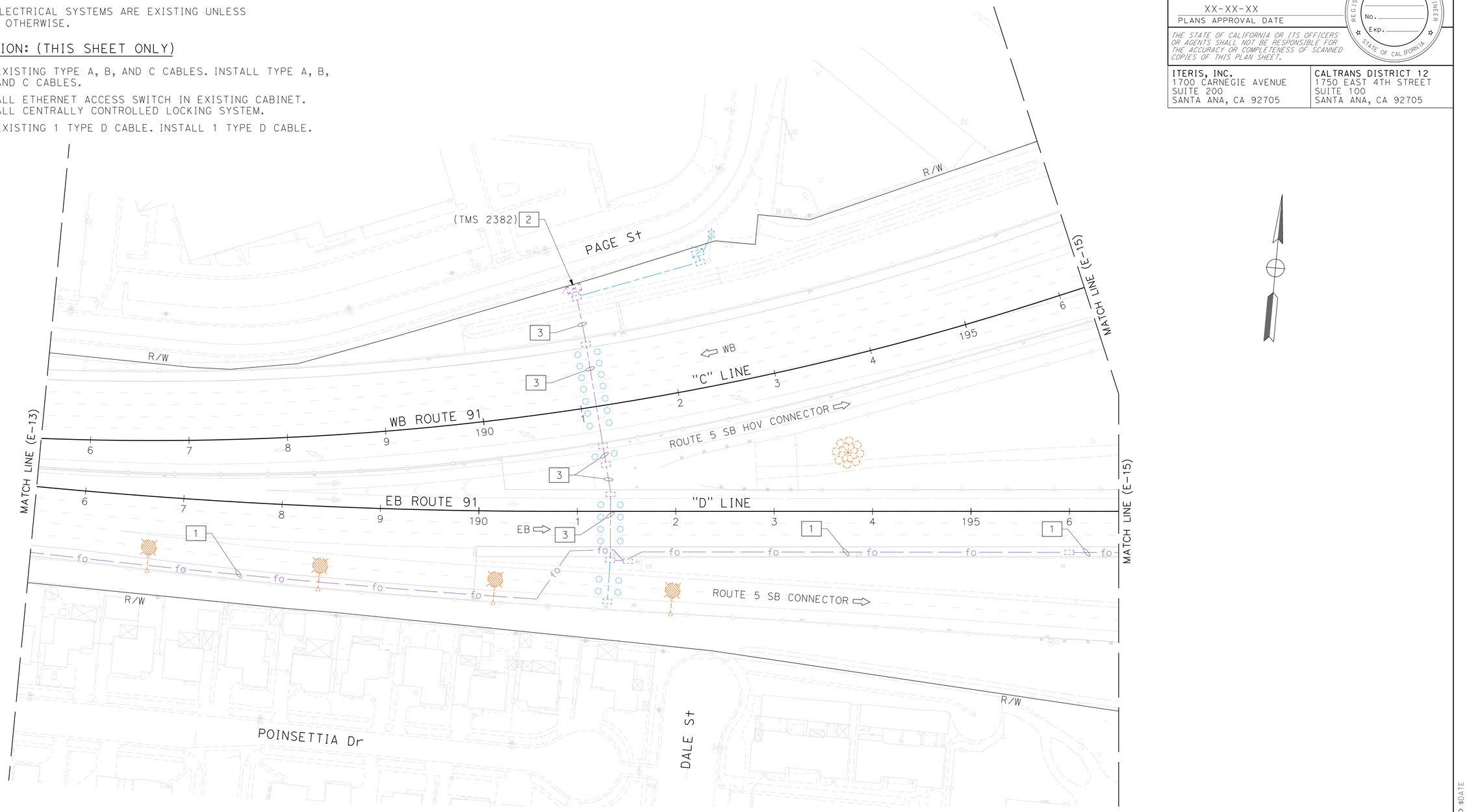
3 RC EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-14

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USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	73	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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ANNOTATION: (THIS SHEET ONLY)

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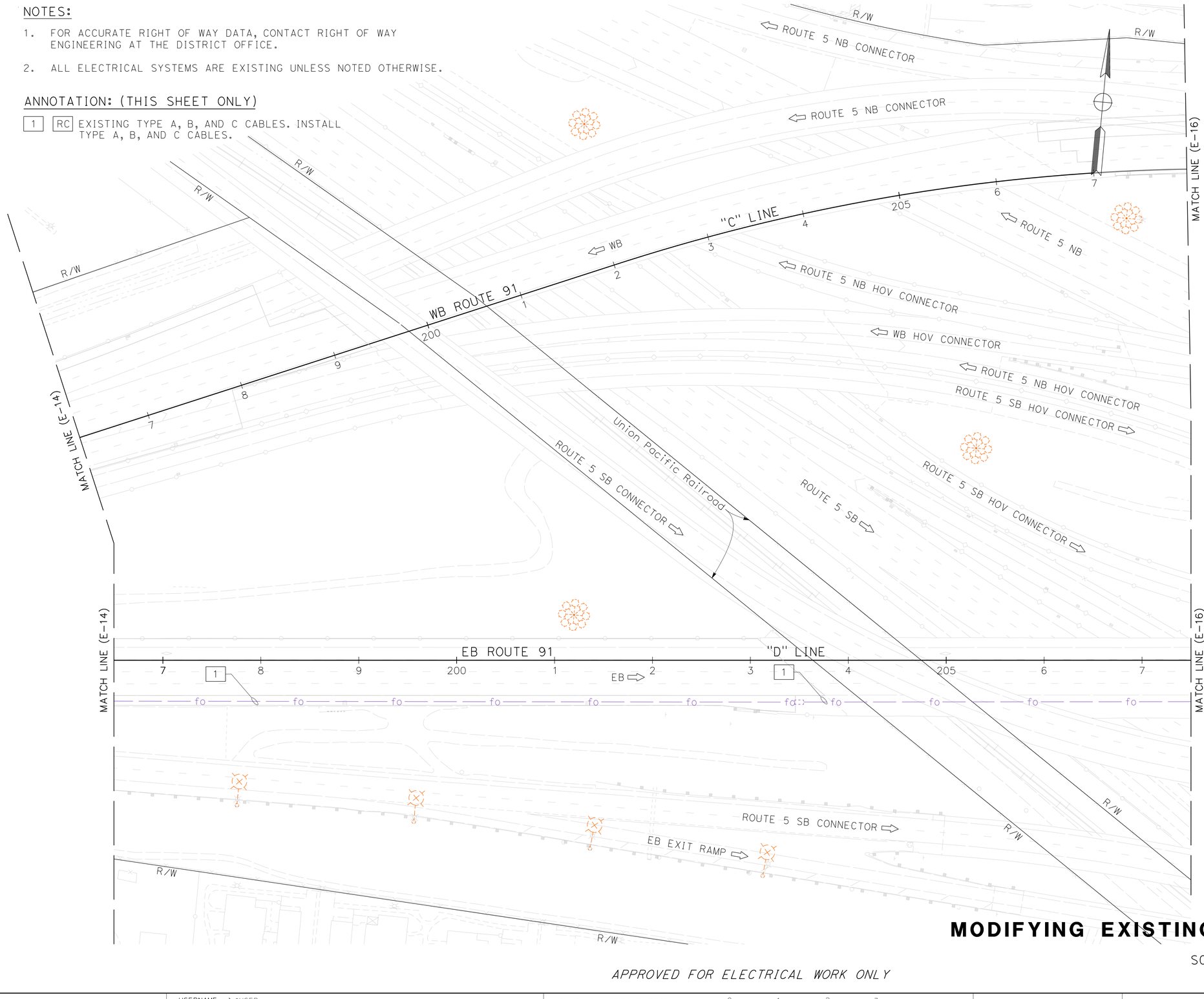

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-15

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	74	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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

XX-XX-XX
PLANS APPROVAL DATE

ITERIS, INC.
1700 CARNEGIE AVENUE
SUITE 200
SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

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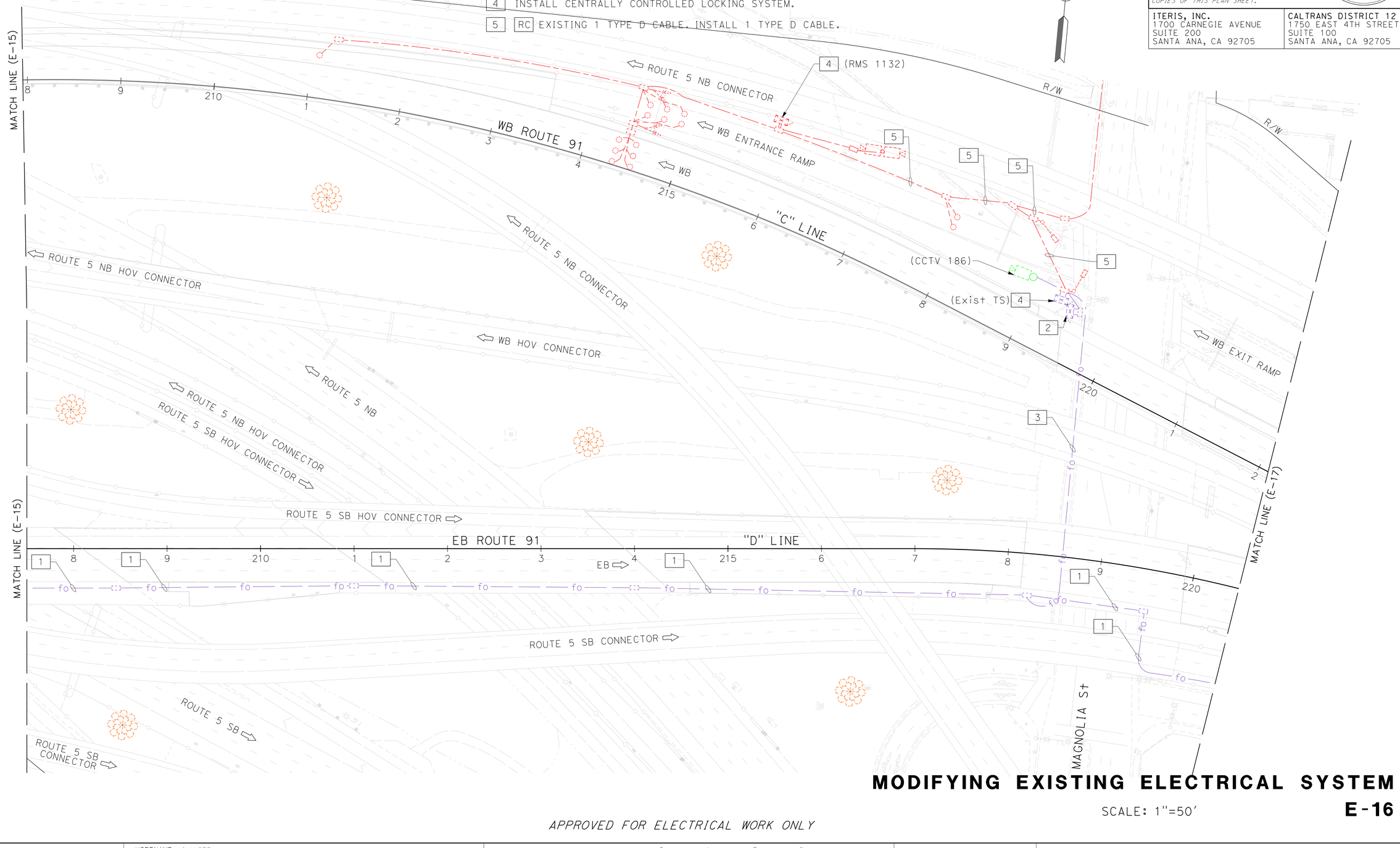
2. INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
3. [RC] EXISTING 3 TYPE D CABLES. INSTALL 3 TYPE D CABLES.
4. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
5. [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-16

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	75	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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SUITE 100
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ANNOTATION: (THIS SHEET ONLY)

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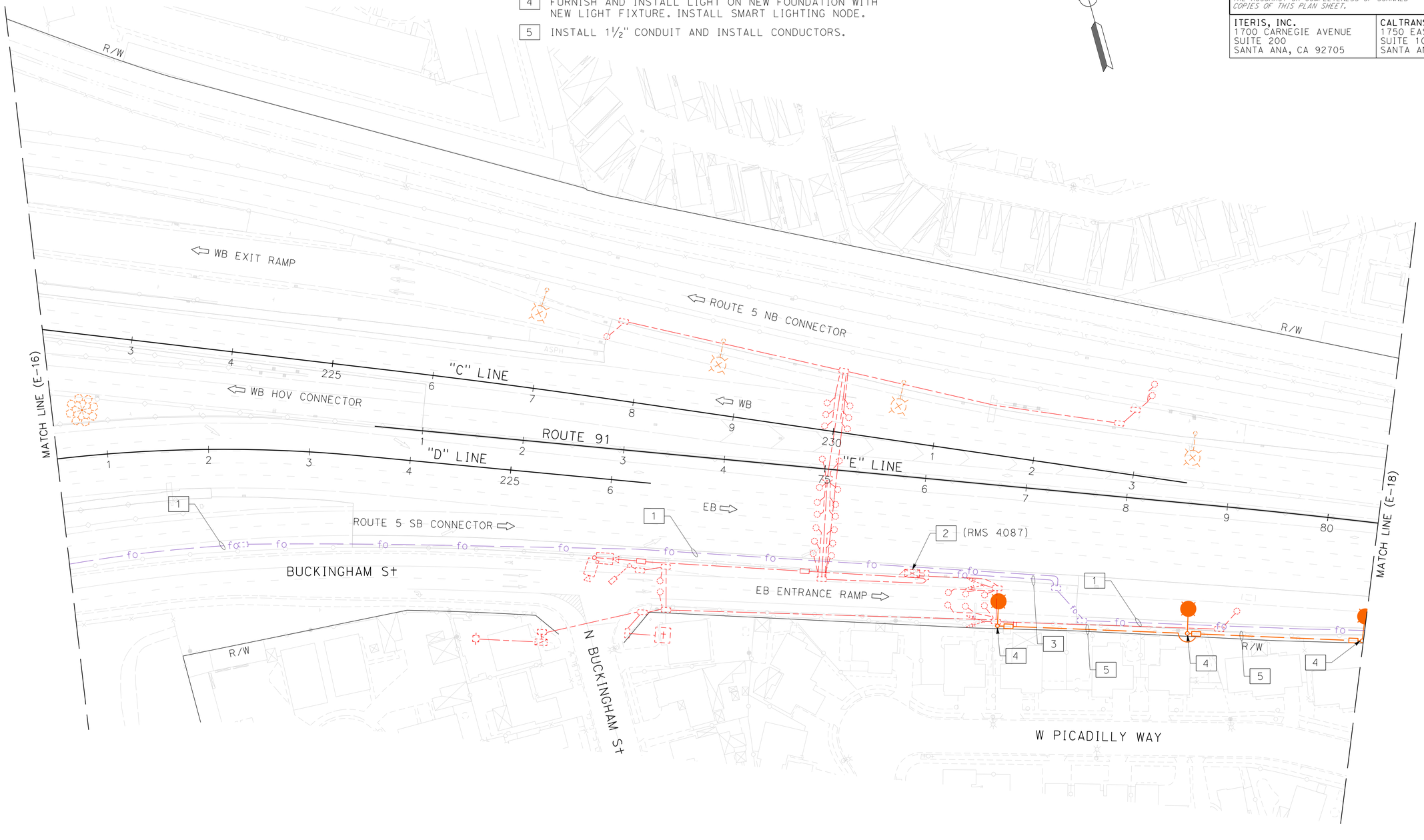
2. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
3. [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.
4. FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.
5. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-17

APPROVED FOR ELECTRICAL WORK ONLY

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	76	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. STATE OF CALIFORNIA

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CALTRANS DISTRICT 12
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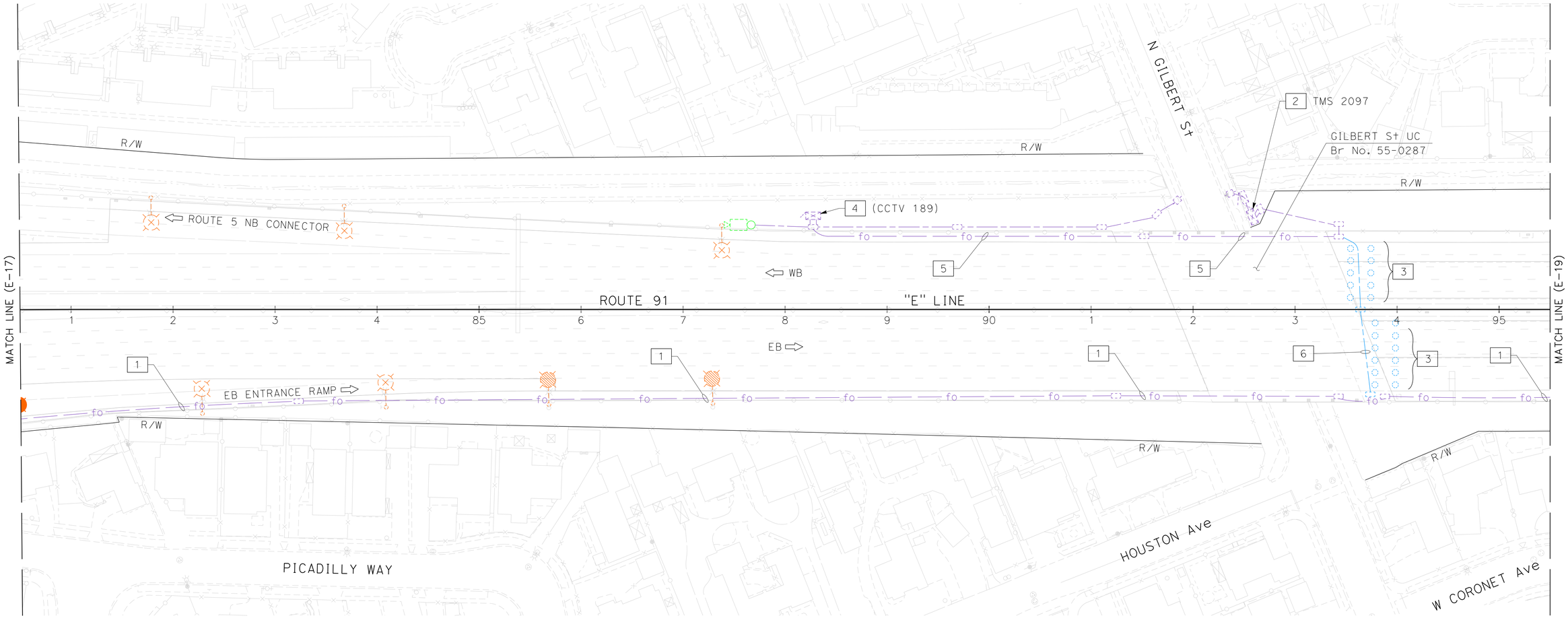
3 AB EXISTING LOOPS AND INSTALL LOOPS.

4 INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

5 RC EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.

6 RC EXISTING 2 TYPE D CABLES. INSTALL 2 TYPE D CABLES.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-18

APPROVED FOR ELECTRICAL WORK ONLY

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LAST REVISION | DATE PLOTTED => $DATE | 00-00-00 | 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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	77	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
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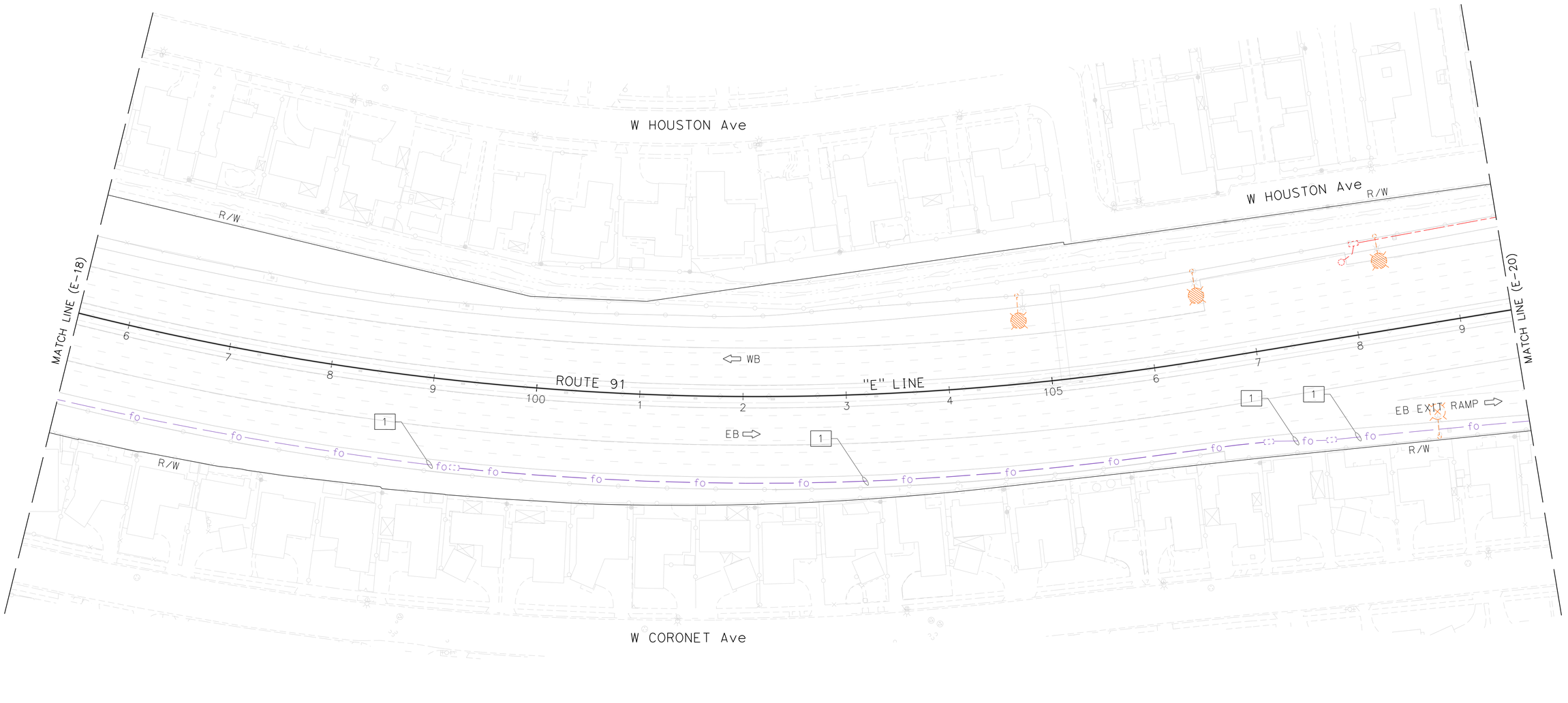

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-19

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	78	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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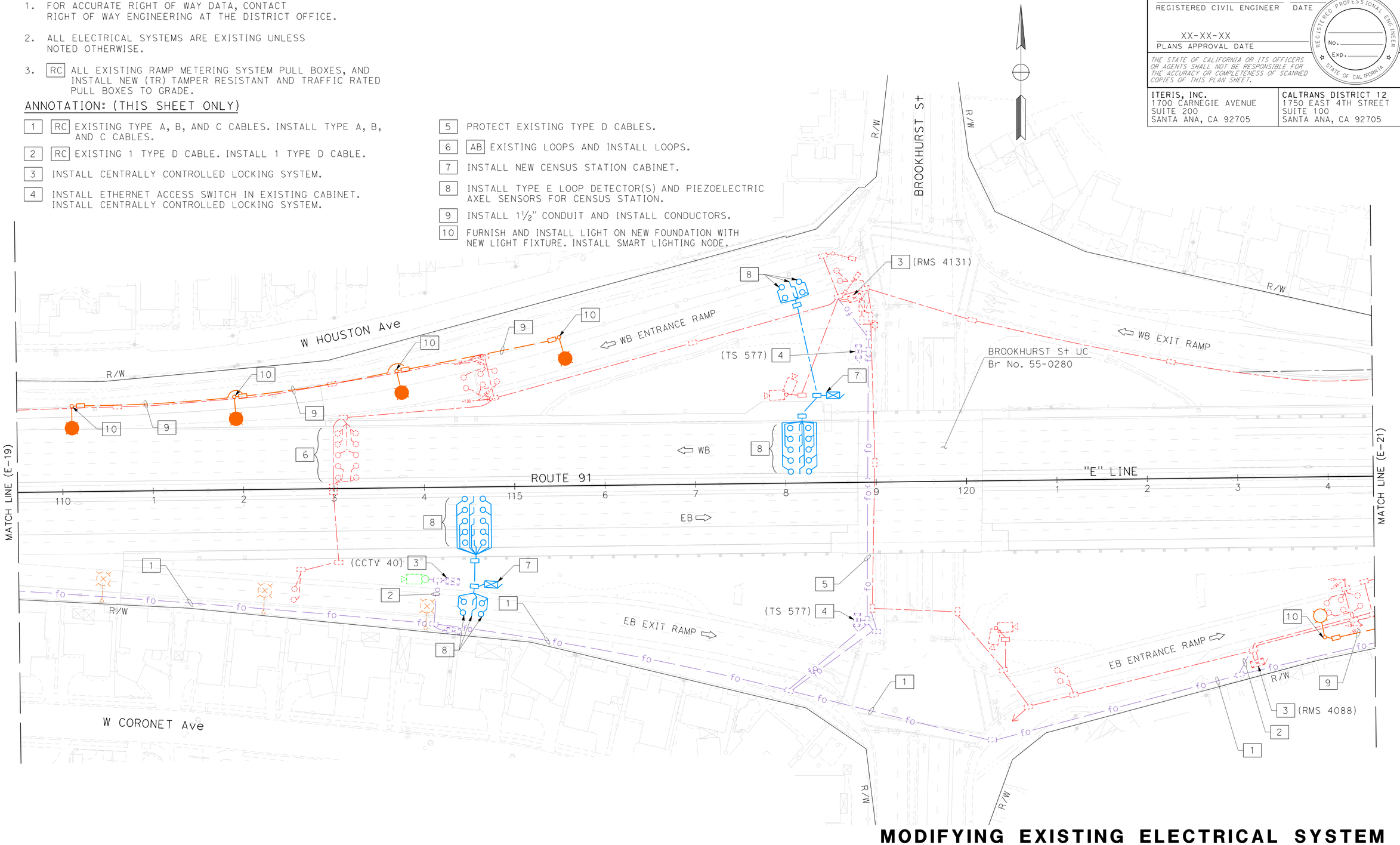
2. RC EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.
3. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
4. INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
5. PROTECT EXISTING TYPE D CABLES.
6. AB EXISTING LOOPS AND INSTALL LOOPS.
7. INSTALL NEW CENSUS STATION CABINET.
8. INSTALL TYPE E LOOP DETECTOR(S) AND PIEZOELECTRIC AXEL SENSORS FOR CENSUS STATION.
9. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
10. FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-20

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	79	92

XX-XX-XX
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SUITE 200
SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL ELECTRICAL SYSTEMS ARE EXISTING UNLESS NOTED OTHERWISE.
3. [RC] ALL EXISTING RAMP METERING SYSTEM PULL BOXES, AND INSTALL NEW (TR) TAMPER RESISTANT AND TRAFFIC RATED PULL BOXES TO GRADE.

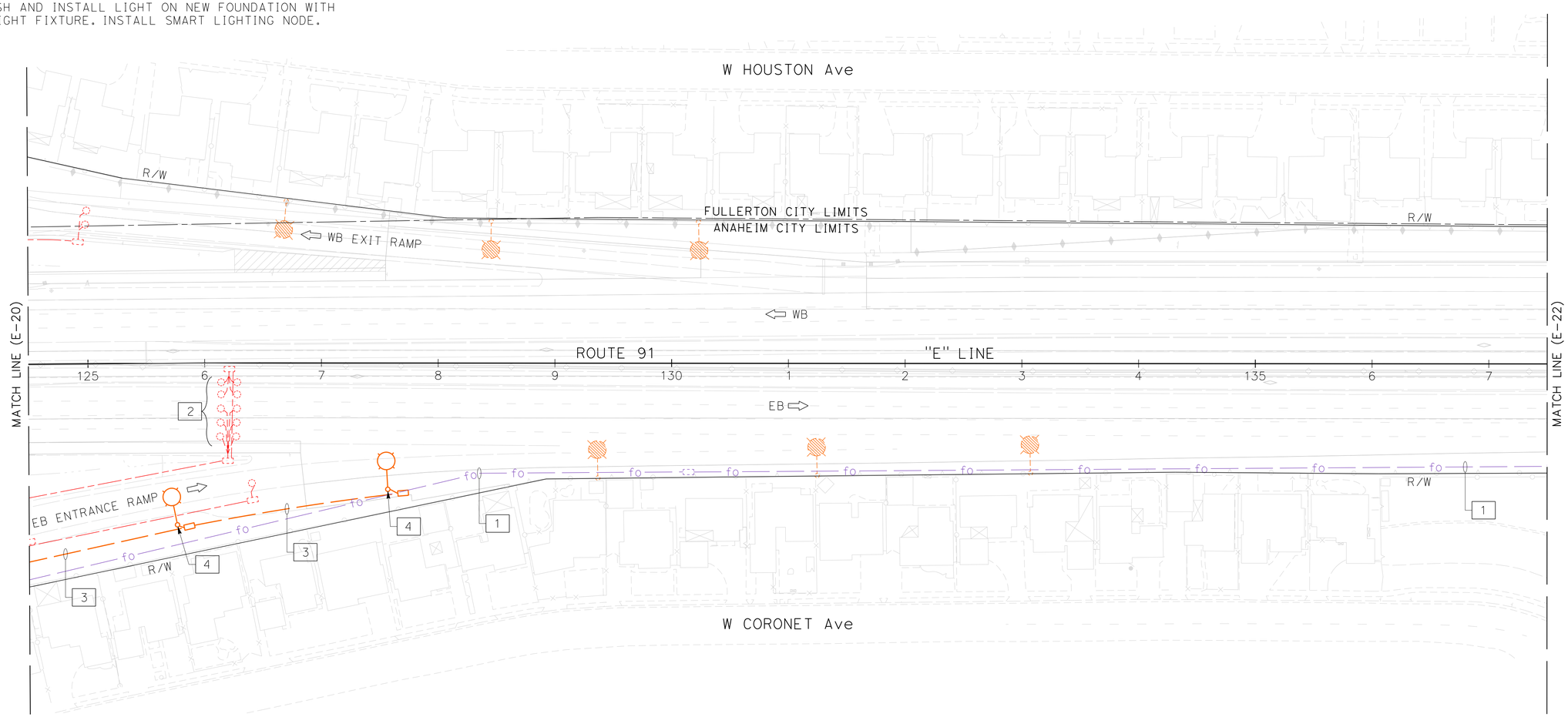
ANNOTATION: (THIS SHEET ONLY)

[1] [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

[2] [AB] EXISTING LOOPS AND INSTALL LOOPS.

[3] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

[4] FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-21

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	80	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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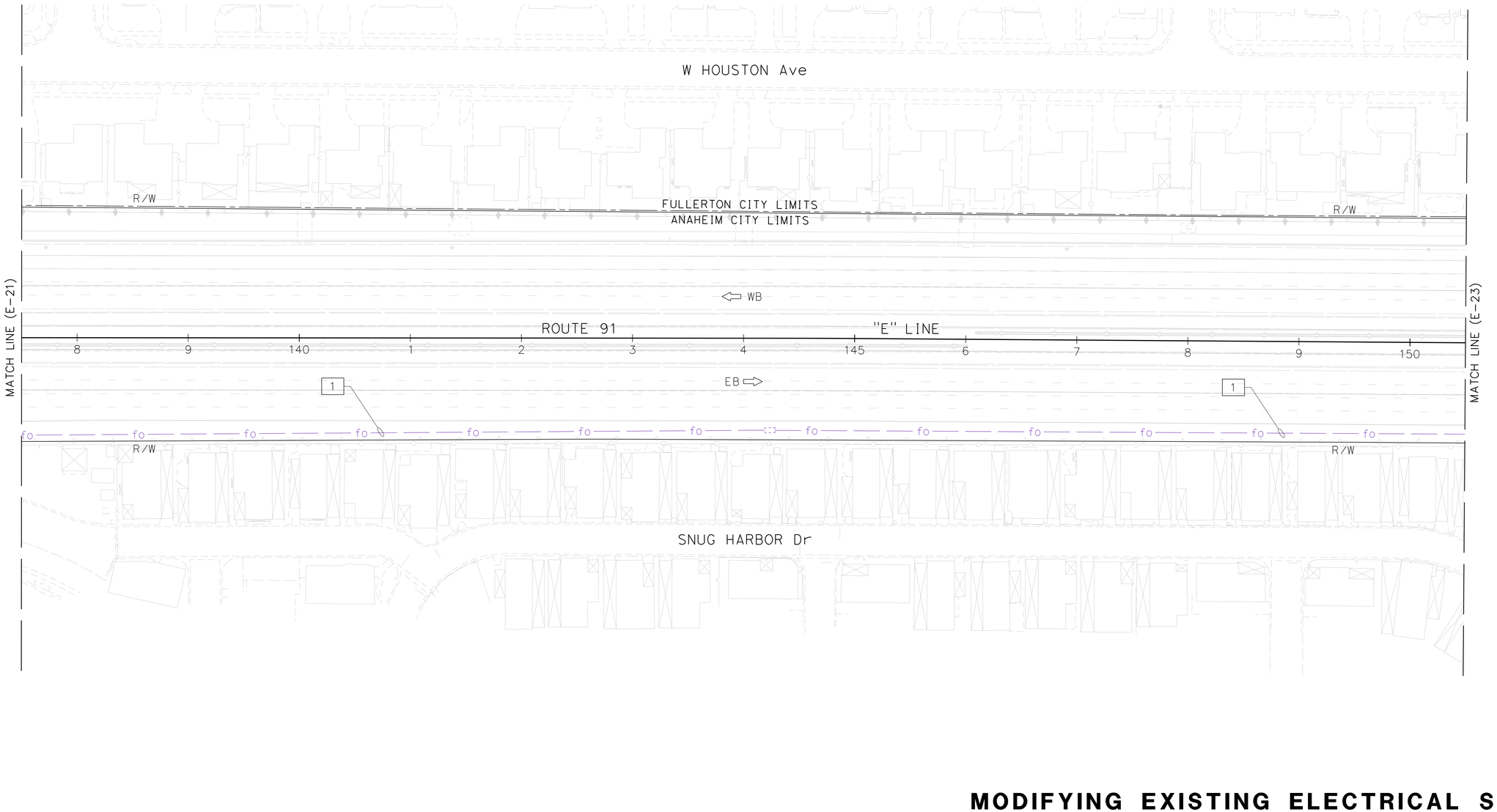

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-22

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LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	81	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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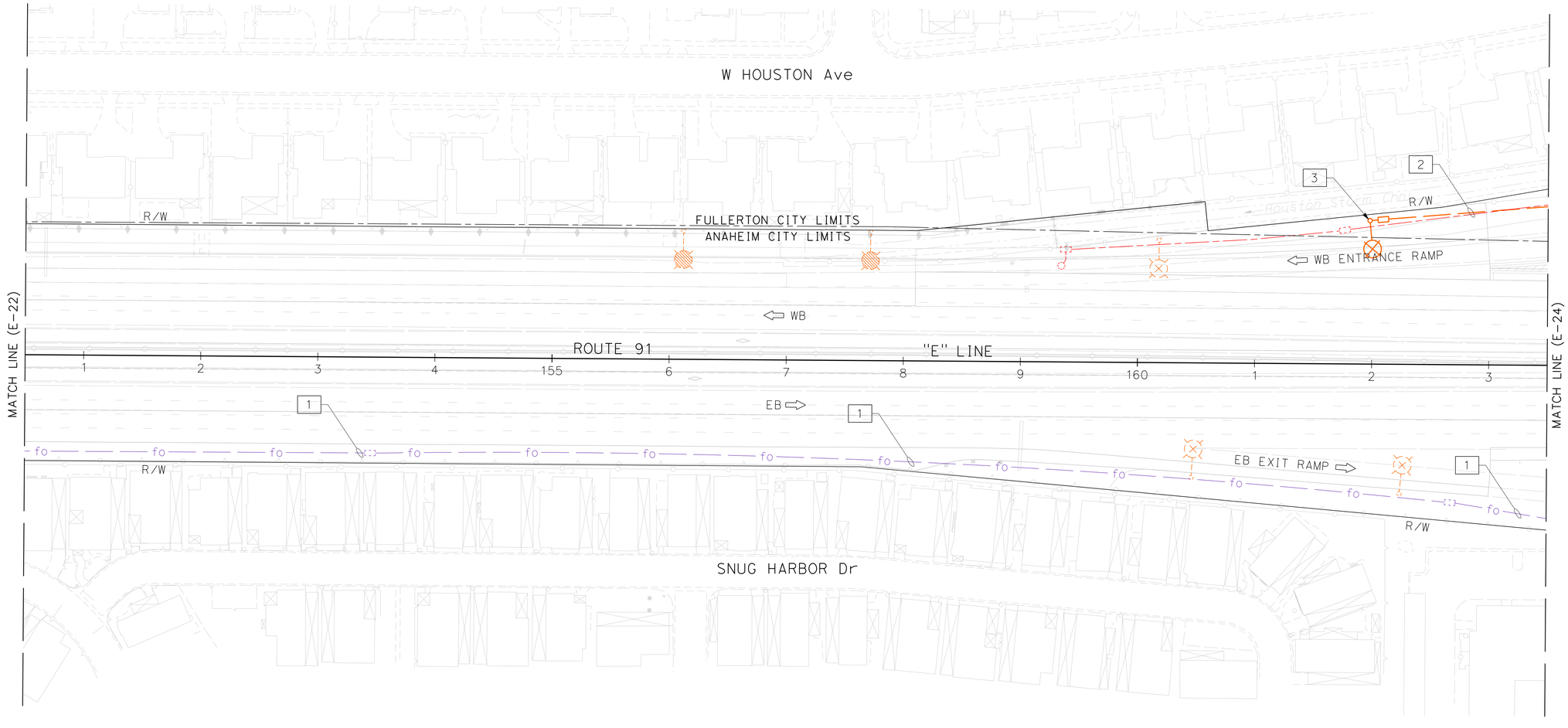
3 FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-23

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-	-

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BORDER LAST REVISED 7/2/2010
USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	82	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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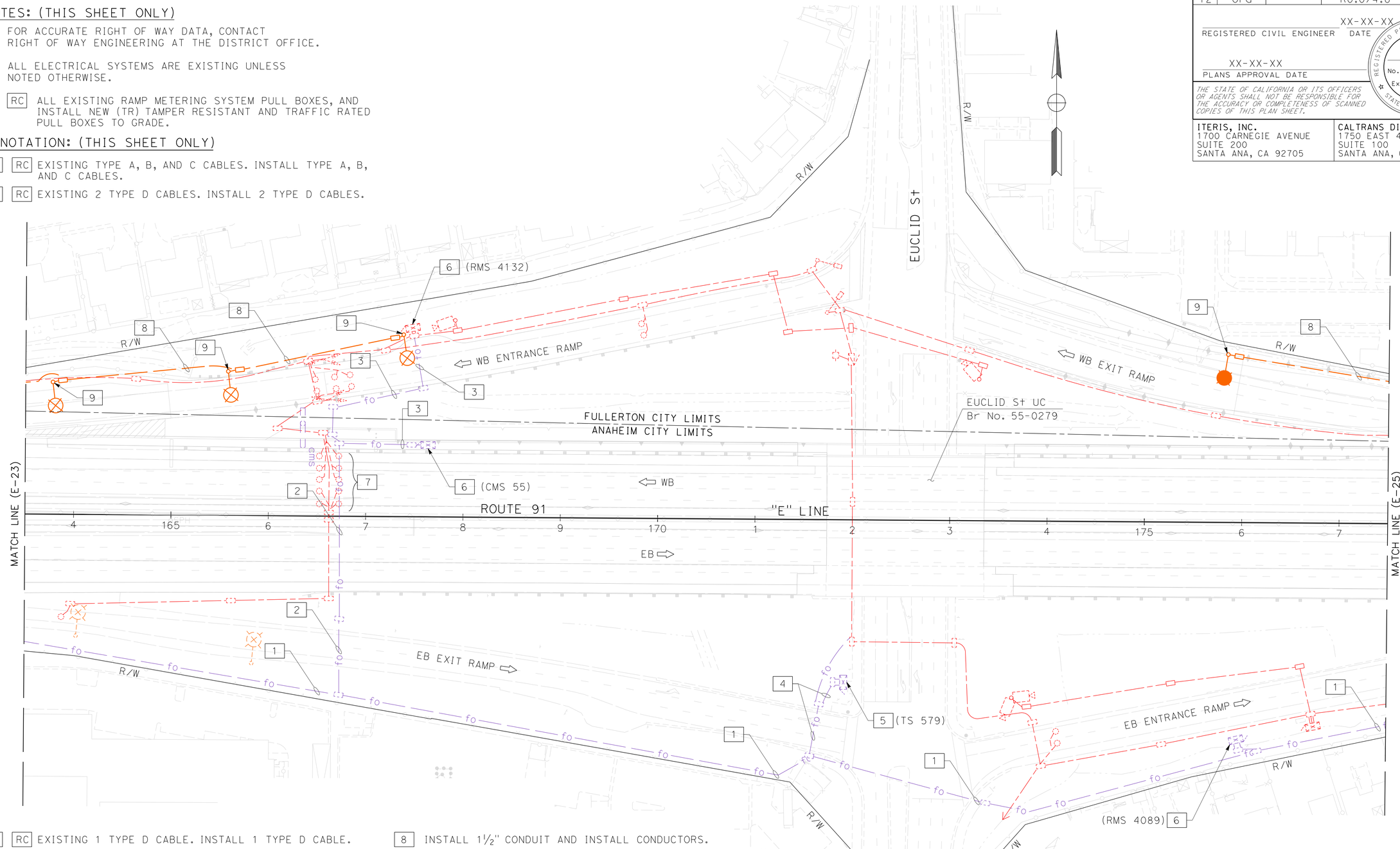
[2] [RC] EXISTING 2 TYPE D CABLES. INSTALL 2 TYPE D CABLES.



[3] [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.

[4] PROTECT EXISTING TYPE D CABLES.

[5] INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

[6] INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

[7] [AB] EXISTING LOOPS AND INSTALL LOOPS.

[8] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

[9] FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-24

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	83	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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ANNOTATION: (THIS SHEET ONLY)

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2. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.
3. RC EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLES.
4. AB EXISTING LOOPS AND INSTALL LOOPS.
5. INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
6. FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-25

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	84	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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Exp.
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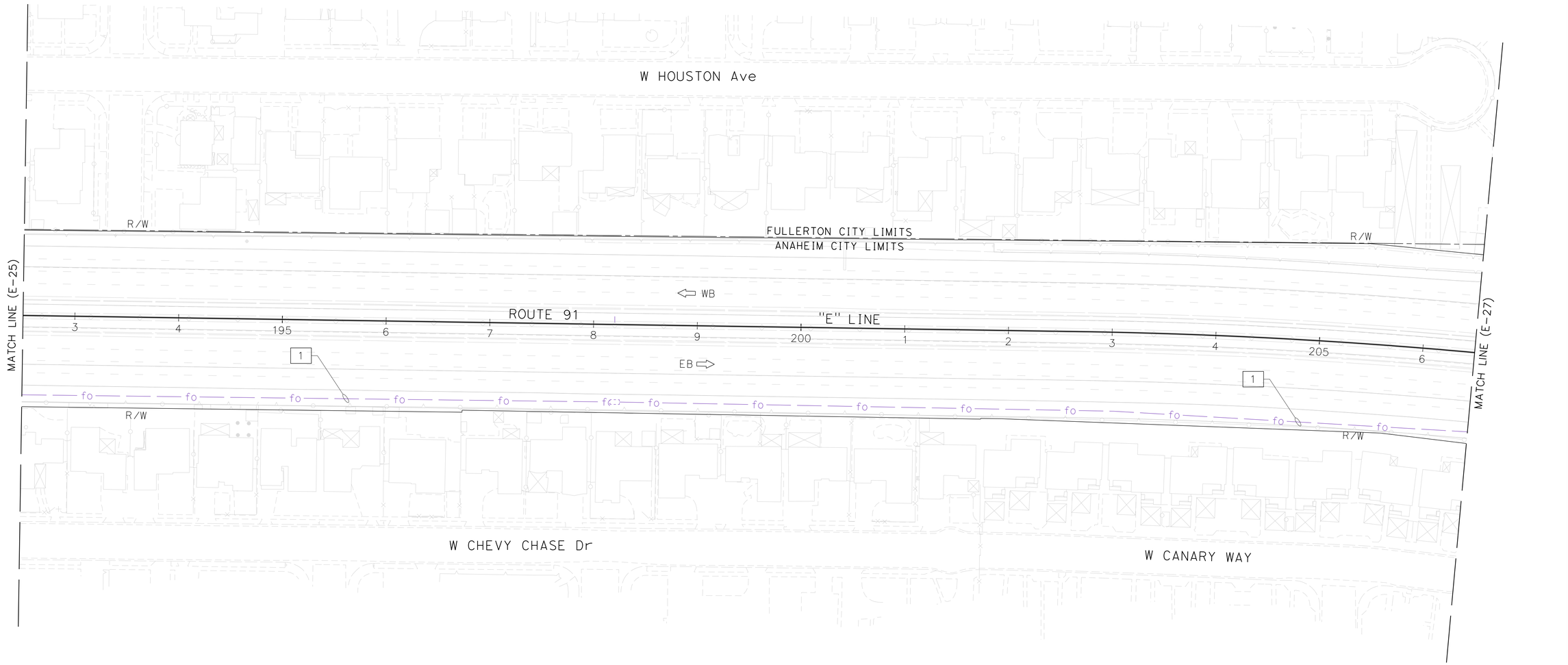

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-26

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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 XXXX | PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	85	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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ANNOTATION: (THIS SHEET ONLY)

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- [2] [AB] EXISTING LOOPS AND INSTALL LOOPS.
- [3] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.
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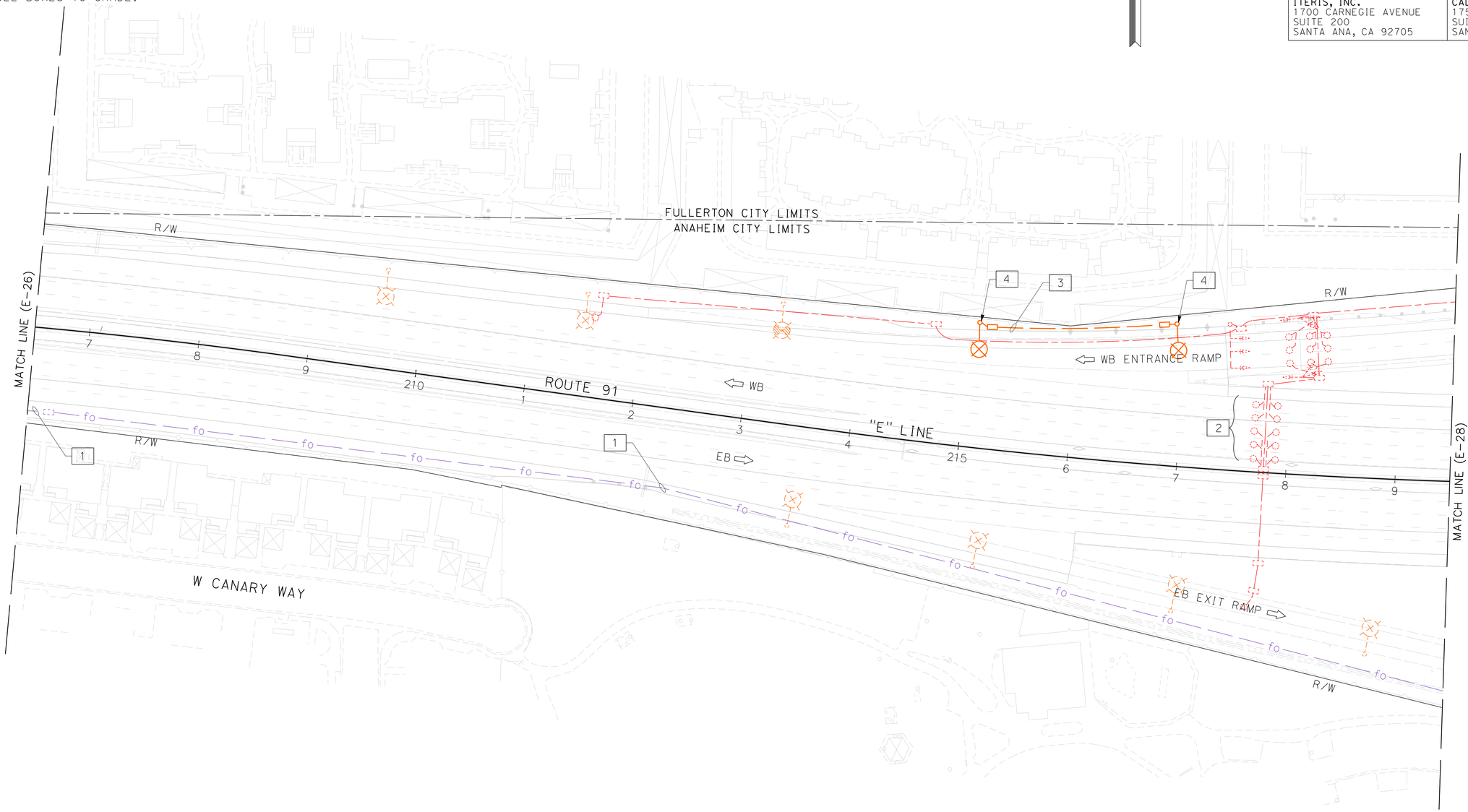

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-27

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BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT XXXX | PROJECT NUMBER & PHASE | 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	86	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. STATE OF CALIFORNIA

XX-XX-XX
PLANS APPROVAL DATE

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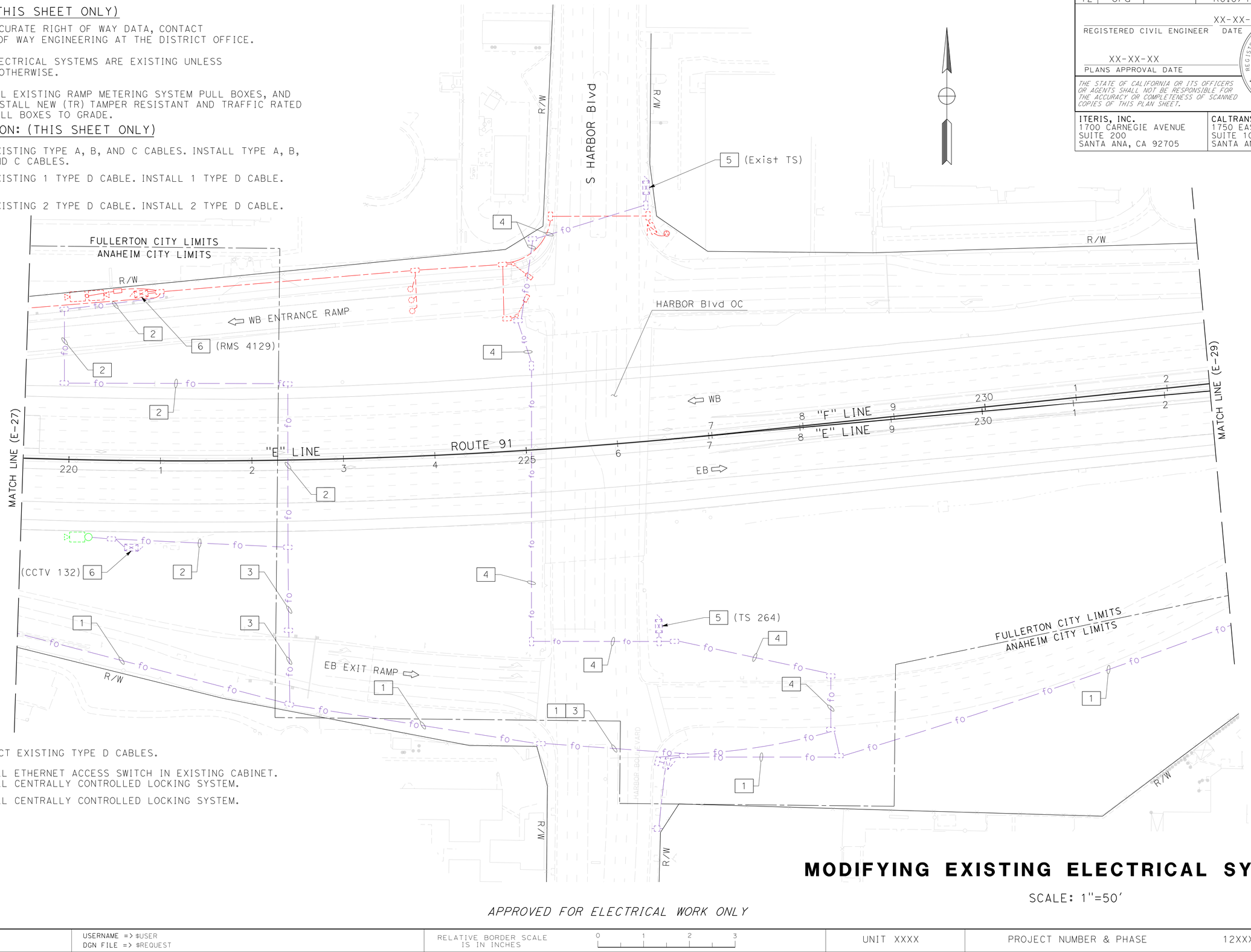

4 PROTECT EXISTING TYPE D CABLES.

5 INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

6 INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

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MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-28

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	87	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

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PLANS APPROVAL DATE

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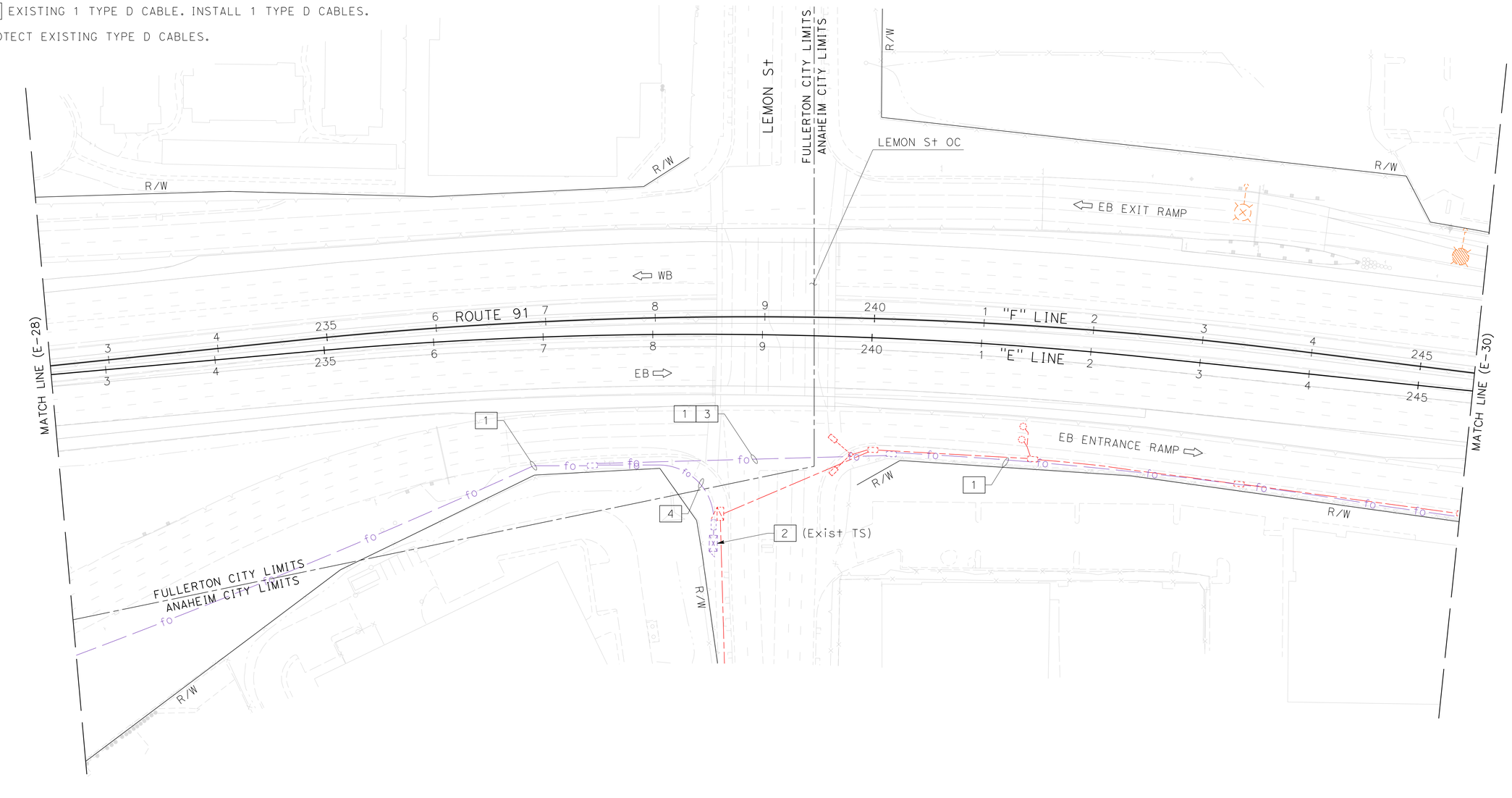

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-29

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	88	92

XX-XX-XX
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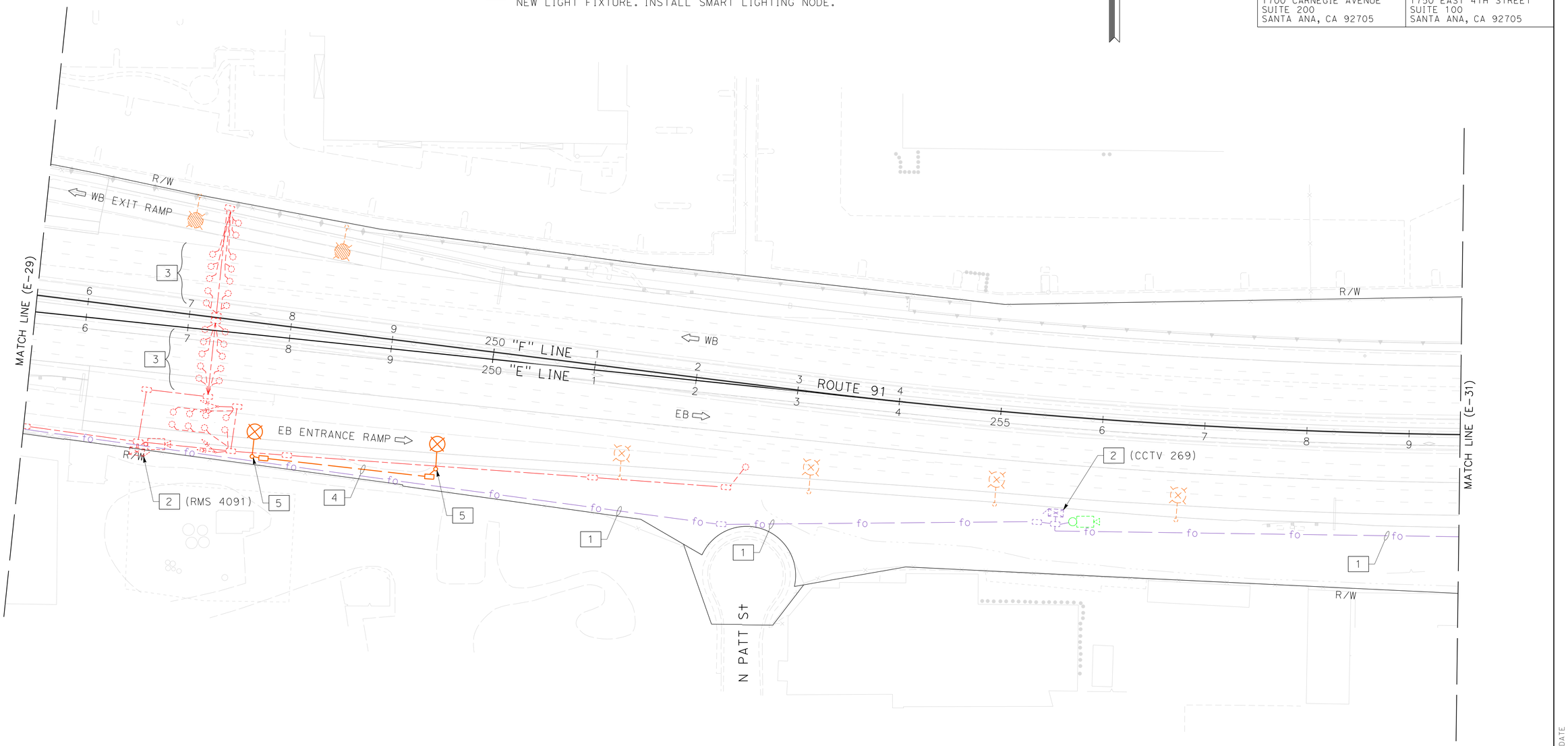

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-30

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LAST REVISION 00-00-00
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BORDER LAST REVISED 7/2/2010
USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	89	92

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3 FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-31

APPROVED FOR ELECTRICAL WORK ONLY

REVISED BY	DATE REVISED
-	-

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION DATE PLOTTED => $DATE
00-00-00 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	90	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. 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.

ITERIS, INC.
1700 CARNEGIE AVENUE
SUITE 200
SANTA ANA, CA 92705

CALTRANS DISTRICT 12
1750 EAST 4TH STREET
SUITE 100
SANTA ANA, CA 92705

NOTES: (THIS SHEET ONLY)

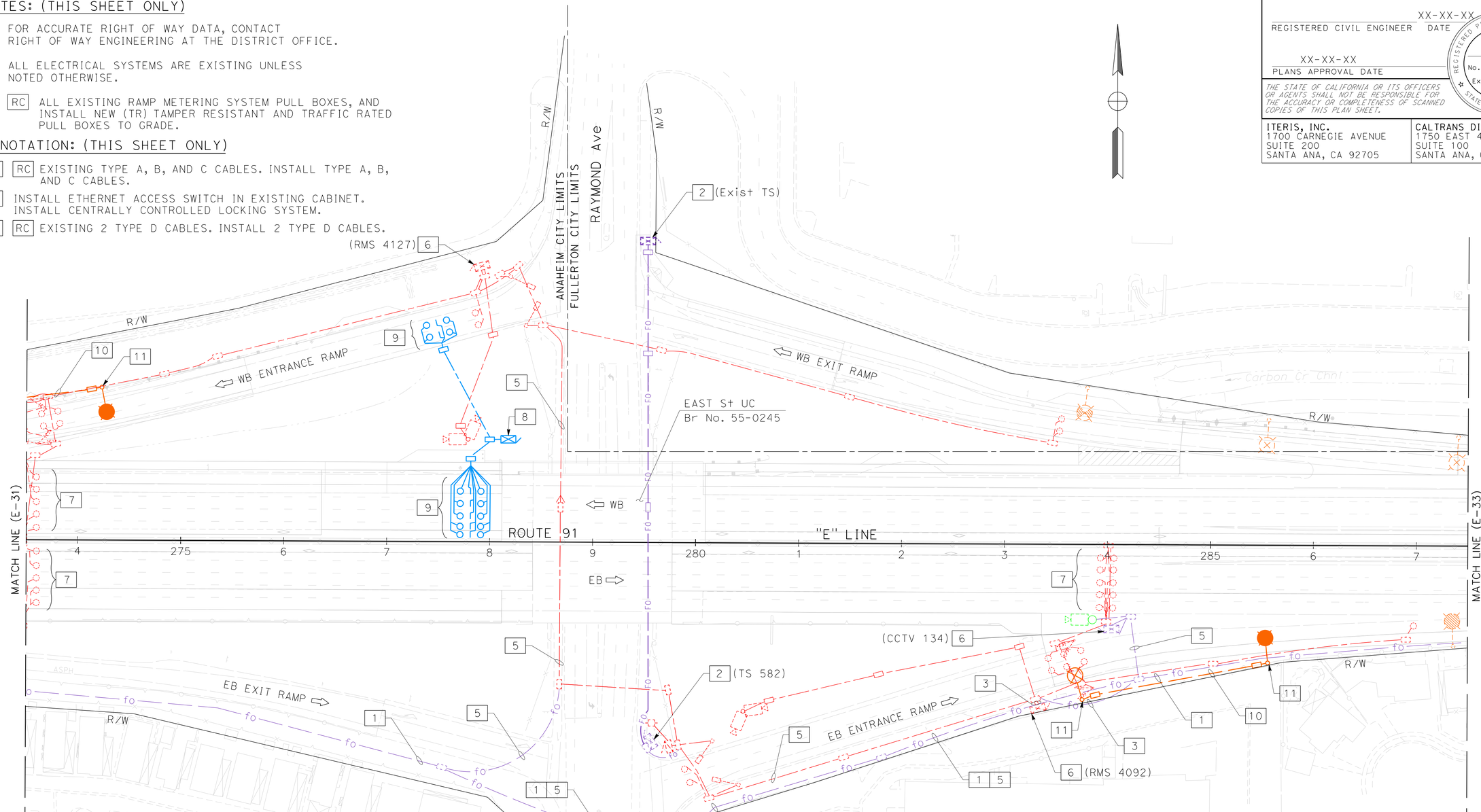
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL ELECTRICAL SYSTEMS ARE EXISTING UNLESS NOTED OTHERWISE.
3. [RC] ALL EXISTING RAMP METERING SYSTEM PULL BOXES, AND INSTALL NEW (TR) TAMPER RESISTANT AND TRAFFIC RATED PULL BOXES TO GRADE.

ANNOTATION: (THIS SHEET ONLY)

[1] [RC] EXISTING TYPE A, B, AND C CABLES. INSTALL TYPE A, B, AND C CABLES.

[2] INSTALL ETHERNET ACCESS SWITCH IN EXISTING CABINET. INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

[3] [RC] EXISTING 2 TYPE D CABLES. INSTALL 2 TYPE D CABLES.



[4] PROTECT EXISTING TYPE D CABLES.

[5] [RC] EXISTING 1 TYPE D CABLE. INSTALL 1 TYPE D CABLE.

[6] INSTALL CENTRALLY CONTROLLED LOCKING SYSTEM.

[7] [AB] EXISTING LOOPS AND INSTALL LOOPS.

[8] INSTALL CENSUS STATION CABINET.

[9] INSTALL TYPE E LOOP DETECTOR(S) AND PIEZOELECTRIC AXEL SENSORS FOR CENSUS STATION.

[10] INSTALL 1½" CONDUIT AND INSTALL CONDUCTORS.

[11] FURNISH AND INSTALL LIGHT ON NEW FOUNDATION WITH NEW LIGHT FIXTURE. INSTALL SMART LIGHTING NODE.

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-32

REVISED BY	DATE REVISED
-	-

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CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

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BORDER LAST REVISED 7/2/2010
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DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	91	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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

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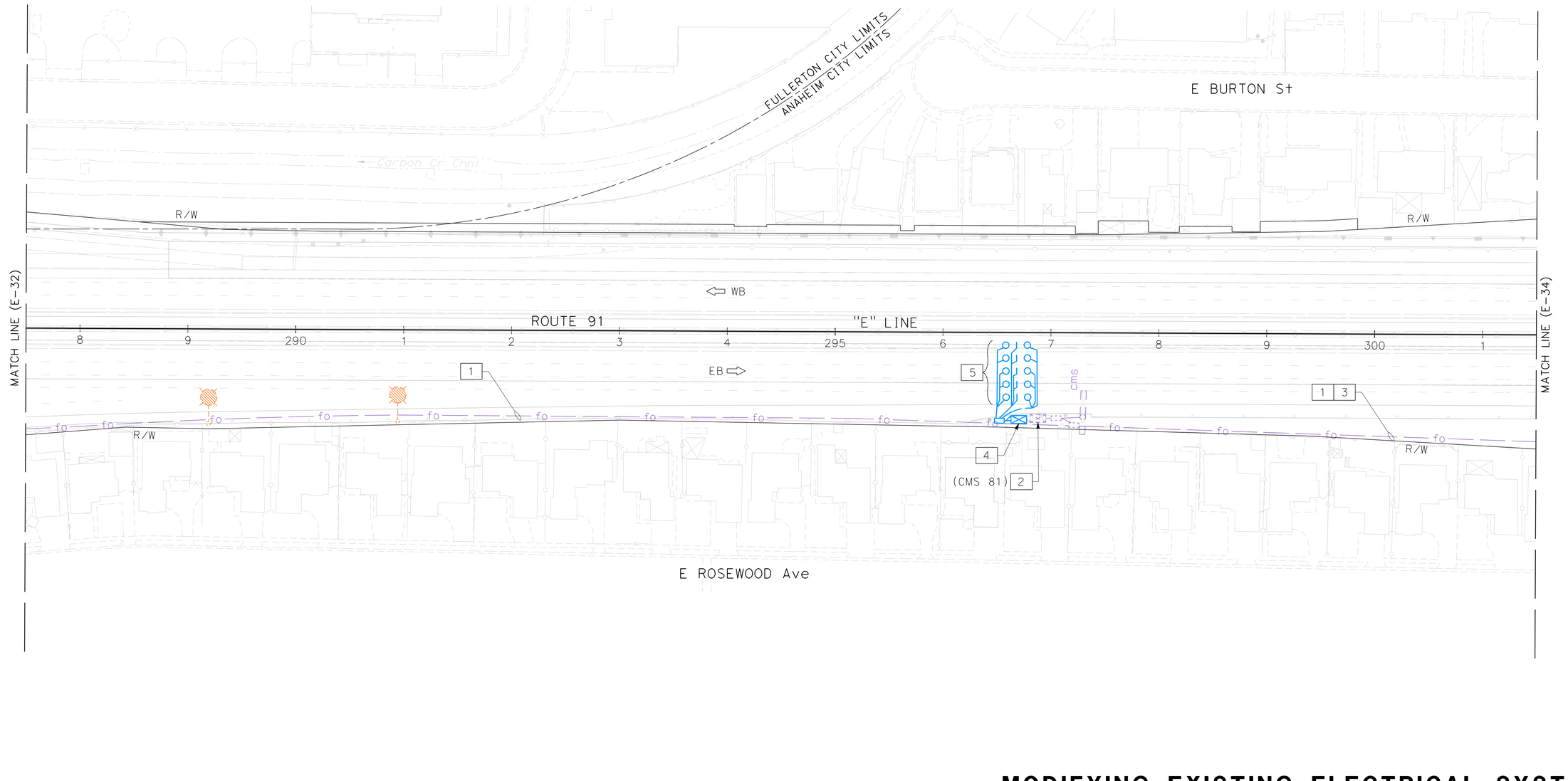
3 RC EXISTING 1 TYPE D CABLES. INSTALL 1 TYPE D CABLES.

4 INSTALL CENSUS STATION CABINET.

5 INSTALL TYPE E LOOP DETECTOR(S) AND PIEZOELECTRIC AXEL SENSORS FOR CENSUS STATION.



MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-33

APPROVED FOR ELECTRICAL WORK ONLY

REVISED BY | DATE REVISED
- | -

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CONSULTANT FUNCTIONAL SUPERVISOR
GREGORY HEFTER

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Caltrans

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00-00-00 | 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 XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07 12	LA Ora	91	R20.6/R20.7 R0.0/4.8	92	92

XX-XX-XX
REGISTERED CIVIL ENGINEER DATE

XX-XX-XX
PLANS APPROVAL DATE

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APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1"=50'

E-34

REVISED BY	DATE REVISED
-	-

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: GREGORY HEFTER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
6028935 $DATE $TIME $USER $FILE$

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BORDER LAST REVISED 7/2/2010
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT XXXX
PROJECT NUMBER & PHASE 12XXXXXXXXXXX

Attachment C

Cost Estimate

PROJECT

PA&ED COST ESTIMATE

EA: 12-0R3110 PID: 1220000021

EA: 12-0R3110

PID: 1220000021

District-County-Route: 07-LA-91 & 12-ORA-91

PM: R20.6/R20.7 & R0.0/4.8

Type of Estimate : PA&ED Draft Project Report Cost Estimate

Project Limits : SR-91 from 0.1 mile West of the LA County Line to Acacia Street

Project Description: SR-91 EB Orangethorpe Off-Ramp Widening, Pavement Rehabilitation, & Bridges/Multi-Asset Project

Alternative : Build

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 34,119,300	$ 39,283,468
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 34,119,300	$ 39,283,468
TOTAL RIGHT OF WAY COST	$ 264,000	$ 264,000
TOTAL CAPITAL OUTLAY COSTS	$ 34,384,000	$ 39,548,000
PA/ED SUPPORT	$ 2,150,000	$ 2,150,000
PS&E SUPPORT	$ 3,560,000	$ 3,560,000
RIGHT OF WAY SUPPORT	$ 474,000	$ 474,000
CONSTRUCTION SUPPORT	$ 4,320,000	$ 4,320,000
TOTAL SUPPORT COST	$ 10,504,000	$ 10,504,000
TOTAL PROJECT COST	$ 45,000,000	$ 50,200,000

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	9	/	2021
Estimated Construction Start (Month/Year)	11	/	24
Number of Working Days =			600
Estimated Mid-Point of Construction (Month/Year)	5	/	26
Estimated Construction End (Month/Year)	11	/	27
Number of Plant Establishment Days			250

Estimated Project Schedule

PID Approval	June-19	Actual
PA/ED Approval	September-21	Target
PS&E	June-23	Target
RTL	March-24	Target
Begin Construction	November-24	Target

Reviewed by District O.E. or Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier | **Date** | **Phone**

Approved by Project Manager

Project Manager | **Date** | **Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	236,600
2	**Pavement Structural Section**	$	16,236,400
3	**Drainage**	$	353,800
4	**Specialty Items**	$	1,475,000
5	**Environmental**	$	1,729,000
6	**Traffic Items**	$	8,458,100
7	**Detours**	$	-
8	**Minor Items**	$	57,000
9	**Roadway Mobilization**	$	571,000
10	**Supplemental Work**	$	475,700
11	**State Furnished**	$	711,200.00
12	**Time-Related Overhead**	$	713,700.00
13	**Roadway Contingency**	$	3,101,800.00
	TOTAL ROADWAY ITEMS	**$**	**34,119,300**

Estimate Prepared By :	Mike Tammen, Project Engineer	September 29, 2021	310-279-7604
	Name and Title	Date	Phone
Estimate Reviewed By :	Greg Hefter, Project Manager	September 29, 2021	949-285-6198
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	3,530	x	36.00	=	$	127,080
170105	Clearing & Grubbing	ACRE	13	x	3,000.00	=	$	39,000
100100	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000
198010	Imported Borrow	CY	1,210	x	50.00	=	$	60,500

TOTAL EARTHWORK SECTION ITEMS	$	236,600

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
038657	Precast Concrete Pavement (PCP)	CY	310	x	1,500.00	=	$	465,000
260203	Class 2 Aggregate Base	CY	1,000	x	75.00	=	$	75,000
280015	Lean Concrete Base Rapid Setting	CY	1,100	x	385.00	=	$	423,500
360200	Base Bond Breaker	SQYD	75,700	x	2.25	=	$	170,325
374002	Asphaltic Emulsion (Fog Seal Coat)	TON	79	x	1,000.00	=	$	79,000
390132	Hot Mix Asphalt (Type A)	TON	5,490	x	110.00	=	$	603,900
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	26,800	x	105.00	=	$	2,814,000
393004	Geosynthetic Pavement Interlayer (Paving Fabric)	SQYD	0	x	1.50	=	$	-
397005	Tack Coat	TON	93	x	750.00	=	$	69,750
398200	Cold Plane Asphalt Concrete Pavement	SQYD	198,900	x	3.00	=	$	596,700
401055	Jointed Plain Concrete Pavement (RSC)	CY	360	x	665.00	=	$	239,400
418006	Remove Concrete Pavement	CY	17,700	x	40.00	=	$	708,000
411105	Individual Slab Replacement (RSC)	CY	17,700	x	500.00	=	$	8,850,000
420102	Groove Existing Concrete Pavement	SQYD	0	x	3.25	=	$	-
420201	Grind Existing Concrete Pavement	SQYD	83,650	x	5.10	=	$	426,615
510080	Structural Concrete, Approach Slab	CY	860	x	700.00	=	$	602,000
730045	Minor Concrete (Gutter)	CY	21	x	860.00	=	$	18,060
731504	Minor Concrete (Curb and Gutter)	CY	34	x	720.00	=	$	24,480
731519	Minor Concrete (Stamped Concrete)	SQFT	330	x	45.00	=	$	14,850
731521	Minor Concrete (Sidewalk)	CY	24	x	640.00	=	$	15,360
731623	Minor Concrete (Curb Ramp)	CY	10	x	1,160.00	=	$	11,600
731710	Remove Concrete Curb	LF	380	x	30.00	=	$	11,400
731780	Remove Concrete Sidewalk	SQYD	320	x	25.00	=	$	8,000
731840	Remove Concrete (Curb and Gutter)	LF	470	x	20.00	=	$	9,400

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	$	16,236,400

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
710150	Remove Inlet	EA	6	x	1,450.00	=	$	8,700
710162	Remove Drainage Junction Structure	EA	1	x	1,700.00	=	$	1,700
710136	Remove Pipe	LF	270	x	100.00	=	$	27,000
710262	Cap Drainage Inlet	EA	2	x	1,800.00	=	$	3,600
710376	12" CMP CIPP Pipe Lining	LF	14	x	165.00	=	$	2,310
710380	18" CMP CIPP Pipe Lining	LF	358	x	130.00	=	$	46,540
710384	24" CMP CIPP Pipe Lining	LF	774	x	150.00	=	$	116,100
710390	36" CMP CIPP Pipe Lining	LF	36	x	280.00	=	$	10,080
510501	Minor Concrete	CY	3	x	1,250.00	=	$	3,750
510502	Minor Concrete (Minor Structure)	CY	9	x	1,250.00	=	$	11,250
510094	Structural Concrete, Drainage Inlet	CY	23	x	2,500.00	=	$	57,500
705011	18" CMP Flared End Section	EA	2	x	850.00	=	$	1,700
705204	18" Concrete Flared End Section	EA	4	x	1,500.00	=	$	6,000
650014	18" Reinforced Concrete Pipe	LF	234	x	175.00	=	$	40,950
750010	Manhole Frame and Cover	EA	1	x	1,350.00	=	$	1,350
723095	Rock Slope Protection Class 1	CY	15	x	210.00	=	$	3,150
729011	Rock Slope Protection Fabric (Class 8)	SQYD	50	x	12.00	=	$	600
700617	Drainage Inlet Marker	EA	2	x	350.00	=	$	700
750001	Miscellaneous Iron and Steel	LB	3,068	x	3.50	=	$	10,738
							TOTAL DRAINAGE ITEMS	**$ 353,800**

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
839752	Remove Guardrail	LF	0	x	15.00	=	$	-
839649	Concrete Barrier (Type 60MS)	LF	20	x	210.00	=	$	4,200
839750	Remove Barrier	LF	450	x	20.00	=	$	9,000
XXXXXX	Remove Retaining Wall	SF	2,450	x	15.00	=	$	36,750
XXXXXX	Retaining Wall No. 1	SF	4,000	x	150.00	=	$	600,000
XXXXXX	Retaining Wall No. 2	SF	0	x	150.00	=	$	-
XXXXXX	Retaining Wall No. 3	SF	5,500	x	150.00	=	$	825,000
							TOTAL SPECIALTY ITEMS	**$ 1,475,000**

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
XXXXXX	Biological Mitigation (On-Site)	LS	0	x	20,000.00	=	$	-		
								Subtotal Environmental Mitigation	*$*	*-*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
20XXXX	Highway Planting	LS	1	x	50,000.00	=	$	50,000		
20XXXX	Highway Irrigation	LS	1	x	80,000.00	=	$	80,000		
200002	Roadside Clearing	LS	1	x	20,000.00	=	$	20,000		
206402	Operate Exisitng Irrigation Facilities	LS	1	x	30,000.00	=	$	30,000		
204096	Maintain Existing Planted Areas	LS	1	x	20,000.00	=	$	20,000		
200114	Rock Blanket	SQFT	8,200	x	25.00	=	$	205,000		
260301	Class 3 Aggregate Base	CY	2,500	x	125.00	=	$	312,500		
394095	Roadside Paving (Miscellaneous Areas)	SQYD	875	x	125.00	=	$	109,375		
721810	Slope Paving Concrete	CY	130	x	920.00	=	$	119,600		
731518	Minor Concrete (Brushed Concrete)	SQFT	22,000	x	15.00	=	$	330,000		
								Subtotal Landscape and Irrigation	*$*	*1,276,475*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost		
XXXXXX		LS	0	x	0	=	$	-		
								Subtotal Erosion Control	*$*	*-*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost		
130300	Prepare SWPPP	LS	1	x	6,000.00	=	$	6,000		
XXXXXX	Treatment BMPs	LS	1	x	62,000.00	=	$	62,000		
XXXXXX	General Construction Site BMPs	LS	1	x	384,500.00	=	$	384,500		
								Subtotal NPDES	*$*	*452,500*

TOTAL ENVIRONMENTAL	**$**	**1,729,000**

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
872134	Modifying Ramp Metering Systems	LS	1	x	574,800.00	=	$	574,800
872133	Modifying Signal and Lighting Systems	LS	1	x	487,000.00	=	$	487,000
872131	Modifying Lighting Systems	LS	1	x	1,499,800.00	=	$	1,499,800
87190X	Modifying Fiber Optic Cable Systems	LS	1	x	1,091,910.00	=	$	1,091,910
87130X	Modify Existing CCTV Camera Systems	LS	1	x	26,800.00	=	$	26,800
872135	Modifying Traffic Monitoring Stations	LS	1	x	43,800.00	=	$	43,800
XXXXXX	Install MVDS System	LS	1	x	57,090.00	=	$	57,090
XXXXXX	Install Weight-in-Motion System	EA	1	x	900,000.00	=	$	900,000
XXXXXX	Install Census Station	EA	8	x	75,000.00	=	$	600,000

Subtotal Traffic Electrical $ *5,281,200*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
141103	Remove Yellow Thermoplastic Traffic Stripe	LF	90,500	x	0.40	=	$	36,200
810230	Pavement Marker (Retroreflective)	EA	12,800	x	2.75	=	$	35,200
810120	Remove Pavement Markers	EA	12,800	x	0.80	=	$	10,240
846007	6" Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	450,400	x	0.65	=	$	292,760
846009	8" Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	136,400	x	1.10	=	$	150,040
846012	Thermoplastic Cosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	10,500	x	4.65	=	$	48,825
846030	Remove Thermoplastic Traffic Stripe	LF	496,300	x	0.30	=	$	148,890
846035	Remove Thermoplastic Pavement Marking	SQFT	10,500	x	1.75	=	$	18,375
847194	Contrast Stripe Paint (1-Coat)	LF	262,600	x	0.20	=	$	52,520
498052	60" Cast-In-Drilled-Hole Concrete Foundation (Sign Foundation)	LF	0	x	1,600.00	=	$	-
560218	Furnish Sign Structure (Truss)	LB	0	x	4.60	=	$	-
560219	Install Sign Structure (Truss)	LB	0	x	0.45	=	$	-
568046	Remove Sign Structure (EA)	EA	0	x	5,000.00	=	$	-
820270	Remove Roadside Sign (Wood Post)	EA	57	x	160.00	=	$	9,120
820300	Remove Roadside Sign (Strap and Saddle Bracket Method)	EA	11	x	125.00	=	$	1,375
820360	Remove Sign Panel	EA	58	x	95.00	=	$	5,510
820710	Furnish Laminated Panel Sign (1"-Type A)	SQFT	9,700	x	25.00	=	$	242,500
820790	Furnish Single Sheet Aluminum Sign (0.080"-Framed)	SQFT	2,700	x	20.00	=	$	54,000
820840	Roadside Sign - One Post	EA	30	x	450.00	=	$	13,500
820850	Roadside Sign - Two Post	EA	10	x	875.00	=	$	8,750
820860	Install Sign (Strap and Saddle Bracket Method)	EA	11	x	200.00	=	$	2,200
820890	Install Sign Panel on Existing Frame	SQFT	9,700	x	6.00	=	$	58,200
820900	Install Roadside Sign Panel on Existing Post	EA	21	x	175.00	=	$	3,675

Subtotal Traffic Signing and Striping $ *1,191,900*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
128651	Portable Changeable Message Signs	LS	1	x	$ 160,000	=	$	160,000
120090	Construction Area Signs (Ground Mounted Signs)	LS	1	x	$ 10,000	=	$	10,000
066063	Traffic Management Plan	LS	1	x	$ 15,000	=	$	15,000

Subtotal Traffic Management Plan $ *185,000*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120100	Traffic Control System	LS	1	x	1,800,000.00	=	$	1,800,000

Subtotal Stage Construction and Traffic Handling $ *1,800,000*

TOTAL TRAFFIC ITEMS $ **8,458,100**

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
07XXXX	Temporary Drainage	LS		x	10,000.00	= $	-
120159	Temporary Traffic Stripe (Paint)	LS		x	25,000.00	= $	-

TOTAL DETOURS $ -

SUBTOTAL SECTIONS 1 through 7 $ 28,488,900

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
	ADA Items		0.0%	$	-	
8B - Bike Path Items						
	Bike Path Items		0.0%	$	-	
8C - Other Minor Items						
	Other Minor Items		0.2%	$	56,978	
	Total of Section 1-7	$ 28,488,900	x 0.2%	= $	56,978	

TOTAL MINOR ITEMS $ 57,000

SECTIONS 9: MOBILIZATION

Item code						
999990	Total Section 1-8	$ 28,545,900	x 2%	= $	570,918	

TOTAL MOBILIZATION $ 571,000

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066090	Maintain Traffic	LS	1	x	250,000.00	= $	250,000
066015	Federal Trainee Program	LS	1	x	23,200.00	= $	23,200
066610	Partnering	LS	1	x	90,000.00	= $	90,000
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	40,000.00	= $	40,000
066919	Dispute Resolution Board	LS	1	x	37,500.00	= $	37,500
066921	Dispute Resolution Advisor	LS	1	x	35,000.00	= $	35,000
	*Cost of **NPDES** Supplemental Work specified in Section 5D*					= $	-
	Total Section 1-8	$ 28,545,900			0.0%	= $	-

TOTAL SUPPLEMENTAL WORK $ 475,700

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066063	Public Information	LS	1	x	51,133.33	=	$51,134
066062A	COZEEP Expenses	LS	1	x	360,000.00	=	$360,000
066105	Resident Engineers Office	LS	1	x	300,000.00	=	$300,000

Total Section 1-8	$	28,545,900	0%	= $	-

TOTAL STATE FURNISHED	**$711,200**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$28,545,900	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$30,303,800	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Releated Overhead (TRO) Percentage (0% to 10%) = **2.5%**

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	600	X	$1,190	=	$713,700

TOTAL TIME-RELATED OVERHEAD	**$713,700**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12	$	31,017,500	x	**10%**	=	$3,101,750	

TOTAL CONTINGENCY	**$3,101,800**

II. STRUCTURE ITEMS

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
COST OF EACH					

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Max Height (Feet)					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ------ Division of Structures — Date

EA: 12-0R3110 PID: 1220000021

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	246,000
	A2)	SB-1210		$	0
B)	Acquisition of Offsite Mitigation			$	0
C)	C1)	Utility Relocation (State Share)		$	
	C2)	Potholing (Design Phase)		$	13,900
D)	Railroad Acquisition			$	0
E)	Clearance / Demolition			$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)			$	0
G)	Title and Escrow			$	3,900
H)	Environmental Review			$	0
I)	Condemnation Settlements		0%	$	0
J)	Design Appreciation Factor		0%	$	0
K)	Utility Relocation (Construction Cost)			$	

Anticipated date of Right-of-Way Certification (Date to which values are escalated)

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$264,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$264,000**
N)	**RIGHT OF WAY SUPPORT**	**$540,000**

Support Cost Estimate Prepared By _____ Project Coordinator[1] Phone

Utility Estimate Prepared By _____ Utiliy Coordinator[2] Phone

R/W Acquistion Estimate Prepared By _____ Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

Attachment D

Right-of-Way Data Sheet

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATA SHEET TRANSMITTAL MEMORANDUM

(Form #)

EXHIBIT
4-EX-4 (REV 7/2016)

To: MOTASHEEMA AFROZE, Branch Chief
Design "D"

Attn: FARZANE SARPOOLAKI
Project Engineer

Date: October 01, 2021
Dist.: 12 Co. ORA Rte. 91 P/M: R20.6/R20.7
Dist.: 12 Co. ORA Rte. 91 P/M: R0.0/4.8
EA: 0R311 EFIS: 1220000021
Project Description: SR-91 EB Orangethorpe Off-Ramp Widening, Pavement Rehabilitation, & Bridges/Multi-Asset Project.

From: EVANGELINA WASHINGTON, Branch Chief
R/W Project Coordination

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project base on maps we received from you on 07/09/2021 , and the following assumptions and limiting conditions.

[ ] 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.

[ ] 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damages to any of the remainder parcels affected by the project.

[ ] 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.

[X] 4. Data Sheet prepared baseD on information provided at this phase of the project.

[ ] 5. We have determined there are no right of way functional involvements in the proposed project at this time as designed.

Right of Way Lead Time will require a minimum of 13 months after we begin receiving final right of way requirements (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node no. 225), we will require a minimum of 16 months prior to the date of certification of the projects. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed, either of which may reflect adversely on the district's other programs.

EVANGELINA WASHINGTON, Branch Chief
Project Coordination/Planning and Management/
& Acquisition

Attachments:

[X] Right of Way Data Sheet – Page One (always required)
[X] Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
[X] Utility Information Sheet
[X] Railroad Information Sheet

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATA SHEET

(Form #)

4-EX-1 (REV 7/2016)
EA 0R311 (1220000021)

To: MOTASHEEMA AFROZE, Acting Branch Chief
Design "D"

Date: 10/01/2021

Dist.: 12 Co LA Rte. 91 PM R20.6/R20.7
Dist.: 12 Co ORA Rte. 91 PM R0.0/4.8

Attention: FARZANE SARPOOLAKI
Project Engineer

EA 0R311 E-FIS Project # 1220000021

Project Description: SR-91 EB Orangethorpe Off-Ramp Widening, Pavement Rehabilitation, & Bridges/Multi-Asset Project.

Subject: Right of Way Data Sheet

Alternate No.: Preferred

This Alternate meets the criteria for a Design/Build project: Yes ☐ No ☒

1. Right of Way Cost Estimate: To be entered into PMCS COST RW1-5 Screens.

		Current Value Future Use	Escalation Rate	Escalated Value	
A.	**Total Acquisition Cost:**				
	Acquisition, including Excess Lands, Damages, and Goodwill.	$ 229,000	3 %	$ 246,000	
	Project Permit Fees.	$ 0	%	$ 0	
B.	**Utility Relocation** (State Share)	$ 12,000	5 %	$ 13,900	
C.	**Relocation Assistance**	$ 0	%	$ 0	
D.	**Clearance/Demolition**	$ 0	%	$ 0	
E.	**Title and Escrow**	$ 3,600	3 %	$ 3,900	
F.	**Total Estimated Cost**	$ 244,600		$ 263,800	≈ $264,000
G.	**Construction Contract Work**	$		$	

2. Current Date of Right of Way Certification 03/01/2024T

3. Parcel Data: To be entered into PMCS EVNT RW Screen.

Type		Dual/Appr	Utilities		RR Involvements	
X			U4-1		None	
A			-2		C&M Agrmt	
B	3		-3		Svc Contract	
C			-4	3	Design	
D			U5-7		Const.	
E	XXXX		-8		Lic/RE/Clauses/	X
F	XXXX		-9		OE Clearance	X
					Misc. R/W Work	
Total	3				RAP Displ	0
					Clear/Demo	0
					Const Permits	0
					Condemnation	1

Areas: R/W 4,325 No. Excess Parcels 0 Excess 0

Entered PMCS Screens _____ by T. Dinh

Entered AGRE Screen (Railroad data only) ___ / ___ / ___ / By _____

4. Are there any major items of construction contract work? Yes ☐ No ☒ (If "Yes," explain.)

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc…)
No right of way required. ☐

Highway Easements and Temporary Construction Easements are needed for ADA project requirements for parcels along Orangethorpe Avenue, La Palma, from Multi-Family Residential property – Brookside Apartments.

6. Any assumptions and/or limiting conditions used? Yes ☒ Not Significant ☐ No ☐ (If "Yes," explain.)

No structural improvements are impacted, including monument sign, only hardscape & landscape.

7. Are utility facilities or rights of way affected?
Yes ☒ No ☐ (If "Yes," attach Utility Information Sheet, Exhibit 4-EX-5.)

The following checked items may seriously impact lead time for utility relocation:
☐ Longitudinal policy conflict(s)
☐ Environmental concerns impacting acquisition of potential easements
☐ Power lines operating in excess of 50 KV and substations
(See attached Exhibit 4-EX-5 for explanation.)

8. Are Railroad facilities or rights of way affected?
Yes ☒ No ☐ (If "Yes," attach Railroad Information Sheet, Exhibit 4-EX-6.)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes ☐ None Evident ☒ (If "Yes," attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are State or Federal rights of way affected?
Yes ☐ No ☒ (If "Yes," provide the following information)

Agencies Involved:

_____ Army Corps of Engineers	_____ GSA	_____ US Postal Service
_____ BIA	_____ National Parks	_____ Veterans Administration
_____ BLM	_____ US Fish & Wildlife	_____ Other _____
_____ Dept. of Parks & Recreation	_____ US Forest Service	_____ Other _____

Rights/Permissions Required:

_____ Cooperative Work Agreement	_____ Letter of Concurrence	_____ Special Use Permit
_____ Cost Recovery	_____ Letter of Consent	_____ Timber Sale
_____ Courtesy Letter	_____ Mineral Agreement	_____ Transfer of Jurisdiction
_____ Easement	_____ Right of Entry	_____ Other _____
_____ Highway Easement	_____ Right of Way Grant	_____ Other _____

11. Are RAP displacements required? Yes ☐ No ☒ (If "Yes," provide the following information.)

    No. of single family _____ No. of business/nonprofit _____

    No. of multi-family _____ No. of farms _____

    Based on Draft/Final Relocation Impact Statement/Study dated _____, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

12. Are there any outdoor advertising signs impacted? Yes ☐ No ☒ (If "Yes," explain.)

13. Are Material Borrow and/or Disposal Sites required? Yes ☐ No ☒ (If "Yes," explain.)

14. Are there potential relinquishments and/or abandonments? Yes ☐ No ☒ (If "Yes," explain.)

15. Are there any existing and/or potential airspace sites? Yes ☐ No ☒ (If "Yes," explain.)

16. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead-time and/or if significant pressures for project advancement are anticipated.)

    Based on the R/W requirements on Page 1 of this Data Sheet, R/W will require a lead-time of 16 months from the date regular appraisals can begin to project certification.

    In any event, RW Maps will require 13 months from Final Maps to project certification.

17. Is it anticipated that Caltrans staff will perform all Right of Way work? Yes ☒ No ☐ (If "No," discuss.)

Evaluation Prepared By:

Right of Way:	Name	JOHN DYKMAN Right of Way Estimator	Date	10/01/2021
Railroad:	Name	TIM CHEUNG Right of Way Railroad Coordinator	Date	10/01/2021
Utilities:	Name	Antonio Avila ANTONIO AVILA Right of Way Utility Estimator	Date	10/01/2021
Airspace:	Name	JAMES THORNBURG Right of Way Airspace Coordinator	Date	10/01/2021
State/Federal Lands:	Name	JOHN DYKMAN Right of Way Estimator	Date	10/01/2021

I have personally reviewed this Right of Way Data Sheet and all supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper, subject to the limiting conditions set forth; and I find this Data Sheet complete and current.

EVANGELINA WASHINGTON, Branch Chief
R/W Project Coordination,
Planning & Management

10/01/2021
Date

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.

   - SR-91: Union Pacific Railroad- W91/5 Separation OH, Bridge #55-293L, PM R3.50/R3.64, City of Fullerton
   - SR-91: Union Pacific Railroad- 91/5 HOV Connector OH, Bridge #55-835H, PM R3.56, City of Anaheim
   - SR-91: Union Pacific Railroad- E91/S5 Separation OH, Bridge #55-502R, PM R3.57/R3.67, City of Fullerton
   - SR-91: Union Pacific Railroad- N5/W91 Connector OH, Bridge #55-830G, PM R3.60, City of Anaheim
   - SR-91: Union Pacific Railroad – E91/S5 Connector OH, Bridge #55-503G, PM R3.61, City of Fullerton
   - SR-91: Union Pacific Railroad – S5/E91 Connector OC & OH, Bridge #55- 831F, PM 3.60, City of Anaheim
   - SR-91: SCRRA/Metrolink – North Anaheim OH, Bridge #55-216, PM 3.99/4.04, City of Anaheim

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to business and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail service? Yes _____ No _____ (If yes, explain)

   N/A

3. Discuss types of agreements and right required from the railroads. Are grade crossings requiring service Contracts or grade separations requiring construct and maintenance agreements involved?

   An Office of Engineer Railroad Clearance Memo with railroad short clauses is required for insertion into the Specifications.

4. Remarks (non-operating railroad right of way involved?):

   N/A

5. PMCS Input Information

RR Involvements	
None	
C&M Agreement	
Service Contract	
Design	
Const.	
Lic/RE/Clauses	X
OE Clearance	X

Prepared By:

TIM CHEUNG
Right of Way Railroad Coordinator

10/01/2021
Date

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

   - Southern California Edison
   - AT&T California
   - Southern California Gas

2. Types of facilities and agreements required:

   Three Positive Location Agreements for test holes and three Notices to Owner for test holes are required. There are a total of 12 test holes.
   Gas - Southern California Gas - 3 test holes for policy conflict.
   Electrical -Southern California Edison - 5 test holes for potential physical conflict

3. Is any facility a longitudinal encroachment in existing or proposed access controlled right of way? Explain.

   No

   Disposition of longitudinal encroachment(s):
   ☐ Relocation required.
   ☐ Exception to policy needed.
   ☐ Other. Explain.

4. Additional information concerning utility involvements on this project, i.e., long lead-time materials, growing or species seasons, customer service seasons (no transmission tower relocations in summer).

   No

5. PMCS Input Information
   Total estimated cost of State's obligation for utility relocation on this project:
   $ 12,000.00 & 13,900.00 escalated

Utility Involvements:

U4-1		(Total number of expected owner expense involvements)
-2		(Total number of expected State expense involvements – conventional highway, no Federal aid)
-3		(Total number of expected State expense involvements – freeway, no Federal aid)
-4	3	(Total number of expected State expense involvements – conventional or freeway, with Federal aid)
U5-7		(Total number of expected utility verifications, which will not result in involvements)
-8		(Total number of expected utility verifications – 50% will result in involvement and 50% will not)
-9		(Total number of expected utility verifications, which will result in involvements)

Prepared By:

Antonio Avila
ANTONIO AVILA
Right of Way Utility Estimator

10/01/2021
Date

Attachment E

Utility Management Matrix

Utility Management Matrix

Project Owner: Caltrans
Project No. : 0R311
Project Description: SR 91 Multi Asset
Highway or Route: SR91

Note: refer to subsheet for utility conflict cost analysis.

Utility Conflict Matrix Developed/Revised By: Charlotte Wu
Date: 10/4/2021
Reviewed By: Mike Tammen
Date: 10/4/2021

Utility Owner and/or Contact Name	Conflict ID	Drawing or Sheet No.	Utility Type	Size and/or Material	Utility Conflict Description	Start Station	Start Offset		End Station	End Offset		Utility Investigation Level Needed	Test Hole Number	Recommended Action or Resolution
City of Cerritos Water District	1	L-1	Water	8" Water in 18" Casing	Across the SR-91 west of the Coyote Creek	219+93	118	L	220+92	123	R	QLD	N/A	Remain in Place
City of Cerritos Water District	2	L-1	Reclaimed Water	4" Reclaimed Water	Across the SR-91 within Coyote Creek	224+03	119	R	224+76	117	L	QLD	N/A	Remain in Place
City of La Palma	3	L-2	Water	12" ACP Water	Along Walker St	232+89	137	L	234+39	164	R	QLD	N/A	Remain in Place
Copley/Colony Cablevision	4	L-2	Television UG	2-2" Television Ducts	Along Walker St	233+23	140	L	234+83	187	R	QLD	N/A	Remain in Place
Southern California Edison	5	L-2	Electrical OH	12kV Electrical OH	Along Walker St	233+38	140	L	235+01	186	R	QLC	N/A	Remain in Place
City of La Palma	6	L-2, L-3	Water	12" ACP Water	Along Orangethorpe Ave	238+38	360	R	252+01	317	L	QLD	N/A	Remain in Place
Southern California Edison	7	L-2	Electrical UG	12kV Electrical UG	Across Orangethorpe Ave and continue along Orangethorpe along the south side to private property	238+79	300	R	241+33	301	R	QLA	2	Remain in Place
Southern California Gas	8	L-2	Gas	2" Gas	Along Orangethorpe Ave	239+45	362	R	244+96	85	R	QLD	N/A	Remain in Place
Southern California Gas	9	L-2	Gas	2" Gas	Across Orangethorpe Ave to private property	241+48	260	R	241+76	310	R	QLA	4	Remain in Place
Southern California Edison	10	L-2, L-3	Electrical OH	12kV Electrical OH	Along Orangethorpe Ave sidewalk on the south side	239+58	388	R	252+31	256	L	QLC	N/A	Remain in Place
AT&T	11	L-2, L-3	Telephone UG	6-4" Ducts	Along south side of Orangethorpe Ave sidewalk	239+57	385	R	252+33	253	L	QLA	1, 3, 5, 7	Remain in Place
AT&T	12	L-2, L-3	Telephone UG	Telephone Conduit	Along south side of Orangethorpe Ave	241+20	302	R	252+27	264	L	QLD	N/A	Remain in Place
Southern California Edison	13	L-2	Electrical UG	12kV Electrical UG	Along southside of Orangethorpe Ave to private property	242+38	245	R	242+62	251	R	QLA	6	Remain in Place
City of La Palma	14	L-4	Water	10" water in 24" Casing	Across SR-91 west of Valley View St	261+69	97	L	262+47	94	R	QLD	N/A	Remain in Place
AT&T	15	L-4	Telephone UG	4-3.5" Telephone Conduit	Across SR-91 west of Valley View St	262+05	95	L	262+81	93	R	QLD	N/A	Remain in Place
Southern California Gas	16	L-4	Gas	10" CSP Gas	Across SR-91 west of Valley View St	262+13	95	L	262+89	94	R	QLA	8, 9	Remain in Place
Southern California Edison	17	L-4	Electrical UG	3 Electrical Conduits	Along Valley View St	263+39	77	L	263+99	80	R	QLD	N/A	Remain in Place
Gilbert	18	L-4	Television UG	Television Conduit	Along Valley View Gt	263+52	77	L	264+12	80	R	QLD	N/A	Remain in Place
Southern California Edison	19	L-4	Electrical OH	12kV Electrical OH	Along Valley View St	263+82	77	L	264+39	80	R	QLC	N/A	Remain in Place
Orange County Sanitation District	20	L-4	Sewer	45" RCP Sewer	Across SR-91 east of Valley View St	264+33	77	L	264+87	78	R	QLD	N/A	Remain in Place
Comcast Cable Television	21	L-5, L-6	Television OH	Television OH	Across SR-91 east of Valley View EB on-ramp and run along the north side of the SR-91 within the R/W	277+29	114	R	290+66	95	L	QLC	N/A	Remain in Place
Southern California Gas	22	L-6	Gas	3" Gas	Across SR-91 at Holder St	290+31	101	L	290+31	101	R	QLD	N/A	Remain in Place
City of Buena Park Municipal Water	23	L-6	Water	12" Water in 18" Casing	Across SR-91 at Holder St	290+61	101	L	290+61	101	R	QLD	N/A	Remain in Place
AT&T	24	L-6	Telephone UG	4 Telephone Conduit in Concrete Casing	Across SR-91 at Holder St	290+71	101	L	290+71	101	R	QLD	N/A	Remain in Place
Southern California Gas	25	L-6	Gas	2" Gas	East of Holder St	293+51	101	L	295+32	84	L	QLD	N/A	Remain in Place
Southern California Edison	26	L-8	Electrical UG	66kV Electrical Duct	Across the WB Knott Ave on-ramp	315+70	225	L	317+17	110	L	QLA	10, 11, 12	Remain in Place
Paramount Petroleum Corporation	27	L-8	Oil	6" Steel Oil	Along Knott Ave	316+66	453	L	316+66	487	R	QLD	N/A	Remain in Place
AT&T	28	L-8	Telephone UG	6 Telephone Conduit	Along Knott Ave	316+70	453	L	316+70	487	R	QLD	N/A	Remain in Place
Southern California Gas	29	L-8	Gas	6" Gas	Along Knott Ave	316+76	453	L	316+76	487	R	QLD	N/A	Remain in Place

Utility Owner and/or Contact Name	Conflict ID	Drawing or Sheet No.	Utility Type	Size and/or Material	Utility Conflict Description	Start Station	Start Offset		End Station	End Offset		Utility Investigation Level Needed	Test Hole Number	Recommended Action or Resolution
Orange County Sanitation District	30	L-8	Sewer	72" RCP Sewer	Along Knott Ave	316+84	453	L	316+84	487	R	QLD	N/A	Remain in Place
Paramount Petroleum Corporation	31	L-8	Oil	12" Steel Oil	Along Knott Ave	316+95	453	L	316+95	487	R	QLD	N/A	Remain in Place
Comcast Cable Television	32	L-8	Television UG	Television Conduit	Along Knott Ave	316+99	453	L	316+99	487	R	QLD	N/A	Remain in Place
City of Buena Park	33	L-8	Water	6" Water	Along Knott Ave	317+05	453	L	317+15	487	R	QLD	N/A	Remain in Place
Southern California Gas	34	L-8	Gas	3" Gas	Along Knott Ave	317+11	453	L	317+11	487	R	QLD	N/A	Remain in Place
Southern California Edison	35	L-8	Electrical UG	6-5" 66kV Electrical Ducts	Along Knott Ave	317+17	453	L	317+17	487	R	QLD	N/A	Remain in Place
Chevron	36	L-8	Oil	8" Steel Oil	Along Knott Ave	317+19	453	L	317+19	487	R	QLD	N/A	Remain in Place
Chevron	37	L-8	Oil	8" Steel Oil	Along Knott Ave	317+23	453	L	317+23	487	R	QLD	N/A	Remain in Place
Chevron	38	L-8	Gasoline	6" Gasoline	Along Knott Ave	317+24	453	L	317+24	487	R	QLD	N/A	Remain in Place
Southern California Edison	39	L-8	Electrical OH	Electrical OH	Along Knott Ave	317+36	453	L	317+36	487	R	QLC	N/A	Remain in Place
City of Buena Park Municipal Water	40	L-10	Water	8" Water	Along Western Ave	343+29	144	L	343+29	116	R	QLD	N/A	Remain in Place
Southern California Edison	41	L-10	Electrical UG	Electrical Conduit	Along Western Ave	343+48	144	L	343+48	116	R	QLD	N/A	Remain in Place
AT&T	42	L-10	Telephone UG	Telephone UG	Along Western Ave	343+65	144	L	343+65	116	R	QLD	N/A	Remain in Place
City of Buena Park Municipal Water	43	L-10	Water	20" Water	Along Western Ave	343+76	144	L	343+76	116	R	QLD	N/A	Remain in Place
Southern California Edison	44	L-10	Electrical OH	Electrical OH	Along Western Ave	343+81	144	L	343+81	116	R	QLC	N/A	Remain in Place
City of Buena Park Municipal Water	45	L-11	Water	12" ACP Water	Along Beach Blvd	356+43	447	L	356+58	411	R	QLD	N/A	Remain in Place
AT&T	46	L-11	Telephone UG	6 Telephone Conduit	Along Beach Blvd	356+50	447	L	356+66	411	R	QLD	N/A	Remain in Place
Texaco	47	L-11	Oil	6" Oil	Along Beach Blvd	356+67	447	L	356+82	411	R	QLD	N/A	Remain in Place
Comcast Cable Television	48	L-11	Television UG	Television UG	Along Beach Blvd	357+01	450	L	357+12	411	R	QLD	N/A	Remain in Place
City of Buena Park Municipal Water	49	L-11	Water	10" ACP Water	Along Beach Blvd	357+36	448	L	357+46	411	R	QLD	N/A	Remain in Place
Southern California Gas	50	L-12	Gas	4" Gas	Along Stanton Ave	369+76	123	L	369+79	163	R	QLD	N/A	Remain in Place
City of Buena Park Municipal Water	51	L-12	Water	6" CIP Water	Along Stanton Ave	370+11	120	L	370+14	147	R	QLD	N/A	Remain in Place
City of Buena Park Municipal Water	52	L-12	Water	10" ACP Water	Along Stanton Ave	370+22	119	L	370+25	136	R	QLD	N/A	Remain in Place
Southern California Edison	53	L-12	Electrical OH	Electrical OH	Along Stanton Ave	370+38	118	L	370+39	122	R	QLC	N/A	Remain in Place
Metropolitan Water District	54	L-14	Water	55" Water with Concrete Encasement	Across SR-91 near Dale St	192+26	140	R	192+67	272	L	QLD	N/A	Remain in Place
Navy	55	L-15	Fuel	8" Fuel	Along UPRR west of I-5	198+70	417	L	200+55	267	R	QLD	N/A	Remain in Place
Kinder Morgan	56	L-15	Oil	10" Oil	Along UPRR west of I-5	198+82	422	L	200+72	270	R	QLD	N/A	Remain in Place
Kinder Morgan	57	L-15	Oil	16" Oil	Along UPRR west of I-5	198+85	424	L	200+76	270	R	QLD	N/A	Remain in Place
Sprint	58	L-15	Telephone UG	2-4" Telephone Conduit	Along UPRR west of I-5	199+00	430	L	200+96	273	R	QLD	N/A	Remain in Place
City of Anaheim	59	L-16	Sewer	36" Sewer	Along Magnolia St	219+03	462	L	219+29	114	R	QLD	N/A	Remain in Place
City of Anaheim	60	L-16	Water	1.5" Water	Along Magnolia St	219+21	459	L	219+51	114	R	QLD	N/A	Remain in Place
City of Anaheim	61	L-18, L-19, L-20	Sewer	18" VCP Sewer	Along Houston Ave and across SR-91 east of Gilbert St and turn south on Brookhurst St	93+62	154	R	119+40	300	R	QLD	N/A	Remain in Place
Southern California Edison	62	L-19, L-20	Electrical OH	12kV Electrical OH	North of and along SR-91 and crosses Brookhurst St	99+95	120	L	119+02	185	L	QLC	N/A	Remain in Place
City of Fullerton	63	L-20	Sewer	8" VCP Sewer	Along Brookhurst St	118+72	263	L	118+96	330	L	QLD	N/A	Remain in Place
Southern California Edison	64	L-20	Electrical OH	12kV Electrical OH	Along the R/W north of SR-91 near WB Brookhurst St off-ramp	119+02	185	R	119+20	450	L	QLC	N/A	Remain in Place
Southern California Gas	65	L-20	Gas	12" High Pressure	Along Brookhurst St	119+57	395	R	119+71	442	L	QLD	N/A	Remain in Place
Southern California Edison	66	L-20, L-21, L-22, L-23, L-24	Electrical OH	12kV Electrical OH	Along the R/W north of SR-91 from Brookhurst St to Euclid St	119+02	185	L	171+66	407	L	QLC	N/A	Remain in Place
Southern California Edison	67	L-24	Electrical OH	12kV Electrical OH	Along Euclid St	171+66	407	L	172+11	387	R	QLC	N/A	Remain in Place
Orange County Sanitation District	68	L-24	Sewer	15" VCP Sewer	Along Euclid St	172+43	472	L	172+43	217	R	QLD	N/A	Remain in Place

Utility Owner and/or Contact Name	Conflict ID	Drawing or Sheet No.	Utility Type	Size and/or Material	Utility Conflict Description	Start Station	Start Offset		End Station	End Offset		Utility Investigation Level Needed	Test Hole Number	Recommended Action or Resolution
Orange County Sanitation District	69	L-24	Sewer	30" VCP Sewer	Along Euclid St	172+62	466	L	172+70	243	L	QLD	N/A	Remain in Place
Orange County Sanitation District	70	L-24	Sewer	48" RCP Sewer	Along Euclid St	172+70	243	L	172+70	215	R	QLD	N/A	Remain in Place
Orange County Sanitation District	71	L-24	Sewer	30" VCP Sewer	Along Euclid St	172+80	83	L	172+80	214	R	QLD	N/A	Remain in Place
Orange County Sanitation District	72	L-24	Sewer	8" VCP Sewer	Along Euclid St	172+80	470	L	172+86	265	L	QLD	N/A	Remain in Place
Orange County Sanitation District	73	L-24	Sewer	48" RCP Sewer	Perpendicular to Euclid St near WB Euclid St off-ramp	172+86	265	L	173+70	266	L	QLD	N/A	Remain in Place
Southern California Edison	74	L-25, L-26	Electrical OH	12kV Electrical OH	Along R/W north of SR-91 from Euclid St WB off-ramp to west of Harbor Blvd WB on-ramp	178+41	137	L	205+64	110	L	QLC	N/A	Remain in Place
City of Fullerton	75	L-27	Water	24" Steel Cylinder Concrete Pipe	Across the SR-91 west of Harbor Blvd	212+27	101	R	212+17	111	L	QLD	N/A	Remain in Place
AT&T	76	L-28	Telephone UG	Telephone UG	Along Harbor Blvd	225+24	297	R	225+55	402	L	QLD	N/A	Remain in Place
AT&T	77	L-28	Telephone UG	Telephone UG	Along Harbor Blvd and across Harbor Blvd	225+59	374	L	226+70	486	L	QLD	N/A	Remain in Place
Southern California Gas	78	L-28	Gas	3" Gas	Along Harbor Blvd	225+57	270	L	225+75	495	L	QLD	N/A	Remain in Place
City of Fullerton	79	L-28	Sewer	8" VCP Sewer	Along Harbor Blvd	225+68	180	L	225+93	494	L	QLD	N/A	Remain in Place
City of Fullerton	80	L-28	Water	16" CIP Water	Along Harbor Blvd	225+68	301	R	226+34	490	L	QLD	N/A	Remain in Place
City of Fullerton	81	L-28	Sewer	8" VCP Sewer	Along Harbor Blvd	226+19	179	L	226+47	489	L	QLD	N/A	Remain in Place
Southern California Edison	82	L-28	Electrical UG	12kV Electrical UG	Along Harbor Blvd	226+72	486	L	226+68	355	L	QLD	N/A	Remain in Place
Southern California Edison	83	L-28	Electrical UG	12kV Electrical, 240/120v Phase 3 UG	Along Harbor Blvd	226+58	129	L	226+66	243	L	QLD	N/A	Remain in Place
City of Fullerton	84	L-28, L-29	Water	6" CIP Water	Along R/W north of SR-91 from Harbor Blvd to Lemon St	229+07	189	L	235+93	140	L	QLD	N/A	Remain in Place
Southern California Edison	85	L-29	Electrical OH	12kV Electrical OH	Along WB Lemon St on-ramp	235+93	140	L	238+38	158	L	QLC	N/A	Remain in Place
Southern California Edison	86	L-29	Electrical OH	12kV Electrical OH	Along Lemon St	238+40	199	L	238+69	329	L	QLC	N/A	Remain in Place
Southern California Edison	87	L-29	Electrical OH	66kV Electrical OH (Joint OH)	Along Lemon St on the same pole as other utilities	238+68	160	L	238+75	336	R	QLC	N/A	Remain in Place
City of Anaheim	88	L-29	Electrical OH	12kV Electrical OH (Joint OH)	Along Lemon St on the same pole as other utilities	238+68	160	L	238+75	336	R	QLC	N/A	Remain in Place
Time Warner	89	L-29	Television OH	Television OH (Joint OH)	Along Lemon St on the same pole as other utilities	238+68	160	L	238+75	336	R	QLC	N/A	Remain in Place
Time Warner	90	L-29	Television OH	Television OH	Perpendicular to Lemon St south of SR-91	238+40	170	R	238+67	163	R	QLC	N/A	Remain in Place
City of Anaheim	91	L-29	Water	12" Water	Along Lemon St	239+20	340	L	239+27	382	R	QLD	N/A	Remain in Place
AT&T	92	L-29	Telephone UG	Telephone UG	Along Lemon St	239+39	340	L	239+51	135	R	QLD	N/A	Remain in Place
City of Anaheim	93	L-30	Sewer	8" VCP Sewer	Across SR-91 near N Patt St	253+17	107	L	253+30	187	R	QLD	N/A	Remain in Place
City of Anaheim	94	L-30	Water	16" DIP Water in 30" Steel Casing	Across SR-91 near N Patt St	252+32	107	L	252+57	138	R	QLD	N/A	Remain in Place
City of Anaheim	95	L-31	Electrical OH	12kV Electrical OH	Across SR-91 at SCRRA Metrolink railroad	264+76	166	L	264+78	142	R	QLC	N/A	Remain in Place
Sprint	96	L-31	Fiber Optic UG	Fiber Optic UG	Across SR-91 at SCRRA Metrolink railroad	265+40	94	L	265+42	107	R	QLD	N/A	Remain in Place
SCRRA	97	L-31	Communication UG	Communication UG	Across SR-91 at SCRRA Metrolink railroad	266+07	151	L	266+13	140	R	QLD	N/A	Remain in Place
City of Anaheim	98	L-31, L-32	Electrical OH	12kV Electrical OH	Along R/W north of SR-91 from Raymond Ave WB on-ramp to Raymond Ave	270+35	156	L	280+33	306	L	QLC	N/A	Remain in Place
City of Fullerton	99	L-32	Sewer	18" VCP Sewer	Along Raymond Ave	279+05	316	R	279+07	482	L	QLD	N/A	Remain in Place
City of Anaheim	100	L-32	Water	12" CIP Water	Along Raymond Ave	278+98	316	R	279+00	476	L	QLD	N/A	Remain in Place
Metropolitan Water District	101	L-32	Water	36" Steel Water	Along Raymond Ave	279+21	316	R	279+23	475	L	QLD	N/A	Remain in Place
AT&T	102	L-32	Telephone UG	Telephone UG	Along Raymond Ave	279+38	453	L	279+38	315	R	QLD	N/A	Remain in Place

Utility Owner and/or Contact Name	Conflict ID	Drawing or Sheet No.	Utility Type	Size and/or Material	Utility Conflict Description	Start Station	Start Offset		End Station	End Offset		Utility Investigation Level Needed	Test Hole Number	Recommended Action or Resolution
MCI/Verizon	103	L-32	Telephone UG	Telephone UG	Along Raymond Ave	279+49	144	R	279+49	364	L	QLD	N/A	Remain in Place
City of Anaheim	104	L-32	Electrical OH	12kV Electrical OH	Along Raymond Ave	279+50	364	L	279+52	315	R	QLC	N/A	Remain in Place
AT&T	105	L-32, L-33, L-34	Telephone OH	Telephone OH (Joint OH)	Along R/W on the south side of SR-91 from EB East St on-ramp to Acacia Ave	285+70	115	R	310+48	102	R	QLC	N/A	Remain in Place
City of Anaheim	106	L-32, L-33, L-34	Electrical OH	12kV and 120/240V Electrical OH (Joint OH)	Along R/W on the south side of SR-91 from EB East St on-ramp to Acacia Ave	285+70	115	R	310+48	102	R	QLC	N/A	Remain in Place
Multivision	107	L-32, L-33, L-34	Television OH	Television OH (Joint OH)	Along R/W on the south side of SR-91 from EB East St on-ramp to Acacia Ave	285+70	115	R	310+48	102	R	QLC	N/A	Remain in Place
City of Anaheim	108	L-34	Electrical OH	12kV and 120/240V Electrical OH	Along R/W north of SR-91 east of Acacia Ave	305+27	194	L	312+19	123	L	QLC	N/A	Remain in Place
AT&T	109	L-34	Telephone UG	Telephone UG	Along Acacia Ave	305+37	103	L	305+36	115	R	QLD	N/A	Remain in Place
City of Anaheim	110	L-34	Electrical UG	120/240V Electrical UG	Along and across Acacia Ave	305+45	26	L	305+97	112	R	QLD	N/A	Remain in Place
City of Anaheim	111	L-34	Water	8" CIP Water	Along Acacia Ave	305+51	104	L	305+51	114	R	QLD	N/A	Remain in Place
City of Anaheim	112	L-34	Sewer	8" VCP Sewer	Along Acacia Ave	305+59	103	L	305+59	114	R	QLD	N/A	Remain in Place
City of Anaheim	113	L-34	Electrical UG	12kV Electrical UG	Along Acacia Ave	305+73	105	L	305+73	115	R	QLD	N/A	Remain in Place
Southern California Gas	114	L-34	Gas	3" Gas	Along Acacia Ave	305+76	104	L	305+75	115	R	QLD	N/A	Remain in Place

Key:
[List of acronyms used in the utility conflict matrix]

Attachment F

Storm Water Data Report Cover Sheet

Dist-County-Route: 7-LA-91, 12-ORA-91
Post Mile Limits: LA R20.6/R20.7, ORA R0.0/4.8
Type of Work: Multi Asset Management Project
Project ID (EA): 1220000021 (OR311)
Program Identification: 201.121
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Los Angeles, Region 4, Santa Ana, Region 8
Total Disturbed Soil Area: 13.83 acres PCTA: 1.40 acres
Alternative Compliance (acres): 0.00 acres ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: Nov 2024 Estimated Const. Completion Date: Nov 2027
Risk Level: RL 1 ☒ RL 2 ☐ RL 3 ☐ WPCP ☐ Other: _____
Is MWELO applicable? Yes ☐ No ☒
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): 0.00 acres
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: _____ No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

Gary W. Sjelin — 8/31/2021
Gary Sjelin, Registered Project Engineer — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Brian Santos — 9/29/2021
Brian Santos, Project Manager — *Date*

9/30/2021
Hilton Briggs, Designated Maintenance Representative — *Date*

9/30/2021
Eric Dickson, Designated Landscape Representative — *Date*

[Stamp Required at PS&E only]

10/1/2021
Grace Pina-Garret, District SW Coordinator — *Date*

Attachment G

Categorical Exemption and Categorical Exclusion

CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM (rev. 04/2021)

Project Information

Project Name (if applicable): SR-91 Multi-Asset Pavement Rehabilitation & Drainage Improvements Project

DIST-CO-RTE: 7-LA-91 & 12-ORA-91 **PM** R20.6/R20.7 & R0.0/4.8.

EA:0R3110 **Federal-Aid Project Number:** Not Applicable

Project Description - In Los Angeles and Orange Counties, in the cities of Cerritos, La Palma, Buena Park, Fullerton, and Anaheim, from just west of the LA county line to Acacia Street, Post Miles R20.6/R20.7 & R0.0/4.8, Caltrans, through its State Route – 91 (SR-91) Multi-Asset Program, proposes a project using State Highway Operation and Protection Program (SHOPP) funds to address inadequate roadway conditions including Pavement Rehabilitation and Drainage Improvements, as well as disconnected transportation management system (TMS) elements.

Continued on page 3

Caltrans CEQA Determination (Check one)

☐ **Not Applicable** – Caltrans is not the CEQA Lead Agency

☐ **Not Applicable** – Caltrans has prepared an IS or EIR under CEQA

Based on an examination of this proposal and supporting information, the project is:

☐ **Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)

☒ **Categorically Exempt. Class** 15301 1 (d). (PRC 21084; 14 CCR 15300 et seq.)

- ☐ No exceptions apply that would bar the use of a categorical exemption (PRC 21084 and 14 CCR 15300.2). See the SER Chapter 34 for exceptions.

☐ **Covered by the Common Sense Exemption**. This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (14 CCR 15061[b][3].)

Senior Environmental Planner or Environmental Branch Chief

Smita Deshpande	Smita Deshpande	September 27, 2021
Print Name	Signature	Date

Project Manager

Brian Santos	Brian Santos	9/27/2021
Print Name	Signature	Date

Caltrans NEPA Determination (Check one)

☐ **Not Applicable**

Caltrans has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). See SER Chapter 30 for unusual circumstances. As such, the project is categorically excluded from the requirements to prepare an EA or EIS under NEPA and is included under the following:

☒ **23 USC 326:** Caltrans has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to 23 USC 326 and the Memorandum of Understanding dated April 18, 2019, executed between FHWA and Caltrans. Caltrans has determined that the project is a Categorical Exclusion under:

☒ **23 CFR 771.117(c): activity (c) (21)**

☐ **23 CFR 771.117(d):**

☐ **Activity listed in Appendix A of the MOU between FHWA and Caltrans**

☐ **23 USC 327:** Based on an examination of this proposal and supporting information, Caltrans has determined that the project is a Categorical Exclusion under 23 USC 327. The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Senior Environmental Planner or Environmental Branch Chief

Smita Deshpande	Smita Deshpande	September 27, 2021
Print Name	Signature	Date

Project Manager/ DLA Engineer

Brian Santos	Brian Santos	9/27/2021
Print Name	Signature	Date

Date of Categorical Exclusion Checklist completion (if applicable): 9/23/2021
Date of Environmental Commitment Record or equivalent: 9/22/2021

Briefly list environmental commitments on continuation sheet if needed (i.e., not necessary if included on an attached ECR). Reference additional information, as appropriate (e.g., additional studies and design conditions).

Continuation sheet:

SHOPP utilizes State and Federal monies. Caltrans (District 12), is the CEQA and NEPA Lead Agency for this Multi-Asset project. Specifically, this nearly nine-mile-long project proposes to:

- Improve roadway conditions by rehabilitating pavement. This section of SR-91 includes damaged and/or cracked pavement sections that are in need of repair. These improvements will extend the life of the pavement and improve ride quality for travelers.
- Drainage improvements are also included in scope of work as field investigation and subsequent engineering evaluations revealed existing drainage pipes were cracked and in need of repair to prevent or reduce flooding on roadway.
- The Eastbound (EB) SR-91 off ramp at Orangethorpe in Buena Park will be widened at ramp terminus
- One Weigh-In-Motion System will be installed in the EB direction
- Additionally, this section of SR-91 operates with inadequate and disconnected technological infrastructure. A range of TMS items (including remote monitoring) are proposed to provide accurate and timely information to drivers, thus improving system performance on this segment of SR-91.
- Repair damaged sidewalk
- Landscape improvements including gore area pavement, narrow area pavement, light duty vehicular trails, maintenance vehicle pullouts, slope pavement, and highway planting are proposed

The estimated DSA for this project is 13.83 acres. Approximately 5-10 geotechnical borings, within State's Right of Way (R/W), are anticipated. Though most of construction activity occurs in State's existing R/W, three Temporary Construction Easements (TCEs) and three Permanent Easements (PE) on private property, are required. Square footage and parcel numbers are provided in table below:

APN:	**Permanent Easement (PE)/Highway (square feet)**	**Temporary Construction Easement (TCE) (square feet)**
263-071-03	1,030	700
263-071-04	10	2,200
263-071-05	190	195

Permission to Enter (PTE) private property is required.

During construction, nearby residents and adjacent businesses may experience temporary construction-related noise from the operation of equipment and machines, however such noise is not anticipated to interfere with residential property usage and/or daily business operations. Temporary shoulder and lane closures on the SR-91 mainline lanes and temporary shoulder and ramp lane closures associated with the Orangethorpe off ramp are anticipated, within project post mile segment. Detours may be required. Construction activities may occur at night during dark hours. A multi-modal Traffic Management Plan (TMP) is required and will be coordinated with all affected cities and emergency responders in advance of Construction. Duration of construction is approximately 36 months. Construction is anticipated to begin December 2024.

Purpose
This project proposes to improve roadway conditions and upgrade the TMS elements on SR-91.
Roadway Improvements:
The primary purpose of the roadway improvements is to improve ride quality, achieve an efficient management of traffic movement, improve traffic operations, enhance traffic flow, reduce travel time, reduce recurrent maintenance, provide safe work locations for highway workers.
To achieve these goals, a range of roadway improvements are proposed, including:

- Replacement of damaged concrete roadway slabs and rehabilitation of AC pavement
- Replacement or repair of bridge approach and departure slabs
- Drainage improvements
- Upgrade of existing and new lighting and conduit
- Landscape improvements
- Installation of weigh-in-motion system
- Upgrade of overhead sign panels and roadside signs
- Widening of the EB Orangethorpe Avenue off-ramp terminus

Traffic Management System (TMS) Improvements:
The primary purpose of the TMS program is to improve traffic flow within the project limits by providing accurate real-time information to freeway travelers via digital data connections. TMS improvements include:

- Upgrade of existing CCTV to HD CCTV
- Installation of switches at various hubs and cabinets
- Upgrade and replacement of fiber optics and conduit
- Installation of video detection cameras
- Installation of smart lighting
- Installation of non-PTZ cameras along on-ramps
- Installation of centrally locking cabinets
- Upgrade to locking pull boxes

Need
The existing SR-91 segment operates with deteriorating and outdated roadway components and incomplete and disconnected technological infrastructure systems.

Note: FTIP ID No. ORA-001103, on 8/24/21 this project was reviewed by SCAG-TCWG. An AQTR and Conformity Checklist are provided.

No significant environmental consequences are anticipated with the proposed project. In addition to the Caltrans Standards and Measures relating to Construction Noise, Air Pollution Control, Erosion Control and Hazardous Waste, the following Measures are required:

- An Environmental Commitment Record (ECR) has been prepared. The ECR contains Measures that will be addressed and implemented during Design and Construction Phases.
- A Multi-modal TMP is required
- Permission to Enter private property in advance of construction is needed

The following technical studies/reports/e-mails support the CE/CE:
Air Conformity Checklist, Dove, 9/22/21
SCAG-TCWG consultation, Bade, 8/24/21
Air Quality Technical Report, Aurasteh/Bade, 8/26/21
NES-MI w/JD, Baker/Anderson, 9/16/21
Cultural Screening Memo, Wright, 7/29/21
Water Quality Memo, Salas, 9/15/21
Floodplain Review No Impact e-mail, Dinh/Patel, 6/30/21
VIA Questionnaire (Low-Score) e-mail, Godett, 8/19/21
Community Impact Memo, Dove, 9/22/21
Noise Review, Aurasteh e-mail, 8/19/21
Hazardous Waste: ISA Checklist & Memo, Aurasteh/Caraig, 7/6/21

Attachment H

Risk Register

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

RISK REGISTER CERTIFICATION (ACCOUNTABILITY CHECKPOINTS)

Form PM-XX (Rev. 08/10/21)

The risk register is to be approved and signed-off by the District Deputies* listed below for all scalability levels. By signing this form, you are certifying that you have reviewed the risks documented in the register and agree that they have been managed to the extent possible by the PDT, or that PM has checked and signed below indicating "No Risk Register Certification Required".

Project Information **Total Capital Cost: $39,589,000**

EA/Project ID/Route/Postmile: 12-0R311 / LA-91-R20.6/R20.7, ORA-91 R0.0/4.8

Project Nickname: SR-91 Multi-Asset Project

Project Description: In La Palma, Buena Park, Anaheim, and Fullerton, from the Los Angeles County line to Acacia St. Rehab pavement, rehab culverts, upgrade lighting, upgrade TMS elements and make highway worker safety improvements.

Project Manager: Brian Santos

No Risk Register Certification Required – Check Box if project is a Minor or TOTAL (Capital and Support) is less than $1 million. Sign below and submit this form at required submittal intervals (as applicable).

☐ Project Manager Signature: _____ Date: _____

PID [M010]	Print Name	Signature	
Project Manager			Date:
Office Chief, Design			Date:
Deputy District Director, Planning			Date:
Office Chief, Project Management			Date:

PA&ED [M200]	Print Name	Signature	
Project Manager	Brian Santos	Brian Santos	Date: 9/23/2021
Office Chief, Right of Way	Son Nguyen (Acting)	Son Nguyen	Date: 9/27/2021
Office Chief, Design	Lisa Ramsey	Lisa Ramsey	Date: 10/1/2021
Deputy District Director, Environmental	Chris Flynn	Chris Flynn	Date: 9/28/2021
Office Chief, Project Management	Monica Benavides		Date: 10/04/2020

Prior to RTL [M377]	Print Name	Signature	
Project Manager			Date:
Office Chief, Design			Date:
Office Chief, Construction			Date:
Office Chief, Right of Way			Date:
Office Chief, Traffic Operations			Date:
Deputy District Director, Maintenance			Date:
Deputy District Director, Environmental			Date:
Office Chief, Project Management			Date:

Risk Register for 12-0R311, SR-91 Multi-Asset Segment 1, Pavement

Form v3.4 last modified April 2019

Risk Checkpoint:	PA&ED
Date:	9/13/2021
Project Nickname:	SR-91 Multi-Asset Segment 1, Pavement
EA:	12-0R311
Co-Rt, Post Miles:	LA-91-R20.6/R20.7, ORA-91-R0.0/4.8
Project Manager:	BRIAN SANTOS
FY & Program (SHOPP or STIP):	2020 (SHOPP)
Capital Costs:	$39,624k
Support Costs:	$10,570k
Total Costs:	$50,194k
RTL Target:	3/22/2024

Phase	Cost Contingency Range $k			Schedule Contingency Range (Wkg Days)		
	Optimistic	PERT	Pessimistic	Optimistic	PERT	Pessimistic
0-PA&ED	$4	**$12**	$17	10	20	33
1-PS&E	$49	**$74**	$100	27	52	96
2-RW Sup	$1	**$3**	$4	6	12	18
3-Con Sup	$0	**$0**	$0	0	0	0
Support Contingency	$54	**$89**	$121	43	84	147
9-RW Cap	$0	**$0**	$0	0	0	0
4-Con Cap	$2,040	**$3,711**	$5,014	0	0	0
Capital Contingency	$2,040	**$3,711**	$5,014	0	0	0
Total Contingency	$2,094	**$3,800**	$5,135	43	84	147

Risk Identification								Risk Assessment			Risk Response				Quantifying "Red" (High P & I) Level Risks			
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (PxI)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Support (Hrs) Capital Cost ($k)	Schedule (Days)	Calculated Contingency
Active	1	Threat	Right of Way	R/W Acquisition	As a result of updating curb ramps and sidewalks for ADA compliance due to signals modifications for build alternative, the curb ramps improvements may require additional permanent easements and temporary construction easements.	The build alternative will require permanent easements and temporary construction easements.	Coordination with private owner has not started. Delay in coordination with property owner might cause schedule delay.	3-Moderate (31-50%)	1 - Very Low (Insignificant)	3	Avoid	If the risk occurs, investigate design alternatives to avoid additional R/W right-of-way requirements.	Right of Way (E. Washington) Design (A. Oshrin)	8/19/2021	2-RW Sup	O 50 hours ML 100 hours P 200 hours PERT 109 hours	O 30 ML 60 P 90 60 days	$3k 12
								20%	4 - Moderate (1-3 months)	12								
Active	2	Threat	Utilities	Utility Conflicts	Discovery of an unidentified conflict during the PS&E phase can cause schedule delay and a potential cost increase.	There are no utility relocations identified and existing utilities will be protected in place. 12 test holes will be needed for positive utility identification during PS&E.	The utility conflict matrix identifies more conflicts than anticipated by the PID estimate or scope of work.	2-Low (11-30%)	2 - Low (<$750k)	4	Mitigate	Perform test holes as early as practicable in the PS&E phase. If the risk occurs, recommended actions are: 1) Investigate design changes or work with utility companies to perform the necessary relocation 2) Delete scope to avoid relocation	R/W Utility Relocations (Erika Irizarry) Design (A. Oshrin)	8/19/2021				
								100%	16 - Very High (>6 months)	32								
Active	3	Threat	Environmental	Nesting Birds	As a result of the high-level scoping, determination of seasonal restrictions for nesting birds and/or roosting bats is deferred until the next phase. Determination of these restrictions may impact schedule and cost.	Construction work can be scheduled such that restrictions will not be critical.	Unlikely requirements (e.g. "non-standard" type special provisions) for birds and/or bats are identified, driving up costs. Or, project staging identifies bird/bat related work items as critical.	2-Low (11-30%)	2 - Low (<$750k)	4	Accept	Develop a conceptual construction critical path method schedule and construction staging plans in the PA&ED phase. If the risk occurs, increase the construction working days estimate to account for critical activities. If exclusion measure costs are beyond the programmed budget, initiate a project change request to revise.	Biology (C. Baker)	7/1/2021				
								20%	2 - Low (<1 month)	4								
Active	4	Threat	Environmental	Permit Delays	As a result of initial Permits, Licenses, Agreements, and Certifications (PLACs) preparation activities being deferred to the PS&E phase, delivery timelines for necessary permits have not been confirmed. Because of this, a critical delay in the delivery of a permit may delay overall project delivery.	The PEAR identified the following permits: 401, 404, 1602 and Section 7. External threats (e.g. permit agency staffing issues) will not occur.	A permit approval activity is identified to on the project's critical path.	1-Very Low (1-10%)	1 - Very Low (Insignificant)	1	Avoid	Identify potential critical permit deliveries early in the PA&ED phase. If the risk occurs, work with permit agencies to compress schedules to move permits off of the critical path.	Environmental (S. Deshpande)	1/3/2020				
								5%	2 - Low (<1 month)	2								
Active	5	Threat	Environmental	Discovery of Hazardous Waste	As a result of hazardous waste (HW) initial site assessments (ISA)/investigations being omitted from the PID and PA/ED phases, discovery of HW during PS&E may occur, which would lead to a cost increase and/or a delay in schedule. All work items involving excavation have the potential to generate HW.	Aerially Deposited Lead (ADL) and Asbestos Containing Material (ACM) will be studied during PS&E upon final design.	ADL could exist w/in the project limits. ACM may be present in the joint seals of the approach/departure slabs according to preliminary review.	3-Moderate (31-50%)	2 - Low (<$750k)	6	Avoid	HW reviews including ISA, ACM, and ADL investigations are assumed to start early in the PA&ED phase. If the risk occurs, initiate a project change request in the PA&ED phase to revise the budget and schedule to address the increase cost of hazardous waste handling or disposal.	Environmental Engineering (R. Aurasteh)	1/3/2020	0-PA&ED Sup	O 40 hours ML 120 hours P 240 hours PERT 127 hours	O 20 ML 30 P 60 34 days	$7k 14
								40%	2 - Low (<1 month)	6								
Active	7	Threat	Structure Design	Sign Structure Replacement	Detailed analysis and modeling of overhead sign structures during PS&E may trigger a sign structure replacement due to the replacement signs, which would lead to increased support and capital costs to implement.	There are 58 sign panels for replacements. Certain sign panels are to be upsized or moved per MUTCD.	Detailed analysis of overhead sign structures triggers a sign structure replacement.	3-Moderate (31-50%)	16 - Very High (>$2,555k)	48	Avoid	The PDT will request DES analysis as early as possible in PS&E. If the risk occurs, initiate a project change request in the PS&E phase to revise the budget to address the cost increases.	DES Structures	1/3/2020	1-PS&E Sup	O 400 hours ML 500 hours P 600 hours PERT 500 hours	O 20 ML 30 P 45 31 days	$25k 13
								40%	8 - High (3-6 months)	24					4-Con Cap	O $2,000k ML $5,000k P $7,000k PERT $4,834k	O ML P	$1,934k
Active	8	Threat	Geotechnical	Low Water Table and/or Unsuitable Soil Conditions	As a result of the District Preliminary Geotechnical Report (DPGR) being deferred to the PA&ED phase, geotechnical issues such as a low water table and/or unsuitable soil may occur and cannot currently be accurately accounted for. The DPGR may identify issues which may result in increased cost and schedule delays.	Geotechnical review is underway in PA/ED.	A geotechnical issue is found which requires a high-cost design solution to address (e.g. soil amendment, lightweight fill, imported borrow, oversized foundation).	2-Low (11-30%)	2 - Low (<$750k)	4	Mitigate	If the risk occurs, investigate alternatives, or design solutions to mitigate for site conditions. If estimated construction capital costs overrun the project budget, initiate a project change request to address.	Design (A. Oshrin)	1/3/2020				
								20%	1 - Very Low (Insignificant)	2								
Active	10	Threat	Project Management	Coordination With 91 Stakeholders	As a result of the project's scope and schedule, conflicts with other agencies' capital projects, maintenance projects, safety projects, or operational activities on SR91 may occur, which would lead to delay and increased cost to the State.	The PA/ED scope avoids overlap scope of work conflicts with ongoing and in-development projects from external agencies. Construction staging issues still need to be discussed.	Interagency reviews of the project identify potential conflicts.	2-Low (11-30%)	2 - Low (<$750k)	4	Avoid	Agencies are coordinating projects on a regular basis and are exploring opportunities for financial contributions to appropriate projects. If the risk of scope overlap or conflict occurs, investigate the transfer of work to the most appropriate project.	Project Management (B. Santos)	1/3/2020	0-PA&ED Sup	O 80 hours ML 150 hours P 160 hours PERT 140 hours	O 5 ML 10 P 20 11 days	$4k 3
								20%	4 - Moderate (1-3 months)	8								

Risk Identification								Risk Assessment			Risk Response				Quantifying "Red" (High P & I) Level Risks			
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (PxI)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Support (Hrs) Capital Cost ($k)	Schedule (Days)	Calculated Contingency
Active	11	Threat	Design	PCC Slab Replacement	The project's initial scope includes both pre-cast concrete (PCC) (60%) and cast-in-place (40%) slab replacement. As a result of various risks to PCC slab design and construction, the PDT may determine to reduce the scope of PCC usage which may lead to cost increases and schedule delays.	Evaluation of screencheck PR includes most recent assumption regarding pavement.	The PDT determines that PCC slabs do not provide a benefit to the project and decides to change approach.	2-Low (11-30%)	4 - Moderate ($751k - $2,350k)	8	Avoid	If risks occurs, revert to using traditional cast-in-place slab replacement for all slab locations. Determine additional requirements for traffic control and construction staging.	Design (A. Oshrin)	1/3/2020	1-PS&E Sup	O 300 hours ML 400 hours P 500 hours PERT 400 hours	O 10 ML 15 P 20 15 days	$10k 3
								20%	2 - Low (<1 month)	4							
Active	12	Threat	Organizational	Staffing for High Workload & Workload Spikes	As a result of the scope of work and the short delivery window, the resource requirement to deliver all project phases is high. Workload spikes may occur, which may lead to schedule delays.	There is adequate time to execute A&E contracts to meet delivery needs. Resource levelling opportunities are limited.	A resource-loaded critical path method schedule shows a negative lag to any delivery phase.	4-High (51-70%)	2 - Low (<$750k)	8	Avoid	Avoid the risk by working with Functional Managers and Consultant Services Unit to execute necessary task order contracts early. Also, keep available capacity in on-going contracts to allow for the risk of understaffing. If the risk occurs, with A&E contracts in-place, crash activities with resources via task order amendments or use in-house overtime.	Project Management (B. Santos) Consultant Services Unit (J. Hong)	1/3/2020				
								60%	2 - Low (<1 month)	8							
Active	14	Threat	Project Management	Widening at Orangethorpe	As a result of the scope of work of operational improvements at Orangethorpe Avenue, the need for critical traffic and environmental work products and non-standard features, would lead to a delay in the PA&ED phase.	The PA&ED work products for Orangethorpe improvements are identified in the PEAR, but their delivery timelines are not finalized.	Critical path activities related to Orangethorpe result in an unrecoverable negative lag. Or, a non-standard feature cannot be approved.	4-High (51-70%)	2 - Low (<$750k)	8	Mitigate	Determine the project's critical path early in the PA&ED phase. Achieve DSDD approval early in PA&ED. If the risk occurs, initiate a project change request to reduce the scope of work at Orangethorpe and recover the project's schedule.	Project Management (B. Santos)	1/3/2020				
								60%	2 - Low (<1 month)	8							
Active	15	Threat	Design	MASH Implementation	Consideration of MASH implementation upgrades is omitted from the PIR. Scoping studies during the PA&ED phase may identify a large number of required or incidental MASH upgrades, which would lead to increased project cost.	Safety Systems Guidance requires multi-asset projects to upgrade safety systems to current standards. MASH implementation is surveys and labor intensive.	Initial cost estimates for traffic safety system upgrades push the project estimate beyond it's programmed amount.	4-High (51-70%)	2 - Low (<$750k)	8	Mitigate	Scope necessary traffic safety upgrades early in the PA&ED phase. Leverage in-progress or currently planned 91 projects to address needed MASH upgrades before the delivery of this project. If the risk occurs, initiate a project change request to request one or both of the following: 1) Defer MASH upgrades to a future project 2) Increase the construction capital budget	Traffic Engineering (B. Sorensen)	1/3/2020	1-PS&E Sup	O 250 hours ML 450 hours P 700 hours PERT 459 hours	O 15 ML 30 P 90 38 days	$35k 23
								60%	2 - Low (<1 month)	8					4-Con Cap	O $400k ML $500k P $790k PERT $532k	O 0 ML 0 P 0	$320k
Active	16	Threat	Funding	Construction Capital Estimate	As a result of constantly deteriorating existing conditions, additional scope may be identified during the PS&E phase, which would lead to an increase in the estimate over the programmed budget.	The current estimate is at 99% of the programmed budget with a 10% contingency. Cost estimates are only escalated at 3.2% through the midpoint of construction.	Additional scope is identified.	3-Moderate (31-50%)	8 - High ($1,502k - $2,555k)	24	Avoid	If the risk occurs, the PDT is to discuss options for initiating a PCR to utilize the District variance to fund additional work or downscoping the project.	Project Management (B. Santos)	9/28/2021	4-Con Cap	O $1,500k ML $2,500k P $3,000k PERT $2,417k	O ML P	$967k
								40%	8 - High (3-6 months)	24								
Active	17	Threat	Project Management	Mobilization Costs	Based on the bid results of similar past projects, 2% for mobilization is used instead of the standard 10%. If contractors bid higher on the mobilization item, the total bid of the project may be greater than capacity of the project to award, causing a re-adverisement delay.	10% is the standard mobilization rate.	The total bid is higher than the project's capacity to award.	2-Low (11-30%)	8 - High ($1,502k - $2,555k)	16	Avoid	If the risk occurs: reduce scope, revise the engineer's estimate, and re-advertise.	Project Management (B. Santos)	11/18/2021	1-PS&E Sup	O 100 hours ML 150 hours P 200 hours PERT 150 hours	O 40 ML 60 P 100 64 days	$4k 13
								20%	4 - Moderate (1-3 months)	8					4-Con Cap	O $2,000k ML $2,500k P $2,700k PERT $2,450k	O ML P	$490k
Retired	9	Threat	Design	Pedestrian Facility Upgrades	If design refinement of curbs ramps and sidewalks during PS&E phase shows that permanent easements from City of La Palma are required, the new requirements may potentially impact cost and schedule. *****RETIRED 9/28/21: Duplicate of Risk ID #1*****	ADA upgrades are assumed to be achievable within existing State R/W.	Surveys show R/W requirements which were not accounted for in the R/W CCE.	2-Low (11-30%)	4 - Moderate ($751k - $2,350k)	8	Avoid	If the risk occurs, revise the design to delete additional R/W requirements.	Design (A. Oshrin)	1/3/2020				
								20%	2 - Low (<1 month)	4								
Retired	6	Threat	Environmental	Air Quality Report and Climate Change Report	The Traffic Report (TRs) is identified as a predecessor to starting the Air Quality Report and Climate Change Report activities. An unrecoverable delay in TR activities may make environmental deliverables critical, which may lead to a delay to the PA&ED phase.	Support costs to perform these reports are captured in the PID-level estimate. PID-level schedule assumes that the TR report is not critical.	The TR report is determined to be critical.	1-Very Low (1-10%)	1 - Very Low (Insignificant)	1	Avoid	If the risk occurs, work to crash activities with necessary resources to achieve the project schedule. Evaluated during PID, and it appears to be no impact.	Environmental Engineering (R. Aurasteh)	1/3/2020	0-PA&ED Sup	O 40 hours ML 150 hours P 240 hours PERT 147 hours	O 20 ML 60 P 90 59 days	$1k 3
								5%	1 - Very Low (Insignificant)	1								
Retired	13	Opportu nity	Project Management	Construction Manager/ General Contractor - Project Staging	As a result of the project's length and scope, the need for segmenting the project to achieve its design and construction delivery commitments may reduce overall threats to project's delivery schedule and cost. There is a residual risk of redundant activities, additional costs, and potential delay in delivering individual segments.	This risk is considered different from general delivery schedule risks because of the unique threats and opportunities related to design segmentation and construction staging.	The project's delivery schedule is determined to be unachievable without segmentation and staging. Or, potential benefits can be obtained through segmentation.	3-Moderate (31-50%)	4 - Moderate ($751k - $2,350k)	12	Exploit	Potential use of CMGC has been eliminated during PA/ED.	Project Management (B. Santos) Construction (A. Abou-Abdou)	1/3/2020				
								40%	4 - Moderate (1-3 months)	12								

Attachment I

SHOPP Tool Post Performance Table

SHOPP Project - Accomplishment - Performance Measures - Benefits

District: 12 **Tool ID:** 22230 **Project ID:** 122000021 **EA:** 0R311 **Co-Rte-PM:** ORA-091-R0.0/R4.759 (Primary Location)

Res In PID WP: 06/22/18 **Project Manager:** Brian Santos

Save to Excel

☐ Bridge ☑ Pavement ☑ Drainage ☐ Facilities ☑ Safety ☑ Mobility ☑ Roadside ☑ Complete Streets ☐ Sustainability /Climate Change ☐ Advance Mitigation/Mitigation ☐ Major Damage ☐ Green-house Gases ☐ Relinquishment

Performance & Accomplishments (TYP)

	Activity Detail	Performance Objective	Unit of Measurement	Quantity	Assets in Good Cond	Assets in Fair Cond	Assets in Poor Cond	New Asset Added	Comment
1	Mainline existing Concrete CAPM (e.g. slab replace, grinding, thin overlay, spall repair) (201.121)	Pavement Class I	Lane Miles	58.24		58.24			
2	Existing Ramps & Connectors (201.121, .122, .120)	No Performance Objective in the SHSMP	Lane Miles	3.6			3.6		
3	Existing Shoulders (201.121, .122, .120)	No Performance Objective in the SHSMP	SF	1304957.0			1304957.0		
4	Replace/Install Culverts (201.151)	No Performance Objective in the SHSMP	EA	9.0			9.0		
5	Replace Install/Culverts (201.151)	Drainage System Restoration	LF	183.0			183.0		
6	Cure in place line Culvert (201.151)	No Performance Objective in the SHSMP	EA	24.0			24.0		
7	Cure in place line Culvert (201.151)	Drainage System Restoration	LF	997.0			997.0		
8	Lighting (201.010, .015)	No Performance Objective in the SHSMP	EA	40.0			40.0		
9	Overhead Sign Structures Rehabilitation (201.170)	Overhead Sign Structures Rehabilitation	EA	1.0			1.0		
10	Sign Panel replacement	Sign Panel Replacement	EA	33.0			33.0		
11	CCTV (201.315)	Transportation Management Systems	EA	2.0			2.0		
12	Vehicle detection (201.315)	Transportation Management Systems	EA	5.0			5.0		Detection System at Ramp Termini/intersections
13	Vehicle detection (201.315)	Transportation Management Systems	EA	9.0			9.0		Hardware in Controller Cabinets(Revised to 42 per original 12-0R310 PIR)
14	Ramp Meter (201.315)	Transportation Management Systems	EA	4.0			4.0		Non PTZ Cameras at ramps
15	Weigh in motion system (201.321)	Weigh-In-Motion Scales	Stations	1.0			1.0		EB 91 at LA County Line
16	DVHD Reduced (201.310)	Operational Improvements	DVHD	380.0			380.0		DVHDs
17	Other Mobility Activity	No Performance Objective in the SHSMP	-	5.5			5.5		TMS - Fiber Optics/ Conduits
18	Other Mobility Activity	No Performance Objective in the SHSMP	-	32.0			32.0		TMS- switches
19	Other Mobility Activity	No Performance Objective in the SHSMP	-	145.0			145.0		TMS - Ramp metering pull boxes with security covers
20	Worker Safety - Safe Access	Roadside Safety Improvements	Location	62.0			62.0		
21	LED Lighting (201.999)	No Performance Objective in the SHSMP	EA	340.0			340.0		
22	Other Complete Streets Activity	No Performance Objective in the SHSMP	-	36.0			36.0		

Attachment J

2021 Federal Transportation Improvement Program (FTIP) Project Listing

2021 Federal Transportation Improvement Program
Orange County Project Listing
State
(in $000`s)

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	MODELING	AIR BASIN	TOTAL PROJECT COST	RTP ID	SYSTEM
ORA000820	Caltrans	Orange	EXEMPT/ MODELED	YES	SCAB	$124,600	2TK01116	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	FTIP AMENDMENT
PLN40 - PLANNING	From Lambert to Los Angeles County Line Post Miles: Begin 21.2	Orange County Transportation Authority (OCTA) - 21-00

DESCRIPTION

SR-57 TRUCK CLIMBING AUX LANE FROM LAMBERT TO LA CO. LINE (PE ONLY)(PPNO 3847A)

PHASE	FUND SOURCE	PRIOR	20/21	21/22	22/23	23/24	24/25	25/26	FUTURE	TOTAL
PE	ORAM2RC - Orange Co. Measure M2-Regional	$0	$0	$250	$0	$0	$0	$0	$0	$250
PE	STPL-R - STP Local Regional	$0	$0	$4,050	$0	$0	$0	$0	$0	$4,050
TOTAL	TOTAL	$0	$0	$4,300	$0	$0	$0	$0	$0	$4,300

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	MODELING	AIR BASIN	TOTAL PROJECT COST	RTP ID	SYSTEM
ORA001102	Caltrans	Orange	EXEMPT - 93.126		SCAB	$66,653	REG0701	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	FTIP AMENDMENT
SHP02 - ROADSIDE REHABILITATION	Post Miles: Begin 0.10 End 0.10	Orange County Transportation Authority (OCTA) - 21-00

DESCRIPTION

Grouped Projects for Safety Improvements - SHOPP Collision Reduction Program Scope: Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 and Table 3 categories - Railroad/highway crossing,Shoulder imp, traffic control devices,ops assistance Intersection signalization projects Pavement marking, Lighting improvements

PHASE	FUND SOURCE	PRIOR	20/21	21/22	22/23	23/24	24/25	25/26	FUTURE	TOTAL
CON	AGENCY - Agency	$0	$0	$430	$0	$0	$0	$0	$0	$430
CON	SHOPPAC - SHOPP - Collision Reduction (AC)	$0	$16,980	$49,243	$0	$0	$0	$0	$0	$66,223
TOTAL	TOTAL	$0	$16,980	$49,673	$0	$0	$0	$0	$0	$66,653

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	MODELING	AIR BASIN	TOTAL PROJECT COST	RTP ID	SYSTEM
ORA001103	Caltrans	Orange	EXEMPT - 93.126		SCAB	$166,438	REG0701	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	FTIP AMENDMENT
SHP03 - ROADWAY REHABILITATION		Orange County Transportation Authority (OCTA) - 21-00

DESCRIPTION

Grouped Projects for Pavement resurfacing and/or rehabilitation - SHOPP Roadway Preservation Program. Scope: Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 categories - Pavement resurfacing and/or rehabilitation, Emergency relief (23 U.S.C. 125), Widening narrow pavements or reconstructing bridges (no additional travel lanes)

PHASE	FUND SOURCE	PRIOR	20/21	21/22	22/23	23/24	24/25	25/26	FUTURE	TOTAL
CON	AGENCY - Agency	$0	$0	$23,828	$0	$0	$0	$0	$0	$23,828
CON	SHOPPAC - SHOPP - Roadway Preservation	$0	$48,484	$94,126	$0	$0	$0	$0	$0	$142,610
TOTAL	TOTAL	$0	$48,484	$117,954	$0	$0	$0	$0	$0	$166,438

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	MODELING	AIR BASIN	TOTAL PROJECT COST	RTP ID	SYSTEM
ORA001104	Caltrans	Orange	EXEMPT - 93.126	NO	SCAB	$1,260	REG0701	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	FTIP AMENDMENT
SHP02 - ROADSIDE REHABILITATION	Post Miles: Begin 0.10 End 0.11	Orange County Transportation Authority (OCTA) - 21-00

DESCRIPTION

Grouped Projects for Shoulder Improvements - SHOPP Roadside Preservation Program. Scope: Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 categories - Fencing, Safety roadside rest areas

PHASE	FUND SOURCE	PRIOR	20/21	21/22	22/23	23/24	24/25	25/26	FUTURE	TOTAL
CON	SHOPPAC - SHOPP - Roadside Preservation	$0	$1,260	$0	$0	$0	$0	$0	$0	$1,260
TOTAL	TOTAL	$0	$1,260	$0	$0	$0	$0	$0	$0	$1,260

FTIP ID	LEAD AGENCY	COUNTY	CONFORM CATEGORY	MODELING	AIR BASIN	TOTAL PROJECT COST	RTP ID	SYSTEM
ORA001105	Caltrans	Orange	EXEMPT - 93.126		SCAB	$49,979	REG0701	State

PRIMARY PROGRAM CODE	PROJECT LIMITS	FTIP AMENDMENT
SHP01 - OPERATIONS		Orange County Transportation Authority (OCTA) - 21-00

DESCRIPTION

Grouped Projects for Safety Improvements - SHOPP Mobility Program. Scope: Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 and Table 3 categories - Railroad/highway crossing, Safer non-Federal-aid system roads, Shoulder imp, traffic control devices ops assistance.Intersection signalization projects, Pavement marking demo,Lighting