ATTACHMENT 2

ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT

I-10/Riverside Avenue Freight Improvement Project

Resolution _____

(to 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) 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, City of Rialto, and the Implementing Agency, City of Rialto, sometimes collectively referred to as the "Parties".

3. RECITAL

3.1 Whereas at its 6/26/2025 meeting the Commission approved the Trade Corridor Enhancement Program and included in this program of projects the I-10/Riverside Avenue Freight Improvement Project, 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***, the Project Report attached hereto as ***Exhibit B***, the Performance Metrics Form, if applicable, attached hereto as ***Exhibit C***, as the baseline for project monitoring by the Commission.

3.2 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 _____, "Adoption of Program of Projects for the Active Transportation Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the Local Partnership Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated _____
- ☐ Resolution _____, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated _____
- ☑ Resolution G-25-42, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated 6/26/2025

4.3 All signatories agree to adhere to the Commission's 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 City of Rialto agrees to secure funds for any additional costs of the project.

4.6 City of Rialto agrees to report to Caltrans on a quarterly basis; on the progress made toward the implementation of the project, including scope, cost, schedule, and anticipated benefits/performance metric outcomes.

4.7 Caltrans agrees to prepare program progress reports on a 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 City of Rialto 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 City of Rialto agrees to submit a timely Project Performance Analysis as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.10 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 and performance metric outcomes during the course of the project, and retain those records for six years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.11 The 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 six 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 Performance Metrics
See Performance Metrics Form, if applicable, attached as Exhibit C.

5.4 Additional Provisions and Conditions *(Please attach an additional page if additional space is needed.)*

In the event of a cost overrun on a department nominated project, the department retains full discretion to determine whether and to what extent it will cover any additional costs, on a case-by-case basis. Any decision to provide funding for a cost overrun will be based on a thorough evaluation of the project's circumstances, including but not limited to the project's alignment with state priorities, the cause and nature of the overrun, and the project's financial management plan.

Projects must demonstrate responsible financial management, including taking appropriate steps to control costs and prevent further increases. The department reserves the right to deny funding for cost overruns at its sole discretion, particularly when cost escalations are deemed unreasonable or avoidable, or when no concrete plan is in place to mitigate future risks.

The Department will only consider supplemental TCEP funding on one phase per project. For example, if a project has a cost increase in PS&E or RW, the state will not consider funding a cost increase in Construction. The state's contribution to the overrun, shall not exceed 20% of the original TCEP state share contributions at the time of TCEP adoption as identified in the Project Programming Request (PPR) at the time of Baseline agreement.

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report
Exhibit C: Performance Metrics Form *(if applicable)*

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Project Name: I-10/Riverside Avenue Freight Improvement Project

Resolution: _____

(to be completed by CTC)

_____ _____
Date

City of Rialto

Project Applicant

_____ _____
Date

City of Rialto

Implementing Agency

_____ _____
Date

District Director
California Department of Transportation

_____ _____
Date

Director
California Department of Transportation

_____ _____
Date

Executive Director
California Transportation Commission

EXHIBIT A
Project Programming Request Form

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5205-2024-0003 v0.1

Amendment (Existing Project) ☐ YES ☒ NO						Date	08/18/2025 13:53:07
Programs ☐ LPP-C ☐ LPP-F ☐ SCCP ☒ TCEP ☐ STIP ☐ Other							
District	EA	Project ID	PPNO	Nominating Agency			
08			1348	City of Rialto			
County	Route	PM Back	PM Ahead	Co-Nominating Agency			
San Bernardino Cou	10	19.900	20.000	Caltrans District 8			
				MPO	Element		
				SCAG	Local Assistance		
Project Manager/Contact			Phone	Email Address			
Amparo Corona			909-421-7244	acorona@rialtoca.gov			

Project Title

I-10/Riverside Ave Freight Improvement Project

Location (Project Limits), Description (Scope of Work)

In Rialto, on Riverside Avenue, from Slover Avenue to the eastbound Interstate 10 on- and off-ramps. Widen the bridge, which crosses the Union Pacific Railroad (UPRR) West Colton rail yard from five lanes (current) to seven lanes, allowing for the extension of existing dedicated northbound left-turn lanes on the Riverside Avenue bridge across I-10. Fill a sidewalk gap to provide continuous sidewalk on Riverside Avenue from I-10 to Slover Avenue.

Component	Implementing Agency
PA&ED	City of Rialto
PS&E	City of Rialto
Right of Way	City of Rialto
Construction	City of Rialto

Legislative Districts

Assembly:	50,45	Senate:	23	Congressional:	33

Project Milestone		Existing	Proposed
Project Study Report Approved		12/15/2016	
Begin Environmental (PA&ED) Phase			09/09/2014
Circulate Draft Environmental Document	Document Type CE/CE		
Draft Project Report			12/15/2016
End Environmental Phase (PA&ED Milestone)			04/25/2016
Begin Design (PS&E) Phase			05/05/2022
End Design Phase (Ready to List for Advertisement Milestone)			06/01/2026
Begin Right of Way Phase			12/01/2024
End Right of Way Phase (Right of Way Certification Milestone)			12/01/2025
Begin Construction Phase (Contract Award Milestone)			12/01/2026
End Construction Phase (Construction Contract Acceptance Milestone)			12/01/2029
Begin Closeout Phase			01/01/2030
End Closeout Phase (Closeout Report)			01/01/2031

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5205-2024-0003 v0.1

Date 08/18/2025 13:53:07

Purpose and Need

The purpose of the project is to widen the existing Riverside Avenue Bridge over the UPRR to match the Riverside Avenue Bridge over the I-10, as well as to provide a continuous sidewalk on the east side of the roadway.

Need: The existing Riverside Avenue Bridge over the UPRR experiences bottleneck congestion along the bridge segment. The existing left-turn pockets at the I-10 westbound entrance ramp is heavily used by large trucks queuing to access the I-10 freeway. The insufficient capacity of the existing left-turn pockets causes spillover traffic into the northbound through lanes on the bridge segment. Additionally, the existing lane configuration of the Riverside Avenue Bridge over the UPRR does not match the lane configuration of the newly widened Riverside Avenue Bridge over the I-10. Finally, there is an existing sidewalk gap at the southern end of the project area, just north of the intersection of Riverside Avenue and Slover Avenue. This gap prevents pedestrians, especially those originating in the nearby residential community, from safely accessing daily destinations.

NHS Improvements ☐ YES ☒ NO	Roadway Class 3	Reversible Lane Analysis ☒ YES ☐ NO

Inc. Sustainable Communities Strategy Goals ☒ YES ☐ NO Reduce Greenhouse Gas Emissions ☒ YES ☐ NO

Project Outputs

Category	Outputs	Unit	Total
Pavement (lane-miles)	Local road - reconstructed	Miles	0.5
Operational Improvement	Intersection / Signal improvements	EA	2
Operational Improvement	Two-way left turn lanes	EA	1
Operational Improvement	Turn pockets constructed	EA	1
Active Transportation	Sidewalk miles	Miles	0.4

PPR ID
ePPR-5205-2024-0003 v0.1

Date 08/18/2025 13:53:07

Additional Information

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Congestion Reduction	TCEP	Change in Daily Vehicle Hours of Delay	Hours	14,933	15,593	-660
	TCEP	Change in Daily Truck Hours of Delay	Hours	3,285	3,430	-145
Throughput (Freight)	TCEP	Change in Truck Volume	# of Trucks	16,471	16,471	0
	TCEP	Change in Rail Volume	# of Trailers	0	0	0
			# of Containers	0	0	0
Velocity (Freight)	TCEP	Travel Time or Total Cargo Transport Time	Hours	1,199,154	1,252,112	-52,958
Air Quality & GHG (only 'Change' required)	LPPC, SCCP, TCEP, LPPF	Particulate Matter	PM 2.5 Tons	0.15	0.15	0
			PM 10 Tons	0.16	0.16	0
	LPPC, SCCP, TCEP, LPPF	Carbon Dioxide (CO2)	Tons	20,717	21,632	-915
	LPPC, SCCP, TCEP, LPPF	Volatile Organic Compounds (VOC)	Tons	0.25	0.25	0
	LPPC, SCCP, TCEP, LPPF	Sulphur Dioxides (SOx)	Tons	0.16	0.16	0
	LPPC, SCCP, TCEP, LPPF	Carbon Monoxide (CO)	Tons	15.23	15.23	0
	LPPC, SCCP, TCEP, LPPF	Nitrogen Oxides (NOx)	Tons	5.6	5.6	0
Safety	LPPC, SCCP, TCEP, LPPF	Number of Fatalities	Number	0.2	0.2	0
	LPPC, SCCP, TCEP, LPPF	Fatalities per 100 Million VMT	Number	0.49	0.49	0
	LPPC, SCCP, TCEP, LPPF	Number of Serious Injuries	Number	12.43	17.74	-5.31
	LPPC, SCCP, TCEP, LPPF	Number of Serious Injuries per 100 Million VMT	Number	30.31	43.28	-12.97
Economic Development	LPPC, SCCP, TCEP, LPPF	Jobs Created (Only 'Build' Required)	Number	352	0	352
Cost Effectiveness (only 'Change' required)	LPPC, SCCP, TCEP, LPPF	Cost Benefit Ratio	Ratio	1.63	0	1.63

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5205-2024-0003 v0.1

District	County	Route	EA	Project ID	PPNO
08	San Bernardino County	10			1348

Project Title

I-10/Riverside Ave Freight Improvement Project

Existing Total Project Cost ($1,000s)									
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Implementing Agency
E&P (PA&ED)									City of Rialto
PS&E									City of Rialto
R/W SUP (CT)									City of Rialto
CON SUP (CT)									City of Rialto
R/W									City of Rialto
CON									City of Rialto
TOTAL									
Proposed Total Project Cost ($1,000s)									Notes
E&P (PA&ED)									
PS&E	3,413							3,413	
R/W SUP (CT)	1,669							1,669	
CON SUP (CT)									
R/W	3,359							3,359	
CON	7,441			29,800				37,241	
TOTAL	15,882			29,800				45,682	

Fund #1:	Local Funds - Local Transportation Funds (Committed)								Program Code
Existing Funding ($1,000s)									
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									City of Rialto
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)									
PS&E	909							909	
R/W SUP (CT)	1,669							1,669	
CON SUP (CT)									
R/W									
CON									
TOTAL	2,578							2,578	

PPR ID
ePPR-5205-2024-0003 v0.1

Fund #2:	Federal Disc. - Housing & Urban Development (Committed)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON	800							800	
TOTAL	800							800	

Fund #3:	Local Funds - SBCTA Major Arterial Reimbursement (Committed)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									Local Funds - San Bernardino County Transportation (SBCTA) Major Arterial Reimbursement
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON	6,641							6,641	
TOTAL	6,641							6,641	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5205-2024-0003 v0.1

Fund #4:	SB1 TCEP - Trade Corridors Enhancement Account (Uncommitted)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									Regional Share
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON				17,900				17,900	
TOTAL				17,900				17,900	

Fund #5:	SB1 TCEP - Trade Corridors Enhancement Account (Uncommitted)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									State Share
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON				11,900				11,900	
TOTAL				11,900				11,900	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-5205-2024-0003 v0.1

Fund #6:	Local Funds - County Funds (Committed)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	24-25	25-26	26-27	27-28	28-29	29-30+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									San Bernardino County Transportation (SBCTA) Public Share per Nexus
PS&E	2,504							2,504	
R/W SUP (CT)									
CON SUP (CT)									
R/W	3,359							3,359	
CON									
TOTAL	5,863							5,863	

EXHIBIT B
Project Report

Project Study Report Equivalent

RIVERSIDE AVENUE OVERHEAD OVER UPRR BRIDGE REPLACEMENT

December 2016

JACOBS®

Table of Contents

Project Report Equivalent

For

Riverside Avenue/UPRR Overhead Bridge Widen or Replace

APPROVAL RECOMMENDED:

(Name), *PROJECT MANAGER* — *DATE*

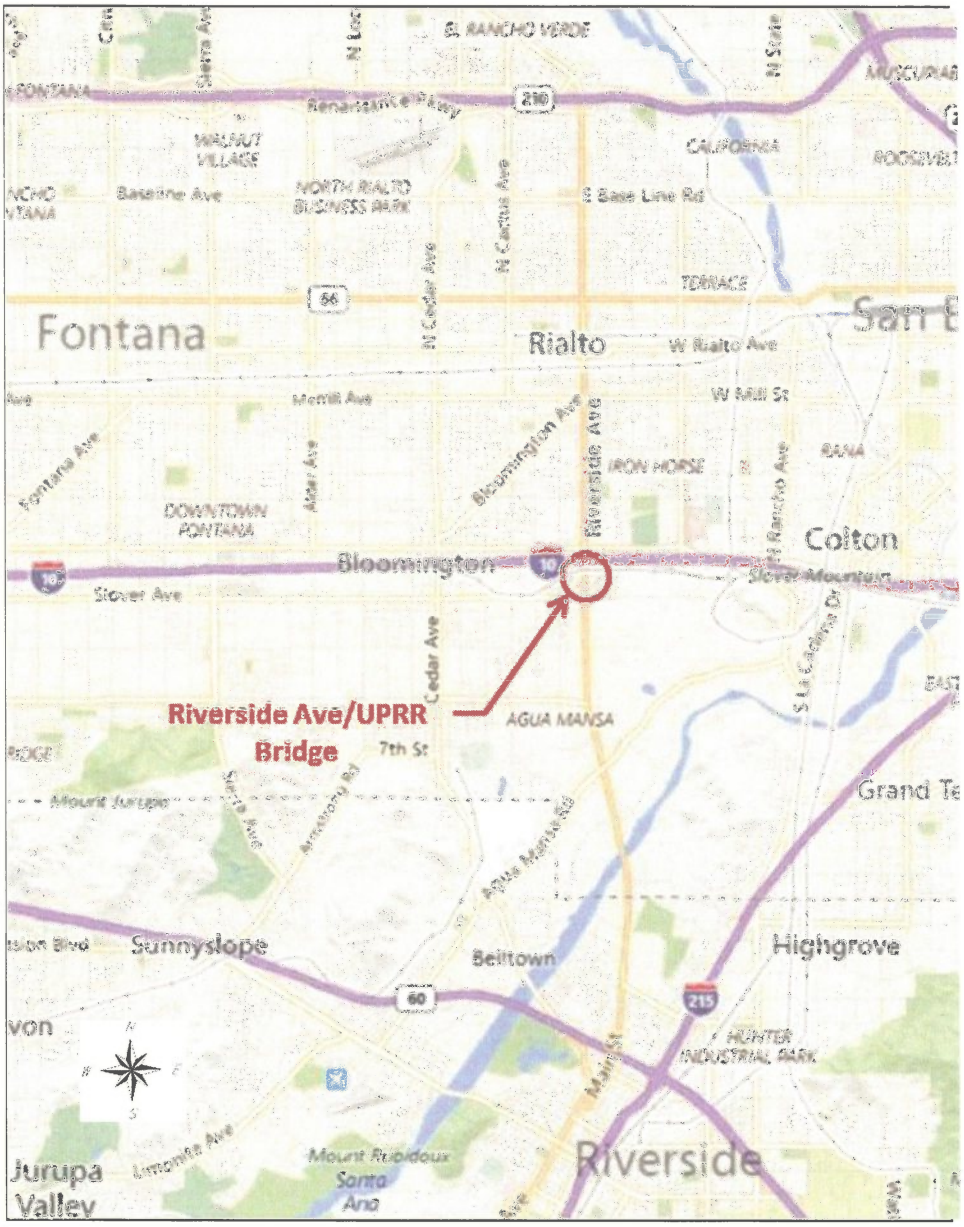
HECTOR GONZALEZ, P.E. — 12/21/16

PROJECT APPROVED:

Robert Eisenbeisz, Public Works *Director/City Engineer* — *DATE*

12/15/16

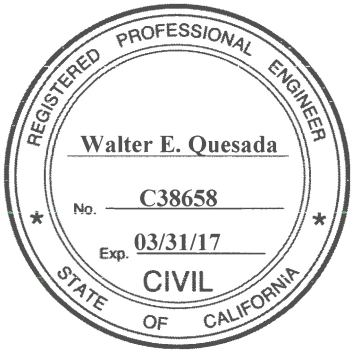
Vicinity Map



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.

12/21/2016

REGISTERED CIVIL ENGINEER *DATE*



1. INTRODUCTION

Project Description:

The City of Rialto (City) proposes to widen or replace the Riverside Avenue Bridge (54C0062) over the Union Pacific Railroad (UPRR) to bring the existing bridge to current standards and improve traffic safety by allowing a better lane configuration with the newly constructed bridge. This project is being prepared under Federal Aid Project No. HPBRLS 5205 (016), City of Rialto Project No. 140813.

The project segment of Riverside Avenue is classified in the City's General Plan Circulation Element as a "Modified Major Arterial II" with 120 feet (ft.) of right-of-way (ROW) for six travel lanes and a median. Riverside Avenue is a regionally significant roadway because it connects to Interstate 210 (I-210) and Interstate 10 (I-10) in the City of Rialto. North of I-210, Riverside Avenue connects to La Sierra Avenue and provides access to Interstate I5 (I-15), South of I-10, Riverside Avenue becomes Main Street and provides access to State Route 60 (SR-60) and State Route 91 (SR-91) in the City of Riverside. The project area on Riverside Avenue extends from the Interstate 10 (I-10) eastbound ramps to Slover Avenue.

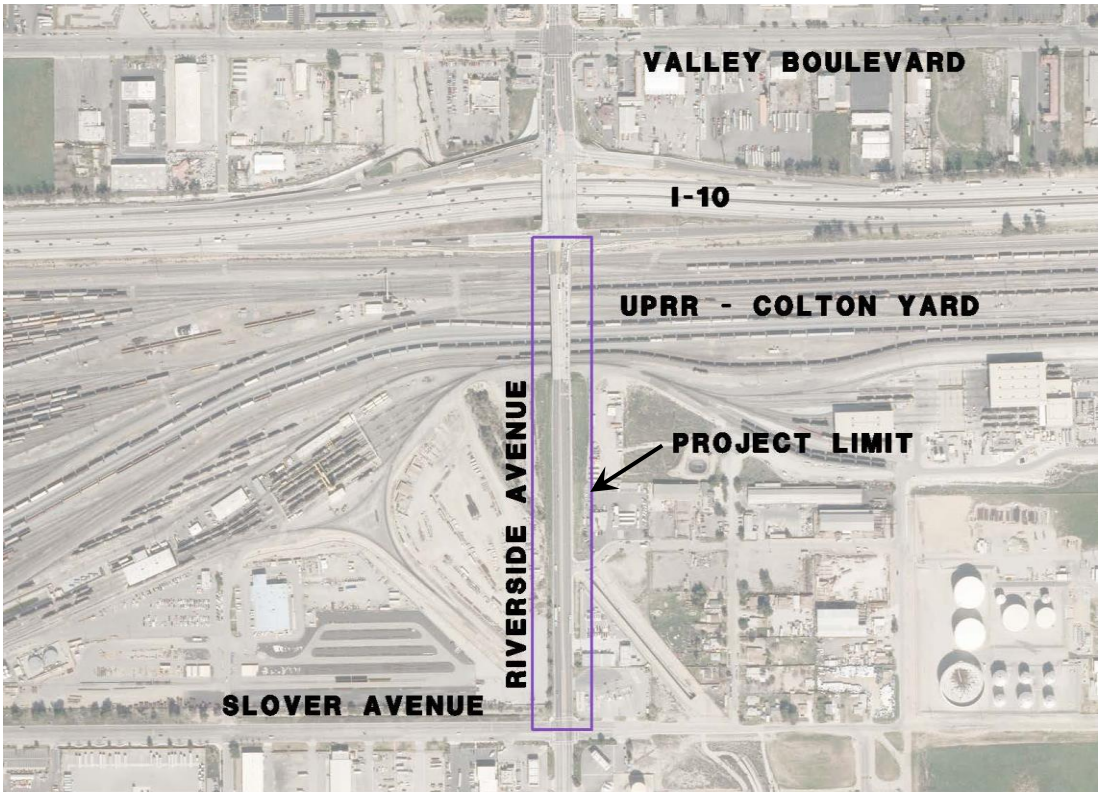


Figure 1, Project Limit

The existing Riverside Avenue Bridge over the UPRR has three through lanes in the northbound direction and two through lanes in the southbound direction. It has a posted speed of 50 MPH at the north and the south of the project limits. The bridge

measures approximately 495 ft. long with a varying width of 85'-2" to 71'. It was initially built in 1957 as a single span bridge over the Southern Pacific Railroad's mainline track. In 1971, the bridge was lengthened by five more spans to accommodate the expansion of the Colton Yard. The Colton Yard is owned by Union Pacific Railroad after the acquisition in 1988.

This bridge is separated from the Riverside Avenue I-10 Bridge by the I-10 eastbound ramps. The I-10 eastbound ramps, westbound ramps, their corresponding intersections with Riverside Avenue, and the Riverside Avenue Bridge over I-10 were widened in 2011 by the California Department of Transportation (Caltrans) and the City of Rialto as part of an interchange improvement project at 1-10/ Riverside Avenue. The widenned interchange currently narrows down to match the existing bridge over UPRR as it has a varying median.

Three alternatives, including a No Build Alternative, have been considered. The No Build Alternative would allow the Riverside Avenue Bridge over the UPRR tracks to remain as is today. Alternative 1 proposes to widen the existing bridge on both sides to allow a better lane configuration with the newly constructed interchange and provide structural enhancement. Alternative 2 proposes to replace the existing bridge with a new structure that meets current design standards in addition to improving the existing lane configuration.

Alternative 1 proposes to widen the current bridge on both sides allowing a lane configuration at the UPRR Bridge that matches the adjacent intersections. The proposed bridge widening would include five lanes in the northbound direction, two lanes that feed into the two left-turn lanes for the I-10 westbound on-ramp; two through lanes; and one shared through/right-turn lane. The added two lanes would extend the existing left-turn pockets from the Riverside Bridge over I-10 southerly onto the Riverside Avenue UPRR Bridge. This approach would provide a safer condition by eliminating short distance traffic weaving. In the southbound direction, the proposed bridge widening would maintain the two through lanes to Slover Avenue. The bridge widening would also include outside shoulders on each side of Riverside Avenue extending south from the railroad bridge to Slover Avenue. A sidewalk and a Class II bike lane would be provided on each side of Riverside Avenue within the project limits. The existing railroad bridge will also be retrofitted based on the findings of the structure integrity investigation.

Alternative 2 proposes a full replacement of the Riverside Avenue Bridge over UPRR. The new bridge would follow the same lane configuration described in Alternative 1. The profile grade would also be adjusted to improve the existing sub-standard 0.1% slope near the EB On/Off Ramps.

Both proposed build alternatives would require sliver acquisitions from four industrial parcels located between Cameron Way and Slover Avenue. This additional right of way would be needed to accommodate the widened roadway. A retaining wall would also be used at the toe of slope to minimize impacts to adjacent parcels. A paved

parking lot on Valley Boulevard, northeast of the project site has been identified as a construction staging area.

The initial estimated cost of this project is $23.64 million for Alt 1 and $40.5 Million for Alt 2. The estimated project cost includes design, construction, right of way, and support. The Project completed preliminary engineering and obtained environmental approval. The Project Design – Plans, Specifications and Estimates (PS&E) Phase II of the project will be completed upon approval of this report.

The project's preliminary engineering and environmental documents was done by using SAFETEA-LU DEMO funds and National Highway Performance Program (NHPP).

2. RECOMMENDATION

It is recommended that since the environmental document has been completed and approved that authorization be granted to proceed to the PS&E. The project anticipates having a cooperative coordination on High Cost Project Agreement between the City and Caltrans for the PS&E phase of this project.

3. BACKGROUND

It has been the City of Rialto's long term desire to address traffic safety by improving the lane configuration at the intersections of the proposed project limits as well as to address the structural integrity of the bridge.

The proposed improvements in this report were initiated from a report done by Caltrans in 2011 stating that Riverside Avenue Bridge over Union Pacific Railroad is "Structurally Deficient". Furthermore, there has been a City concern, based on previous studies, of the presence of Alkali-Silica Reaction (ASR) in the bridge and the life span limitation that this might bring.

This segment of Riverside Avenue has very limited access from adjacent properties. Cameron Way is the only collector road that intersects between Slover Avenue and the I-10 EB ramps. Access to Cameron Way is limited to a right-in and right-out. There are also two driveways south of Cameron Way, one serves an auto body shop and the other serves a gas station. These driveways are also limited to right turn movements only.

In the year 2014, Riverside Avenue had an Average Daily Traffic (ADT) count of 29,601 vehicles traveling daily on the bridge, consisting of a northbound volume of 14,301 and a southbound volume of 15,300.

Vehicle classification counts revealed that during peak hours (AM and PM); passenger vehicles constitute 90% of vehicular traffic using this segment of the road

and bridge. The key exception is in the morning when northbound truck traffic is heavy and constitutes over 20% of the overall traffic flow. Over a 24-hour long period, cars account for at least 60% of traffic flow, 2-axle trucks account for approximately 22% of traffic flow, and 3-axle and 4-axle-and-up trucks account for the remainder traffic flow at approximately 15% - 18%. As the number shows, truck traffic is heavy on Riverside Avenue.

The traffic study indicated that the existing intersections at I-10 on-off ramps and Slover Avenue have a LOS of "C/C" in the morning and a LOS of "C/D" in the evening, respectively. In 2040, with the projected increase of traffic in the area and with no improvements done, the LOS at the intersections will be raised to "E/F" in the AM and "F/F" in the PM. Even with the proposed improvements the LOS in the AM will be "D/E" and "E/F" in the PM.

4. PURPOSE AND NEED

Purpose:
The purpose of the project is to reconstruct the existing Riverside Avenue Bridge over the UPRR to match the Riverside Avenue Bridge over the I-10.

Need:
The existing Riverside Avenue Bridge over the UPRR experiences bottleneck congestion along the bridge segment. The existing left-turn pockets at the I-10 westbound entrance ramp are heavily used by large trucks queuing to access the I-10 freeway. The insufficient capacity of the existing left-turn pockets causes spillover traffic into the northbound through lanes on the bridge segment. Additionally, the existing lane configuration of the Riverside Avenue Bridge over the UPRR does not match the lane configuration of the newly widened Riverside Avenue Bridge over the I-10.

Problem, Deficiencies, Justification
The existing lane configuration is creating unsafe traffic conditions, widening the bridge and extending the left turn lanes will improve weaving conditions and reduce bottleneck and vehicular collisions.

The aging structure has been identified by Caltrans to be structurally deficient. There are also signs of ASR detected in the bridge piers, therefore; reducing its life span. The existing structure lacks sufficient width to meet the newly rebuilt interchange over I-10. The existing bridge experiences bottleneck congestion along the bridge segment. The existing left-tum pockets at the I-10 westbound entrance ramp are heavily used by large trucks queuing to access the I-10 freeway aggravating congestion. The insufficient capacity of the existing left-tum pockets causes spillover traffic into the northbound through lanes on the bridge segment creating unsafe conditions.

Widening and retrofitting the existing bridge will improve overall safety for both vehicular and truck traffic. Furthermore; replacing the bridge with an up-to-date standard and seismic design safety would extend its serviceability from an already limited life span.

Caltrans inspected the existing Riverside Avenue Bridge over the Union UPRR on November 3, 2011. Caltrans' inspection determined the bridge to be "Structurally Deficient" with a sufficiency rating of 79.0. It is important to note that the term "Structurally Deficient" neither means that the structure itself is at imminent risk of collapse nor represents a risk to public health and safety.

The Alkali-Silica Reaction (ASR) study that was previously conducted showed that all the samples tested detected the presence of ASR. The ASR gel was present in the hardened paste and coated reacted particles, but the majority of cracks in all samples were empty. There were no other signs in the sample to assess the significance of ASR damage to the bridge integrity.

Chloride Content Reaction - The threshold chloride content to indicate corrosion is between 1.0 lb. /yd3 and 1.5 lb. /yd3 (Mehta & Monteiro). Per laboratory testing, chloride content is between 0.24 lb. /yd3 and 0.78 lb. /yd3 in the various samples. Based on these test results and field observations, there is little indication of chloride corrosion of the bridge rebar.

Compressive Strength Test – Compressive strength taken from both the 1971 and 1959 structures were tested. Concrete strength of 1971 structure samples varies between 4,450 to 5,400 psi. This is above the as-built minimum specified design strength of f 'c = 3,250 psi. Concrete strength of the 1959 sample is 6,890 psi, well above the as-built minimum specified design strength of f 'c = 1,200 psi.

Regional and System Planning

The proposed project is not included in the following systems:

- Interstate System
- National Highway System
- Freeway and Expressway System
- Scenic Highway System
- Interregional Road System
- Extralegal Load Network

The proposed project is located south of the I-10 freeway, separated from the Riverside Avenue I-10 Bridge and immediately south of the I-10 eastbound ramps. Riverside Avenue serves two major City redevelopment project areas, Downtown (Central Business District) and Gateway, according to the City's General Plan. The Gateway redevelopment (adopted in 1985) is the closest and will be impacted from the project site.

According to the City's General Plan, the Gateway Project Area spans the area

around I-10. The focus of this project area is to reduce visual blight at the southern entrance to the City. Additional efforts include planning for efficient use of underutilized properties and relieving traffic congestion. This area is well suited for retail development opportunities given its freeway frontage and proximity and available land.

The circulation element from the General Plan classified this segment of Riverside Avenue as a Modified Major Arterial II. Modified Major Arterial II has three lanes of travel in each direction and medians. The extra travel lanes are meant to accommodate the heavy traffic flow on Riverside Avenue near the I-10 freeway intersection. Class II bike lanes were planned on the Riverside Avenue as part of the circulation element for City's bike master plan. Public transits were not planned along this segment of Riverside Avenue according to the General Plan.

Traffic

The proposed project will improve traffic safety by widening the bridge to seven (7) lanes including shoulders and sidewalks on both sides to match the dimensions of the adjacent Caltrans bridge. The Project will improve traffic operations at the bridge and better handle higher volumes of truck traffic. The proposed project will maintain a LOS of "E" for the Slover Avenue intersections based on a 2% growth rate at the opening year 2020. It is recommended that the City program improvements at the intersection of Riverside Avenue at Slover Avenue after Year 2020 before the level of service reaches "F" and no longer meets the City's minimum requirements.

The current and forecasted traffic conditions for the proposed project within the project area are summarized in this section.

Current Traffic

A traffic operations analysis report was completed for this project in 2015. The analysis covers the current year (2014), the opening year (2020) and future year (2040) and is consistent with the standard minimum 20-year design horizon.

Table 4.1 summarizes the existing LOS during the AM and the PM peak hours for the studied intersections. During the AM peak hour, the LOS at both the intersection of Riverside Avenue at Slover Avenue and the intersection of Riverside Avenue at I-10 Eastbound ramps are "C". During the PM peak hour, the LOS at the intersection of Riverside Avenue at Slover Avenue is "D" and at the intersection of Riverside Avenue at I-10 Eastbound ramps is "C".

Table 4.1 Existing (2014) Level of Service

Intersection	AM Peak			PM Peak		
	LOS	Delay	V/C	LOS	Delay	V/C
1. Cedar Avenue / I-10 Westbound Ramps[1]	C	32.8	0.90	D	39.5	0.77
2. Cedar Avenue / I-10 Eastbound Ramps	D	37.5	0.88	D	46.4	0.98
3. Cedar Ave / Slover Avenue	D	43.8	0.71	D	44.7	0.73
4. Riverside Avenue / I-10 Westbound Ramps	C	26.0	0.72	C	29.7	0.61
5. Riverside Avenue / I-10 Eastbound Ramps	C	21.8	0.69	C	27.3	0.87
6. Riverside Avenue / Slover Avenue	C	25.0	0.85	D	46.4	1.00

Sources: FPL and Associates, Inc. Traffic Study, June 1, 2015

1. Intersections 1-4 are nearby intersections outside of our project area for traffic level comparison.

The traffic growth rate in the study area was determined by the joint meeting between Caltrans District 8 and the City of Rialto at 2% annually for each future year.

Forecasted Traffic

Construction is planned to begin in FY 2018 and finish in FY 2020, the latter year being when the project is complete and open to the public for use. Based on the 2% growth rate, traffic volumes were forecasted for Opening Year 2020. The opening year (2020) Build Alternatives will result in the elimination of the existing critical bottlenecks and unsafe weaving conditions.

Table 4.2 and Table 4.3 summarize Opening Year 2020 LOS during the AM and the PM peak hours for the six studied intersections without and with the proposed project being implemented.

The LOS for the No Build scenario, shown in Table 4.2, at the intersection of Riverside Avenue at Slover Avenue is “C” during the AM peak hour and “E” during the PM peak hour. The LOS for the intersection of Riverside Avenue at I-10 Eastbound ramps is “C” and “D” during AM and PM peak hours, respectively.

Table 4.2 Opening Year (2020) Level of Service - No Build

Intersection	AM Peak			PM Peak		
	LOS	Delay	V/C	LOS	Delay	V/C
1. Cedar Avenue / I-10 Westbound Ramps[1]	D	46.2	1.04	D	44.1	0.87
2. Cedar Avenue / I-10 Eastbound Ramps	D	46.6	0.99	E	66.8	1.11
3. Cedar Ave / Slover Avenue	D	47.5	0.78	D	46.1	0.82
4. Riverside Avenue / I-10 Westbound Ramps	C	29.6	0.85	C	31.9	0.69
5. Riverside Avenue / I-10 Eastbound Ramps	C	24.4	0.78	D	35.4	0.99
6. Riverside Avenue / Slover Avenue	C	30.9	0.96	E	71.7	1.12

Sources: FPL and Associates, Inc. Traffic Study, June 1, 2015

1. Intersections 1-4 are nearby intersections outside of our project area for traffic level comparison.

The LOS for the Build scenario, shown in Table 4.3, at the intersection of Riverside Avenue at Slover Avenue is "C" during the AM peak hour and "E" during the PM peak hour. The LOS for the intersection of Riverside Avenue at I-10 Eastbound ramps is "C" for both AM and PM peak hours.

It should be noted that traffic turning from Riverside Avenue to the I-10 Eastbound on-ramp is significant. In the morning, there are 1,074 PCEs turning to the on-ramp (510 right turns and 564 left turns). In the evening, there are 1,251 PCEs turning to the on-ramp (739 right turns and 512 left turns).

Table 4.3 Opening Year (2020) Level of Service - Build

Intersection	AM Peak			PM Peak		
	LOS	Delay	V/C	LOS	Delay	V/C
1. Cedar Avenue / I-10 Westbound Ramps[1]	D	46.2	1.04	D	44.1	0.87
2. Cedar Avenue / I-10 Eastbound Ramps	D	46.6	0.99	E	66.6	1.11
3. Cedar Ave / Slover Avenue	D	45.8	0.78	D	42.7	0.82
4. Riverside Avenue / I-10 Westbound Ramps	C	30.0	0.85	C	29.0	0.69
5. Riverside Avenue / I-10 Eastbound Ramps	C	22.2	0.69	C	29.8	0.79
6. Riverside Avenue / Slover Avenue	C	25.9	0.85	E	69.8	1.11

Sources: FPL and Associates, Inc. Traffic Study, June 1, 2015

1. Intersections 1-4 are nearby intersections outside of our project area for traffic level comparison.

Under the future year or horizon year (2040) Tables 4.4 and Table 4.5 summarize LOS during the AM and the PM peak hours for the six study intersections without and with the proposed project being implemented.

The LOS for the No Build scenario, as shown in Table 4.4, at the intersection of Riverside Avenue at Slover Avenue is "F" during the AM peak hour and "F" during the PM peak hour. The LOS for the intersection of Riverside Avenue at I-10 Eastbound ramps is "E" and "F" during AM and PM peak hours, respectively.

Table 4.4 Horizon Year (2040) Level of Service – No Build

Intersection	AM Peak			PM Peak		
	LOS	Delay	V/C	LOS	Delay	V/C
1. Cedar Avenue / I-10 Westbound Ramps[1]	F	148.1	1.59	F	118.4	1.25
2. Cedar Avenue / I-10 Eastbound Ramps	F	128.4	1.40	F	180.8	1.56
3. Cedar Ave / Slover Avenue	F	105.8	1.07	F	98.6	1.17
4. Riverside Avenue / I-10 Westbound Ramps	F	95.5	1.34	D	41.3	0.98
5. Riverside Avenue / I-10 Eastbound Ramps	E	66.6	1.11	F	162.6	1.39
6. Riverside Avenue / Slover Avenue	F	131.6	1.35	F	233.5	1.59

Sources: FPL and Associates, Inc. Traffic Study, June 1, 2015

1. Intersections 1-4 are nearby intersections outside of our project area for traffic level comparison.

The LOS for the Build scenario, as shown in Table 4.5, at the intersection of

Riverside Avenue at Slover Avenue is "E" during the AM peak hour and "F" during the PM peak hour. The LOS for the intersection of Riverside Avenue at I-10 Eastbound ramps is "D" and "E" during AM and PM peak hours, respectively. The proposed project will improve the LOS for the intersection of Riverside Avenue at I-10 Eastbound ramps during the PM peak hour from "F" to "E."

With the LOS for the intersection of Slover Avenue at Riverside Avenue still being "F," the City should plan for additional improvements to at least meet the minimum LOS requirement of "E."

Table 4.5 Horizon Year (2040) Level of Service - Build

Intersection	AM Peak			PM Peak		
	LOS	Delay	V/C	LOS	Delay	V/C
1. Cedar Avenue / I-10 Westbound Ramps[1]	F	148.1	1.59	F	118.3	1.25
2. Cedar Avenue / I-10 Eastbound Ramps	F	128.3	1.40	F	180.8	1.56
3. Cedar Ave / Slover Avenue	F	105.6	1.07	F	97.8	1.17
4. Riverside Avenue / I-10 Westbound Ramps	F	95.7	1.34	D	39.7	0.98
5. Riverside Avenue / I-10 Eastbound Ramps	D	38.2	0.92	E	71.4	1.11
6. Riverside Avenue / Slover Avenue	E	72.0	1.19	F	195.7	1.57

Sources: FPL and Associates, Inc. Traffic Study, June 1, 2015

1. Intersections 1-4 are nearby intersections outside of our project area for traffic level comparison.

Collision Analysis

Data for traffic accidents along Riverside Avenue between Valley Boulevard and Slover Avenue for a 3-year period between May 1, 2011 and May 1, 2014 were obtained from the City. The traffic accident data were categorized by "locations" and are summarized in Attachment G, Accident Occurrences on Riverside Ave.

The figure is comprised of eight "tables" for each of the locations identified in the traffic accident report provided by the City. The tables list the number of occurrences for each type of accident in a particular location. The highest number of accidents, totaling 107, took place outside of the project area along Riverside Avenue between the I-10 Westbound on- and off-ramps and Valley Boulevard. Meanwhile, there were 63 total accidents at the intersection of Riverside Avenue at the I-10 Eastbound on- and off-ramps, as well as 64 total accidents at the intersection of Riverside Avenue at Slover Avenue. The majority of traffic accidents were non-injury accidents.

5. ALTERNATIVES

This Project Report Equivalent is being prepared for the proposed project in support of the approved Environmental Document. Two Build alternatives are being analyzed for this project: Alternative 1 - Bridge Widening and Alternative 2 – Bridge Replacement. The two build alternatives have the same layout configuration and are referred in this document as the (proposed project).

No Build Alternative
The No Build alternative would not construct any bridge improvements and would not provide any traffic safety improvements at the Riverside Avenue Bridge over the UPRR. The No Build alternative would not address future traffic demands and would allow the Riverside Avenue Bridge over the UPRR tracks to remain as is today.

Build Alternatives
The proposed project would widen or replace the current five-lane bridge over the UPRR to a seven-lane bridge in order to match the configuration of the Riverside Avenue Bridge over I-10. However, the added two lanes would be utilized for extending the existing left-turn pockets from the Riverside Bridge over I-10 southerly onto the Riverside Avenue Bridge over the UPRR, and thereby would not involve additional through lanes nor increase capacity. The proposed bridge widening would include five lanes in the northbound direction: two lanes that feed into the two left-turn lanes for the I-10 westbound on-ramp; two through lanes; and one shared through/right-turn lane. In the southbound direction, the proposed bridge widening would maintain the two through lanes. Construction would also include outside shoulders on each side of Riverside Avenue extending south from the railroad bridge to Slover Avenue. Sidewalks and a Class II bike lane would be provided on each side of Riverside Avenue, within the project limits.

In either alternative, it would require sliver acquisitions from four industrial parcels in order to accommodate the widened of the roadway between Cameron Way and Slover Avenue. Retaining wall will also be used at the toe of slope minimize impact to adjacent parcels.

The conceptual design for the proposed project is shown on Attachment A, B, and C, Typical Section, Plan and Profile.

The estimated cost of this project is $23.6 million for Alternative 1 and $40.5 million for Alternative 2. The estimated project cost includes design, construction, right of way, and permitting.

5A. Alternative 1 – Bridge Widening

Typical Section
This alternative widens the existing bridge on the outside with a constant width of 23’ for the northbound and a range of 18’ to 23’ for the southbound. The new bridge width will include a new sidewalk and bike lane for the southbound and a new bike lane for the northbound. The roadway width is then reduced from 105’to 88’ at Slover Ave intersection. The Right-of-Way width for this segment of Riverside Avenue varies from 267’ to 100’. The roadway cross slope and fill slope will match the existing at 1.5% and 1:1.5 respectively. Any toe of the slope that extends beyond the existing right-of-way will be avoided by using a retaining wall with a 10’ minimum setback from the right-of-way line to allow for easier maintenance.

The roadway section south of Cameron Way will be at a maximum width of 100' from back of sidewalk to back of sidewalk. This width is the same as the existing right-of-way and thus slivers of parcels will be needed for temporary and permanent easements. Driveways and landscaping along the east side of Riverside Avenue will be impacted and will be reconstructed. The right-of-way over the UPRR tracks will be sufficient to accommodate for the bridge widening and no additional parcels will be needed with the exception of UPRR clearance.

At the Rialto Channel, the widened fill slope will be either further retained with a wall or by lengthening the existing box culvert. The improvements at the channel will require a further hydraulic study to determine the appropriate type of improvement.

Horizontal Alignment
No horizontal change from existing alignment.

Vertical Alignment
No vertical change from existing alignment.

Walls
Any toe of slope exceeding the existing right-of-way will be avoided by using a retaining wall with a 10' minimum setback from the existing right-of-way line to allow for easy maintenance.

Structures
The proposed bridge alternative consists of a six-span structure which is a combination of cast-in-place posttensioned concrete box girder and precast concrete girder similar to the existing bridge. Spans 1 through 5 are cast-in-place concrete box girder and span 6 consists of Caltrans precast concrete I-Girder in order to match the existing type construction with depth of 4'-6" and 4'-4", respectively. The construction of the widened bridges will meet all minimum clearance set by the railroad.

The proposed abutment 1 will be similarly constructed as the existing being supported by 24" steel piles. A new abutment 7 for the widening segments will be constructed on 24" CIDH piles in the same location of the existing abutment wing wall to avoid any interference to the existing abutment and MSE walls. This approach will provide an even alignment for the existing and new abutments. Intermediate piers supporting the bridge superstructure is assumed to be supported by single 6-foot diameter columns resting on 24"-diameter steel pipe pile foundations.

Right-of-Way
The project would require sliver acquisitions from four industrial parcels in order to accommodate the widened bridge and transition to the roadway between the bridge and Slover Avenue. These four parcels (013231201, 013231202, 013231209, and 025424113) are located immediately north of Slover Avenue and are shown on

Attachment E. A paved parking lot on Valley Boulevard, northeast of the project site has been identified as a construction staging area.

Traffic Handling
Traffic will remain open on Riverside Avenue with reduced lane width to accommodate the construction. Impacts to roadway traffic will be minor. Rail traffic would require coordination with UPRR for staging and determination of track closure windows.

5B. Alternative 2 – Bridge Replacement

Typical Section
This alternative replaces the existing bridge with a new structure to improve structural deficiencies. The new bridge width will include a new sidewalk and a bike lane on the southbound direction and a new bike lane on the northbound direction. The roadway width is then reduced from 99'to 88' at Slover Ave intersection. The right-of-way width for this segment of Riverside Avenue varies from 267' to 100'. The roadway cross slope and fill slope will match existing at 1.5% and 1:1.5 respectively. Any toe of the slope that extends beyond the existing right-of-way will be avoided using a retaining wall with a 10' minimum setback from the existing right-of-way line to allow for easier maintenance.

The roadway section south of Cameron Way will have a maximum width of 100' from back of sidewalk to back of sidewalk. This width is the same as the existing right-of-way and thus slivers of parcels will be acquired for temporary and permanent easement. Driveways and landscaping along the east side of Riverside Avenue will be impacted and will be reconstructed. The right-of-way over the UPRR tracks will be sufficient for the bridge widening and no additional parcels are needed with the exception of UPRR clearance.

At the Rialto Channel, widened fill slope will be either further retained with a wall or by lengthening the existing box culvert. The channel will require further hydraulic studies to assess the type of improvement that will be required.

Horizontal Alignment
No horizontal change from existing alignment will be necessary.

Vertical Alignment
The vertical alignment will change slightly over the bridge to improve the slope from the existing 0.1% to 0.5%. The vertical sight distance will maintain a minimum of 40 MPH as posted on Riverside Avenue.

Walls
Any toe of the slope extending beyond the existing right-of-way will be retained by using retaining wall with a 10' minimum setback from the existing right-of-way line to allow for easier maintenance.

Structures
The bridge structure for this alternative will be replaced with a new structure that is 36.5' shorter than the previous and with only 5 spans instead of 6. The superstructure will be constructed with precast prestressed concrete girders. This type of construction does not require falsework hence minimizing interruption to the railroad traffic; it would also shorten the construction time which is ideal where a bridge structure over crosses railroad tracks. The depth of the superstructure is anticipated to be 5'-11".

New abutment 1 will be supported by three rows of steel piles whereas abutment 6 will be constructed on 4-foot diameter drilled shaft due to limitation on the existing abutment wall. Each interior support will consist of three 7-foot diameter columns that are founded on sixteen 24-inch diameter steel pipe piles. The construction of the widened bridges will meet all minimum clearance set by the railroad. However this construction of Abutment 6 in front of the existing abutment wall will reduce the existing minimum horizontal clearance of 25 feet to the centerline of the nearby track, therefore a crash wall is proposed to be constructed in front of the drilled shafts to provide a minimum horizontal clearance of 15 feet to the centerline of the track.

Right-of-Way
The project would require sliver acquisitions from four industrial parcels in order to accommodate the widened bridge and transition to the roadway between the bridge and Slover Avenue. These four parcels (013231201, 013231202, 013231209, and 025424113) are located between Slover Avenue and Cameron Way and are shown on Attachment E. A paved parking lot on Valley Boulevard, northeast of the project site has been identified as a construction staging area.

Traffic Handling
This proposed alternative would allow for traffic along Riverside Avenue to remain open during construction by reducing lane widths and employing a two stage bridge construction replacement method. If the City opts for a full closure method to reduce construction duration a single stage bridge construction method could be used, under this approach traffic would be rerouted through either Cedar Avenue, Pepper Avenue, or Rancho Avenue via Aqua Mansa Road. These options would be determined carefully as to minimize impacts to local traffic and business. Rail traffic would require coordination with UPRR to establish construction windows for track closures.

5C. Rejected Alternatives
Our study did not identify any rejected alternatives.

6. SYSTEM PLANNING & COORDINATION

The proposed project is not included in the following systems:

- Interstate System

- National Highway System
- Freeway and Expressway System
- Scenic Highway System
- Interregional Road System
- Extralegal Load Network

The proposed project is located south of the I-10 freeway, separated from the Riverside Avenue I-10 Bridge and immediately south of the I-10 eastbound ramps.

Riverside Avenue serves two major city redevelopment project areas, Downtown (Central Business District) and Gateway, according city's General Plan. The Gateway redevelopment is the closest and will be impacted from the project site.

7. RIGHT OF WAY

The project would require sliver acquisitions, as discussed in previous sections, from four industrial parcels in order to accommodate the widening of the roadway between Cameron Way and Slover Avenue.
The project will also require construction and permanent easements from UPRR.
See Attachment F.

8. ENVIRONMENTAL DETERMINATION/DOCUMENTS

Section 21080.13 of the Public Resources Code lists the statutory exemption from the requirements of CEQA for railroad grade separations as follows: "This division shall not apply to any railroad grade separation project which eliminates an existing grade crossing or which reconstructs an existing grade separation" The Riverside Avenue bridge widening meets this definition. The project's Notice of Exemption is shown on Attachment H.

The project NEPA determination to receive federal funds was approved on April 25, 2016. The project's Categorical Exemption/Categorical Exclusion Determination Form is shown on Attachment H.

The State 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 CFA 771.117(b). As such, the project is categorically excluded from the requirements to prepare an environmental assessment or environmental impact statement under the National Environmental Policy Act. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated June 07, 2013, executed between the FHWA and the State. The State has determined that the project is a Categorical Exclusion under: 23 CFA 771,117(c): activity (c) (27).

Environmental document is available upon request.

9. OTHER CONSIDERATIONS AS APPROPRIATE

Transportation Management Plan

Prior to the start of construction activities, the Project Engineer will ensure that a Transportation Management Plan (TMP) is developed during final design. The Project Engineer will require the construction contractor to implement the TMP during project construction to address short-term traffic circulation and access impacts during project construction. Specifically, during final design, a qualified traffic engineer will prepare the TMP, which will include, but not be limited to, the elements described below to reduce traveler delays and enhance traveler safety during project construction. The TMP will be approved by the City of Rialto Public Works Director, or designee, during final design and be incorporated into the plans, specifications, and estimates. The TMP for the proposed project will include the following elements and strategies:

- During construction, the contractor will be required to coordinate all road closures and detour plans with applicable fire, emergency, medical, and law enforcement providers, to minimize temporary delays in provider response times.
- The TMP will include construction staging, detours, and road closures, as applicable.
- Traffic control plans and related specifications, to be completed during final design of the proposed project, will be developed in accordance with applicable city requirements. These plans and specifications will include elements such as: advance roadside signs and portable changeable message signs; traffic surveillance; lane/shoulder closures; and temporary signing/striping on local streets and Interstate 10 (I-10).
- The proposed project will implement a public outreach program to keep the surrounding community abreast of the project's progress and construction activities.
- Construction will be coordinated with nearby projects. Coordination is important to address possible temporary increases in traffic due to detours from nearby projects.
- The proposed project will include provisions for maintaining pedestrian and bicycle access at all times during construction.
- The proposed project will include contingency plans that specify the actions that will be taken in the event that something unexpected occurs with respect to construction activities or traffic operations. The contractor will review these plans and incorporate them into the contractor's contingency plan.

Utilities

Riverside Avenue within this segment has very limited utilities located within its right-of-way. There is a Fiber Optics line owned by Verizon that parallels at the base of the I-10 eastbound MSE wall and adjacent to the Riverside Avenue bridge abutment #2. There is an existing underground AT&T telephone line, on the west side of the bridge that is within the roadway Right-of-Way but far enough from abutment and pier construction. At the intersection of the Riverside Avenue and Slover Avenue, overhead power line crosses Riverside Avenue and extends north for a short distance to provide power to adjacent parcels. There is also a CMP pipe that crosses Riverside Avenue on north side of Slover Avenue and drains into the Rialto Channel. Service providers in the study area are shown in Table 9.1.

Type of utilities identified within or near the project area.

- ATT Buried Cable
- Sewer Lines
- Water Lines
- Gas Lines
- Electrical OH
- Electrical UG
- HP Steel Petroleum Pipeline
- Storm Drains

Table 9.1 Utility Service Providers in the City of Rialto

Utility Category	Utility Provider
Water	City of Rialto and West Valley Water District
Sewer	City of Rialto
Gas	Southern California Gas Company
Electricity	Southern California Edison
Cable Television	Time Warner and AT&T Uverse
Telecommunication	Verizon and AT&T

Sources: City of Rialto. Website: http://www.rialtoca.gov.

10. FUNDING, PROGRAMMING AND ESTIMATE

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

Programming
The project was programmed with funds primarily from Federal transportation Improvement Program (FTIP). SCAG and Caltrans are responsible for developing plans and manage the funding so it can be evenly distributed to various agencies.

Riverside Avenue Overhead is listed in the 2017 FTIP which covers fiscal year (FY) 2016/17 - 2021/22. The project is anticipated to go to construction in FY 2018 and be completed by FY 2020.

Fund Source	Fiscal Year Estimate								
HBRRP	Prior	14/15	15/16	16/17	17/18	18/19	19/20	Future	Total
Component	In thousands of dollars ($1,000)								
PE Support	75				2,950				3,025
Right-of-Way Support					50				
Construction Support									
Right-of-Way									
Construction					5,506	11,012		20,986	37,500
Total	75				16,518				40,575

11. DELIVERY SCHEDULE

Project Milestones	Scheduled Delivery Date (Month Year)
ENVIRONMENTAL DOCUMENT APPROVAL	April 2016
PROJECT REPORT EQUIVALENT	December 2016
PS&E	2017
RIGHT OF WAY	2018
READY TO ADVERTISE	2018/2019
AWARD	2018/2019

12. RISKS

- Determinations of right-of-way needs, specifically UPRR requirements, are yet to be determined.
- Stage of construction for widening or replacement of bridge for vehicular and rail traffic.
- Possible construction and demolition or bridge replacement challenge due to limited construction area and active rail traffic.

13. EXTERNAL AGENCY COORDINATION

Federal Highway Administration (FHWA)

The project requires the following coordination:

California Department of Fish and Wildlife
California Fish and Game Code Section1602
Lake or Streambed Alteration Agreement

Regional Water Quality Control Board
Clean Water Act Section 401
Water Quality Certification

Local Agency
Agreements with _____

Railroads
UPRR

14. PROJECT PERSONNEL

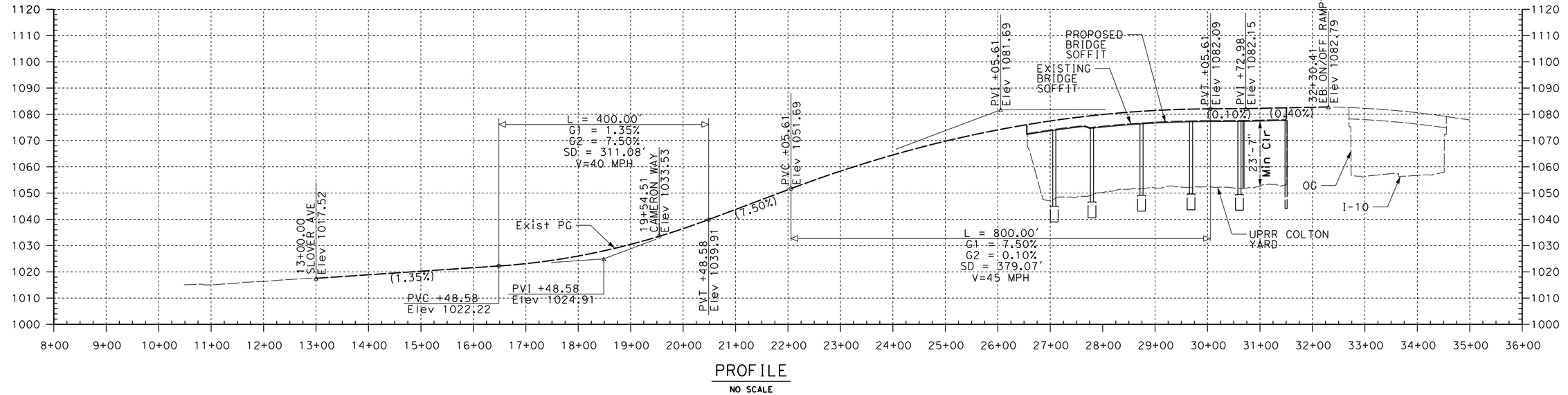
Hector Gonzalez, PE Project Manager	(909) 421-4986
Robert Eisenbeisz, Public Works Director/City Engineer	(909) 820-2525
Keyvan Pirbazari, P.E. Project Manager Jacobs	(714) 835-6355
Daryoush Haghighi, PE, SE Structural Engineer Jacobs	(714) 835-6355
Walt Quesada, P.E. Project Engineer Jacobs	(909) 974-2738
Richard Yu, P.E. Project Engineer Jacobs	(909) 974-2738
David Garcia, Project Engineer Jacobs	(909) 974-2738

15. ATTACHMENTS

A. Alternative 1 –Plan & Profile
B. Alternative 2 –Plan & Profile
C. Alternatives 1 & 2 Typical Section
D. Preliminary Construction Cost Estimate
E. Utility Layout

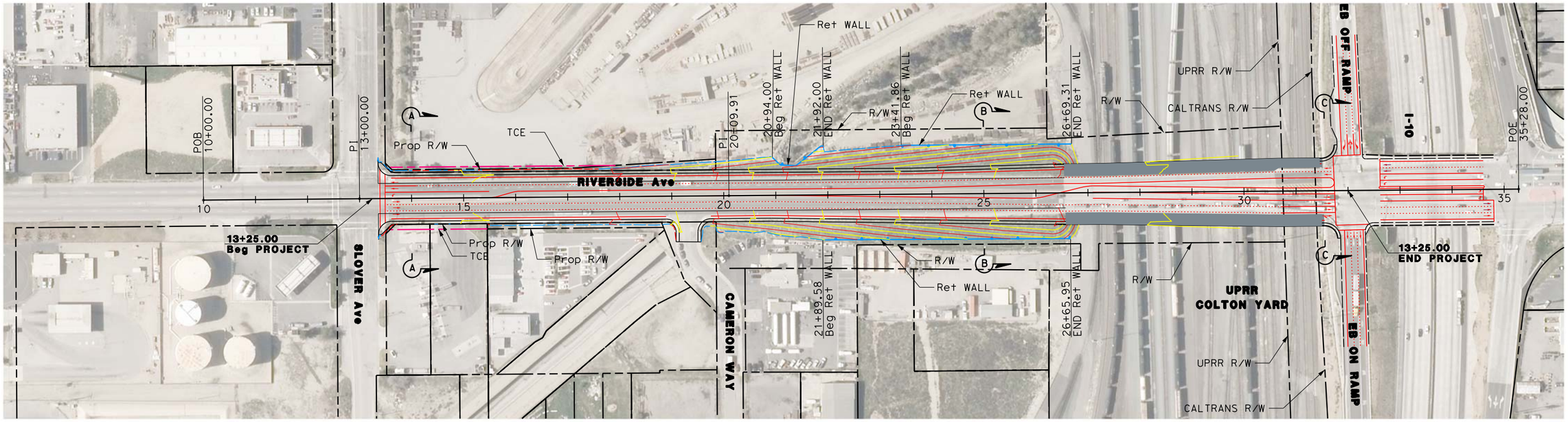
F. R/W Layout Plan
G. Accident Occurrences on Riverside Avenue
H. Environmental Clearance - Approved CEQA and NEPA forms
I. Advance Planning Study – Alternatives 1 and 2

Attachment A
Alternative 1 – Layout and Profile



PROFILE

NO SCALE



PLAN

NO SCALE

FOR ROADWAY SECTIONS, PLEASE SEE TYPICAL SECTION SHEET.

REV	DATE	DESCRIPTION	BY	SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

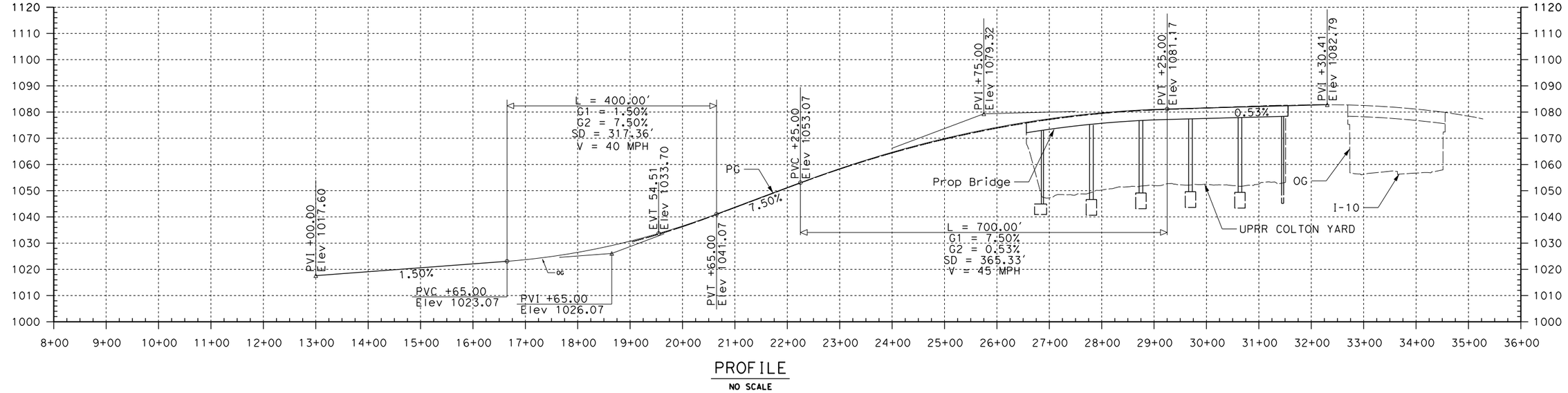
CITY OF RIALTO
DEPARTMENT OF PUBLIC WORKS
RIVERSIDE AVE UPRR BRIDGE WIDENING PROJECT
ALTERNATIVE I- WIDENING

CONTRACT NO.
DRAWING NO.
REVISION | SHEET NO.
SCALE

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT

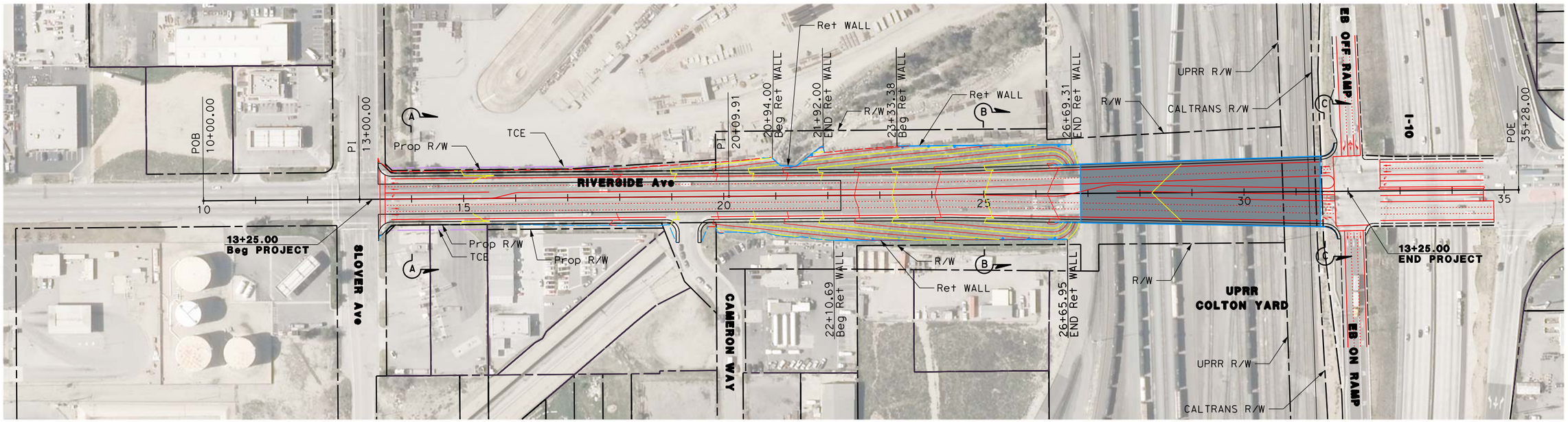
$USER$
Pen Table File
$TIME$
$DATE$

Attachment B
Alternative 2 – Layout and Profile



PROFILE

NO SCALE



PLAN

NO SCALE

FOR ROADWAY SECTIONS, PLEASE SEE TYPICAL SECTION SHEET.

REV	DATE	DESCRIPTION	BY	SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY	
DRAWN BY	
CHECKED BY	
APPROVED BY	
DATE	

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

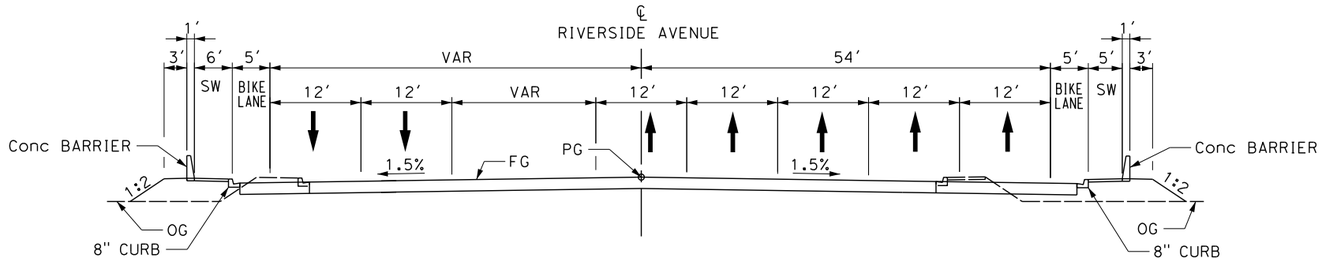
CITY OF RIALTO
DEPARTMENT OF PUBLIC WORKS
RIVERSIDE AVE UPRR BRIDGE WIDENING PROJECT
ALTERNATIVE 2 - REPLACEMENT

CONTRACT NO.	
DRAWING NO.	
REVISION	SHEET NO.
SCALE	

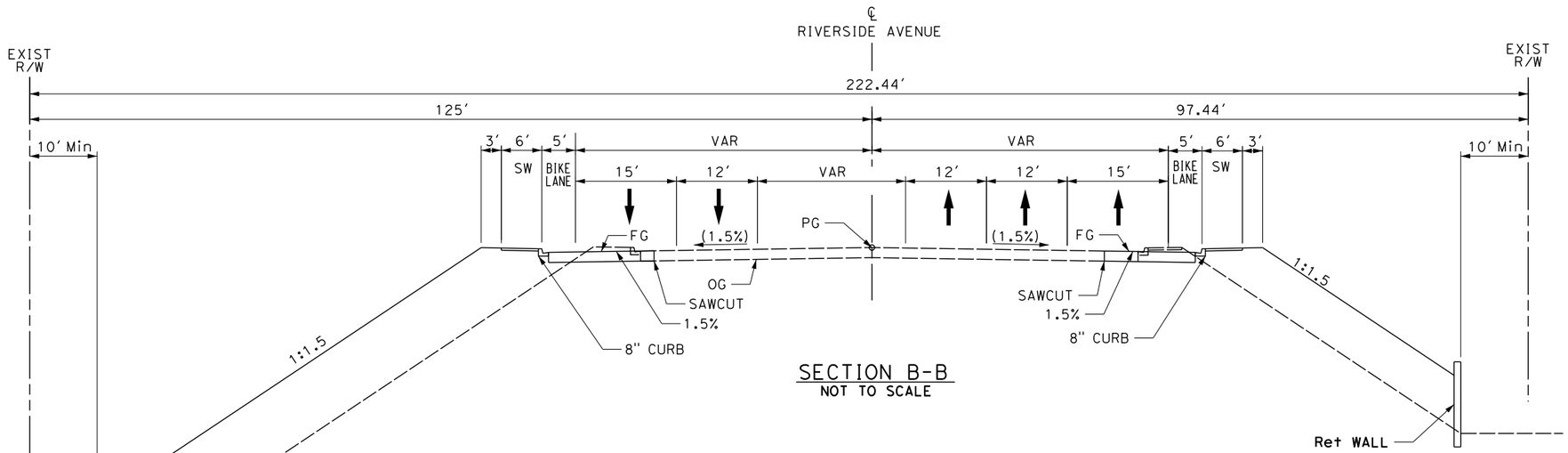
PROJECT NUMBER	
COST ELEMENT	
LINE ITEM	
CONTRACT DESIGNATOR	
PHYSICAL ENTITY	
WORK ELEMENT	

$USER$
Pen Table File
$TIME$
$DATE$

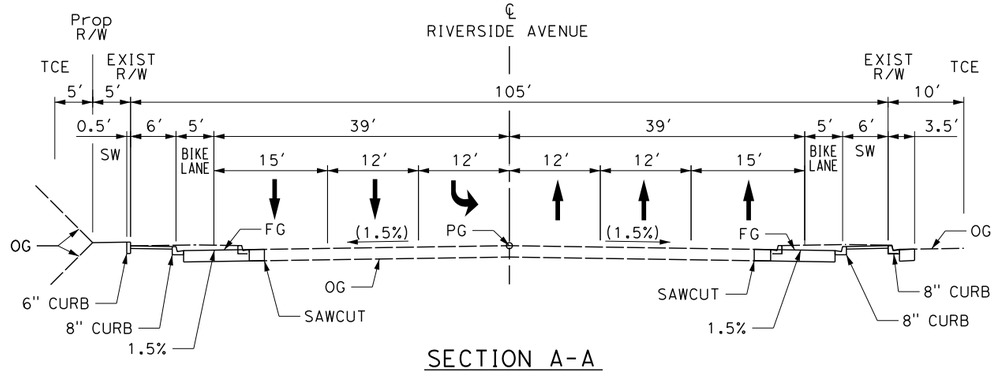
Attachment C
Typical Sections



SECTION C-C
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION A-A
NOT TO SCALE

$USER$
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$TIME$
$DATE$

REV	DATE	DESCRIPTION	BY	SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
DEPARTMENT OF PUBLIC WORKS
RIVERSIDE AVE UPRR BRIDGE WIDENING PROJECT
ROADWAY TYPICALS - ALTERNATIVES 1 & 2

CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO.
SCALE

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT

Attachment D
Preliminary Construction Cost Estimate

Riverside Ave/UPRR Overhead Bridge
Preliminary Project Cost Estimate
ALTERNATIVE 1 - Bridge Widening

ROADWAY

Earthwork	Unit	Unit Cost	Quantity	Cost
Roadway Excavation	CY	$28	359	$10,052
Imported Borrow	CY	$37	16,065	$594,405
Clearing and Grubbing	AC	$10,650	2	$21,300
Subtotal Earthwork				**$625,757**
Pavement Structural Section	Unit	Unit Cost	Quantity	Cost
Jointed Plain Concrete Pavement	CY	$260	154	$40,040
Hot Mix Asphalt (Type A)	TON	$88	5,868	$516,384
Class 2 Aggregate Base	CY	$50	1,624	$81,200
Subtotal Pavement Structural Section				**$637,624**
Drainage	Unit	Unit Cost	Quantity	Cost
Storm Drains	LS	$35,000	1	$35,000
Cap Inlet (New Inlet)	EA	$2,200	2	$4,400
Minor Concrete (Catch Basin)	EA	$15,000	2	$30,000
Water Quality Treatment	LS	$100,000	1	$100,000
Water Pollution Control	LS	$100,000	1	$100,000
Subtotal Drainage				**$269,400**
Specialty Items	Unit	Unit Cost	Quantity	Cost
Retaining Wall	SF	$70	7,500	$525,000
Structure Excavation (Retaining Wall)	CY	$78	1,700	$132,600
Roadside Sign - Two Post	EA	$510	1	$510
Minor Concrete (Curb & Gutter)	CY	$680	99	$67,320
Minor Concrete (Sidewalk)	CY	$660	168	$110,880
Minor Concrete (Curb Ramp)	CY	$800	47	$37,600
Subtotal Specialty Items				**$873,910**
Traffic	Unit	Unit Cost	Quantity	Cost
Permanent Signing & Striping	LS	$35,000	1	$35,000
Transportation Management Plan	LS	$10,000	1	$10,000
Traffic Control Signal and Lighting System	LS	$200,000	2	$400,000
Street Lighting	EA	$10,000	19	$190,000
Subtotal Traffic				**$635,000**
Removal	Unit	Unit Cost	Quantity	Cost
Remove Inlet	EA	$1,600	2	$3,200
Remove Manhole/Inlet	EA	$2,000	2	$4,000
Remove Roadside Sign (Wood Post)	EA	$220	1	$220
Remove Concrete Sidewalk (SQYD)	CY	$24	740	$17,760
Remove Concrete (Curb & Gutter)	LF	$9	2,505	$22,545
Remove Guard Rail	LF	$13	320	$4,160
Subtotal Removal				**$51,885**
Other Items	Unit	Unit Cost	Quantity	Cost
Minor Items	LS	$329,000	1	$329,000
Mobilization	LS	$410,000	1	$410,000
Supplemental Work	LS	$200,000	1	$200,000
State Furnished Materials and Expenses	LS	$239,000	1	$239,000
Time-Related Overhead	WD	$467,000	1	$467,000
Roadway Contingency	25%	$4,271,576	1	$4,271,576
Subtotal Other Items				**$5,916,576**
TOTAL ROADWAY ITEMS				**$9,010,152**

STRUCTURE

Bride Structure	Unit	Unit Cost	Quantity	Cost
Widening	LS	$6,227,000	1	$6,227,000
TOTAL STRUCTURES				**$6,227,000**

RAILROAD

Railroad	Unit	Unit Cost	Quantity	Cost
Railroad Track Work	LS	$1,500,000	1	$1,500,000
Railroad Design Approvals	LS	$30,000	1	$30,000
UPRR Design Approvals	LS	$30,000	1	$30,000
C&M Agreement with UPRR	LS	$30,000	1	$30,000
TOTAL RAILROAD				**$1,590,000**
			TOTAL CONSTRUCTION	**$16,827,152**

RIGHT OF WAY

Right of Way	Unit	Unit Cost	Quantity	Cost
Partial Parcel Acquisition	LS	$1,000,000	1	$1,000,000
Temporary Construction Easements	LS	$150,000	1	$150,000
Title / Escrow / Legal fees	LS	$250,000	1	$250,000
Environmental Mitigation	LS	$25,000	1	$25,000
TOTAL RIGHT OF WAY				**$1,425,000**

UTILITY RELOCATION

Utility Relocation	Unit	Unit Cost	Quantity	Cost
Power Distribution Line Relocation	LS	$2,000,000	1	$2,000,000
TOTAL UTILITY RELOCATION				**$2,000,000**
			CAPITAL COST SUBTOTAL	**$20,252,152**

SUPPORT SERVICE FEES

				Cost
Design (9%)				$1,682,715
Construction Management (8%)				$1,346,172
Environmental Mitigation				$350,000
TOTAL ENGINEERING SERVICE FEES				**$3,378,887**

TOTAL COST	**$23,600,000**

Riverside Ave/UPRR Overhead Bridge
Preliminary Project Cost Estimate
ALTERNATIVE 2 - Bridge Replacement

ROADWAY

Earthwork	Unit	Unit Cost	Quantity	Cost
Roadway Excavation	CY	$28	340	$9,520
Imported Borrow	CY	$37	16,120	$596,440
Clearing and Grubbing	AC	$10,650	2	$21,300
Subtotal Earthwork				**$627,260**
Pavement Structural Section	Unit	Unit Cost	Quantity	Cost
Jointed Plain Concrete Pavement	CY	$260	154	$40,040
Hot Mix Asphalt (Type A)	TON	$88	5,868	$516,384
Class 2 Aggregate Base	CY	$50	1,624	$81,200
Subtotal Pavement Structural Section				**$637,624**
Drainage	Unit	Unit Cost	Quantity	Cost
Storm Drains	LS	$35,000	1	$35,000
Cap Inlet (New Inlet)	EA	$2,200	2	$4,400
Minor Concrete (Catch Basin)	EA	$15,000	2	$30,000
Water Quality Treatment	LS	$100,000	1	$100,000
Water Pollution Control	LS	$100,000	1	$100,000
Subtotal Drainage				**$269,400**
Specialty Items	Unit	Unit Cost	Quantity	Cost
Retaining Wall	SF	$70	6,150	$430,500
Structure Excavation (Retaining Wall)	CY	$78	1,650	$128,700
Roadside Sign - Two Post	EA	$510	1	$510
Minor Concrete (Curb & Gutter)	CY	$680	99	$67,320
Minor Concrete (Sidewalk)	CY	$660	168	$110,880
Minor Concrete (Curb Ramp)	CY	$800	47	$37,600
Subtotal Specialty Items				**$775,510**
Traffic	Unit	Unit Cost	Quantity	Cost
Permanent Signing & Striping	LS	$35,000	1	$35,000
Transportation Management Plan	LS	$10,000	1	$10,000
Traffic Control Signal and Lighting System	LS	$200,000	2	$400,000
Street Lighting	EA	$10,000	19	$190,000
Subtotal Traffic				**$635,000**
Removal	Unit	Unit Cost	Quantity	Cost
Remove Inlet	EA	$1,600	2	$3,200
Remove Manhole/Inlet	EA	$2,000	2	$4,000
Remove Roadside Sign (Wood Post)	EA	$220	1	$220
Remove Concrete Sidewalk (SQYD)	CY	$24	740	$17,760
Remove Concrete (Curb & Gutter)	LF	$9	2,505	$22,545
Remove Guard Rail	LF	$13	320	$4,160
Subtotal Removal				**$51,885**
Other Items	Unit	Unit Cost	Quantity	Cost
Minor Items	LS	$329,000	1	$329,000
Mobilization	LS	$410,000	1	$410,000
Supplemental Work	LS	$200,000	1	$200,000
State Furnished Materials and Expenses	LS	$239,000	1	$239,000
Time-Related Overhead	WD	$467,000	1	$467,000
Roadway Contingency	25%	$4,174,679	1	$4,174,679
Subtotal Other Items				**$5,819,679**
TOTAL ROADWAY ITEMS				**$8,816,358**

STRUCTURE

Bride Structure	Unit	Unit Cost	Quantity	Cost
Replacement	LS	$20,189,000	1	$20,189,000
TOTAL STRUCTURES				**$20,189,000**

RAILROAD

Railroad	Unit	Unit Cost	Quantity	Cost
Railroad Track Work	LS	$2,000,000	1	$2,000,000
Railroad Design Approvals	LS	$30,000	1	$30,000
UPRR Design Approvals	LS	$30,000	1	$30,000
C&M Agreement with UPRR	LS	$30,000	1	$30,000
TOTAL RAILROAD				**$2,090,000**
			TOTAL CONSTRUCTION	**$31,095,358**

RIGHT OF WAY

Right of Way	Unit	Unit Cost	Quantity	Cost
Partial Parcel Acquisition	LS	$1,000,000	1	$1,000,000
Temporary Construction Easements	LS	$150,000	1	$150,000
Title / Escrow / Legal fees	LS	$250,000	1	$250,000
Environmental Mitigation	LS	$50,000	1	$50,000
TOTAL RIGHT OF WAY				**$1,450,000**

UTILITY RELOCATION

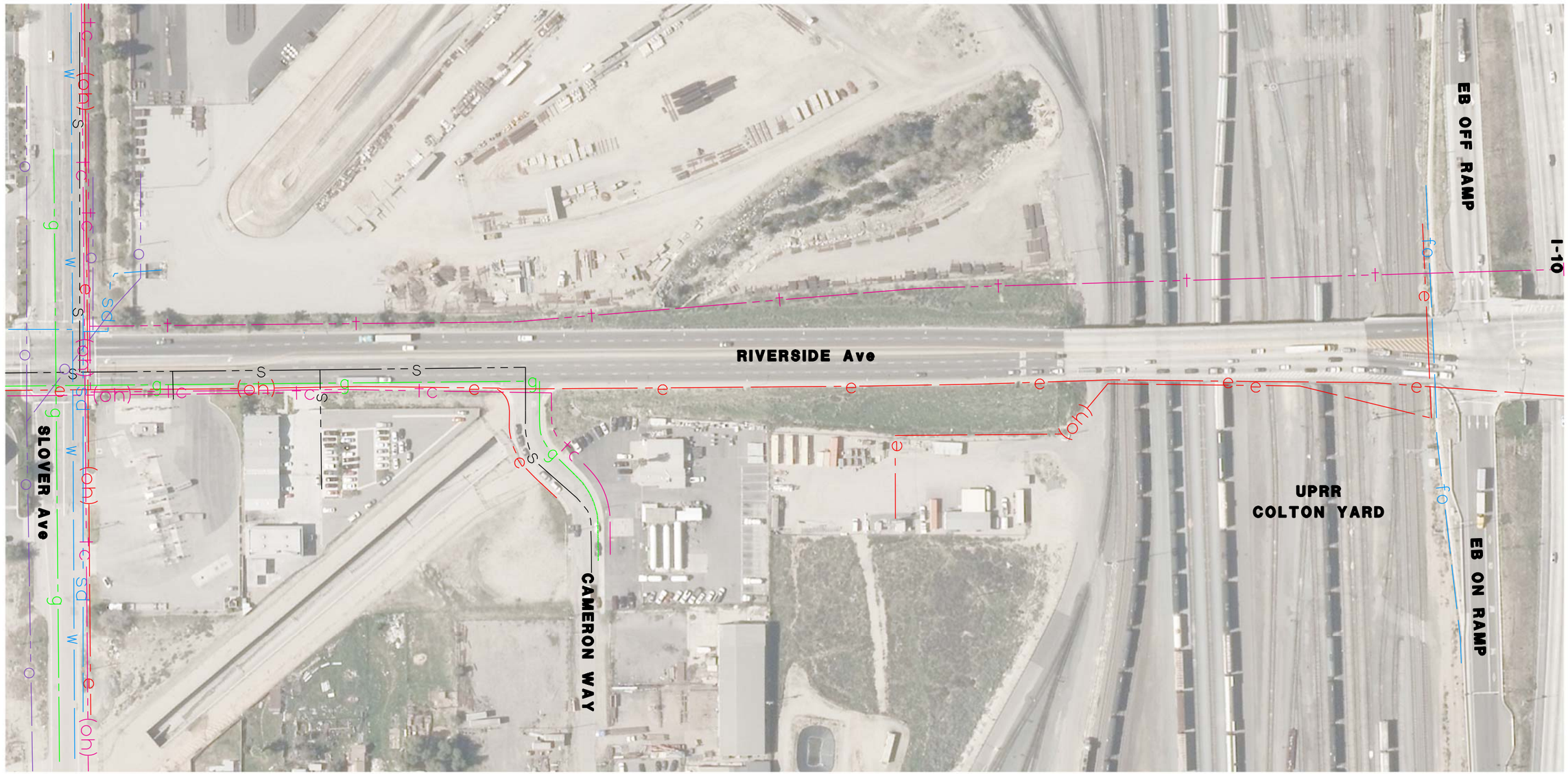
Utility Relocation	Unit	Unit Cost	Quantity	Cost
Power Distribution Line Relocation	LS	$2,000,000	1	$2,000,000
TOTAL UTILITY RELOCATION				**$2,000,000**
			CAPITAL COST SUBTOTAL	**$34,545,358**

SUPPORT SERVICE FEES

				Cost
Design (10%)				$3,109,536
Construction Management (8%)				$2,487,629
Environmental Mitigation				$350,000
TOTAL ENGINEERING SERVICE FEES				**$5,947,164**

TOTAL COST	**$40,500,000**

Attachment E
Utility Layout



LEGEND

- Exist ELECTRICAL
- Exist ELECTRICAL OH
- Exist FIBER OPTIC
- Exist GAS
- Exist PETROLEUM
- Exist STORM DRAIN
- Exist TELECOM CABLE
- Exist TELECOM CABLE OH
- Exist TELEPHONE
- Exist WATER

NOTE

THE LOCATION OF EXISTING UTILITIES AS SHOWN IN THIS PLAN IS BASED ON LIMITED AVAILABLE INFORMATION. THE EXACT LOCATION OF ALL EXISTING UTILITIES NEEDS TO BE VERIFY.

$USER$
Pen Table File
$TIME$
$DATE$

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATOR	PHYSICAL ENTITY	WORK ELEMENT

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
DEPARTMENT OF PUBLIC WORKS
RIVERSIDE AVE UPRR BRIDGE

EXISTING UTILITIES

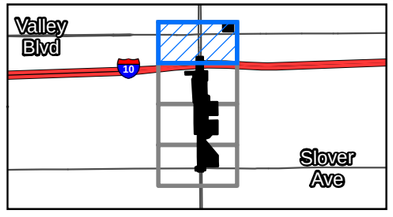
CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO.
SCALE

Attachment F
Right of Way Layout Plan

LEGEND

- Existing Right of Way
- Caltrans Existing Right of Way
- Proposed Right of Way
- Area of Potential Effects (APE)
- Bridge Widening
- Bridge Footing
- Sidewalks
- Striping
- Parcels
- Proposed Retaining Wall
- Staging Area

0 50 100
FEET



MAP 3
Sheet 1 of 4

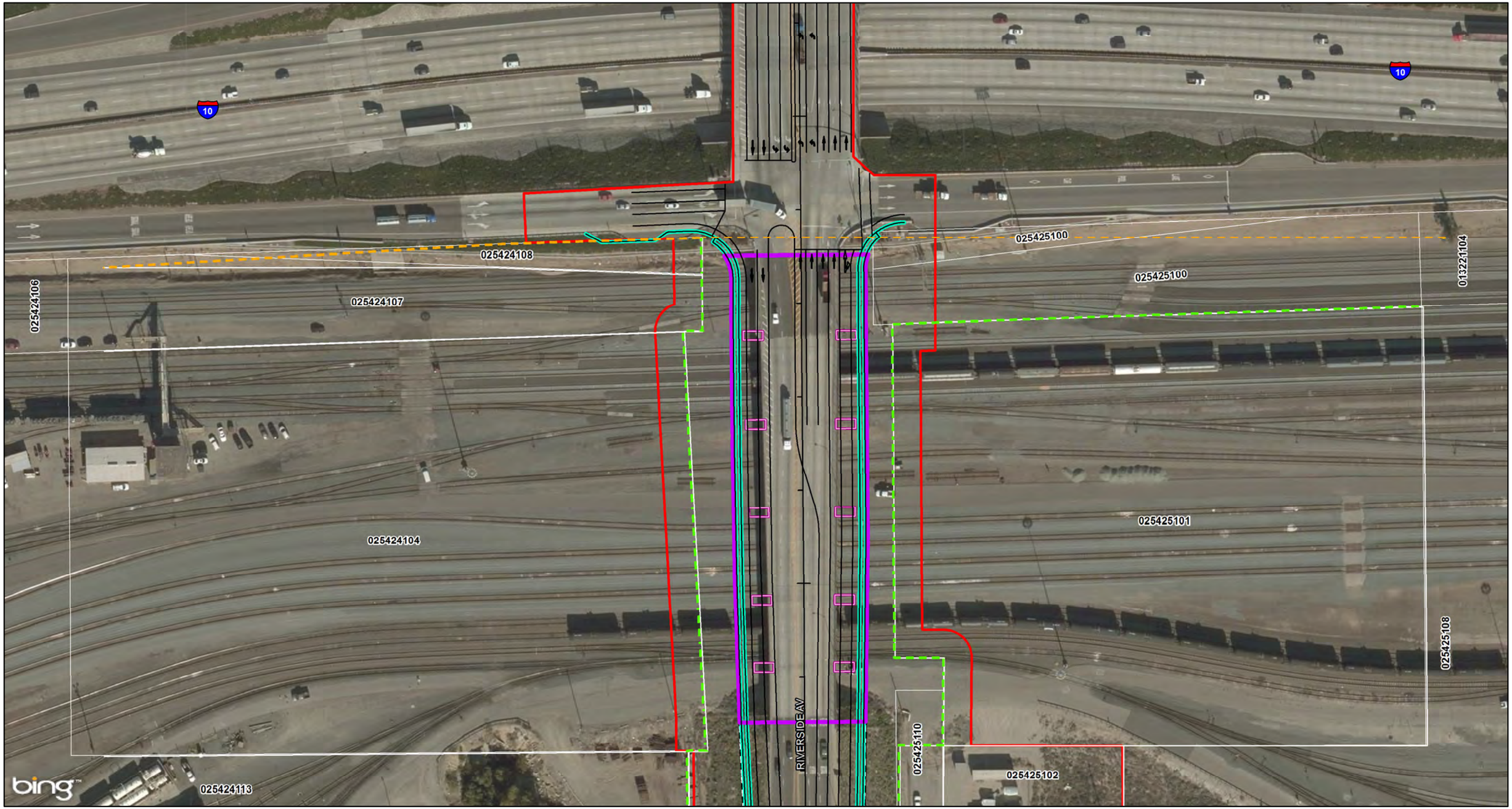
Riverside Avenue Over UPRR Bridge Widening Project

Area of Potential Effects

HPBRLS 5205 (016)

SOURCE: Bing (2013); JL Patterson (05/23/2014)

I:\JLP1401\GIS\APE.mxd (3/1/2016)



LEGEND

- Existing Right of Way
- Caltrans Existing Right of Way
- Proposed Right of Way
- Area of Potential Effects (APE)
- Bridge Widening
- Bridge Footing
- Sidewalks
- Striping
- Parcels
- Proposed Retaining Wall
- Staging Area

0 50 100
FEET

SOURCE: Bing (2013); JL Patterson (05/23/2014)

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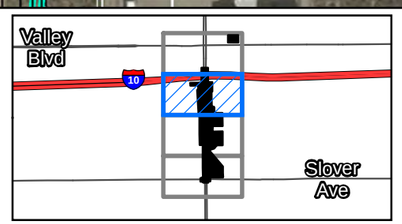
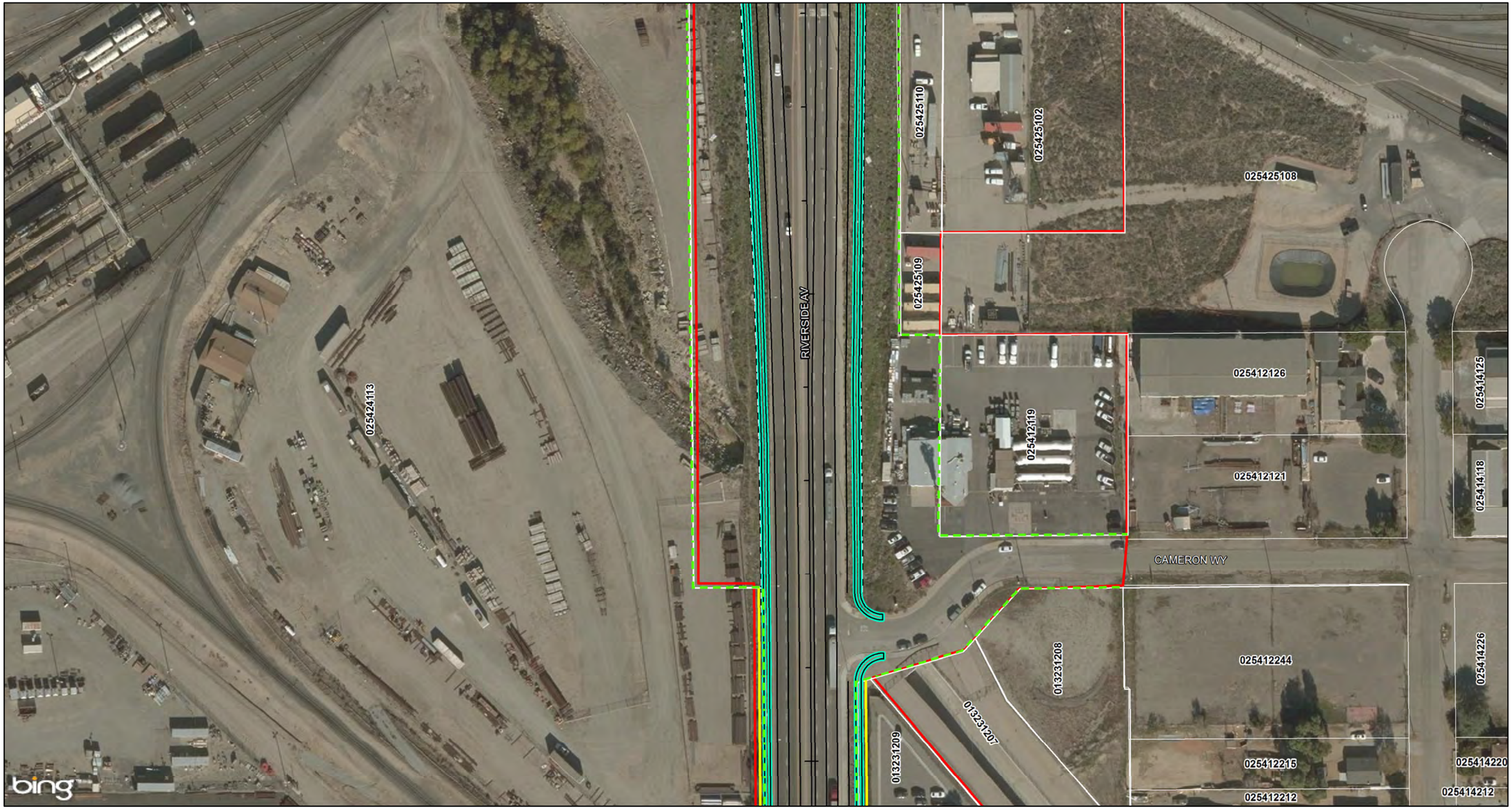


MAP 3
Sheet 2 of 4

Riverside Avenue Over UPRR Bridge Widening Project

Area of Potential Effects

HPBRLS 5205 (016)



LEGEND

- Existing Right of Way
- Caltrans Existing Right of Way
- Proposed Right of Way
- Area of Potential Effects (APE)
- Bridge Widening
- Bridge Footing
- Sidewalks
- Striping
- Parcels
- Proposed Retaining Wall
- Staging Area

0 50 100
FEET

SOURCE: Bing (2013); JL Patterson (05/23/2014)

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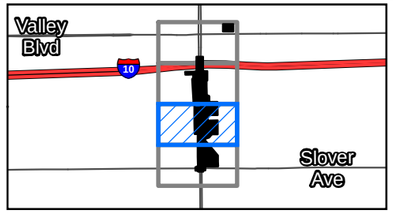
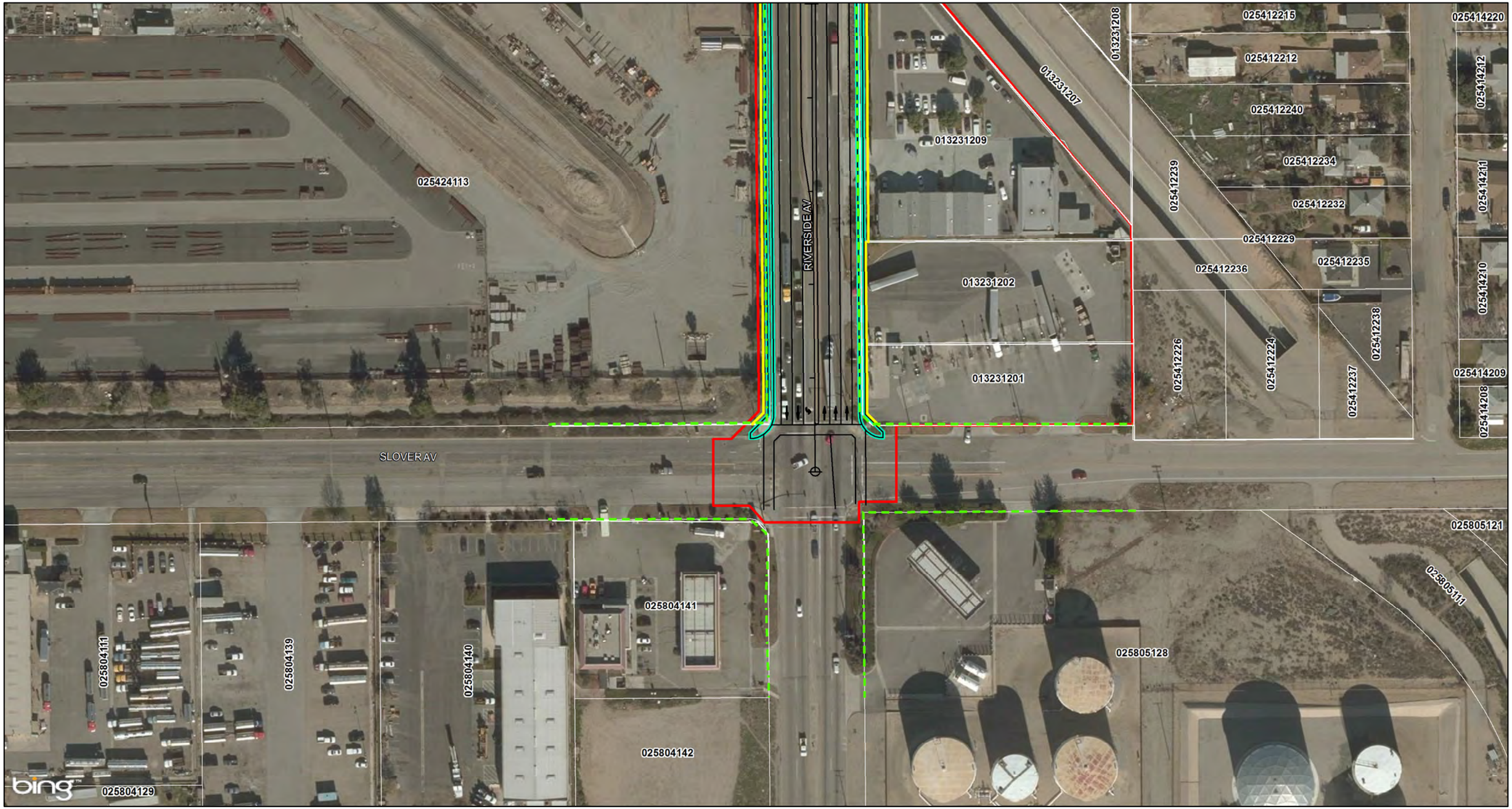


MAP 3
Sheet 3 of 4

Riverside Avenue Over UPRR Bridge Widening Project

Area of Potential Effects

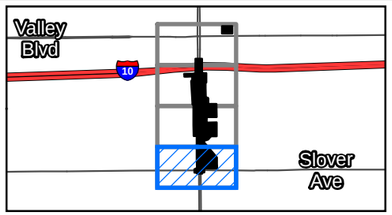
HPBRLS 5205 (016)



LEGEND

- Existing Right of Way
- Caltrans Existing Right of Way
- Proposed Right of Way
- Area of Potential Effects (APE)
- Bridge Widening
- Bridge Footing
- Sidewalks
- Striping
- Parcels
- Proposed Retaining Wall
- Staging Area

0 50 100
FEET



MAP 3
Sheet 4 of 4

Riverside Avenue Over UPRR Bridge Widening Project

Area of Potential Effects

HPBRLS 5205 (016)

SOURCE: Bing (2013); JL Patterson (05/23/2014)

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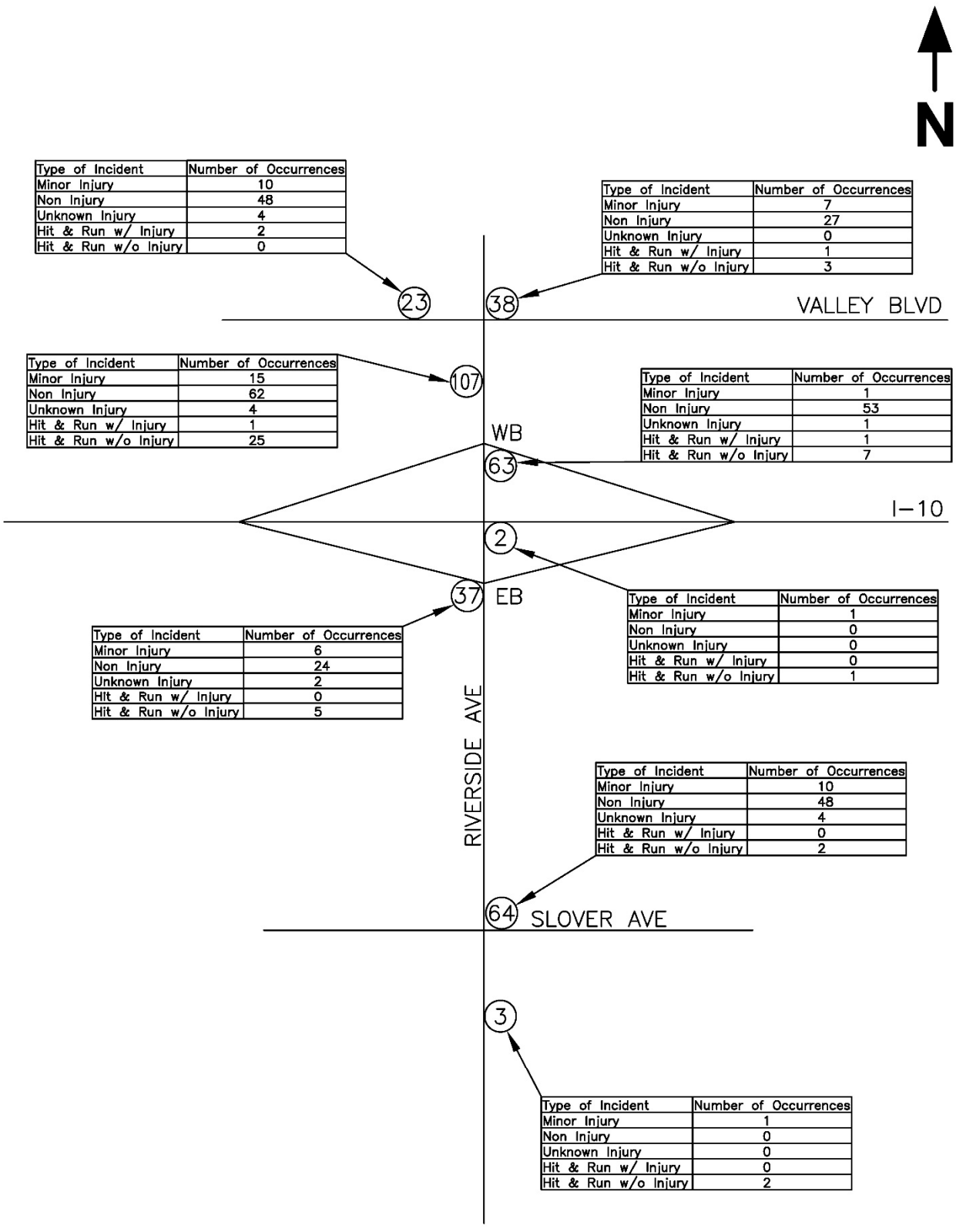
Attachment G
Accident Occurrences on Riverside Avenue



NOT TO SCALE

Accident Occurrences on Riverside Avenue Attachment G

City of Rialto Riverside Avenue Overhead Widening Project
Traffic Study

FPL and Associates, Inc.

Attachment H
Environmental Clearance - Approved CEQA and NEPA forms

Notice of Exemption

To: ☐ Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

☒ County Clerk
County of San Bernardino Clerk of the Board
385 N. Arrowhead Avenue
San Bernardino, California 92415

From: City of Rialto
150 S. Palm Avenue
Rialto, California 92376

Project Title: Riverside Avenue Over the Union Pacific Railroad Bridge Widening Project

Project Location - Specific: Riverside Avenue crossing at the Union Pacific Railroad (UPRR) in the City of Rialto, California

Project Location - City: Rialto **Project Location - County**: San Bernardino

Description of Nature, Purpose, and Beneficiaries of Project: The project would widen or replace the bridge over the UPRR to match the configuration of the adjacent Riverside Avenue bridge over I-10 by extending the existing left-turn pockets from the I-10 bridge southerly to the UPRR bridge. The existing Riverside Avenue bridge over the UPRR experiences bottleneck congestion along the bridge segment. The existing left-turn pockets at the I-10 westbound entrance ramp are heavily used by large trucks queuing to access the I-10 freeway. The insufficient capacity of the existing left-turn pockets causes spillover traffic into the northbound through lanes on the bridge segment. Project features include minor right-of-way acquisition, utility relocations, shoulders, sidewalks, and bicycle lanes.

Name of Public Agency Approving Project: City of Rialto

Name of Person or Agency Carrying Out Project: City of Rialto

Exempt Status: (*check one*)

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☐ Categorical Exemption. State type and section number:
- ☒ Statutory Exemptions. State code number: Section 21080.13 of the Public Resources Code

Reasons why project is exempt: Section 21080.13 of the Public Resources Code lists the statutory exemption for railroad grade separations as follows: "This division shall not apply to any railroad grade separation project which eliminates an existing grade crossing or which reconstructs an existing grade separation." The Riverside Avenue bridge widening meets this definition.

Lead Agency Contact Person: Gina Gibson Area Code/Telephone/Extension: (909) 421-7240

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☐ Yes ☐ No

Signature: _____ Date: _____ Title: _____

☒ Signed by Lead Agency Date received for filing at OPR:

☐ Signed by Applicant

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

08/SBd/Rialto			HPBRLS 5205 (016)
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

PROJECT DESCRIPTION: (Briefly describe project including need, purpose, location, limits, right-of-way requirements, and activities involved in this box. *Use Continuation Sheet, if necessary.)*

The City of Rialto (City) proposes to widen or replace the Riverside Avenue Bridge over the Union Pacific Railroad (UPRR) (Federal Aid Project No. HPBRLS 5205 [016)]). The project segment of Riverside Avenue is classified as a "Modified Major Arterial III" with 120 feet (ft) of right of way (ROW) for six travel lanes and a median in the City's General Plan Circulation Element. Riverside Avenue is a regionally significant roadway because it connects to Interstate 210 (I-210) in the City of Rialto and to State Route 60 (SR-60) and State Route 91 (SR-91) in the City of Riverside. The project area on Riverside Avenue extends from the Interstate 10 (I-10) eastbound ramps to Slover Avenue.

The Riverside Avenue Bridge over the UPRR is approximately 500 ft long. It is separated from the Riverside Avenue I-10 Bridge by the I-10 eastbound ramps. The I-10 eastbound ramps, westbound ramps, their corresponding intersections with Riverside Avenue, and the Riverside Avenue Bridge over I-10 were widened in 2011 by the California Department of Transportation (Caltrans) and the City as a part of an interchange improvement project at I-10/ Riverside Avenue.

CEQA COMPLIANCE *(for State Projects only)*

Based on an examination of this proposal and supporting information, the following statements are true and exceptions do not apply (See 14 CCR 15300 et seq.):

- If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 ("Cortese List").
- This project does not cause a substantial adverse change in the significance of a historical resource.

CALTRANS CEQA DETERMINATION (Check one)

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

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

☐ **Categorically Exempt. Class** . (PRC 21084; 14 CCR 15300 et seq.)

☐ **Categorically Exempt. General Rule 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 (CCR 15061[b][3].)

N/A	N/A
Print Name: Environmental Branch Chief	Print Name: Project Manager/DLA Engineer
N/A	N/A
Signature Date	Signature Date

NEPA COMPLIANCE

In accordance with 23 CFR 771.117, and based on an examination of this proposal and supporting information, the State has determined that this project:

- does not individually or cumulatively have a significant impact on the environment as defined by NEPA and is excluded from the requirements to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS), and
- has considered unusual circumstances pursuant to 23 CFR 771.117(b).

CALTRANS NEPA DETERMINATION (Check one)

☒ **23 USC 326:** The State 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). As such, the project is categorically excluded from the requirements to prepare an environmental assessment or environmental impact statement under the National Environmental Policy Act. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated June 07, 2013, executed between the FHWA and the State. The State has determined that the project is a Categorical Exclusion under:

- ☒ **23 CFR 771.117(c): activity (c)(27)**
- ☐ **23 CFR 771.117(d): activity (d) (___)**
- ☐ **Activity ___ listed in Appendix A of the MOU between FHWA and the State**

☐ **23 USC 327:** Based on an examination of this proposal and supporting information, the State has determined that the project is a CE under 23 USC 327.

Aaron P. Burton	Sean Yeung
Print Name: Environmental Branch Chief	Print Name: Project Manager/DLA Engineer
4-25-16	4/25/2016
Signature Date	Signature Date

Date of Categorical Exclusion Checklist completion: Date of ECR or equivalent :

08/SBd/Rialto			HPBRLS 5205 (016)
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

Continued from page 1:

PROJECT DESCRIPTION CONTINUED:

The project would widen or replace the current five-lane bridge over the UPRR to a seven-lane bridge in order to match the configuration of the Riverside Avenue Bridge over I-10. However, the two added lanes would be utilized for the extension of the existing left-turn pockets from the Riverside Bridge over I-10 southerly onto the Riverside Avenue Bridge over the UPRR, and thereby would not involve additional through lanes nor increase capacity. Currently, the bridge over the UPRR has three through lanes in the northbound direction and two through lanes in the southbound direction. The proposed bridge would include five lanes in the northbound direction (i.e., two lanes that feed into the two left-turn lanes for the I-10 westbound on-ramp, two through lanes, and one shared through/right-turn lane). In the southbound direction, the new bridge would maintain the two through lanes. Construction would also include outside shoulders on both sides of Riverside Avenue extending south from the railroad bridge to Slover Avenue.

ENVIRONMENTAL COMMITMENTS:

The following standard conditions, conditions of construction, and avoidance and minimization measures shall be followed during construction to minimize potential impacts:

AIR QUALITY

- During clearing, grading, earthmoving, or excavation operations, excessive fugitive dust emissions will be controlled by regular watering or other dust preventive measures using the following procedures, as specified in the South Coast Air Quality Management District (SCAQMD) Rule 403. All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on site or off site will be either sufficiently watered or securely covered to prevent excessive amounts of dust. The area disturbed by clearing, grading, earth moving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in project specifications. Visible dust beyond the property line emanating from the project will be prevented to the maximum extent feasible.
- Project grading plans will show the duration of construction. Ozone precursor emissions from construction equipment vehicles will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturer's specifications.
- All trucks that are to haul excavated or graded material on site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4), as amended, regarding the prevention of such material spilling onto public streets and roads.
- The contractor will adhere to Caltrans Standard Specifications for Construction (Sections 14.9-02 and 14-9.03).
- Should the project geologist determine that asbestos-containing materials (ACMs) are present at the project area during final inspection prior to construction, the appropriate methods will be implemented to remove ACMs.

COMMUNITY IMPACT ASSESSMENT

- A Transportation Management Plan (TMP) is developed during final design. The Project Engineer will require the construction contractor to implement the TMP during project construction to address short-term traffic circulation and access impacts during project construction. Specifically, during final design, a qualified traffic engineer will prepare the TMP, which will include, but not be limited to, the elements described below to reduce traveler delays and enhance traveler safety during project construction. The TMP will be approved by the City of Rialto Public Works Director, or designee, during final design and be incorporated into the plans, specifications, and estimates. The TMP for the proposed project will include the following elements and strategies:
    - During construction, the contractor will be required to coordinate all road closures and detour plans with applicable fire, emergency, medical, and law enforcement providers, to minimize temporary delays in provider response times.
    - The TMP will include construction staging, detours, and road closures, as applicable.
    - Traffic control plans and related specifications, to be completed during final design of the proposed project, will be developed in accordance with applicable city requirements. These plans and specifications will include elements such as: advance roadside signs and portable changeable message signs; traffic surveillance; lane/shoulder closures; and temporary signing/striping on local streets and Interstate 10 (I-10).
    - The proposed project will implement a public outreach program to keep the surrounding community abreast of the project's progress and construction activities.

  - Construction will be coordinated with nearby projects. Coordination is important to address possible temporary increases in traffic due to detours from nearby projects.
  - The proposed project will include provisions for maintaining pedestrian and bicycle access at all times during construction.
  - The proposed project will include contingency plans that specify the actions that will be taken in the event that something unexpected occurs with respect to construction activities or traffic operations. The contractor will review these plans and incorporate them into the contractor's contingency plan.
- The contractor to coordinate all lane restrictions, roadway closures, and detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times. Such coordination will include the identification of alternative routes for emergency vehicles and routes across the construction area.
- The construction contractor for the project will coordinate any such activities with utility service providers in the area to minimize the risk of disruption of services and damage to any utility facilities present within the project's disturbance limits, to ensure advance notification of any temporary service disruptions to the public, and to protect the safety of the construction workers and the general public.
- The Project Engineer will prepare an updated utility survey to update information on known utility facilities as well as previously unidentified/unknown or new utility facilities within the disturbance limits of the project.

CULTURAL RESOURCES

- If buried cultural resources are encountered during construction, work will stop in that area until a qualified archaeologist has evaluated the nature and significance of the find.
- In the event that human remains, including isolated, disarticulated bones or fragments, are discovered during construction activities, work will cease in the vicinity of the human remains. The Caltrans District Native American Coordinator, Gary Jones (909) 383-7505, will be contacted immediately.
- Establishment of an Environmentally Sensitive Area (ESA) – the ESA delineated for this project will be included on all construction plans and documents in accordance with the ESA Action Plan.
- Identification of Previously Unidentified Features that Contribute to the Historic Property – if any additional features that contribute to the historic property are identified in the ESA, prior to or during construction, the Responsible Engineer shall be contacted and impacts, if any, to the feature, shall be avoided per the conditions listed here.
- Use of the Union Pacific Railroad's *Guidelines for Preparation of a Bridge Demolition and Removal Plan for Structures Over Railroad*
- Periodic Monitoring – the ESA will be monitored periodically by a Caltrans PQS Architectural Historian to ensure that the protective measures are being properly utilized.
- Caltrans Principal Architectural Historian (PQS) will review draft version of maps and project plans in order to ensure that the Environmentally Sensitive Area (ESA) for the historic property (UPRR and West Colton Classification Yard) is adequate and clearly shown on project documents.
- ESA requirements shall be discussed at the pre-construction meeting with information provided by Caltrans PQS.
- The project sponsor will discuss the importance of keeping all personnel and project activities outside of designated ESAs. (At this time, usefulness of marking the ESA out in the field using taped stakes, paint markings, or other method can be discussed.)
- Caltrans PQS will be invited to meetings during construction on an as-needed basis if questions arise regarding either the resource or the ESA.
- If the ESA is visually marked out in the field, the project sponsor must ensure that the marking method elements are maintained throughout the duration of the project.
- The project sponsor/project engineer must notify the Caltrans PQS within 24 hours of any ESA violations to determine how the violation will be addressed. The Caltrans PQS and/or District Environmental Branch Chief shall contact the Caltrans Cultural Studies Office as applicable within 48 hours of the ESA violation.
- The project sponsor will notify the Caltrans PQS when construction is complete.
- Caltrans PQS will document post-construction conditions in order to confirm no adverse effect to resource.

BIOLOGICAL RESOURCES

- The following is required to avoid any potential effects to roosting bats:
  - Prior to project construction, access to the railroad property will be obtained to inspect the bridge hinge more closely and confirm the suitability and quantity of any potential roosting habitat. This can be conducted during the Plan, Specification and Estimate (PS&E) stage, at which time it will be determined if further bat surveys are required.

  - If the culvert and/or UPRR bridge is found to provide suitable bat habitat, a qualified biologist will perform a preconstruction nighttime emergence survey during the summer months (June through August) to ascertain whether any bats are roosting in the culvert or bridge hinge. This can be conducted during the PS&E stage, which would allow time to identify handling, monitoring, and/or exclusion procedures prior to contract award. The nighttime survey should include the use of ultrasound acoustic equipment to aid in identifying bat species present, as well as exit counts. For emergence surveys at the UPRR bridge, access to UPRR property would not be necessary.
  - After the surveys are completed during the PS&E phase, and if bats are found, measures to minimize potential adverse effects to roosting bats and avoid direct mortality will be determined and implemented by a qualified bat biologist. These measures may include humane eviction/exclusion and/or construction monitoring.
- The following avoidance and minimization measures are recommended to avoid potential effects to nesting birds protected by the Migratory Bird Treaty Act and the California Fish and Game Code:
  - UPRR bridge construction, and ornamental tree/shrub removal should be completed outside of bird breeding season (typically set as February 15 through August 31).
  - In the event that tree/shrub removal cannot be conducted outside the bird breeding season, focused surveys will be conducted by a qualified biologist prior to ground-disturbing activities. Should nesting birds be found, an exclusionary buffer will be established by a qualified biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the qualified biologist, and construction or clearing will not be conducted within this zone until the qualified biologist determines that the young have fledged or the nest is no longer active.
  - Prior to project construction, and during the nesting season, access to the railroad property will be obtained to more closely inspect the bridge structure for nesting bird activity. This can be conducted during the PS&E stage. For nesting birds found to be utilizing the UPRR bridge structure, exclusionary devices and nest prevention methods, designed to prevent birds from utilizing the bridge, will be determined and implemented by a qualified biologist. Exclusionary devices must be installed prior to the initiation of nesting season (February 15), and before any bridge demolition and other bridge construction activities begin.
  - Nesting bird habitat within the BSA will be resurveyed during bird breeding season if there is a lapse in construction activities longer than 7 days.
- In compliance with EO 13112, a weed abatement program will be developed to minimize the importation of non-native plant material during and after construction. Eradication strategies would be employed should an invasion occur. At a minimum, this program will include the following measures:
  - During construction, soil and vegetation disturbance will be minimized to the greatest extent feasible.
  - During construction, the construction contractor will ensure that all active portions of the construction site are watered as needed to prevent excessive amounts of dust due to dry or windy conditions.
  - During construction, the construction contractor will ensure that all material stockpiled is sufficiently watered or covered to prevent excessive amounts of dust.
  - During construction, soil/gravel/rock will be obtained from weed-free sources.
  - Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control.
  - The proposed project has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasive species, the inclusion of invasive species in seed mixtures and mulch, and by the improper removal and disposal of invasive species so that seed is spread. The following measures will be implemented to mitigate the potential of invasive species from spreading from or into the project area:
    - Vehicles will be evaluated for weed seed prior to entry on site and are required to be cleaned of weed seed and invasive plant materials prior to working on site.
    - All mulch, topsoil, and seed mixes used during any post-construction landscaping activities and erosion-control Best Management Practices (BMPs) implemented will be free of invasive plant species propogules.
    - Trucks with loads carrying vegetation shall be covered, and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.
    - After construction, all revegetated areas will avoid the use of species listed on California Invasive Plant Council's (Cal-IPC's) California Invasive Plant Inventory that have a high or moderate rating.
    - Eradication procedures (e.g., spraying and/or hand weeding) will be outlined should an infestation occur; the use of herbicides will be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by a qualified biologist.

HAZARDOUS WASTE

- A hazardous building materials survey with laboratory analytical testing will be conducted to evaluate the presence of asbestos containing materials and lead-based paint during PS&E prior to construction.
- Conduct soil sampling for aerially deposited lead (ADL) in unpaved locations adjacent to the roadway within project area. The analytical results of the soil sampling will determine the appropriate handling of the soil and disposal of surplus materials. Excavated hazardous soils would require removal and disposal at a landfill permitted to accept hazardous materials. Refer to Caltrans Standard Special Provisions for additional information on the disposal of soils impacted with ADL.
- Utility pole transformers will be tested for polychlorinated biphenyls (PCBs) if they are found to be leaking prior to or during construction. PCB-containing material will be disposed of consistent with State regulations.
- Petroleum pipelines will be located as part of the utility search and appropriate procedures will be followed with respect to activities in the vicinity of these pipelines.
- If hazardous materials contamination or sources are suspected or identified during construction, an environmental professional will evaluate the course of action required. This course of action will follow procedures equivalent to the Unknown Hazards Procedures described in Chapter 7 of the Caltrans Construction Manual (August 2006).

NOISE

- Section 9.50.050 of the City of Rialto Municipal Code limits the use of pile drivers, steam or gasoline shovels, pneumatic hammers, steam or electric hoists, or other similar devices to between the hours of 7:00 a.m. and 8:00 p.m. for all zones.
- The contractor shall adhere to Caltrans Standard Specifications for Construction (Section 14-8.02) within Caltrans right-of-way.

WATER QUALITY

- The proposed project shall comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) Order No. 2009-0009-DWQ, or any other subsequent permit. The project shall comply with the CGP by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate Risk Level. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include Best Management Practices (BMPs) to control the pollutants, such as Sediment Control, Catch Basin Inlet Protection, Construction Materials Management, and Non-Storm Water BMPs. All work shall conform to the Construction Site BMP requirements specified in the latest edition of the Caltrans Storm Water Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. These include, but are not limited to, temporary sediment control, temporary soil stabilization, concrete waste management, street sweeping and vacuuming, wind erosion control, and other non-storm water BMPs.
- The proposed project shall comply with the provisions of the NPDES Permit and Waste Discharge Requirements (WDRs) for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Order No. R8-2010-0036, NPDES No. CAS618036, or any subsequent permit. The proposed project would follow the City's Local Implementation Plan (LIP) to implement the Municipal Storm Water Management Program (MSWMP) and would implement the Monitoring and Report Program (MRP), including the Integrated Watershed Monitoring Program (IWMP) and a regional monitoring program. The NPDES Permit shall include implementation of Treatment Control BMPs to the maximum extent practicable. Treatment Control BMPs for the proposed project include three drainage inlet filter inserts. Additionally, in compliance with the Water Quality Management Plan (WQMP) prepared for the NPDES Permit, a final project-specific WQMP shall be prepared.
- The proposed project would be required to comply with the standards set forth in Chapter 12.60, Municipal Separate Storm Sewer System, of the City of Rialto's Municipal Code. Implementation of the City's Municipal Code would ensure the health and safety of the City by prescribing reasonable regulations to control nonstorm water discharges containing pollutants into the City's municipal separate storm sewer system to the maximum extent practicable, thereby fully complying with the terms of the municipal NPDES Permit.

Attachment I
Advance Planning Study – Alternatives 1 and 2

Advance Planning Study

For

Riverside Avenue/UPRR Overhead Bridge Widen or Replace

December 16, 2016

Section 1 – Advance Planning Study Report

Existing Bridge Structure

The existing Riverside Avenue Overhead (BR No. 54C-62) is located in the City of Rialto, San Bernardino County. It was originally constructed in 1957 as an 82-foot long single span bridge overcrossing the Union Pacific Rail Road (UPRR) main tracks with precast prestressed concrete girder superstructure supported on seat type abutments. Later in 1971 it was modified by addition of 5 more continuous reinforced concrete box girder spans with total length of approximately 414 feet in order to accommodate crossing over the entire UPRR rail yard. All foundations are supported on steel piles except the northerly Abutment 7 which is supported on spread footing type foundation.

Existing Bridge Condition

The last inspection of the bridge was performed in 2011. The inspection report indicated that the existing piers 2, 3, 4 & 5 columns have hair cracks with possible presence of alkali-silica reactivity (ASR) gel. In addition other components of the bridge such as deck slab appear to have inadequate concrete cover by several exposed transverse rebars. A field investigation and coring program was conducted in 2014 to determine the extent of the deterioration due to ASR gel and the compressive strength of the columns. The conclusion from this investigation was that the ASR was well contained within concrete and its presence did not have a noticeable effect in reducing the concrete compressive strength and did not appear to be the source of deterioration. Upon examination of the concrete core samples, the hairline cracks on the columns were observed only at the surface and did not propagate deep into the concrete cores. The core sampling from the footings was not performed at the time due to lack of permit to take core sample in the UPRR rail yard facilities. However the core sampling of the footings will be performed prior to bridge type selection. It should be noted that there is no record of seismic retrofitting of the existing bridge.

Proposed Structures

The proposed project considers a wider bridge than the existing for addition of two more lanes to the current five-lane traffic for a total of seven traffic lanes in order to match the configuration of the nearby existing Riverside Avenue Bridge over I-10 to mitigate the operation deficiencies without increasing capacity.

Structures Alternatives

There are two alternatives to consider for this project:

1. Widening of the existing bridge on both sides
2. Replacing the existing bridge with a new structure

Alternative 1-Existing Bridge Widening

This alternative considers salvaging the existing bridge and widening it by 23 feet on each side for a total of 46 feet to accommodate 7-lane of traffic. The existing bridge will require some repair work. However, as discussed in the above, the physical condition of the bridge foundations is unknown. Core samples will be taken from the footings to perform the lab test in order to determine the degree of deterioration and reduction of compressive strength of the concrete, if any, due to the presence of ASR. In addition seismic evaluation of the existing bridge should be performed to determine whether seismic retrofit is required.

Superstructure

The proposed bridge alternative consists of a six-span structure which is a combination of cast-in-place posttensioned concrete box girder and precast concrete girder similar to the existing bridge. Spans1 through 5 is cast-in-place concrete box girder and span 6 consists of Caltrans precast concrete I-Girder in order to match the existing type construction. The 23-foot widening segment on each side stays constant throughout the length of the bridge. The width of the widened bridge would vary from 117'-0" at abutment 1 to 131'-2" at Abutment 7. The total length of the widened bridge will be approximately 495 feet long similar to the length of the existing bridge. The structure depth for cast-in-place box girder segment is considered to be 4'-6" (spans 1 to 5) and 4'-4" for precast girder on span 6.

Substructure

Abutments-
The proposed Abutment 1 is seat type, similar to the existing abutment, supported on 24" diameter steel pipe piles. However the existing Abutment 7 wall is retaining the road and cannot be removed, therefore for the widening a seat abutment is proposed to be constructed on top of three-foot diameter drilled shafts located behind the existing abutment wall. The existing abutment wing walls should be removed to make the drilling operation of the shafts possible in the existing gap area between the MSE wall and the back of the existing abutment wall.

Intermediate Piers-
The widened bridge superstructure is assumed to be supported by single 6-foot diameter columns resting on 24"-diameter steel pipe pile foundations.

Falsework and Minimum Clearances

A segment of the structure, span 6, which is over the UPPR mainline track, does not require falsework because of the precast girder construction. The minimum vertical clearance over the tracks will be 23'-7" which meets the UPRR requirement and the existing horizontal clearance of 25 feet would be maintained. However, spans 1 through 5 are cast-in- place construction and will require falsework. Considering a 2.5-foot falsework depth, the minimum vertical clearance over the other tracks during the construction would be 21 feet which also meets the UPRR temporary clearance requirement.

Alternative 2-Bridge Replacement

This alternative considers complete removal of the existing bridge and replacing it with a new construction. It is proposed to reduce the length of the new bridge from 496 feet for the case of Alternative 1, to 459.5 feet by locating the new abutment 1 to the north of the existing abutment hence eliminating one span and constructing a new five-span bridge.

Superstructure

It is proposed for this alternative the superstructure be constructed with precast prestressed concrete girders. This type of construction does not require falsework hence minimizing interruption to the railroad traffic; it would also shorten the construction time which is ideal where a bridge structure over crosses railroad tracks. The depth of the superstructure is anticipated to be 5'-11"; spans will be made continuous for live loading. The bridge width varies from 112'-8" at Abutment 1 to 135'-8" at Abutment 6.

Substructure

Abutments-
A tall seat abutment type is proposed for Abutment 1 supported on three rows of steel pipe piles with front row piles battered. At Abutment 6 however, since the existing abutment wall is retaining the road, it cannot be removed. Therefore the new Abutment 6 will be constructed on 4-foot diameter drilled shafts located in front of the existing abutment wall.

Intermediate Piers-
Each interior support will consist of three 7-foot diameter columns that are fixed at the top to the pier cap and are hinged at the base to the pile caps in order to reduce the cost of foundation. The columns are founded on sixteen 24-inch diameter steel pipe piles.

Falsework and Minimum clearances

The construction of the precast girder superstructure does not require falsework over the tracks. The minimum vertical clearance over the tracks is 24’-10” which meets the UPRR requirement. However this construction of Abutment 6 in front of the existing abutment wall will reduce the existing minimum horizontal clearance of 25 feet to the centerline of the nearby track, therefore a crash wall is proposed to be constructed in front of the drilled shafts to provide a minimum horizontal clearance of 15 feet to the centerline of the track.

Section 2 – APS Check List

Consultant Prepared Advance Planning Study (APS) Checklist

Date: 12/19/2016	Consultant Firm (for structures): JACOBS Engineering		Phone No: 714-835-6355
Designed by: D. Haghighi			Phone No: 714-835-6355
EA:	County: San Bernardino	Rte:	KP(PM)
Project Description: Advance Planning Study-Riverside Avenue Overhead			
Bridge No(s): 54C-62	Bridge Name(s): Riverside Avenue Bridge		
Total number of bridges in project: 1		APS Alternative Letter or Number (if more than one): 2	
Purpose of this APS:	Initial APS Cost & Feasibility ☒	Revised scope ☐	Update cost ☐

Part A Items to collect and considerations prior to beginning the APS

All items listed in Part A are to be made available and submitted if requested by the Liaison Engineer. (Mark **N/A** if not applicable)

- ☒ Preliminary profile grade of proposed structure.
- ☒ Typical section of the proposed structure. (Including barrier type, sidewalks, cross slope %, etc.)
- ☒ Grades or spot elevations of roadway below the structure.
- NA Typical section of roadway below the structure. (Including shoulders, gutters, embankment slope.)
- NA Site map: including horizontal alignment of new structure and the roadway below, topo, contours, etc.
- NA Stage construction or detour plan for traffic on the structure. (number of lanes to remain open, Temp Railing, etc.)
- NA Stage construction or detour plan for the roadway below the structure. (falsework openings for each stage and any restrictions.)
- ☒ "As Built" plans for existing structures.
- NA Future widening plans of upper and lower roadway (verify with Route Concept Report).
- ☒ Site aerial photograph (at the proposed structure).
- ☒ Environmental and/or permit requirements (areas of potential impact, construction windows, etc.)
- NA Overhead and underground utility plans
- ☒ Any other information that you feel is necessary to complete the study. (Other concerns that may affect the APS: local agency requirements such as aesthetics, improvements in vicinity of structure, airspace usage, other obstructions, etc.)

Consultant Prepared Advance Planning Study (APS) Checklist

Part B Considerations during the APS design and cost estimate preparation

1.	Has this project been discussed with:	the OSFP Liaison Engineer?	Yes ☐ No ☒
		the Caltrans District Project Manager?	Yes ☒ No ☐
		the roadway consultant?	Yes ☐ No ☒
2.	Have the Caltrans Structures Maintenance records been reviewed?		Yes ☒ No ☐
	If the records recommend any work for the structure, is it included in the APS?		Yes ☐ No ☐
3.	Are there special aesthetic considerations?		Yes ☐ No ☒
4.	(Widenings and Modifications) Has this project been reviewed for seismic retrofit requirements?		Yes ☐ No ☒
	Are seismic retrofit requirements included in the APS?		Yes ☐ No ☐
5.	Any special Railroad requirements?		Yes ☒ No ☐
	Shoofly required?		Yes ☐ No ☒
	Cost of shoofly included as a separate item in the project cost estimate?		Yes ☐ No ☐
6.	Any special foundation requirements, including scour critical work, special excavation such as Type A, Type D, and/or hazardous or contaminated material?		Yes ☐ No ☒
7.	Any special construction requirements, including limited site accessibility or seasonal work?		Yes ☒ No ☐
8.	Other items to be included in the cost such as slope paving, approach slabs, and/or adjacent retaining walls?		Yes ☒ No ☐
9.	Remove existing bridge? Total Deck Area: 33,400 sq.ft		Yes ☒ No ☐
10.	Any other unusual or special requirements?		Yes ☐ No ☒
11.	Provide and attach a consultant prepared Design Memo to summarize and document any important assumptions, discussions, decisions, unusual items, local agency requirements such as aesthetics, improvements in vicinity of the structure, airspace usage, other obstructions, or any items noted above.	Summary attached?	Yes ☐ No ☒

Designer: (Printed Name)	Designer's Signature:	Date:
Dary Haghighi	Dary Haghighi	12/19/16

Section 3 – Bridge Cost Estimates

☐ GENERAL PLAN ESTIMATE ☐ ADVANCE PLANNING ESTIMATE

Revised - December 3, 2007

RCVD BY: **IN EST:**

OUT EST:

BRIDGE: Riverside Avenue Bridge (Widen) (Alternative 1) **BR. No.:** 54C-62 **DISTRICT:**

TYPE: Combined CIP/PS & Precast prestress Concrete Girders **RTE:**

CU: TBD **CO:**

EA: TBD **PM:**

LENGTH: 496.00 **WIDTH:** 46'-widening **AREA (SF)=** 22,816

DESIGN SECTION:

 # OF STRUCTURES IN PROJECT : **EST. NO.**

PRICES BY : **COST INDEX:**

PRICES CHECKED BY : **DATE:**

QUANTITIES BY: **DATE:**

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	Excavation		CY	1,730	$70.00	$121,100.00
2	Structural Backfill		CY	724	$75.00	$54,300.00
3	Structural Concrete Bridge	5000 psi	CY	1,600	$825.00	$1,320,000.00
4	Structural Concrete Bridge	4000 psi	CY	390	$800.00	$312,000.00
5	Structural Concrete Bridge Footing		CY	1,020	$525.00	$535,500.00
6	Bar Reinforcing Steel		LB	644,000	$1.15	$740,600.00
7	Prestressing Steel		LB	56,166	$1.80	$101,098.80
8	Furnished Precast Prestress Concrete Girder (89')	CA I42	EA	7	$20,000.00	$140,000.00
9	24-inch Dia. Steel Pile		LF	2,007	$60.00	$120,420.00
10	Pile Drive		EA	51	$1,600.00	$81,600.00
11	Cast-in-Drilled Hole Cocnrete Piling	36" Dia.	LF	335	$475.00	$159,125.00
12	Joint Seal	MR=2"	LF	180	$75.00	$13,500.00
13	Concrete Barrier	Type 26 Mod	LF	1,033	$125.00	$129,125.00
14	Chain Link Railing	Type 7	LF	1,033	$65.00	$67,145.00
15	Bridge Removal	Lump Sum	LS	1	$125,000.00	$125,000.00
16	Elastomeric Bearing Pads		EA	79	$700.00	$55,300.00
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

SUBTOTAL	$4,075,814
TIME RELATED OVERHEAD	$407,581
MOBILIZATION (@ 10 %)	$498,155
SUBTOTAL BRIDGE ITEMS	$4,981,550
CONTINGENCIES (@ 25%)	$1,245,388
BRIDGE TOTAL COST	$6,226,938
COST PER SQ. FOOT	$272.92
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	$6,226,938
BUDGET ESTIMATE AS OF	**$6,227,000**

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS:

Escalated Budget Estimate to Midpoint of Construction *

Escalation Rate per Year

Years Beyond Midpoint	Escalated Budget Est.
1	
2	
3	

Years Beyond Midpoint	Escalated Budget Est.
4	
5	

* Escalated budget estimate is provided for information only, actual construction costs may vary. Escalated budget estimates provided do not replace Departmental policy to update cost estimates annually.

☐ GENERAL PLAN ESTIMATE ☐ ADVANCE PLANNING ESTIMATE

Revised - December 3, 2007

RCVD BY: **IN EST:**

OUT EST:

BRIDGE: Riverside Avenue Bridge (Replacement) (Alternative 2) **BR. No.:** 54C-62 **DISTRICT:**

TYPE: Precast prestress Concrete Girders **RTE:**

CU: TBD **CO:**

EA: TBD **PM:**

LENGTH: 459.50 **WIDTH:** 124' (average) **AREA (SF)=** 57,056

DESIGN SECTION:

 # OF STRUCTURES IN PROJECT : **EST. NO.**

PRICES BY : **COST INDEX:**

PRICES CHECKED BY : **DATE:**

QUANTITIES BY: **DATE:**

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	Excavation		CY	4,088	$70.00	$286,160.00
2	Structural Backfill		CY	2,906	$75.00	$217,950.00
3	Structural Concrete Bridge	4000 psi	CY	4,772	$800.00	$3,817,600.00
4	Structural Concrete Bridge Footing		CY	1,875	$525.00	$984,375.00
5	Approach Slab		CY	345	$600.00	$207,000.00
6	Bar Reinforcing Steel		LB	1,693,610	$1.15	$1,947,651.50
7	Furnished Precast Prestress Concrete Girder (94')	CA BT61	EA	58	$35,000.00	$2,030,000.00
8	Furnished Precast Prestress Concrete Girder (81')	CA BT61	EA	16	$30,000.00	$480,000.00
9	24-inch Dia. Steel Pile		LF	12,228	$60.00	$733,680.00
10	Pile Drive		EA	303	$1,600.00	$484,800.00
11	Cast-in-Drilled Hole Cocnrete Piling	48" Dia.	LF	659	$700.00	$461,300.00
12	Joint Seal	MR=2"	LF	248	$75.00	$18,600.00
13	Concrete Barrier	Type 26 Mod	LF	998	$125.00	$124,750.00
14	Chain Link Railing	Type 7	LF	998	$65.00	$64,870.00
15	Bridge Removal	Lump Sum	LS	1	$1,200,000.00	$1,200,000.00
16	Elastomeric Bearing Pad		EA	148	$700.00	$103,600.00
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

SUBTOTAL	$13,162,337
TIME RELATED OVERHEAD	$1,316,234
MOBILIZATION (@ 10 %)	$1,608,730
SUBTOTAL BRIDGE ITEMS	$16,087,300
CONTINGENCIES (@ 25%)	$4,021,825
BRIDGE TOTAL COST	$20,109,125
COST PER SQ. FOOT	$352.45
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	$20,109,125
BUDGET ESTIMATE AS OF	**$20,109,000**

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS:

Escalated Budget Estimate to Midpoint of Construction *

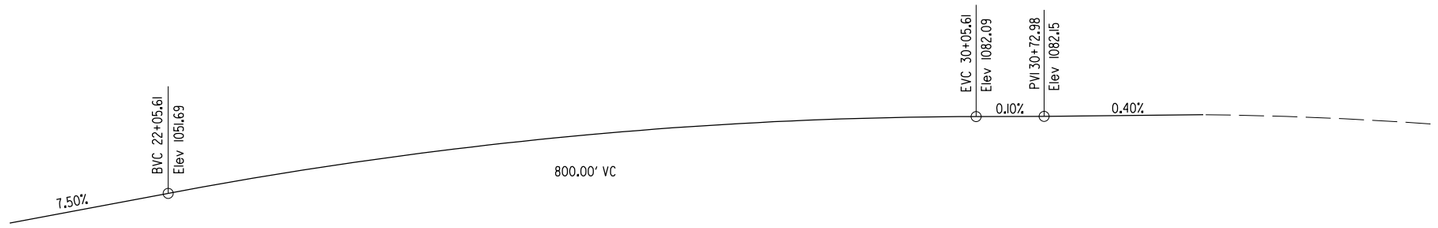
Escalation Rate per Year

Years Beyond Midpoint	Escalated Budget Est.
1	
2	
3	

Years Beyond Midpoint	Escalated Budget Est.
4	
5	

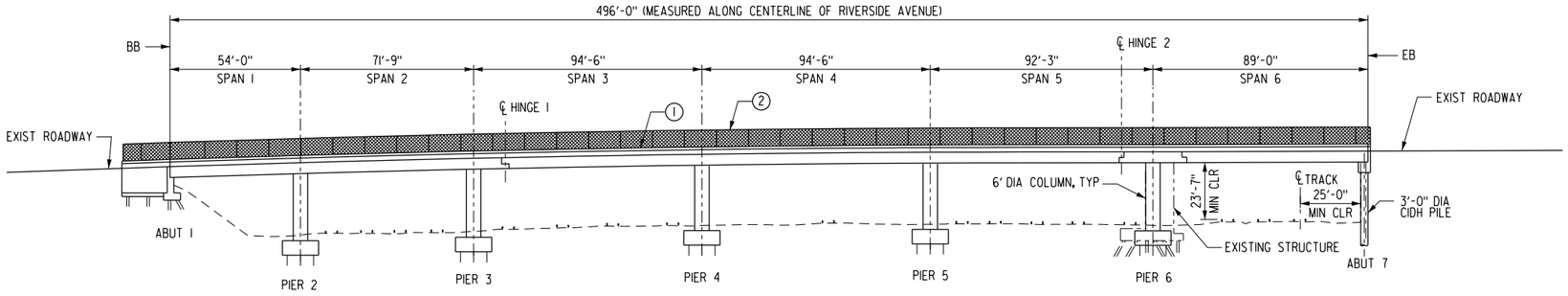
* Escalated budget estimate is provided for information only, actual construction costs may vary. Escalated budget estimates provided do not replace Departmental policy to update cost estimates annually.

Section 4 – General Plans and Typical Sections



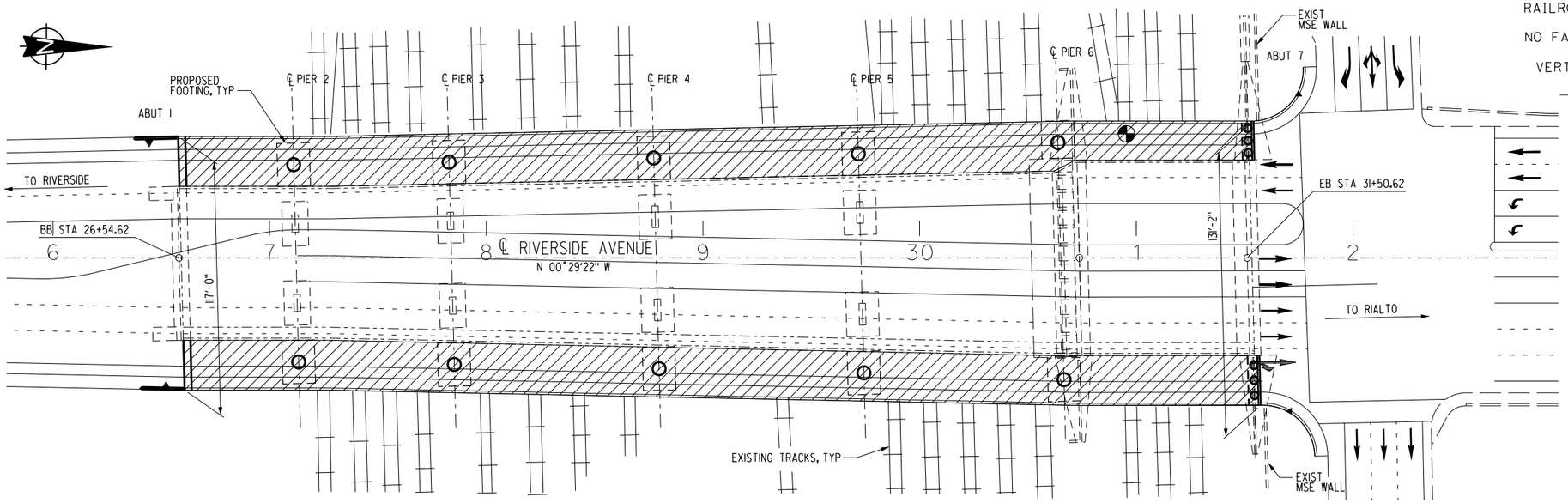
RIVERSIDE AVENUE PROFILE GRADE

N.T.S.



ELEVATION

SCALE: 1" = 30'



PLAN

SCALE: 1" = 30'

LEGEND:

= BRIDGE WIDENING

= INDICATES UPRR TRACKS

= DIRECTION OF TRAFFIC

KEY NOTES:

= POINT OF MINIMUM VERTICAL CLEARANCE

(1) CONCRETE BARRIER

(2) CHAIN LINK RAILING (TYPE 7)

VEHICULAR TRAFFIC

1. _X_ EXISTING ALIGNMENT. TRAFFIC ON RIVERSIDE AVE.
2. ___ TRAFFIC WILL BE DETOURED AWAY FROM RIVERSIDE AVE.
3. _X_ TRAFFIC WILL BE CARRIED ON THE STRUCTURE. STAGE CONSTRUCTION WILL NOT BE REQUIRED.
4. ___ TRAFFIC WILL PASS UNDER THE STRUCTURE
   - A. ___ NO FALSEWORK ALLOWED OVER TRAFFIC.
   - B. ___ FALSEWORK OPENING(S) REQUIRED:

	TEMPORARY VERTICAL CLEARANCE	WIDTH OF TRAFFIC OPENING
TWO WAY	_____	_____

   - C. ___ TEMPORARY TRAFFIC LANES SHARED WITH PEDESTRIANS.

RAILROAD TRAFFIC

NO FALSEWORK ALLOWED OVER UPRR TRACK.

VERTICAL CLEARANCE	HORIZONTAL CLEAR WIDTH
_____	_____

ALTERNATIVE 1

30' 20' 10' 0 30' 60'

GRAPHIC SCALE: 1" = 30'

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY	D. HAGHIGHI
DRAWN BY	P. ZUCCHI
CHECKED BY	K. PIRBAZARI
APPROVED BY	
DATE	DECEMBER 19, 2016

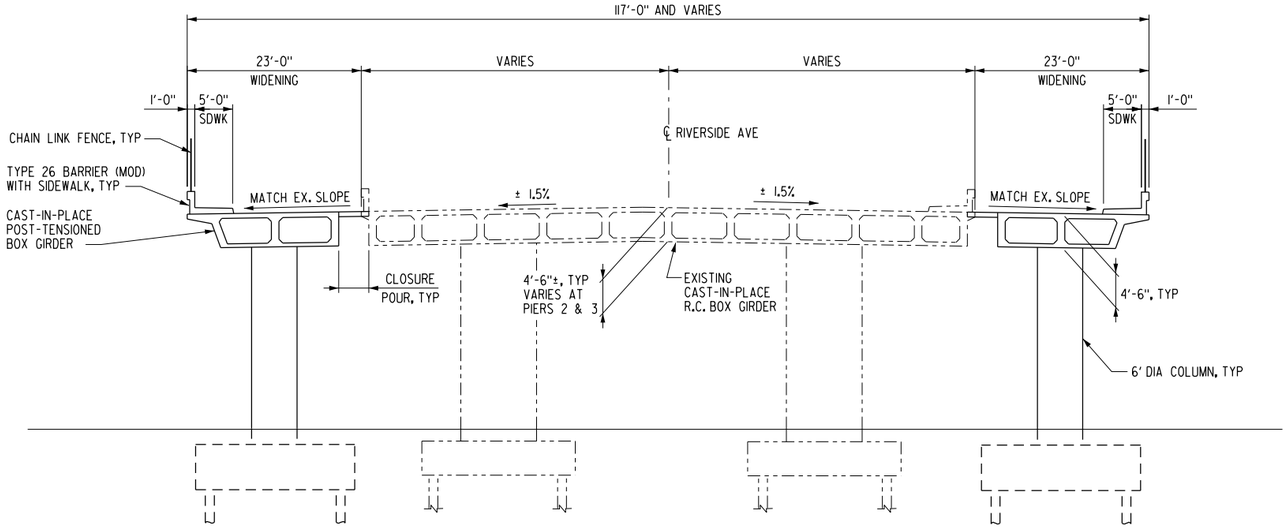
JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (WIDEN)

PLANNING STUDY 1OF 2

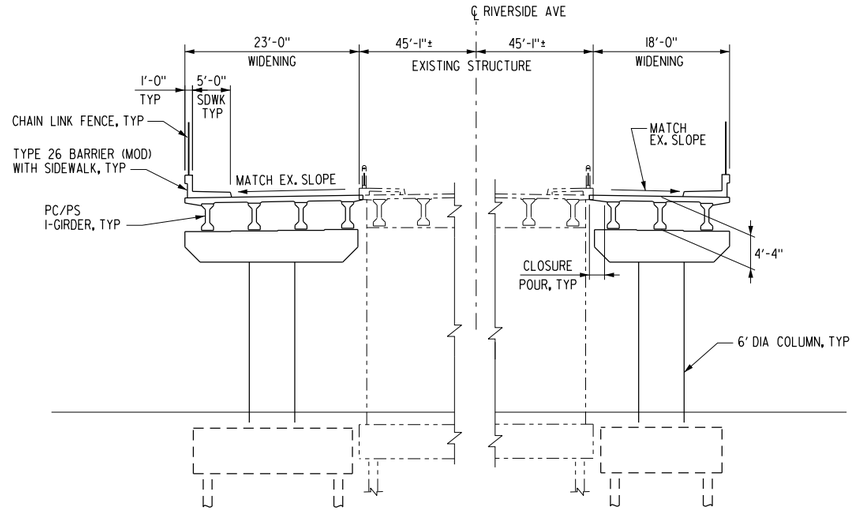
CONTRACT NO.	
DRAWING NO.	
REVISION	SHEET NO. 1 OF 2
SCALE	AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT



TYPICAL SECTION - PIER 2 (LOOKING NORTH)

SCALE: 1" = 10'



TYPICAL SECTION - PIER 6 (LOOKING SOUTH)

SCALE: 1" = 10'

PLANNING ESTIMATE:

DATE OF ESTIMATE		12/19/2016
STRUCTURE DEPTH	=	4'-4"
LENGTH	=	496'-0"
WIDTH (TOTAL)	=	46'-0"
AREA	=	22,816 SQ FT
COST/SQ FT INCLUDING:		
10% MOBILIZATION &		
25% CONTINGENCY	=	327.50
TOTAL COST	=	7,472,000

ALTERNATIVE 1

GRAPHIC SCALE: 10' 0 10' 20' — 1" = 10'

zucchip
pw:\\DCICLUSOI.jacobs.com:Jacobs_JLPatterson\Documents\Engineering\City Of Rialto\001- Riverside Ave UPRR Bridge Widening\Drawings\Structural\WIDEN-TYPICAL.dgn
3:55:14 PM
12/15/2016

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATOR	PHYSICAL ENTITY	WORK ELEMENT

REV	DATE	DESCRIPTION	BY / SUB	APP

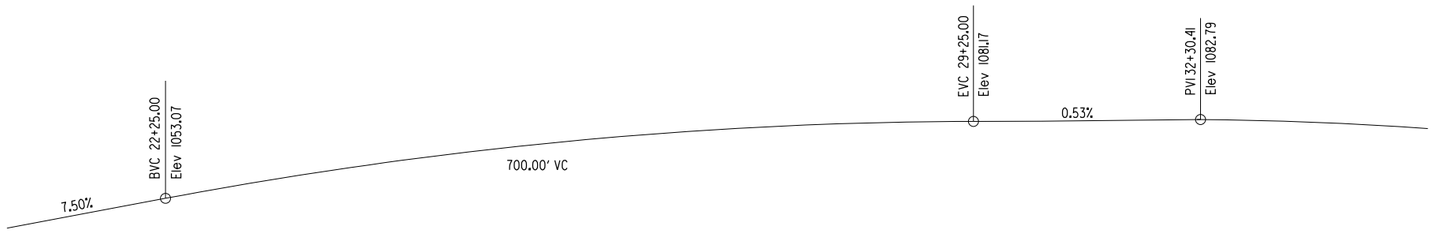
DESIGNED BY	D. HAGHIGHI
DRAWN BY	P. ZUCCHI
CHECKED BY	K. PIRBAZARI
APPROVED BY	
DATE	DECEMBER 19, 2016

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (WIDEN)

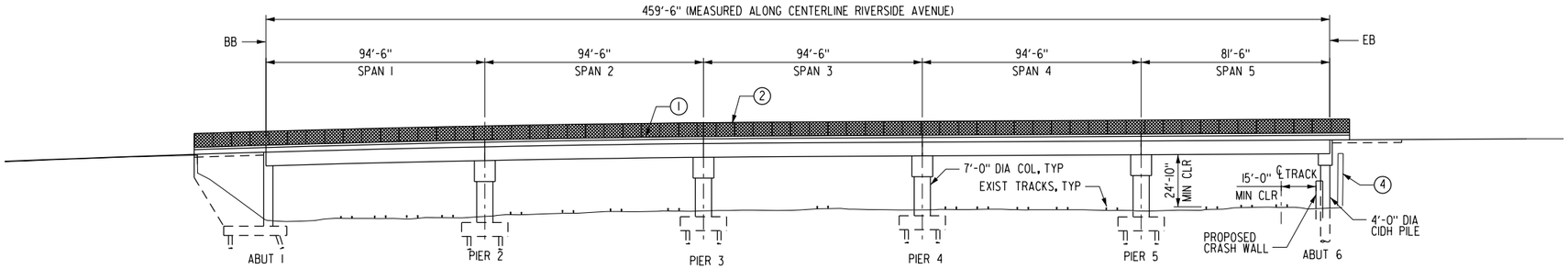
PLANNING STUDY 2 OF 2

CONTRACT NO.	
DRAWING NO.	
REVISION	SHEET NO. 2 OF 2
SCALE	AS SHOWN



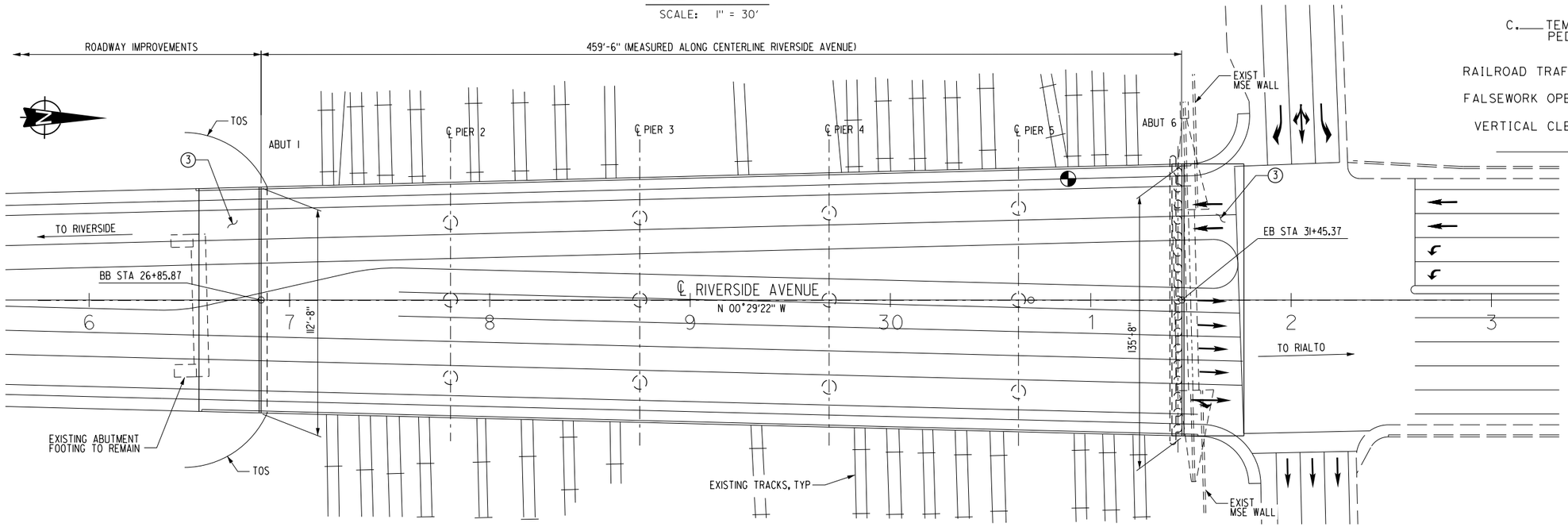
RIVERSIDE AVENUE PROFILE GRADE

N.T.S.



ELEVATION

SCALE: 1" = 30'



PLAN

SCALE: 1" = 30'

LEGEND:

= BRIDGE WIDENING

= INDICATES UPRR TRACKS

= DIRECTION OF TRAFFIC

KEY NOTES:

- POINT OF MINIMUM VERTICAL CLEARANCE
- (1) CONCRETE BARRIER (TYPE 26)
- (2) CHAIN LINK RAILING (TYPE 7)
- (3) STRUCTURE APPROACH TYPE N(30S)
- (4) EXISTING ABUTMENT WALL TO REMAIN

VEHICULAR TRAFFIC

1. X EXISTING ALIGNMENT. TRAFFIC ON RIVERSIDE AVE.
2. X TRAFFIC WILL BE DETOURED AWAY FROM RIVERSIDE AVE.
3. ___ TRAFFIC WILL BE CARRIED ON THE STRUCTURE. STAGE CONSTRUCTION WILL NOT BE REQUIRED.
4. ___ TRAFFIC WILL PASS UNDER THE STRUCTURE
   - A. ___ NO FALSEWORK ALLOWED OVER TRAFFIC.
   - B. ___ FALSEWORK OPENING(S) REQUIRED:

	TEMPORARY VERTICAL CLEARANCE	WIDTH OF TRAFFIC OPENING
TWO WAY	_____	_____

   - C. ___ TEMPORARY TRAFFIC LANES SHARED WITH PEDESTRIANS.

RAILROAD TRAFFIC

FALSEWORK OPENING IS NOT REQUIRED OVER UPRR TRACK.

VERTICAL CLEARANCE	HORIZONTAL CLEAR WIDTH
_____	_____

ALTERNATIVE 2

REV	DATE	DESCRIPTION	BY / SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY D. HAGHIGHI
DRAWN BY P. ZUCCHI
CHECKED BY K. PIRBAZARI
APPROVED BY
DATE DECEMBER 19, 2016

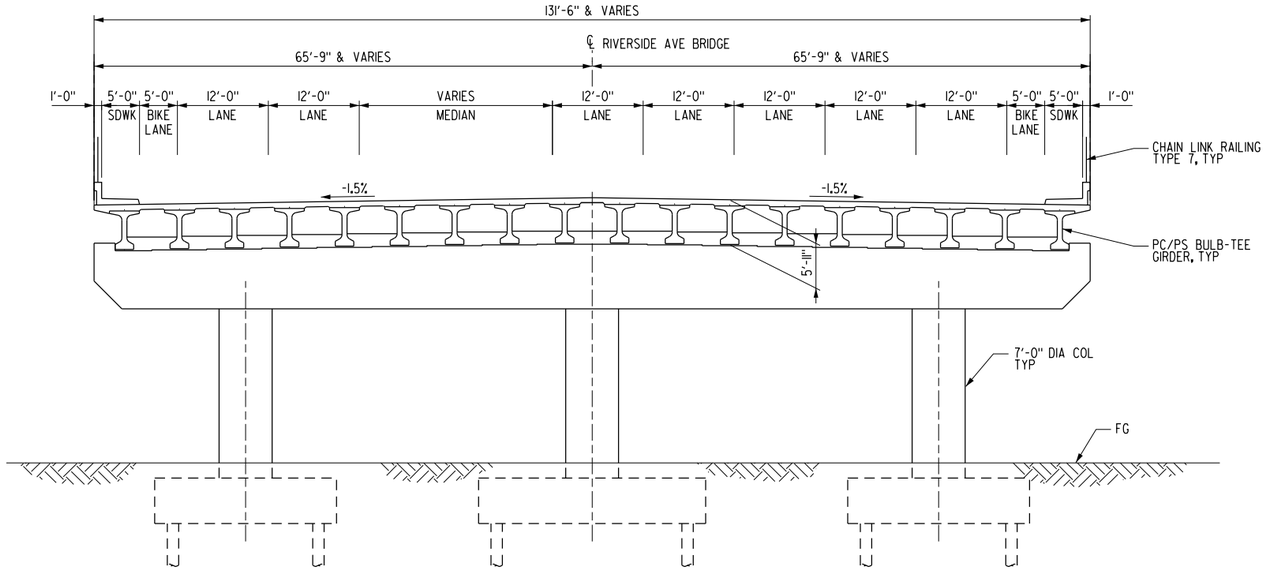
JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (REPLACEMENT)

PLANNING STUDY 1 OF 2

CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO. 1 OF 2
SCALE AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT



TYPICAL SECTION - PIER 5

SCALE: 1" = 10'

PLANNING ESTIMATE:

DATE OF ESTIMATE		12/19/2016
STRUCTURE DEPTH	=	5'-11"
LENGTH	=	459'-6"
WIDTH	=	124'-2" (AVERAGE)
AREA	=	57,056 SQ FT
COST/SQ FT INCLUDING:		
10% MOBILIZATION &		
25% CONTINGENCY	=	352.45
TOTAL COST	=	20,189,000

ALTERNATIVE 2

10' 0 10' 20'

GRAPHIC SCALE: 1" = 10'

REV	DATE	DESCRIPTION	BY / SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY	D. HAGHIGHI
DRAWN BY	P. ZUCCHI
CHECKED BY	K. PIRBAZARI
APPROVED BY	
DATE	DECEMBER 19, 2016

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (REPLACEMENT)

PLANNING STUDY 2 OF 2

CONTRACT NO.	
DRAWING NO.	
REVISION	SHEET NO. 2 OF 2
SCALE	AS SHOWN

PROJECT NUMBER	
COST ELEMENT	
LINE ITEM	
CONTRACT DESIGNATOR	
PHYSICAL ENTITY	
WORK ELEMENT	

Section 5 – Structural Preliminary Geotechnical Report

A Report Prepared for:

JACOBS
725 West Country Road, Suite 300
Orange, CA 92868

STRUCTURE PRELIMINARY GEOTECHNICAL REPORT
RIVERSIDE AVENUE OVERHEAD (WIDEN OR REPLACE) OVER UNION PACIFIC RAILROAD
BRIDGE NO. 54C6002
RIALTO, CALIFORNIA

Project No. 2014-015

by

Esteban Villanueva
Staff Engineer

REGISTERED PROFESSIONAL ENGINEER
V.R. NADESWARAN
GE 02390
GEOTECHNICAL
STATE OF CALIFORNIA

V.R. Nadeswaran
Geotechnical Engineer 2390

Diaz•Yourman & Associates
1616 East 17th Street
Santa Ana, CA 92705-8509

December 15, 2016

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

This structure preliminary geotechnical report (SPGR) provides preliminary geotechnical information for the advanced planning study (APS) of the proposed Widening or Replacement of Riverside Avenue Overhead over Union Pacific Railroad (UPRR) in Rialto, California. The information provided in this report is based on review of available as-built data, review of existing subsurface and groundwater data in the project vicinity, and discussions with representatives of Jacobs. No field exploration has been performed at this time. Jacobs authorized this work on December 8, 2016.

2 SCOPE OF SERVICES

The purpose of our study was to provide geotechnical input for the APS. The scope of our services consisted of reviewing available data and developing preliminary conclusions regarding site conditions, geologic and seismic setting, corrosion potential, and conceptual foundation type. This SPGR has been prepared in general accordance with the guidelines outlined in the Foundation Report Preparation for Bridge Foundations (Caltrans, 2009c).

3 PROJECT DESCRIPTION

The proposed project will consist of widening Riverside Avenue between Interstate (I) 10 and Slover Avenue and will include widening or replacement of the existing Riverside Avenue overhead over UPRR in the City of Rialto, California. The existing six-span, approximately 495-foot-long bridge structure will be widened in each direction by 23 feet or replaced with a wider, five-span, approximately 460-foot-long new bridge structure.

3.1 PROJECT LOCATION

The project site is shown on the Vicinity Map, Figure 1. The latitude and longitude for the project site are 34.06869^0 north and 117.37017^0 west, respectively.

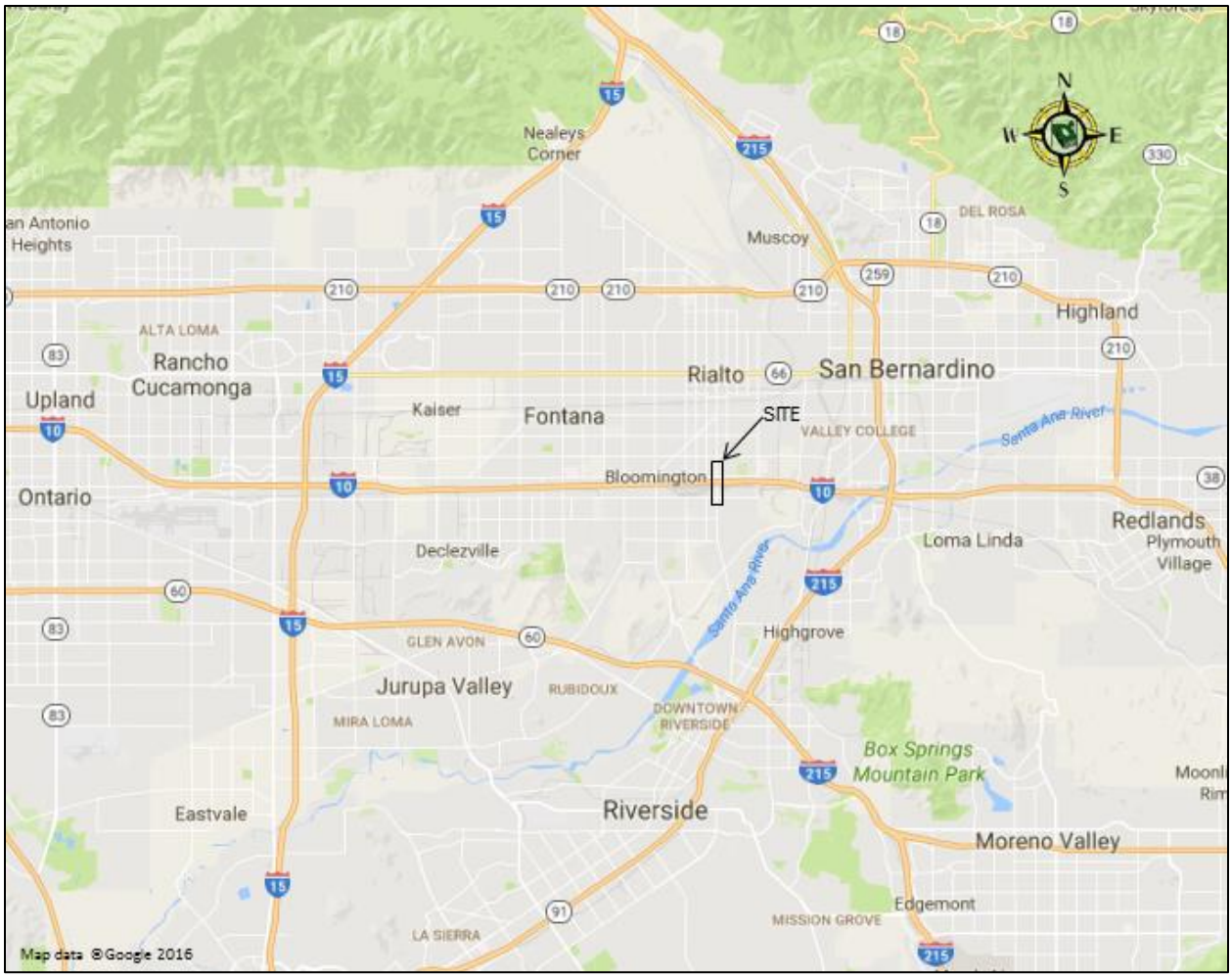


Figure 1 - VICINITY MAP

3.2 EXISTING STRUCTURE

The existing Riverside Avenue overhead over UPRR (Bridge) was originally constructed in late 1958 as a single-span bridge and lengthened by 5 more spans in 1971 to accommodate the expansion of the rail yard. The existing Bridge has six spans and is approximately 495 feet long and approximately 70 to 85 feet wide. A summary of the existing bridge foundation is presented in Table 1. The minimum vertical clearance under the existing bridge is approximately 22 feet. There are mechanically stabilized earth (MSE) walls present near Abutment 7.

As-built logs of test borings (LOTBs) are attached in Appendix A.

Table 1 - EXISTING BRIDGE FOUNDATIONS

LOCATION	PILE TYPE	APPROXIMATE PILE/FOOTING TOP ELEVATION (feet)	APPROXIMATE SPECIFIED PILE TIP ELEVATION (feet)	DESIGN PILE CAPACITY (kips)
Abutment 1[1]	Driven HP 10x42	1,060	Unknown	90
Pier 2[1]	Driven HP 10x42	1,039	1,020	90
Pier 3[1]	Driven HP 10x42	1,040	1,021	90
Pier 4[1]	Driven HP 10x42	1,042	1,023	90
Pier 5[1]	Driven HP 10x42	1,043	1,025	90
Pier 6[1,2]	Driven HP 10x42 (1971) and existing piles, likely driven HP-type piles (1958)	1,043	1,025	90
Abutment 7[2,3]	Shallow spread footing	1,045	N/A	--

Notes:
1. Based on as-built plans for Bridge Number 54C-62 (Caltrans, 1971).
2. Based on as-built plans for Bridge Number 54C-62 (Caltrans, 1958).
3. Abutment wall has tie-back anchors.

3.3 PROPOSED STRUCTURE

3.3.1 WIDENING

The General Plan (GP) and typical section developed by Jacobs for the widening option are included in Appendix B. The Bridge will be widened by approximately 23 feet on both sides. The widened bridge will be approximately 117 to 131 feet wide.

3.3.2 REPLACEMENT

The GP and typical section developed by Jacobs for the replacement option are included in Appendix B. The new bridge will have 5 spans, approximately 460 feet long and 120 to 131 feet wide and will have a minimum clearance of approximately 24 feet.

4 DATA REVIEW

A list of documents reviewed is presented in the bibliography, Section 16. Selected as-built plans and LOTBs available for the existing Bridge are provided in Appendix A. Subsurface data from adjacent Riverside Avenue Overcrossing over I-10 was also reviewed. Selected subsurface data from adjacent sites are also included in Appendix A. The Caltrans documents and Caltrans ARS On-line tool and spreadsheets along with United States Geological Survey (USGS) interactive deaggregation tool (USGS, 2013) were reviewed to develop the acceleration response spectrum (ARS). Geological maps and data published by the USGS and California Geological Survey (CGS; formerly known as California Division of Mines and Geology [CDMG]) were also reviewed.

5 FIELD INVESTIGATION AND TESTING PROGRAM

No subsurface investigation was performed for the project.

6 LABORATORY TESTING PROGRAM

No geotechnical laboratory testing program was conducted for this project.

7 GEOLOGY, SURFACE/SUBSURFACE CONDITION, AND GROUNDWATER LEVEL

7.1 GEOLOGY

The site is located in the northeastern portion of the San Bernardino Valley near the base of the San Bernardino Mountains where the Peninsular Range Geomorphic Province meets the Transverse Range Geomorphic Province. The San Gabriel Mountains portion of the Transverse Range Geomorphic Province is bound by the Cucamonga Fault system to the south. The San Bernardino Mountains to the southwest are bounded by the San Andreas Fault. The San Bernardino Mountains and the San Gabriel Mountains to the Northwest consist of Mesozoic intrusive crystalline rocks and crystalline metamorphic rocks that make up the majority of the eastern portion of the Transverse Ranges of California. The San Bernardino Valley consists of deep deposits of Tertiary and Quaternary sedimentary alluvial sediments.

The site geology consists of fills overlying alluvial soils to depths that will impact/influence project design and construction.

The site is located within a seismically active area.

7.2 SURFACE CONDITION

The roadway at the site was generally level at an approximate elevation of 1,080 feet. The ground surface below the existing bridge near the railway tracks was generally level at an approximate elevation of 1,050 feet.

7.3 SUBSURFACE CONDITION

The subsurface soils at the site generally consist of granular silty sands, sands with silts, and gravels. The soils, with the exception of some loose pockets, are generally medium dense to very dense. For the purposes of preliminary design, the subsurface conditions along the proposed bridge are summarized in Table 2.

Table 2 - IDEALIZED PROFILE

SOIL TYPE	DEPTH BELOW RAIL TRACKS (feet)	ELEVATION (feet)		TOTAL UNIT WEIGHT (pcf)	SHEAR STRENGTH PARAMETERS	
		Top	Bottom		Cohesion (psf)	Friction Angle (degrees)
Fills and natural silty sands and sands with silts, loose to dense	0 to 20	--	1,030	120	--	33
Natural sands with silts, medium dense to very dense	20 to 29	1,030	1,021	125	--	36
Natural sands with silts and gravels, dense to very dense	29 to 70	1,021	980	130	--	40

Notes:
- Simplified soil types.
- pcf = pounds per cubic foot.
- psf = pounds per square foot.

Based on the soil types shown in the LOTB and blow count data in the project vicinity, the shear wave velocity for the upper 30 meters (100 feet) of soils (V_{S30}) was estimated to be 390 meters per second (m/s).

7.4 GROUNDWATER

Based on the review of the LOTBs, groundwater was not detected in the previous borings to depths of 70 feet below the ground surface (bgs). Based on review of available information, we judge that the groundwater is likely at depths greater than 150 feet bgs.

8 SCOUR POTENTIAL

Scour is not a design concern because the proposed Bridge is not located within an active streambed.

9 CORROSION POTENTIAL

No corrosion test results were available for the project site. Based on the corrosion test data from adjacent sites and anticipated soil types at the site, we judge that the potential for corrosion is low.

10 PRELIMINARY SEISMIC RECOMMENDATIONS

10.1 GROUND RUPTURE

No known active faults were located within the project site boundaries, and the project site was not located within the Alquist-Priolo Earthquake Fault Zone (APEFZ; CGS, 2007). Therefore, we consider the possibility of surface rupture at the proposed bridge site to be low.

10.2 SEISMIC GROUND MOTION

The site is located within a seismically active region. The characteristics of nearby faults are summarized in Table 3.

The design ARS was developed based on current Caltrans seismic design procedure. Based on this Caltrans seismic design procedure, the peak ground acceleration (PGA) for the site was calculated to be 0.79g. The current Caltrans procedure considers both deterministic and probabilistic (975-year return period) approaches and enveloping the spectra developed by using both methodologies.

Table 3 - MAJOR FAULT CHARACTERIZATION IN THE PROJECT VICINITY

FAULT[1]	FID[2]	SITE-TO-FAULT DISTANCE[3] (kilometers)		TYPE[4]	M_{MAX} [5]	DIP AND DIRECTION[6]	BASIN EFFECTS[7]	
		R_x	R_{RUP}				$Z_{1.0}$ (m)	$Z_{2.5}$ (km)
San Jacinto (San Bernardino)	336	2.01	2.01	SS	7.7	90°, V	N/A	N/A
San Jacinto (San Bernardino Valley Section)	310	5.70	5.70	SS	7.7	90°, V	N/A	N/A
San Andreas (San Bernardino S)	325	14.40	14.40	SS	7.9	90°, V	N/A	N/A

Notes:

1. Caltrans fault database (Caltrans, 2012).
2. FID = Fault identification Number.
3. The R_x distance is defined as the closest distance to the fault trace or surface projection of the top of the rupture plane. The R_{RUP} is defined as closet distance from the project site to the fault rupture plane. The distance measurements are approximate.
4. SS = Strike-slip.
5. M_{MAX} = Maximum earthquake magnitude.
6. V = vertical direction.
7. $Z_{1.0}$ = Depth to shear wave velocity of 1,000 m/s; $Z_{2.5}$ = Depth to shear wave velocity of 2,500 m/s.

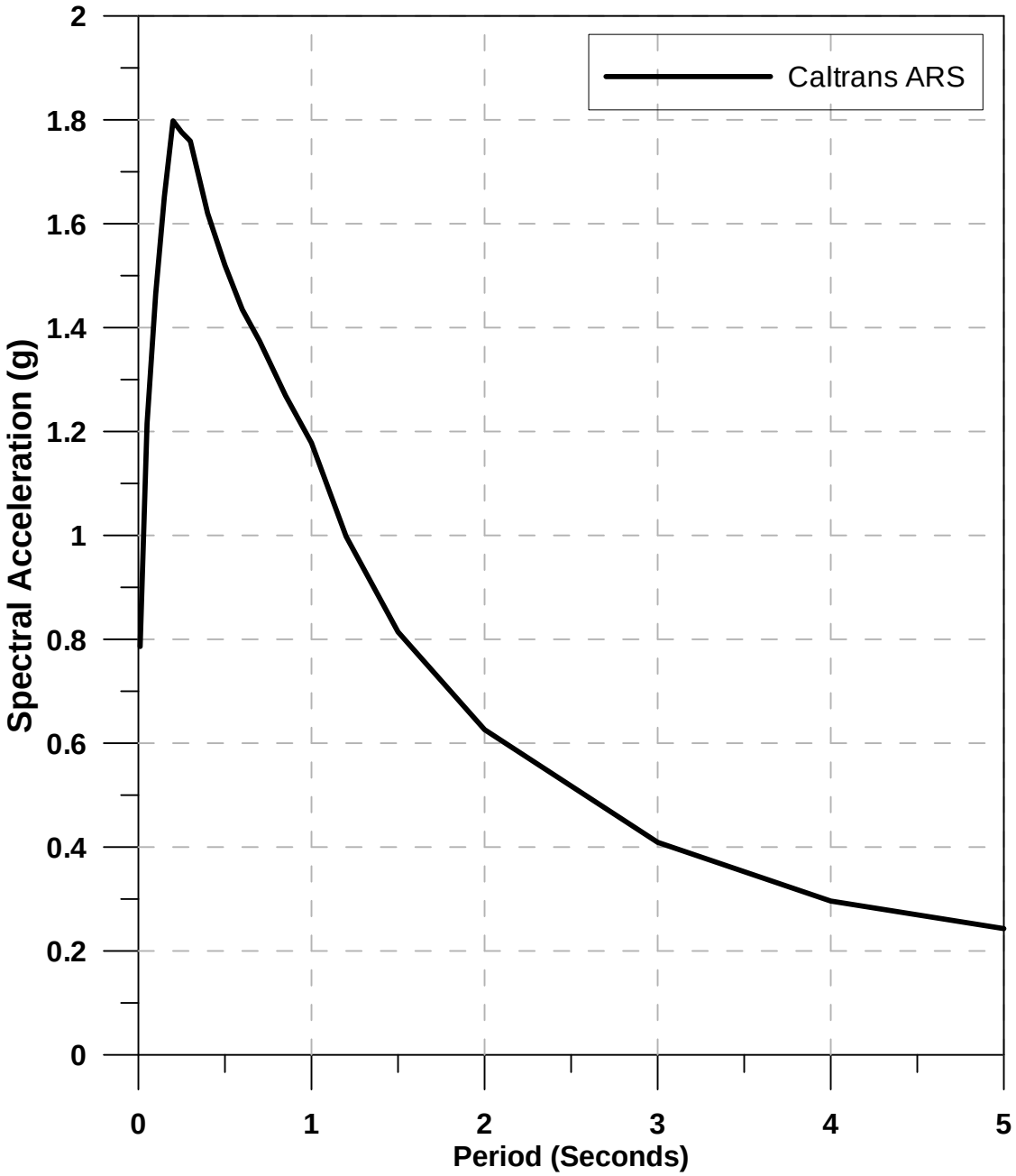
- Values presented in the above table were determined using the Caltrans ARS online tool (Caltrans, 2016).
- Site location used for analysis: Latitude = 34.06869^0 and Longitude = -117.37017^0.

The recommended design horizontal ARS is summarized in Table 4 and presented on Figure 2.

Table 4 - DESIGN HORIZONTAL ACCELERATION RESPONSE SPECTRUM

PERIOD (seconds)	HORIZONTAL 5% DAMPED SPECTRAL ACCELERATION (g)			
	Deterministic		Probabilistic	Design
	San Jacinto (San Bernardino Valley Section)	CA Minimum Spectrum		
0.01	0.526	0.223	0.786	0.786
0.05	0.655	0.284	1.215	1.215
0.1	0.865	0.425	1.465	1.465
0.15	1.015	0.507	1.652	1.652
0.2	1.111	0.523	1.798	1.798
0.25	1.141	0.502	1.776	1.776
0.3	1.139	0.477	1.759	1.759
0.4	1.104	0.422	1.620	1.620
0.5	1.065	0.365	1.520	1.520
0.6	1.024	0.311	1.435	1.435
0.7	0.993	0.270	1.374	1.374
0.85	0.941	0.224	1.269	1.269
1	0.892	0.190	1.178	1.178
1.2	0.776	0.154	0.998	0.998
1.5	0.642	0.118	0.814	0.814
2	0.480	0.080	0.626	0.626
3	0.306	0.046	0.409	0.409
4	0.221	0.031	0.296	0.296
5	0.173	0.023	0.243	0.243

Note:
1. Design acceleration response spectrum is the envelope of deterministic and probabilistic spectra.



Notes:
1. Caltrans ARS based on Caltrans ARS Online Tool, Version 2.3.08.
2. Location: 34.06869°, -117.37017°.
3. Soil Site Class C (NEHRP), Vs30 = 390 m/s.
4. Damping = 5%.
5. Caltrans ARS shown is an envelope of deterministic and probabilistic spectra.

Figure 2 - DESIGN HORIZONTAL ACCELERATION RESPONSE SPECTRUM

10.3 LIQUEFACTION POTENTIAL AND SEISMIC SETTLEMENT

The project site has not yet been mapped for seismic hazard zones by CGS. The groundwater level at the site is estimated to be deeper than 150 feet. Medium-dense to very dense sands are generally estimated to be present at the site. The potential for soil liquefaction and seismic settlement are therefore estimated to be very low at the project site.

10.4 LANDSLIDE AND SLOPE INSTABILITY

The site area has not yet been mapped by CGS for seismic hazards including landslides. Based on the level topography of the site, the landslide potential at the site is low. The embankment fill slopes are mostly inclined approximately at 1.5H:1V and paved. These slopes are also judged to be stable.

11 AS-BUILT FOUNDATION DATA

As-built LOTBs and structural plans are presented in Appendix A. As indicated in Table 1, Abutment 1 through Pier 6 of the existing bridge structure are supported on 45-ton, driven HP 10x42 piles. The piles lengths at the piers likely ranged from about 18 to 20 feet. Even though no information on pile length at Abutment 1 was available in the as-built plans reviewed, we judge that the abutment piles likely tipped near elevation 1,025 feet similar to those at the piers (i.e., the pile length at Abutment 1 probably was about 35 feet). Abutment 7 was supported on shallow spread foundation, approximately 11 feet wide and 90 feet long, near elevation 1,045 feet.

The abutments and bents of adjacent Riverside Avenue Overcrossing at I-10 were supported on shallow spread foundations near elevation 1,047 feet.

12 PRELIMINARY FOUNDATION RECOMMENDATIONS

12.1 BRIDGE

We judge that the proposed structure (widen and replace options) can be supported on shallow spread foundations or on pile foundations. Shallow foundations may require some removal and recompaction of loose sands that might be present at the site; consequently shallow foundation construction will result in larger excavations in comparison to pile foundation installation. Based on discussions with JACOBS, we understand that it is preferable to minimize excavations near existing facilities and use pile foundations for support of the proposed structure similar to

existing. Both driven and cast-in-drilled-hole (CIDH) piles are feasible at the site. Because of the presence of very dense sands and gravels, low-displacement driven piles such as steel H-piles or open ended steel pipe piles are preferred instead of the large displacement concrete piles or closed-ended steel pipe piles. Near the northern abutment (Abutment 7 for the widen option and Abutment 6 for the replace option), there are existing MSE walls and other facilities, and based on our discussions with Jacobs, we understand it is preferable to use CIDH concrete piles at this location to minimize disturbances during pile installation.

For driven piles, the primary construction consideration will be drivability in very dense sandy soils and gravels. Both H piles and open-ended pipe piles are feasible at the site. If compression load demand controls the pile design, we recommend that H piles be selected for foundation support. If lateral load demands control the pile design then we recommend selection of open-ended pipe pile for supports. Steel pipe piles have structural properties that results in higher lateral resistance than H-piles and if needed internal drilling through the pipe piles can be used to advance the pile to the specified pile tip elevation.

For CIDH piles, the primary consideration is the presence of granular sands that have significant potential for caving during construction. Casing and/or wet drilling methods will be required for construction of CIDH piles.

Based on our discussions with Jacobs, we understand that 24-inch diameter, 0.375” thick, open ended steel pipe piles will be utilized for all foundation supports except the northern abutment. At the northern abutment, 3- to 4-foot-diameter CIDH concrete piles will be used.

For planning purposes, the preliminary axial pile capacity charts provided in Appendix C can be used to estimate the required pile lengths. We have also included preliminary axial pile capacities for steel H piles (HP 14x72 and HP 18x135) for comparison and, if applicable, for alternate foundation selection.

13 CONSTRUCTION CONSIDERATIONS

The proposed driven piles will need to extend through upper soils that may contain gravels. The potential for driving refusal within the gravel should therefore be evaluated carefully. Difficult driving conditions may also be encountered within the dense and very dense sands. Extreme caution should be exercised in the selection of a suitable pile-driving hammer system to drive theses piles to the specified tip elevations. Internal drilling may needed to install the piles to specified tip elevations. A pile drivability analysis will need to be performed based on dynamic wave equation analysis program (WEAP) once the pile driving system is known.

The proposed CIDH piles will extend through cohesionless granular materials. The cohesionless soils have potential to slough and cave during CIDH pile installation or when subject to vibration load from the adjacent traffic. The "wet" construction method or temporary casing should be used for ease of construction and to reduce the potential for CIDH pile anomalies. When "wet" construction methods are used, the integrity of concrete should be checked using downhole gamma-gamma and/or cross-hole sonic testing; PVC inspection pipes should be installed within the CIDH piles to facilitate the testing. There should be at least one inspection tube for every foot of diameter of the CIDH piles. Difficult drilling conditions also should be anticipated to penetrate the very dense sandy soils present at the site. In general, a minimum of 24 hours should be allowed between placing concrete in one pile shaft and drilling any nearby shafts or performing any other excavations within three pile diameters.

The preliminary cost estimates for foundation installation should include for provisions noted above.

14 ADDITIONAL FIELD AND LABORATORY TESTING

Additional field investigation consisting of a minimum of 5 to 7 soil borings will be required for final design of the proposed project. The borings should be sufficiently deep to provide the subsurface conditions at the proposed abutment and pier locations. The field investigation and laboratory testing should incorporate Standard Penetration Tests (SPT) and collecting soils samples for index properties, shear strength, and corrosion.

15 LIMITATIONS

This SPGR is intended for the use of Jacobs for the design of the proposed Riverside Avenue Overhead in Rialto, California. This report is based on the project as described and the information obtained from previous geotechnical data. The findings and recommendations contained in this report are based on data review and preliminary engineering analyses. In addition, soils and subsurface conditions encountered in the previous borings are presumed to be representative of the project site. However, subsurface conditions and characteristics of soils between exploratory borings can vary. The findings reflect an interpretation of the direct evidence obtained. The recommendations presented in this report should be confirmed or modified based on appropriate site-specific investigation during the preliminary/final design phase. DYA should be notified of any pertinent changes in the project plans or if subsurface conditions are found to vary from those described herein. Such changes or variations may require a re-evaluation of the recommendations contained in this report.

The data, opinions, and recommendations contained in this report are applicable to the specific design element(s) and location(s) that is (are) the subject of this report. They have no applicability to any other design elements or to any other locations, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of DYA.

Services performed by DYA have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, expressed or implied, and no warranty or guarantee is included or intended.

16 BIBLIOGRAPHY

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APPENDIX A -
LOG OF TEST BORINGS (LOTB)
AND AS-BUILT PLANS

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	31.2/32.8	335	339

REGISTERED CIVIL ENGINEER 5-6-09

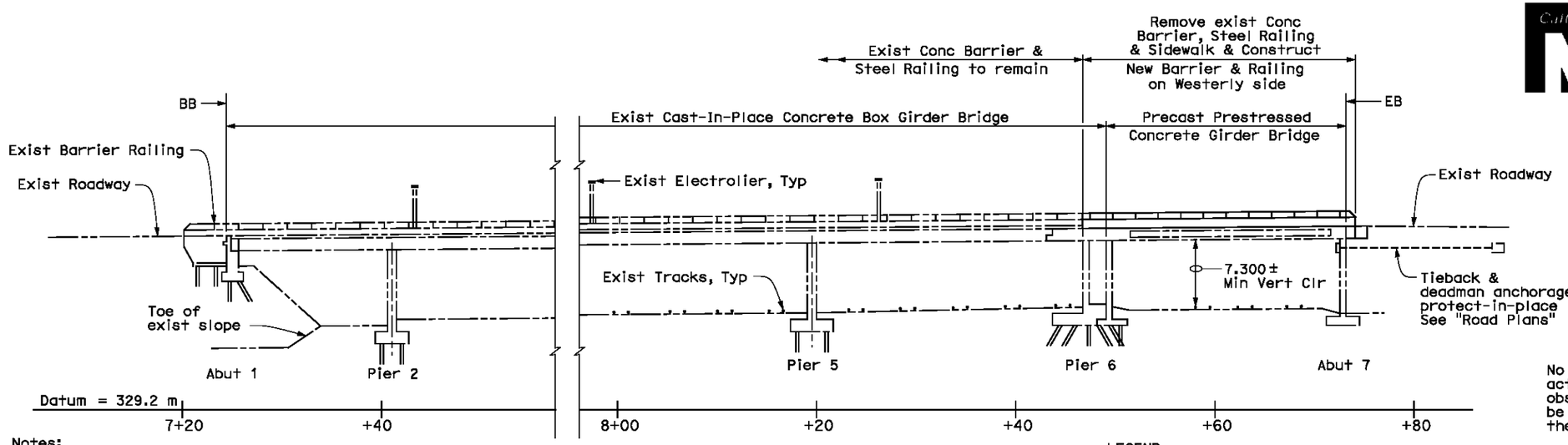
9-10-09
PLANS APPROVAL DATE

MOHAN S. CHAR No. C57894 Exp. 6/30/10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

CITY OF RIALTO
150 SOUTH PALM AVENUE
RIALTO, CA 92376

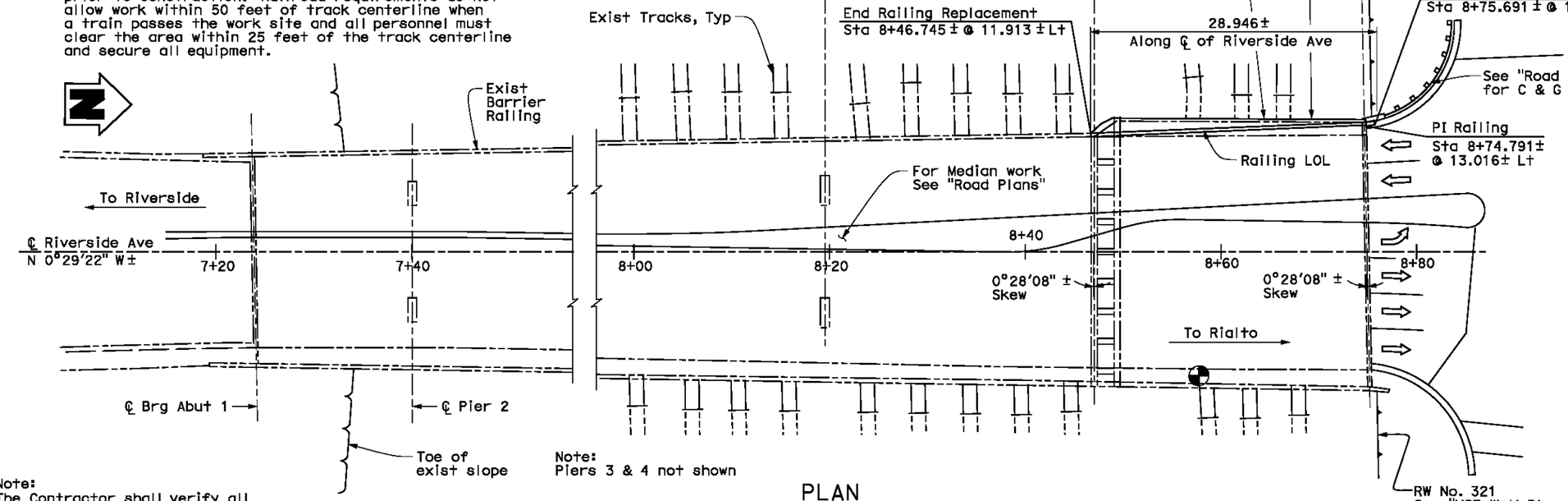
LIM & NASCIMENTO ENGINEERING
1887 BUSINESS CENTER DRIVE, SUITE 6
SAN BERNARDINO, CALIFORNIA 92408



MIRROR ELEVATION
1:250

Notes:
1. For General Notes, see "Removal Details" sheet.
2. Contractor shall comply with all safety requirements of rail road to prevent objects falling from bridge resulting from the work of this project and shall maintain all required horizontal and vertical clearances from tracks.
3. Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction. Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.

INDEX TO PLANS

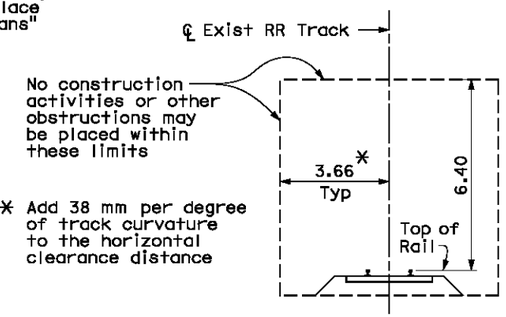


Note: Piers 3 & 4 not shown

PLAN
1:250

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

LEGEND
- ⇨ Indicates Direction of Traffic
- ---- Indicates existing structure
- ◓ Point of Minimum Vertical Clearance



* Add 38 mm per degree of track curvature to the horizontal clearance distance

MINIMUM CONSTRUCTION CLEARANCES
(Normal to Railroad)
See "Note 3"
No Scale

AS BUILT
NO CORRECTIONS THIS SHEET
CONTRACT No. 08-422304
Structure Rep Dave Smith
Field Corrections Date 3/8/2012
Corrections transfered by R.A.
Date Transfered 6/13/2012

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

LILY SUN DESIGN OVERSIGHT 9-10-09 SIGN OFF DATE	DESIGN	BY H. FEILEN	CHECKED S. XIE	LOAD FACTOR DESIGN	LIVE LOADING: 54K IMPACT LOAD		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
	DETAILS	BY H. FEILEN	CHECKED S. XIE	LAYOUT	BY R. ANDRASEK	CHECKED M. CHAR	
	QUANTITIES	BY M. ABOUZALAN	CHECKED U. SANDIRA	SPECIFICATIONS	BY S. XIE	PLANS AND SPECS COMPARED M. CHAR	

MOHAN CHAR
PROJECT ENGINEER

BRIDGE NO. 54C-62
KILOMETER POST

RIVERSIDE AVENUE OVERHEAD
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 08224
EA 422301

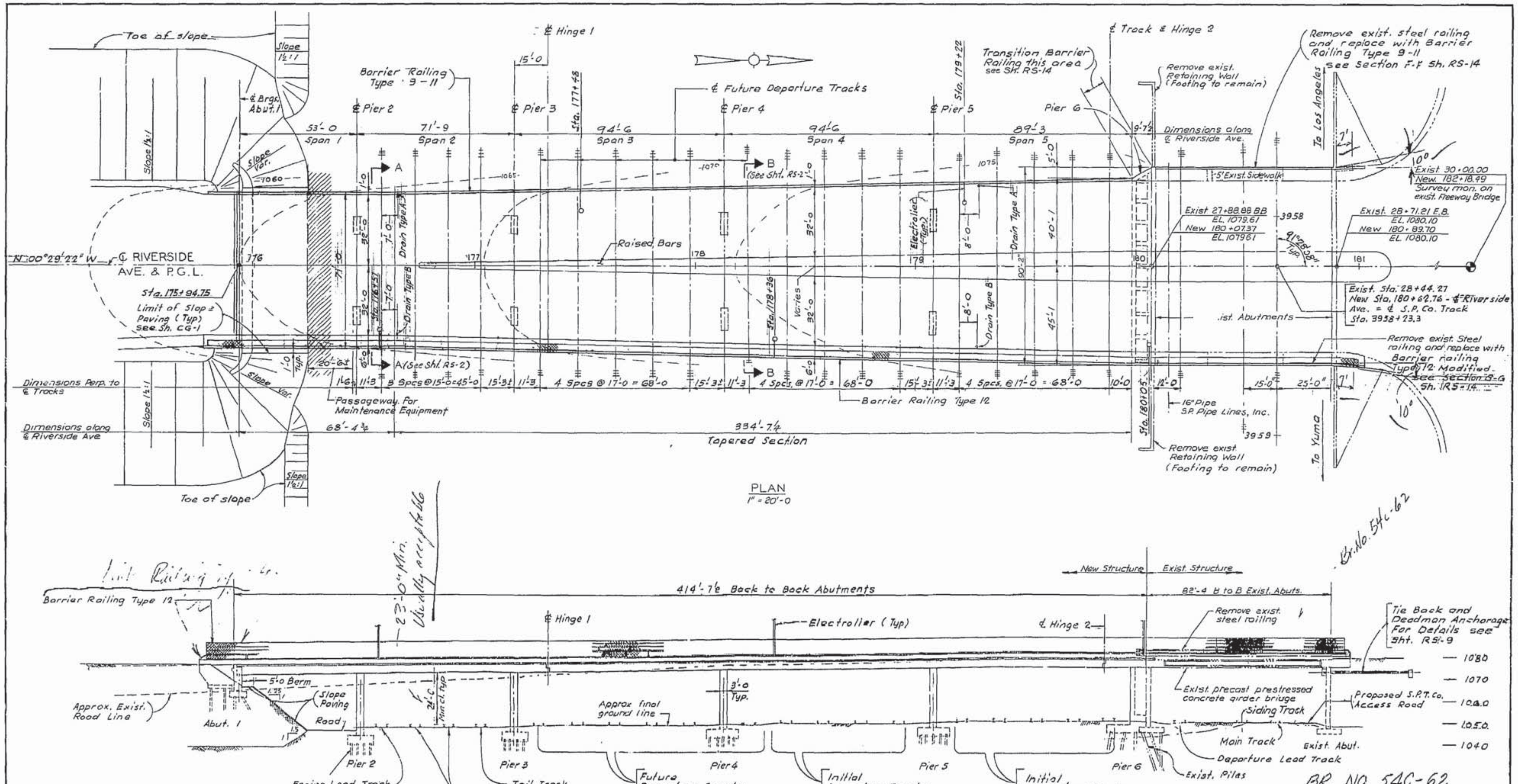
FILE => 54C-62-a-gp01.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 6/30/02 | 1/06/04 | 9/23/05 | 11/28/06 | 4/23/07 | 11/26/07 | 1/1/2008 | 9/01/09

SHEET 1 OF 5

USERNAME => AECOM DATE PLOTTED => 8/10/2012 TIME PLOTTED => 7:53:18 AM



CITY OF RIALTO

RIVERSIDE AVENUE OVERHEAD

GENERAL PLAN & ELEVATION

DE LEUW, CATHER & COMPANY
CONSULTING ENGINEERS
SAN FRANCISCO CALIFORNIA

SCALE: AS NOTED
DATE: July 1971
SHEET NO.: RS - 1

DESIGNED: S.H. Edwards — CHECKED: N. Tapia
DRAWN: I.K. — APPROVED: P.G. Bjubas

1925-02 X

16X

AS BUILT PLANS
Contract No. unknown
Date Completed ____

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

DATE: 7/28/77 SIGNATURE: Joseph M Costa TITLE: Supervisor

DAS-55-78

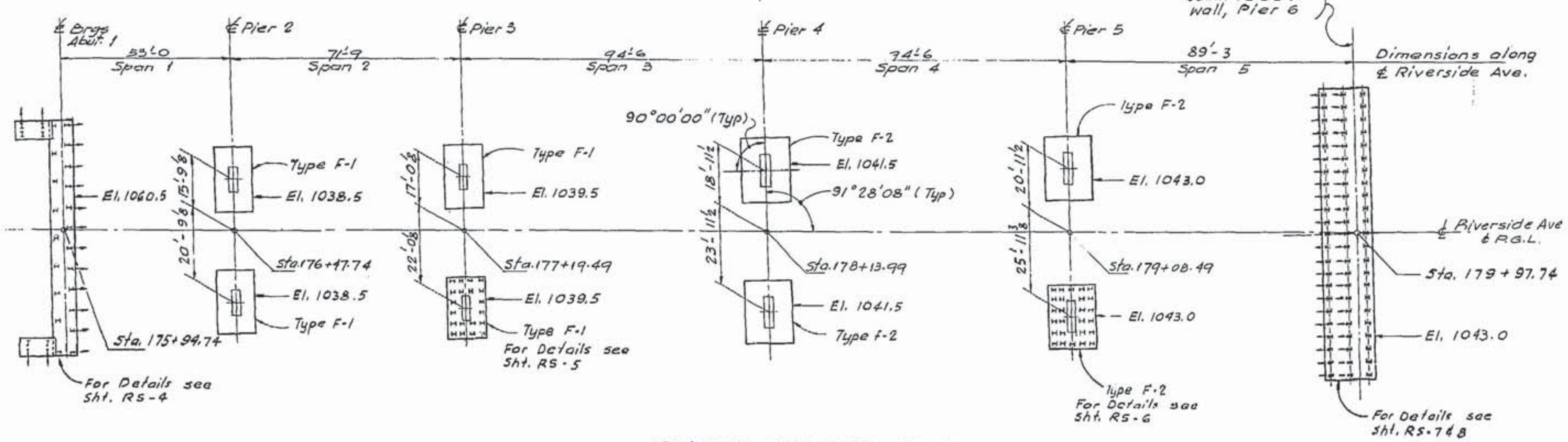
* ¼ points in spans 3 & 5 are between ℄ Hinge and ℄ Pier

TABLE OF THEORETICAL DECK ELEVATIONS

GIRDER	SPAN 1: ℄ Brgs Abut. 1	SPAN 1: ¼	SPAN 1: ½	SPAN 1: ¾	℄ Pier 2	SPAN 2: ¼	SPAN 2: ½	SPAN 2: ¾	℄ Pier 3	℄ Hinge 1
1	73.18	73.61	74.02	74.42	74.80	75.28	75.74	76.16	76.56	76.87
2	73.28	73.71	74.12	74.52	74.90	75.39	75.84	76.27	76.67	76.99
3	73.40	73.83	74.25	74.64	75.02	75.51	75.97	76.40	76.80	77.11
4	73.53	73.96	74.37	74.77	75.15	75.64	76.09	76.52	76.92	77.23
5	73.66	74.09	74.50	74.89	75.27	75.76	76.22	76.65	77.05	77.36
P.G.L.	73.68	74.11	74.52	74.92	75.30	75.79	76.24	76.67	77.07	77.38
6	73.59	74.02	74.43	74.83	75.20	75.69	76.15	76.58	76.98	77.29
7	73.48	73.90	74.32	74.71	75.09	75.58	76.04	76.46	76.86	77.17
8	73.36	73.79	74.20	74.60	74.98	75.46	75.92	76.35	76.75	77.06
9	73.25	73.68	74.09	74.48	74.86	75.35	75.81	76.23	76.63	76.94
10	73.16	73.59	74.00	74.40	74.77	75.26	75.71	76.13	76.52	76.83

GIRDER	SPAN 3: ℄ Hinge 1	SPAN 3: * ¼	SPAN 3: * ½	SPAN 3: * ¾	℄ Pier 4	SPAN 4: ¼	SPAN 4: ½	SPAN 4: ¾	℄ Pier 5	SPAN 5: * ¼	SPAN 5: * ½	SPAN 5: * ¾	℄ Hinge 2	South Face of Pier 6 Wall
11	76.87	77.24	77.58	77.88	78.15	78.41	78.63	78.79	78.91	78.96	78.98	79.00	79.01	79.02
12	76.91	77.29	77.63	77.94	78.21	78.49	78.71	78.88	79.00	79.06	79.09	79.11	79.13	79.14
13	77.04	77.42	77.76	78.07	78.34	78.61	78.84	79.01	79.13	79.17	79.21	79.23	79.25	79.26
14	77.16	77.54	77.89	78.19	78.47	78.74	78.96	79.13	79.25	79.31	79.34	79.36	79.38	79.39
15	77.29	77.67	78.01	78.32	78.59	78.86	79.09	79.26	79.38	79.44	79.46	79.48	79.50	79.51
P.G.L.	77.38	77.76	78.10	78.41	78.68	78.95	79.17	79.34	79.46	79.52	79.55	79.57	79.59	79.60 ℄
16	77.34	77.72	78.07	78.37	78.64	78.92	79.14	79.31	79.43	79.48	79.51	79.53	79.55	79.56
17	77.23	77.60	77.95	78.25	78.52	78.79	79.02	79.18	79.30	79.36	79.39	79.41	79.43	79.44
18	77.11	77.48	77.83	78.13	78.40	78.67	78.89	79.06	79.18	79.24	79.26	79.28	79.30	79.31
19	76.99	77.36	77.71	78.01	78.28	78.55	78.77	78.94	79.06	79.11	79.14	79.16	79.18	79.19
20	76.87	77.24	77.59	77.89	78.16	78.43	78.65	78.82	78.93	78.99	79.02	79.04	79.06	79.07
21	76.83	77.20	77.53	77.83	78.09	78.36	78.57	78.73	78.84	78.89	78.91	78.92	78.94	78.94

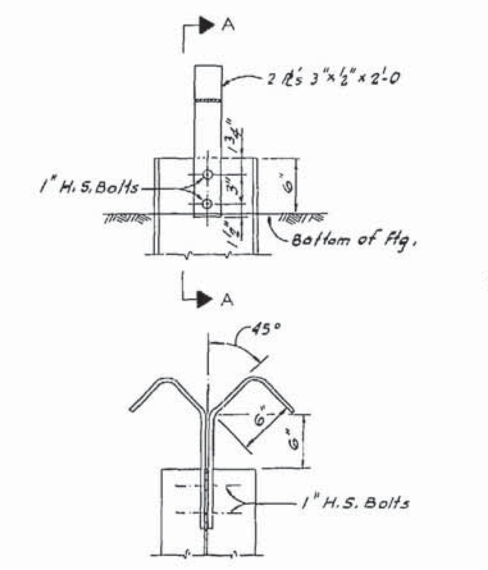
Note: Add 1000.00' to all theoretical deck elevations shown above.



FOOTING LOCATION PLAN

1" = 20'-0

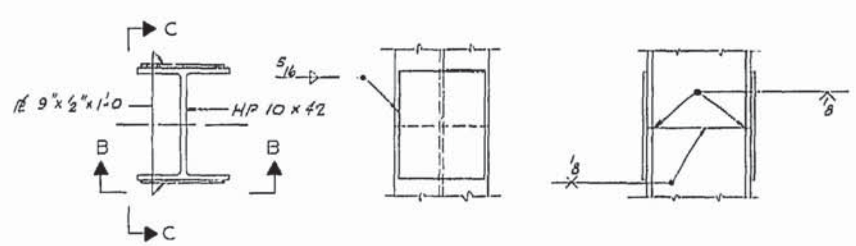
NOTE: All Footing Elevations shown are at bottom of footing.



SECTION A-A

PILE ANCHOR DETAIL

1½" = 1'-0



ALLOWABLE PILE SPLICE

No Scale

MICROFILMED JUL 28 1977

BR NO 54C-62

CITY OF RIALTO

RIVERSIDE AVENUE OVERHEAD
FOOTING LOCATION PLAN & DECK ELEVATIONS

DE LEUW, CATHER & COMPANY
CONSULTING ENGINEERS
SAN FRANCISCO, CALIFORNIA

Scale: AS NOTED
Date: July 1971
Sheet No: RS-3

Designed: J. A. CANNON · Checked: R. PIETERS
Drawn: E. LHUN, R. DIBE · Approved: P.E. 3/8525

REV. | DESCRIPTION | DATE | BY

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

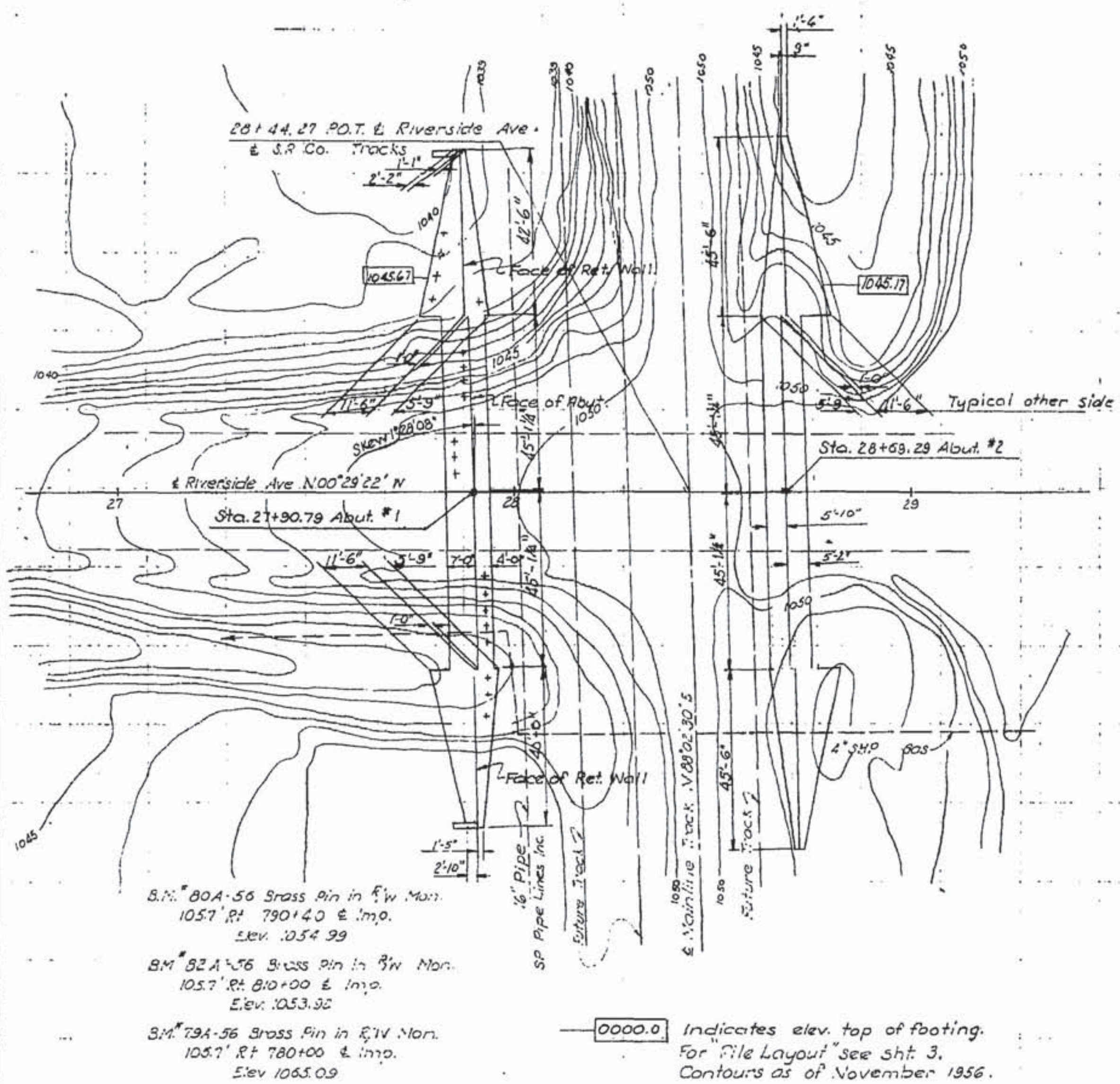
16X

AS BUILT PLANS
Contract No. Unknown
Date Completed —
Document No. 8000-3518

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

DATE 7/28/77 · SIGNATURE Joseph M. Costa · TITLE Supervisor

DAS-SS-78



GENERAL NOTES

SPECIFICATIONS:

DESIGN: A.A.S.H.O. DATED 1953 WITH REVISIONS AND AS SUPPLEMENTED BY BRIDGE PLANNING AND DESIGN MANUAL.

CONSTRUCTION: STANDARD SPECIFICATIONS, DIVISION OF HIGHWAYS, DATED AUGUST 1954 AND THE SPECIAL PROVISIONS.

LIVE LOADING: H20-S16-44 AND ALTERNATIVE

UNIT STRESSES:

REINFORCED CONCRETE: f_s = 20,000 P.S.I., N = 10

f_c = 1,200 P.S.I. (EXCEPT AS NOTED)

f_c = 1,000 P.S.I. (ROADWAY SLAB ON GIRDERS)

f_c = PRESTRESSED GIRDERS SEE SHEET 6.

FOOTING PRESSURE: 4 TONS P.S.F.

PILE LOADING: 45 TONS. TYPE: STEEL 10 BP 42

LOG OF TEST BORINGS: SEE SHEET 16 RIVERSIDE AVENUE O.C.

AS BUILT W.B. Garrett
CORRECTIONS BY NO CORRECTIONS THIS SHEET
CONTRACT NO. 59 BVC15 F1

BRIDGE DEPARTMENT
DESIGN SECTION 9
Project Designer
Chief Designer L.R. Gilbert

	By	Checked
DESIGN	10-57	R. Van Kessel 11/57
DETAILS	Bradford 11-57	11/57
QUANTITIES	Don Mart 12-57	Toora 12-57
SPECIFICATIONS		

Approval Recommended by

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

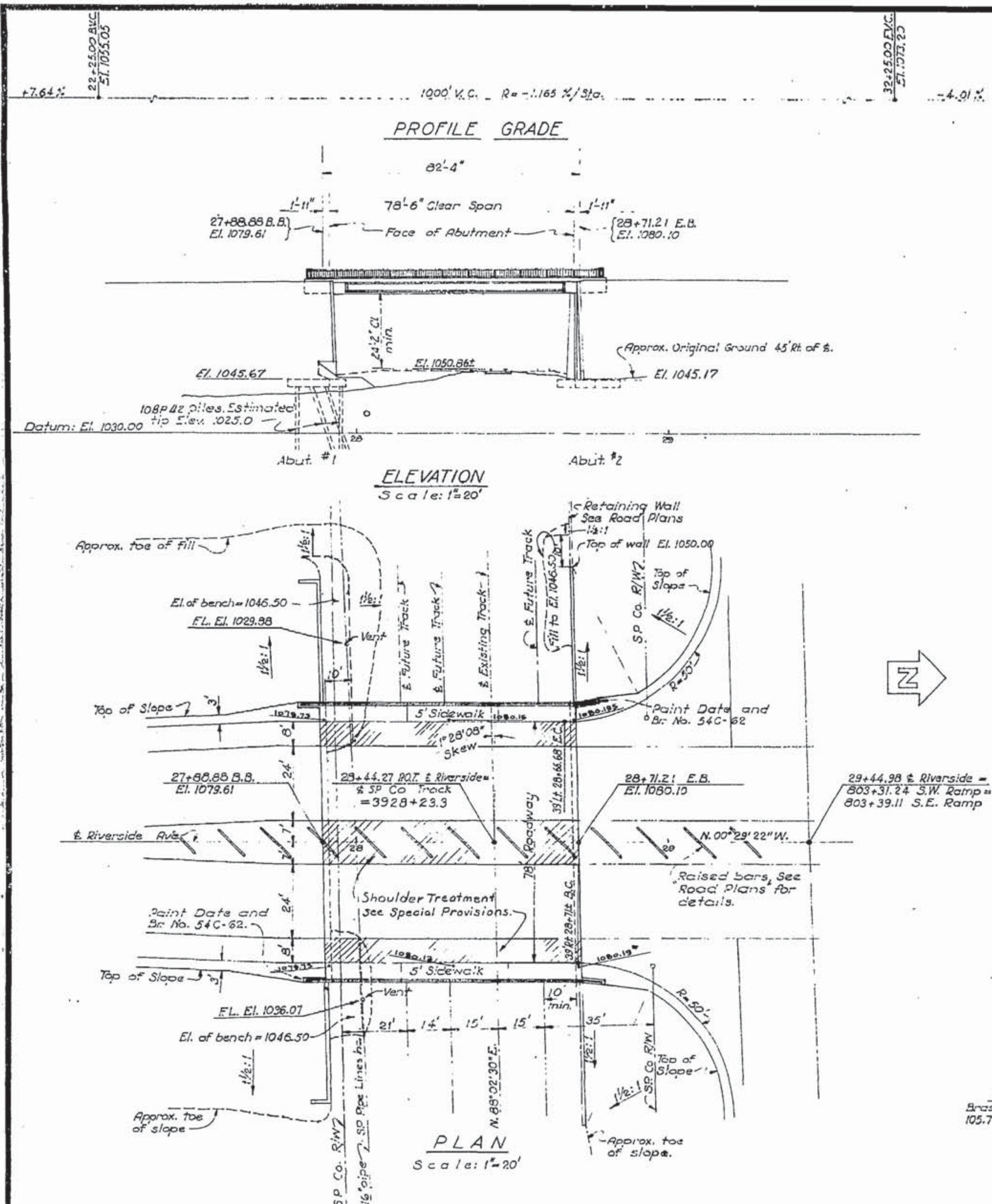
RIVERSIDE AVENUE OVERHEAD

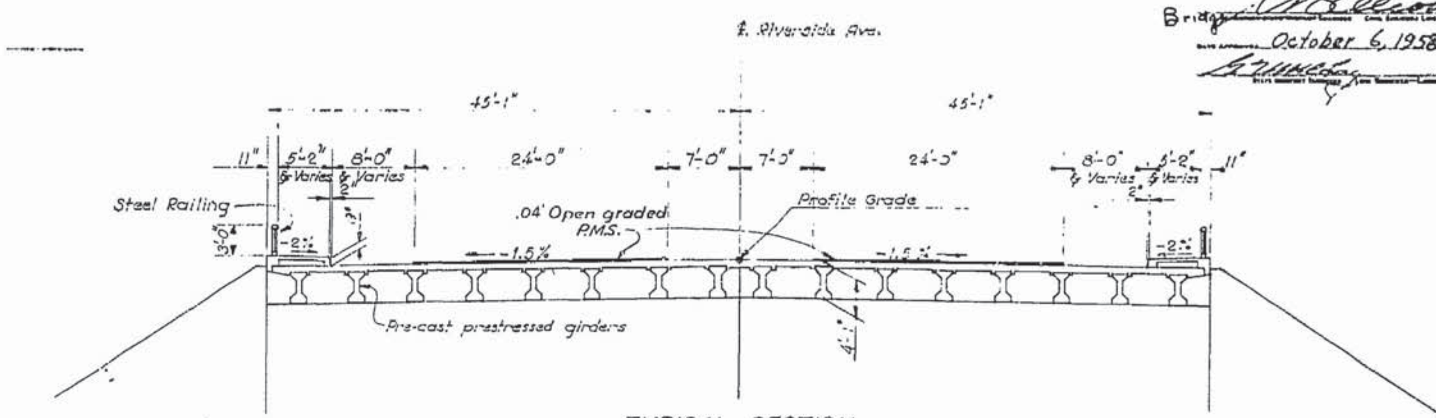
FOUNDATION PLAN

SCALE | BRIDGE 54C-62 | FILE | DRAWING C-5375-2

PREL. DRAWING NO. P-5375 8 15 23

I-084-2 (7) Unit 3





TYPICAL SECTION

Scale: 1/8"=1'-0"

Note: .04' Open graded PMS to be placed above finished grade.

APPROXIMATE QUANTITIES

STRUCTURE EXCAVATION	1,275 C.Y.
STRUCTURE BACKFILL	2,860 C.Y.
CLASS "A" CONCRETE (BRIDGES)(1,200 C.Y.)	LUMP SUM
RUBBER WATERSTOPS	270 L.F.
BAR REINFORCING STEEL (BRIDGES)(195,000 LBS.)	LUMP SUM
FURNISHING STEEL PILING	2,105 L.F.
DRIVING PILES	109
STEEL RAILING	188 L.F.
FURNISHING PRECAST PRESTRESSED CONCRETE GIRDERS (81'-0" LONG)	16
ERECTING PRECAST PRESTRESSED CONCRETE GIRDERS	16
BRIDGE SHOULDER TREATMENT	274 S.Y.
PLANT MIX SURFACING	13 TONS*

*SEE SPECIAL PROVISIONS

INDEX TO PLANS

Note: - See Sheet 10 Riverside Ave. O.C. for "Lighting Reinforcement."

For GENERAL NOTES to this set of plans see Sheet # 2.

B.M. # 80 A-56
Brass pin in R/W Mon. 105.7' Rt. 790+40 ℄ Imp. El. 1054.99

Live Loading = H20-S16-44 and Alternative

AS BUILT
CORRECTIONS BY W.B. Garrett
CONTRACT NO. 59 8VC15 F1

October 6, 1958

BRIDGE DEPARTMENT — DESIGN SECTION 9

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

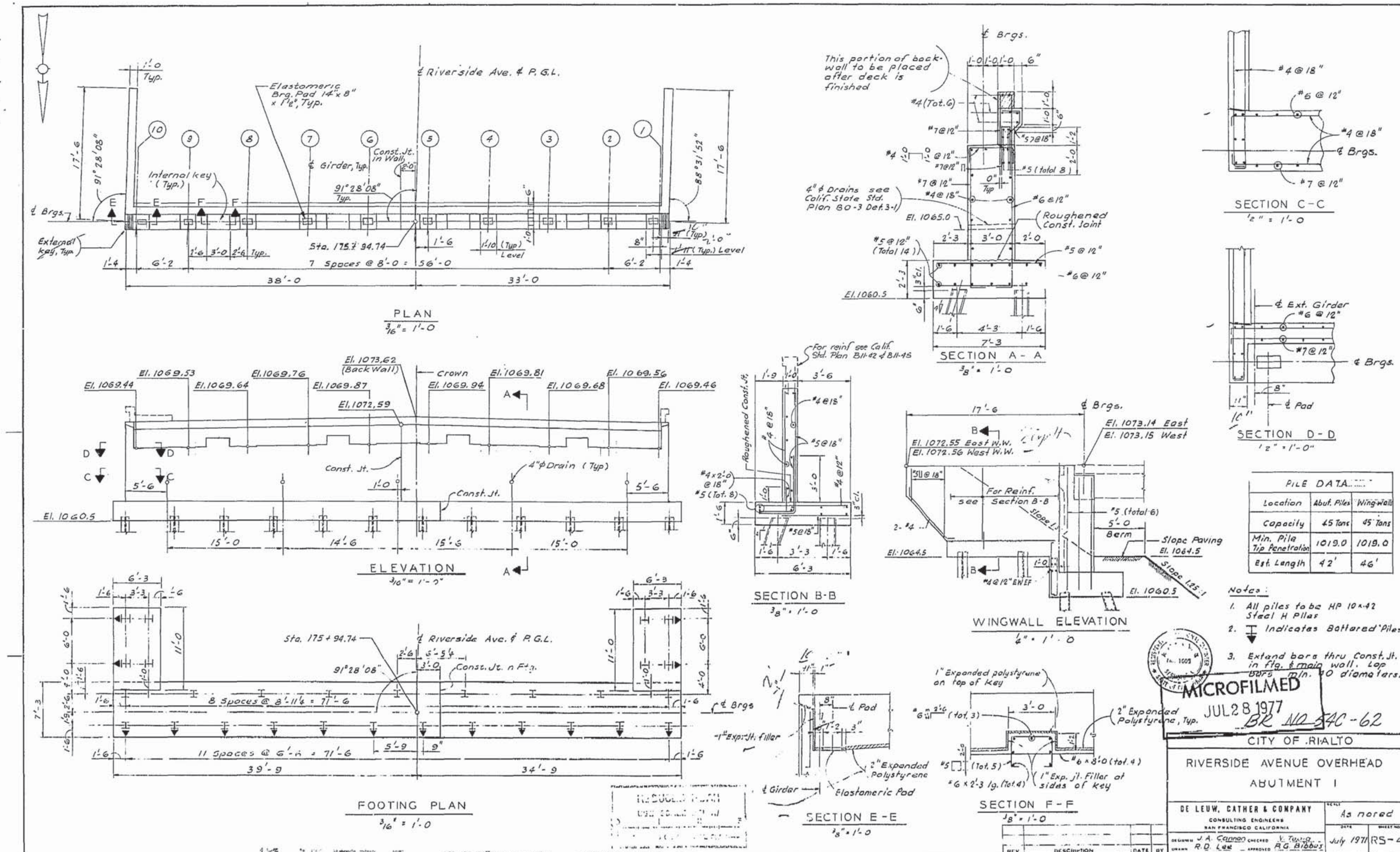
RIVERSIDE AVENUE OVERHEAD

OVER S.P. CO. TRACK IN THE CITY OF RIALTO IN SAN BERNARDINO COUNTY

GENERAL PLAN

SCALE AS NOTED | BRIDGE 54C-62 | DRAWING C-5375-1

PREL. DRAWING NO. P-5375


PLAN
3/16" = 1'-0
ELEVATION
FOOTING PLAN
3/16" = 1'-0
SECTION A - A
3/8" = 1'-0
SECTION B-B
3/8" = 1'-0
SECTION C-C
1/2" = 1'-0
SECTION D-D
1/2" = 1'-0"
SECTION E-E
3/8" = 1'-0
SECTION F-F
3/8" = 1'-0
WINGWALL ELEVATION
1/4" = 1'-0
℄ Riverside Ave. ℄ P.G.L.
Sta. 175+94.74
7 Spaces @ 8'-0 = 56'-0
38'-0
33'-0
8 Spaces @ 8'-11 1/4 = 71'-6
11 Spaces @ 6'-6 = 71'-6
39'-9
34'-9
El. 1060.5
Notes:
1. All piles to be HP 10x42 Steel H Piles
2. Indicates Battered Piles
3. Extend bars thru Const. Jt. in ftg. & main wall. Lap bars min. 30 diameters.
MICROFILMED
JUL 28 1977
BR NO 54C-62
CITY OF RIALTO
RIVERSIDE AVENUE OVERHEAD
ABUTMENT 1
DE LEUW, CATHER & COMPANY
CONSULTING ENGINEERS
SAN FRANCISCO CALIFORNIA
J. A. Cannon
R. G. Lee
V. Tuazo
R. G. Gibbus
As noted
July 1971
RS-4
1975-02

PILE DATA		
Location	Abut. Piles	Wingwalls
Capacity	45 Tons	45 Tons
Min. Pile Tip Penetration	1019.0	1018.0
Est. Length	42'	46'

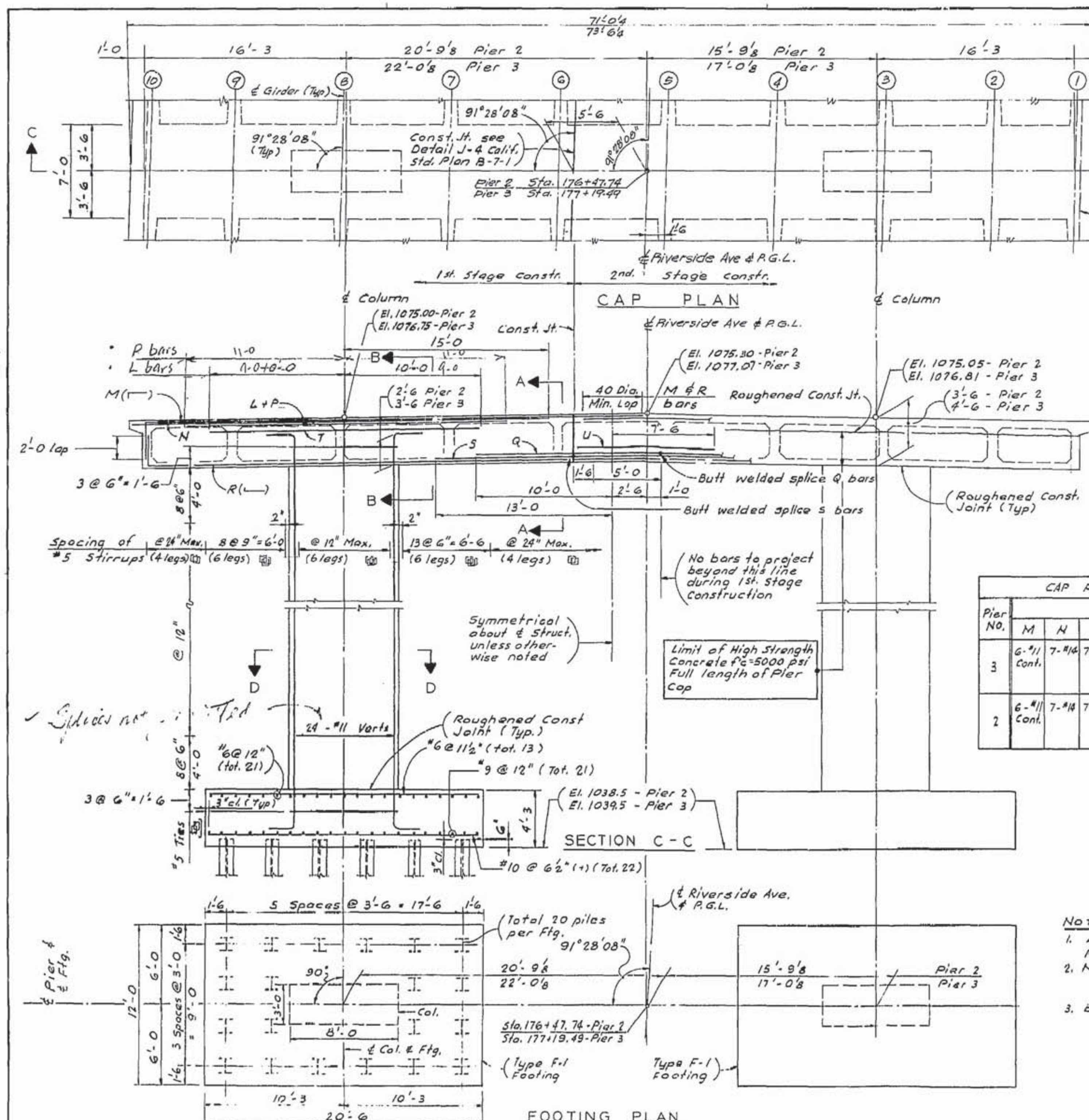
16X

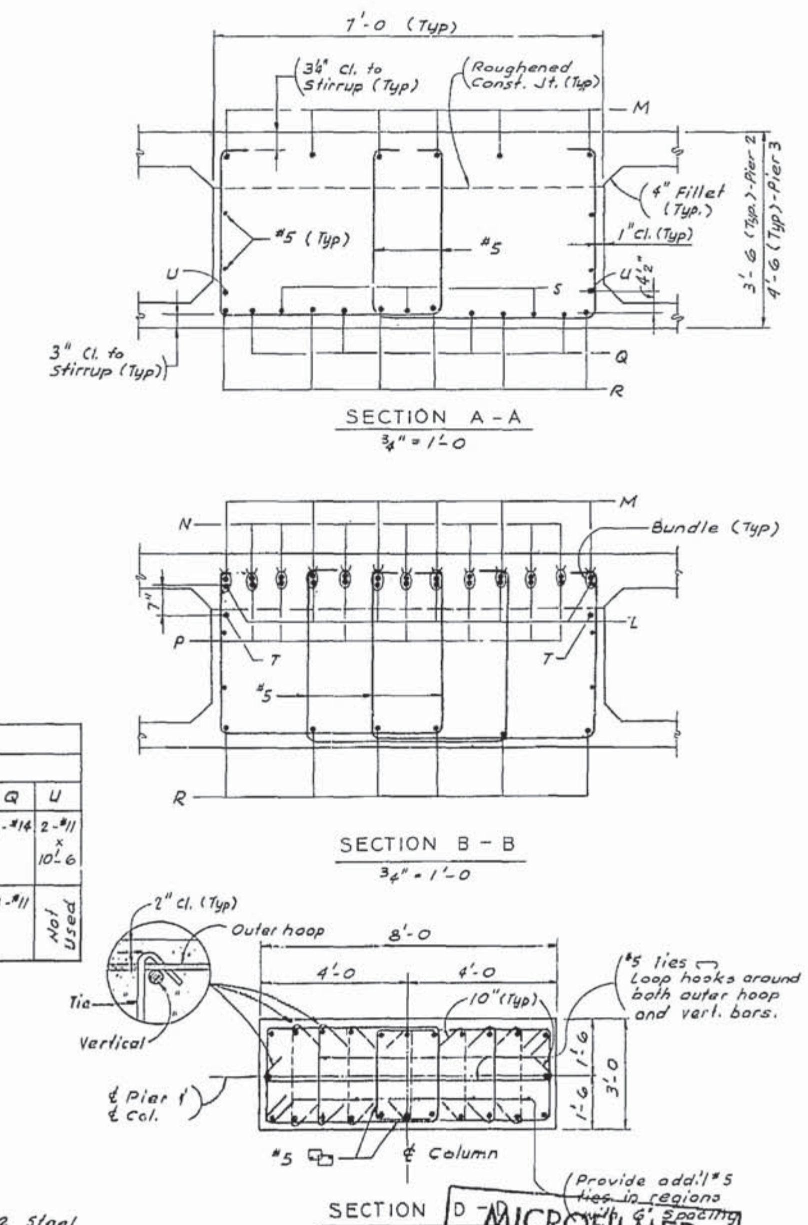
AS BUILT PLANS
Contract No. unknown
Date Completed —

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

DATE	SIGNATURE	TITLE
7/28/77	Joseph M. Costa	Supervisor

DAS-55-78





Pier No.	Bars								
	M	N	P	L	T	R	S	Q	U
3	6-#11 Cont.	7-#14	7-#14	6-#11	2-#11	6-#11 Cont.	3-#14	4-#14	2-#11 x 10'-6
2	6-#11 Cont.	7-#14	7-#14	6-#11	Not Used	6-#11 Cont.	3-#14	4-#11	Not Used

CAP REINFORCEMENT DATA

NOTES:

1. All piles to be HP 10x42 Steel piles, Capacity = 45 tons
2. Min. Pile tip penetration:
   Pier 2 = El. 1020.00
   Pier 3 = El. 1021.50
3. Estimated pile length:
   Pier 2 = 19'
   Pier 3 = 19'

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

MICROFILMED JUL 28 1977
BR. NO. 54C-62

CITY OF RIALTO

RIVERSIDE AVENUE OVERHEAD

PIERS 2 & 3

DE LEUW, CATHER & COMPANY
CONSULTING ENGINEERS
SAN FRANCISCO, CALIFORNIA

REV.	DESCRIPTION	DATE	BY

Designed W. Young · Checked R. Pieters · Drawn R. D. Lee · Approved M. G. Bidoes

Scale 1/4" = 1'-0 except as noted · Date July 1971 · Sheet No. RS-5

Proj. No. 1425-02

16X

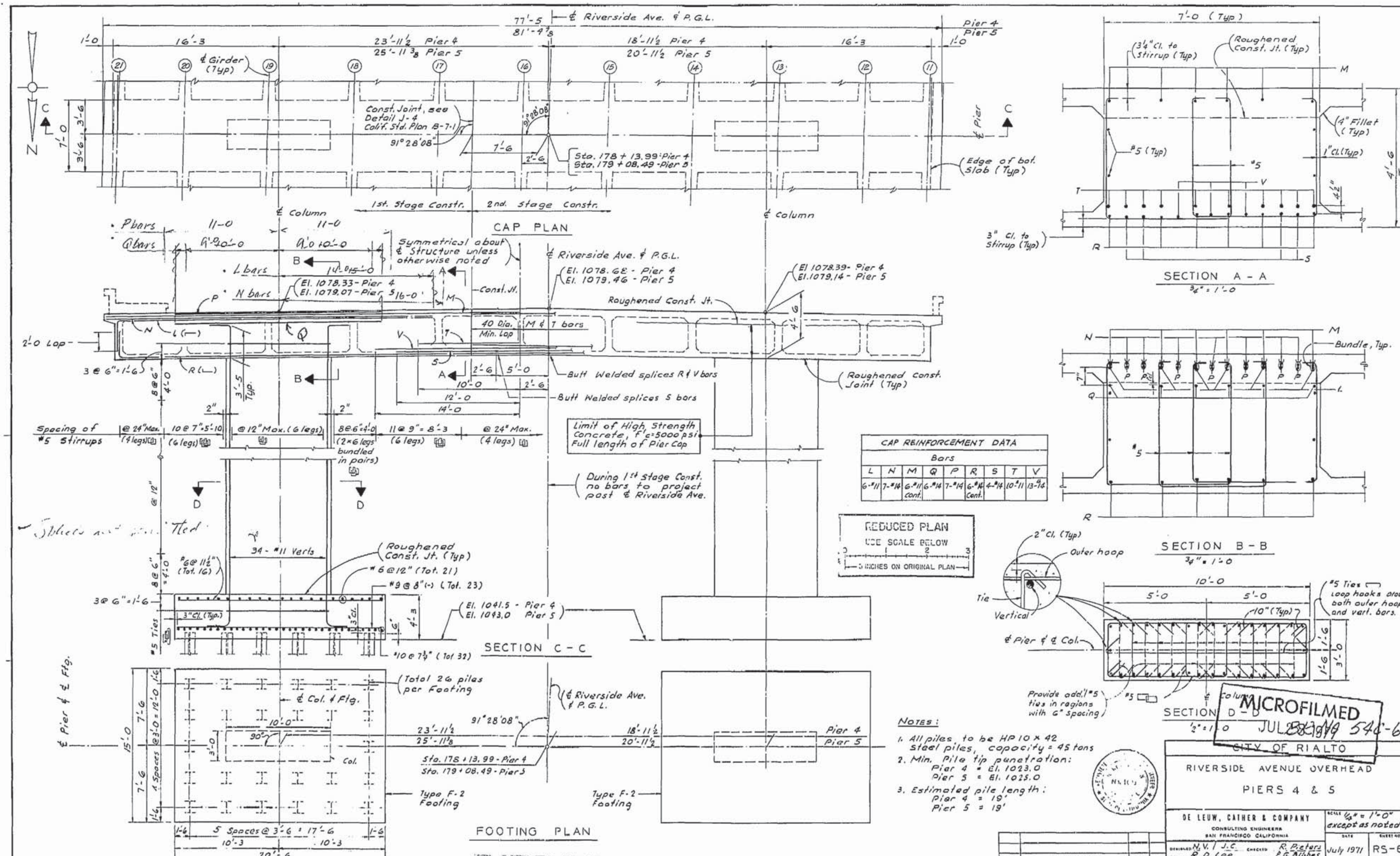
AS BUILT PLANS

Contract No. Unknown
Date Completed —
Document No. [illegible]

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

DATE	SIGNATURE	TITLE
7/28/77	Joseph M Costa	Supervisor

DAS-55-78



CAP REINFORCEMENT DATA								
Bars								
L	N	M	Q	P	R	S	T	V
6-#11	7-#14	6-#11 cont.	6-#14	7-#14	6-#14 Cont.	4-#14	10-#11	13-#14

NOTES:

1. All piles to be HP 10 × 42 steel piles, capacity = 45 tons
2. Min. Pile tip penetration:
   Pier 4 = El. 1023.0
   Pier 5 = El. 1025.0
3. Estimated pile length:
   Pier 4 = 19'
   Pier 5 = 19'

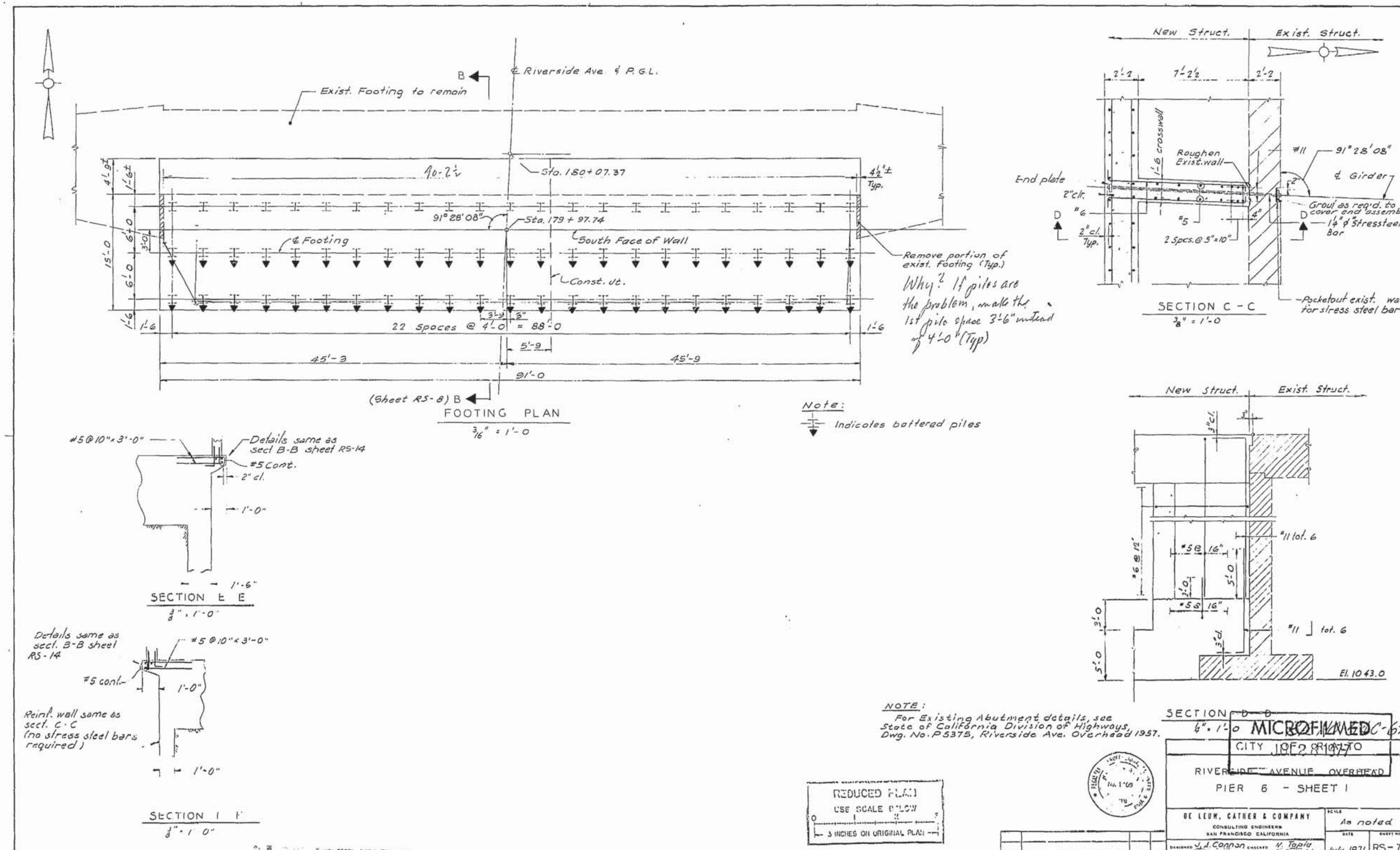
16X

AS BUILT PLANS
Contract No. Unknown
Date Completed —
Document No.

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

DATE 7/28/77 SIGNATURE Joseph M Costa TITLE Supervisor

DAS-55-78



MICROFILMED JUN 2 8 1977

CITY OF RIALTO

RIVERSIDE AVENUE OVERHEAD

PIER 6 - SHEET 1

DE LEUW, CATHER & COMPANY
CONSULTING ENGINEERS
SAN FRANCISCO CALIFORNIA

Designed V. J. Connon — Checked V. Tapia — Drawn R. O. Lee — Approved P. G. Bibbas

Scale: As noted — Date: July 1971 — Sheet No.: RS-7

Proj. No. 1925-02

REDUCED PLAN
USE SCALE BELOW
3 INCHES ON ORIGINAL PLAN

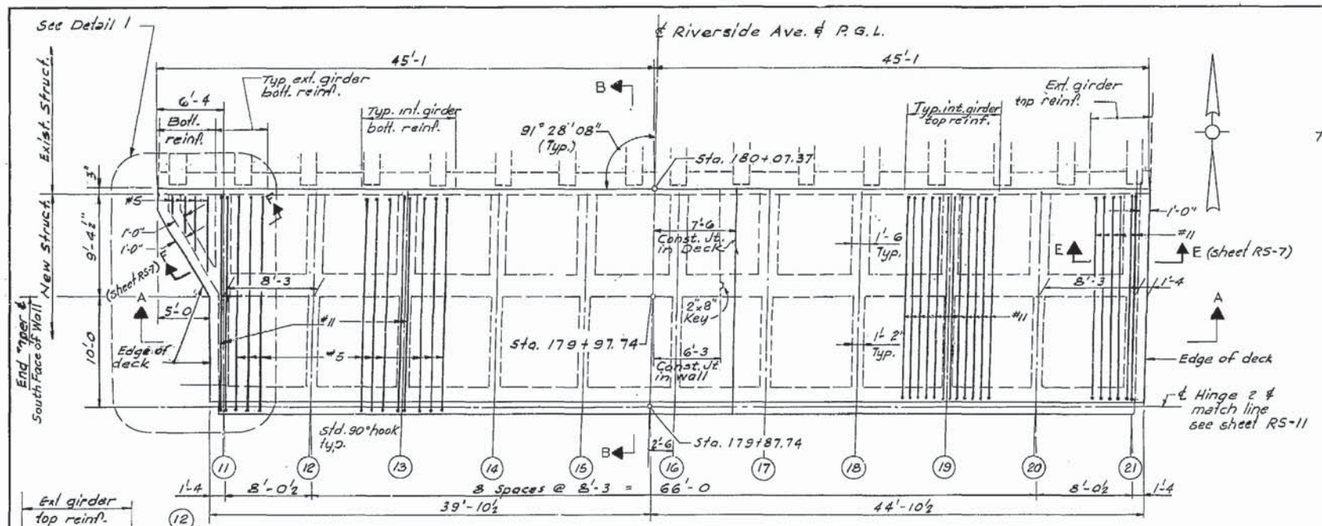
16X

AS BUILT PLANS
Contract No. unknown
Date Completed —

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

DATE	SIGNATURE	TITLE
7/28/77	Joseph M. Costa	Supervisor

DAS-SS-78



MICROFILMED

16X

AS BUILT PLANS
Contract No. 08-54604
Date Completed

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

DATE 7/28/77 SIGNATURE Joseph M Costa TITLE Supervisor

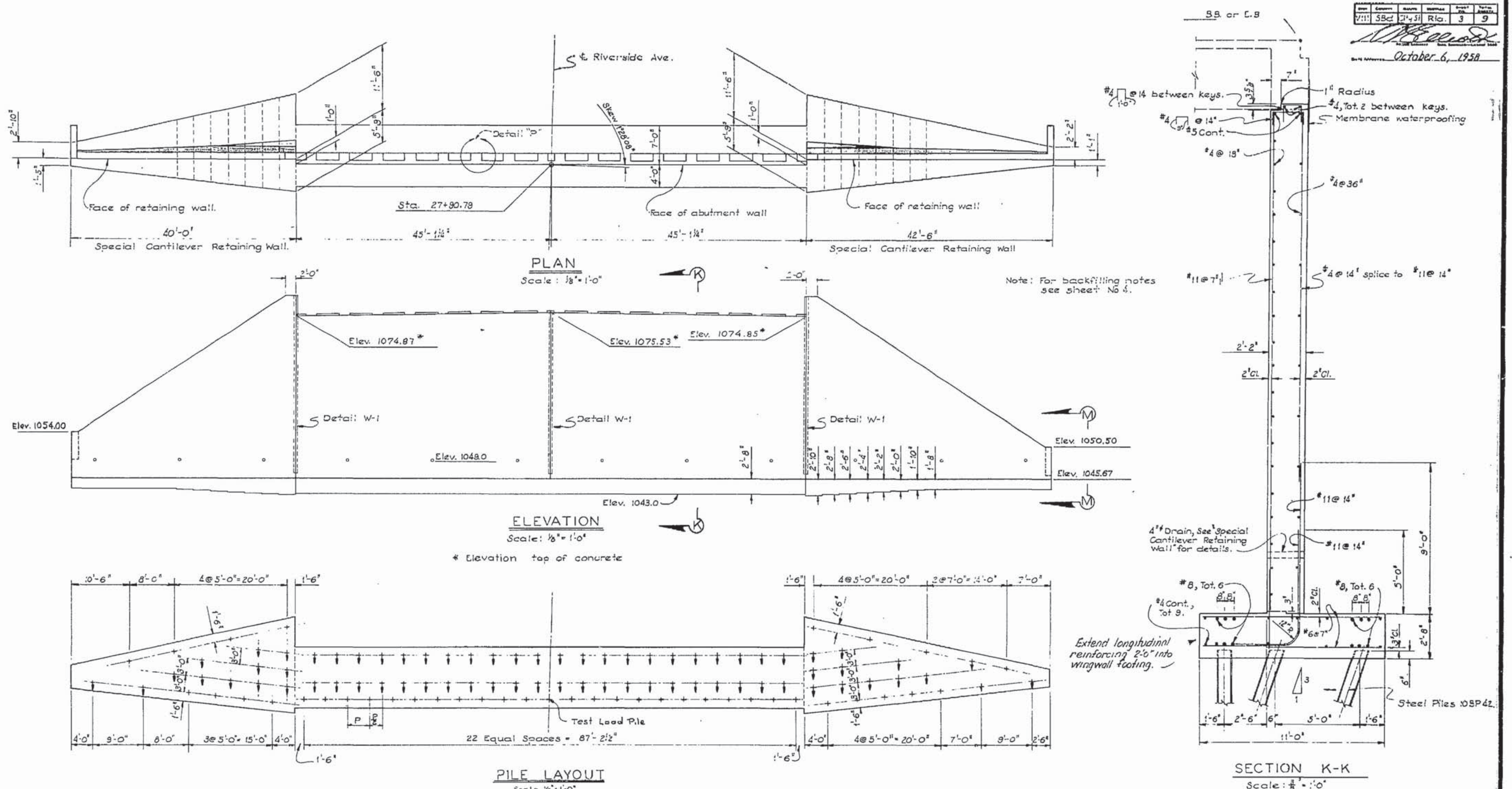
DAS-55-78

I-084-2 (7) Unit 3

FED. ROAD DIV. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.			115	121

DIST	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
VIII	SBd	31, 43, 51	Rlo.	3	9

Date Approved: October 6, 1958



┼ Indicates 1:3 battered pile

+ Indicates vertical pile.

For "View M-M" see sheet No. 4.

AS BUILT

CORRECTIONS BY NO CORRECTIONS THIS SHEET

CONTRACT NO. 59 8VC15 F1

BRIDGE DEPARTMENT
DESIGN SECTION 9

DESIGN	B. E. Habstick 10-57	Checked	R. Van Reenen 11/57
DETAILS	Bradford 10-57	Checked	R. Van Reenen 11/57
QUANTITIES	Don Mealy 12-57	Checked	
SPECIFICATIONS			

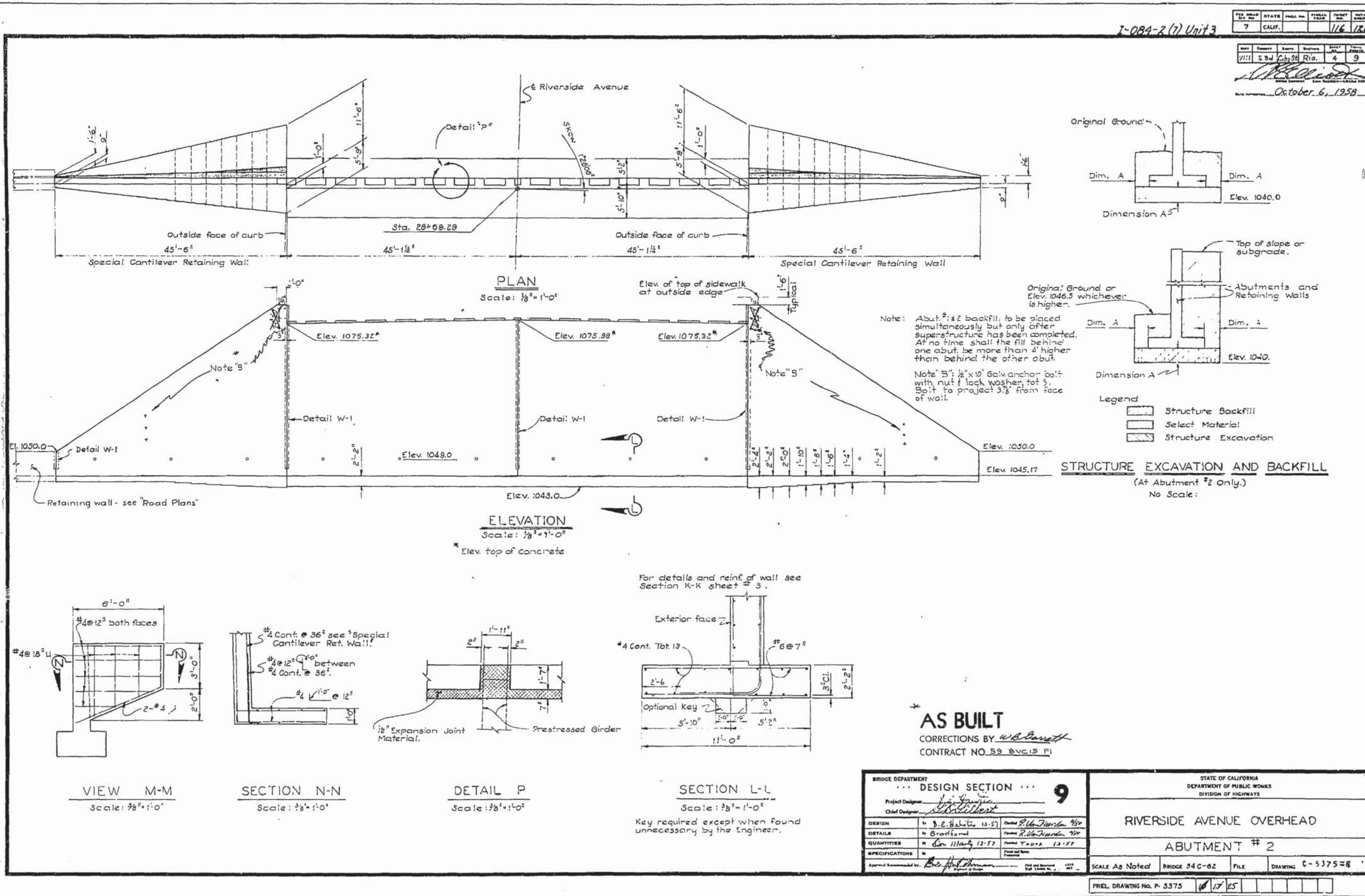
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

RIVERSIDE AVENUE OVERHEAD

ABUTMENT #1

SCALE As Noted | BRIDGE #54C-62 | FILE | DRAWING C-5375-3

PREL. DRAWING NO. P-5375



I-084-2(7) Unit 3
7 CALIF. 116 121
VIII S.Bd City St Ria. 4 9
October 6, 1958
℄ Riverside Avenue
Detail "P"
Skew 12°00'
Sta. 28+58.29
Outside face of curb
45'-6"
45'-1¼"
45'-1¼"
45'-6"
Special Cantilever Retaining Wall
Special Cantilever Retaining Wall
PLAN
Scale: ⅛" = 1'-0"
Elev. of top of sidewalk at outside edge
Typical
Elev. 1075.32*
Elev. 1075.98*
Elev. 1075.32*
Note "B"
Note "B"
Detail W-1
Detail W-1
Detail W-1
Detail W-1
El. 1050.0
Elev. 1049.0
Elev. 1050.0
Elev. 1045.17
Elev. 1043.0
Retaining wall - see "Road Plans"
ELEVATION
Scale: ⅛" = 1'-0"
* Elev. top of concrete
Note: Abut. #1 & 2 backfill to be placed simultaneously but only after superstructure has been completed. At no time shall the fill behind one abut. be more than 4' higher than behind the other abut.
Note "B": ½" x 10" Galv. anchor bolt with nut & lock washer, tot 5. Bolt to project 3⅞" from face of wall.
Original Ground
Dim. A
Dim. A
Elev. 1040.0
Dimension A
Top of slope or subgrade.
Original Ground or Elev. 1046.5 whichever is higher.
Abutments and Retaining Walls
Dim. A
Dim. A
Elev. 1040.
Dimension A
Legend
Structure Backfill
Select Material
Structure Excavation
STRUCTURE EXCAVATION AND BACKFILL
(At Abutment #2 Only.)
No Scale:
6'-0"
#4 @ 12" both faces
#4 @ 18" U
2-#4
#4 Cont. @ 36" see "Special Cantilever Ret. Wall."
#4 @ 12" between
#4 Cont. @ 36"
#4 @ 12"
1'-11"
½" Expansion Joint Material.
Prestressed Girder
For details and reinf. of wall see Section K-K sheet # 3.
Exterior face
#4 Cont. Tot. 13
#6 @ 7"
Optional Key
5'-10"
5'-2"
11'-0"
VIEW M-M
Scale: ⅜" = 1'-0"
SECTION N-N
Scale: ⅜" = 1'-0"
DETAIL P
Scale: ⅜" = 1'-0"
SECTION L-L
Scale: ⅜" = 1'-0"
Key required except when found unnecessary by the Engineer.
AS BUILT
CORRECTIONS BY W.B. Garrett
CONTRACT NO. 59 8vc15 F1
BRIDGE DEPARTMENT
DESIGN SECTION 9
Project Designer
Chief Designer
DESIGN
DETAILS Bradford
QUANTITIES
SPECIFICATIONS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
RIVERSIDE AVENUE OVERHEAD
ABUTMENT # 2
SCALE As Noted
BRIDGE 54C-62
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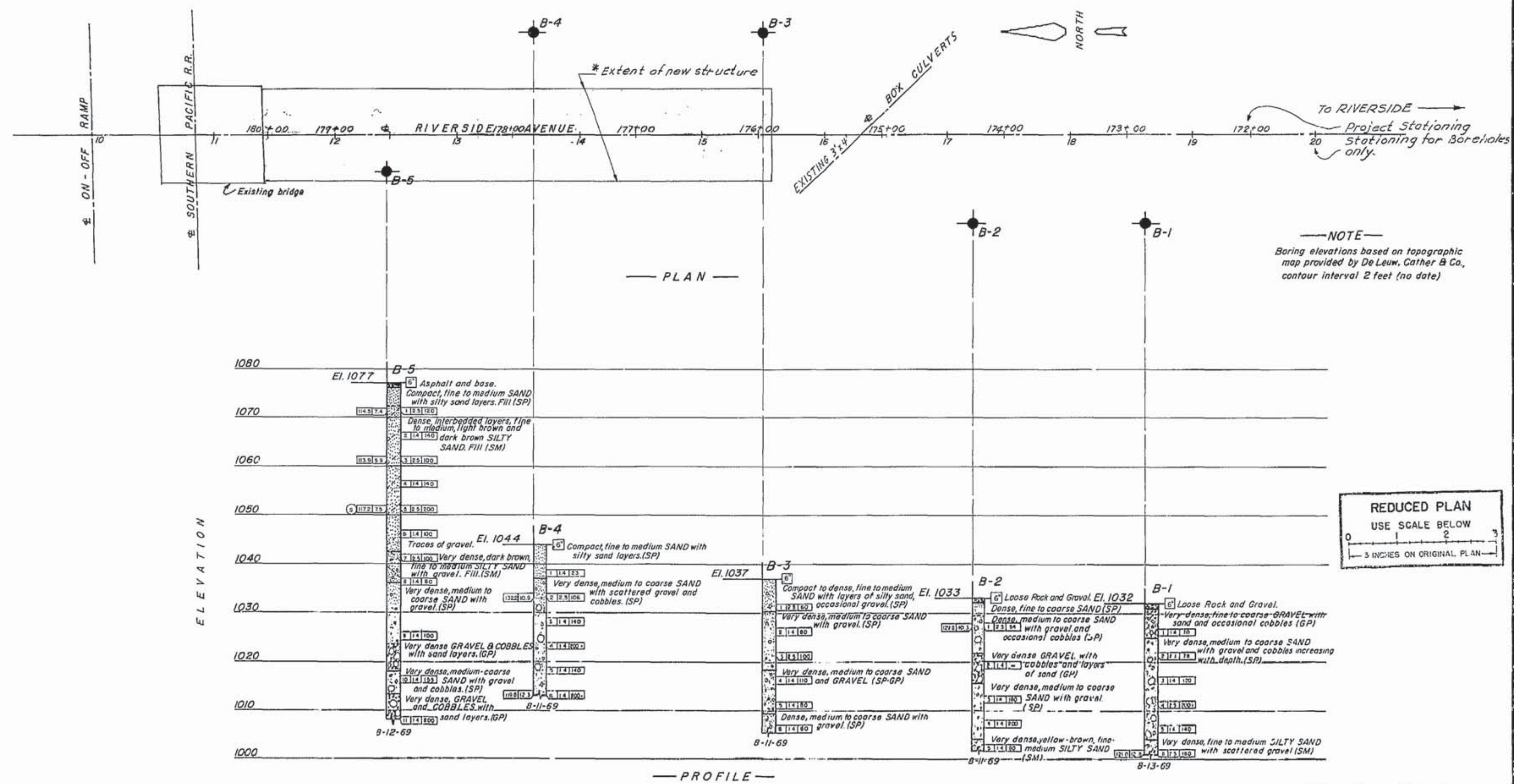
DRAWING C-5375=8
PREL. DRAWING No. P-5375

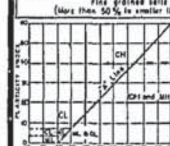


BR NO 54C-62

LEGEND OF EARTH MATERIALS

UNIFIED SOIL CLASSIFICATION

Pt	OH	CH	MH	OL	CL	ML	SC	SM	SP	SW	GC	GM	GP	GW
Highly organic soils	Silts and clays Liquid limit greater than 50			Silts and clays Liquid limit less than 50			Sands with fines >12% fines		Clean sands <5% fines		Gravels with fines >12% fines		Clean gravels <5% fines	
							Sands - more than 50% of coarse fraction is smaller than Nº 4 sieve				Gravels - more than 50% of coarse fraction is larger than Nº 4 sieve			
Fine grained soils (More than 50% is smaller than Nº 200 sieve)							Coarse grained soils (More than 50% is larger than Nº 200 sieve)							



LABORATORY CLASSIFICATION CRITERIA

GW and SW - $C_u = \frac{D_{60}}{D_{10}}$ greater than 4 for GW & 6 for SW, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 & 3.

GP and SP - Clean gravel or sand not meeting requirements for GW and SW.

GM and SM - Atterberg limits below "A" line or P.I. less than 4

GC and SC - Atterberg limits above "A" line with P.I. greater than 7.

Fines (silt or clay)	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel	Cobbles	Boulders
Sieve sizes							

Classification of earth materials shown on this sheet based on field inspection and should not be construed to imply laboratory analysis unless so stated

MATERIAL SYMBOLS

- Gravel
- Sand
- Silt
- Clay
- Sandy clay or clayey sand
- Sandy silt or silty sand
- Silty clay or clayey silt
- Peat or organic matter
- Fill material
- Shale
- Sandstone
- Limestone
- Metamorphic rock
- Igneous rock

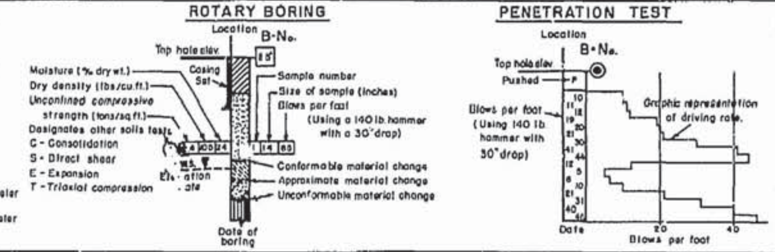
CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

Nº of blows	Granular	Cohesive
0-5	Very loose	Very soft
6-10	Loose	Soft
11-20	Semicompact	Stiff
21-35	Compact	Very stiff
36-70	Dense	Hard
>70	Very dense	Very hard

LEGEND OF BORING OPERATIONS

- Plan of any boring
- Rotary boring
- Diamond core boring
- Auger boring
- Sample boring
- Jet boring
- Test pit
- 2½" Cone penetrometer
- 2½" Cone penetrometer



MICROFILMED JUL 28 1977

APPROVED [signature] REGISTERED CIVIL ENGINEER No. 8369 JOB No. 169-700F

DE LEUW, CATHER & COMPANY

RIVERSIDE AVENUE OVERHEAD
SOUTHERN PACIFIC COMPANY

LOG OF TEST BORINGS

Scale Horiz. 1" = 40' Vert. 1" = 10'	Date Sept 9, 1969	By ALS / Check by	Drawing A-7

PROJ. NO. 1925-OE

* Revised March 1970 by D.C. & Co.

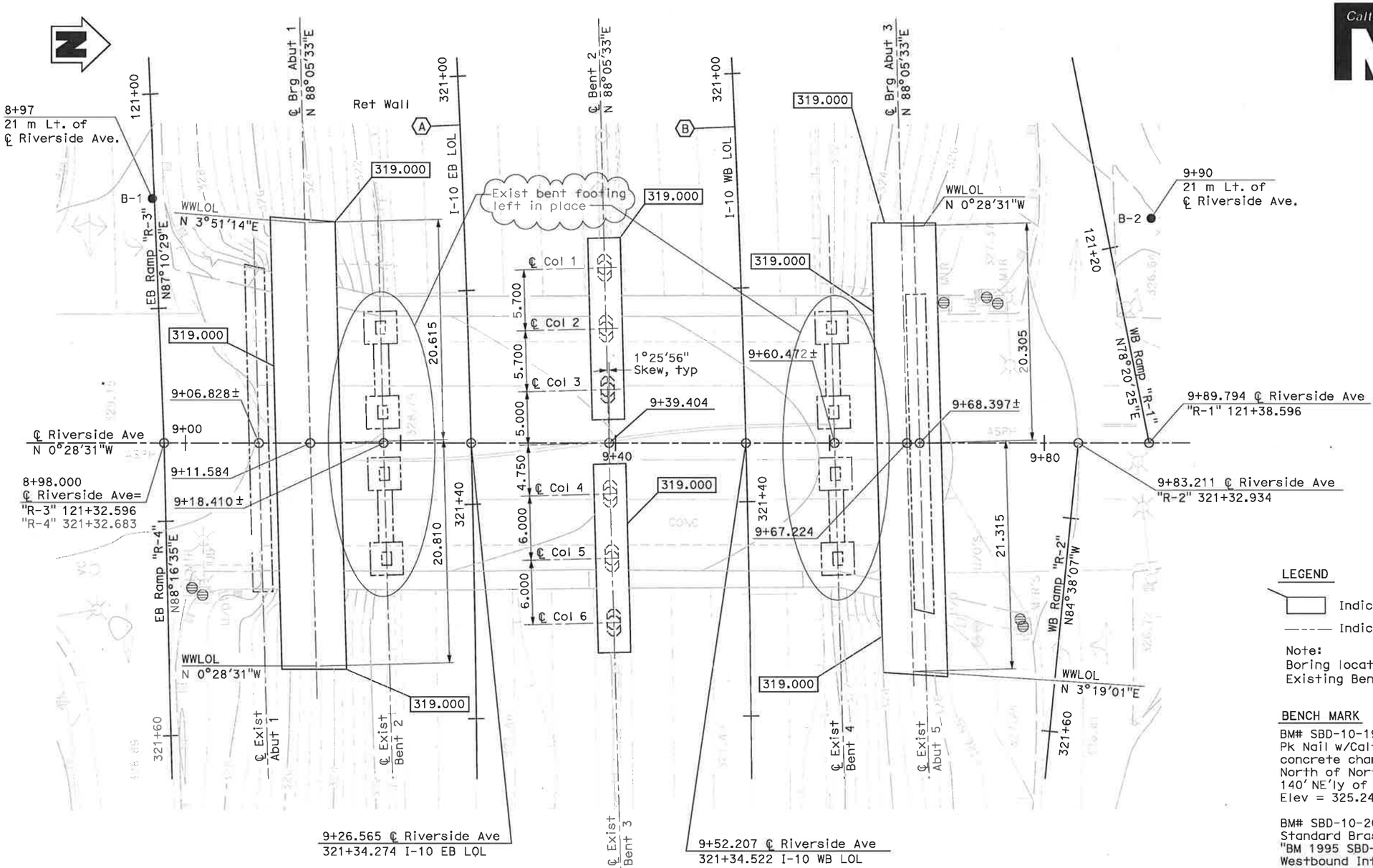
16X

AS BUILT PLANS
Contract No. unknown
Date Completed —

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

DATE	SIGNATURE	TITLE
7/28/77	Joseph M. Costa	Supervisor

DAS-SS-78



PLAN
1:200

Note:
Footing dimensions shown are measured along ℄ Abutments and ℄ Bent.

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

CURVE DATA

Ⓐ	Ⓑ
R = 1523.903 m	R = 1548.287 m
Δ = 10°29'24"	Δ = 9°02'18"
T = 139.893 m	T = 122.375 m
L = 279.005 m	L = 244.243 m

LEGEND

Indicates bottom of footing elevation

Indicates existing structure

Note:
Boring locations are approximate.
Existing Bent 3 is not shown.

BENCH MARK

BM# SBD-10-19.5
Pk Nail w/Caltrans Brass Washer in lip of concrete channel at West top of curb, 18' North of North AC berm FL, Westbound Interstate 10, 140' NE'ly of call box 10-197, near milepost 19.5
Elev = 325.248

BM# SBD-10-20.5
Standard Brass Disk in concrete and 2" IP stamped "BM 1995 SBD-10-20.5", 47.5' North of North AC berm FL Westbound Interstate 10, 4.5' South of R/W fence, 2' South of metal guide post, 9' North of concrete "V" ditch, 43' North of call box 10-207, near milepost 20.5, Elev = 321.107

Note:
Vertical control based on NGVD-1929, Supplemental USC&GS Adjustment of 1933 established by Caltrans

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	31.2/32.8	288	339

Caltrans Metric

REGISTERED CIVIL ENGINEER 5-6-09

9-10-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MOHAN S. CHAR
No. C57894
Exp. 6/30/10
CIVIL
STATE OF CALIFORNIA

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

CITY OF RIALTO
150 SOUTH PALM AVE
RIALTO, CA 92376

LIM & NASCIMENTO ENGINEERING
1887 BUSINESS CENTER DRIVE, SUITE 6
SAN BERNARDINO, CALIFORNIA 92408

AS BUILT
CONTRACT No. 08-422304
Structure Rep Dave Smith
Field Corrections Date 3/8/2012
Corrections transfered by R.A.
Date Transfered 6/13/2012

Karl Bowker 5-6-09
GEOTECHNICAL PROFESSIONAL APPROVAL DATE

LILY SUN
DESIGN OVERSIGHT
9-10-09
SIGN OFF DATE

SCALE: | VERT.DATUM | HORZ.DATUM
PHOTOGRAMMETRY AS OF: | ALIGNMENT TIES
SURVEYED BY | DRAFTED BY
FIELD CHECKED BY | CHECKED BY

DESIGN BY U. SANDIRA CHECKED S. MISLINSKI
DETAILS BY R. ANDRASEK CHECKED S. MISLINSKI
QUANTITIES BY U. SANDIRA CHECKED M. ABOUZALAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MOHAN CHAR
PROJECT ENGINEER

BRIDGE NO. 54-1267
KILOMETER POST 32.14

RIVERSIDE AVENUE OVERCROSSING
FOUNDATION PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 08224
EA 422301

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 2/28/03 | 3/28/05 | 11/28/05 | 4/28/07 | 8/28/07 | 11/28/07 | 1/28/08 | 7/28/08 | 2/28/09 | 6/15/09

SHEET 4 OF 42

FILE => 54-1267-e-fdpl.dgn

TIME PLOTTED => 7:44:45 AM
DATE PLOTTED => 8/10/2012
USERNAME => AECOM

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	31.2/32.8	318	339

Caltrans Metric

Kul Bhushan 5-6-09
GEOTECHNICAL PROFESSIONAL

9-10-09
PLANS APPROVAL DATE

REGISTERED GEOTECHNICAL ENGINEER — Kul Bhushan — No. G.E. 144 — Exp. 12/31/09 — STATE OF CALIFORNIA

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CITY OF RIALTO
150 SOUTH PALM AVENUE
RIALTO, CA 92376

GROUP DELTA CONSULTANTS
92 ARGONAUT, SUITE 120
ALISO VIEJO, CALIFORNIA 92656

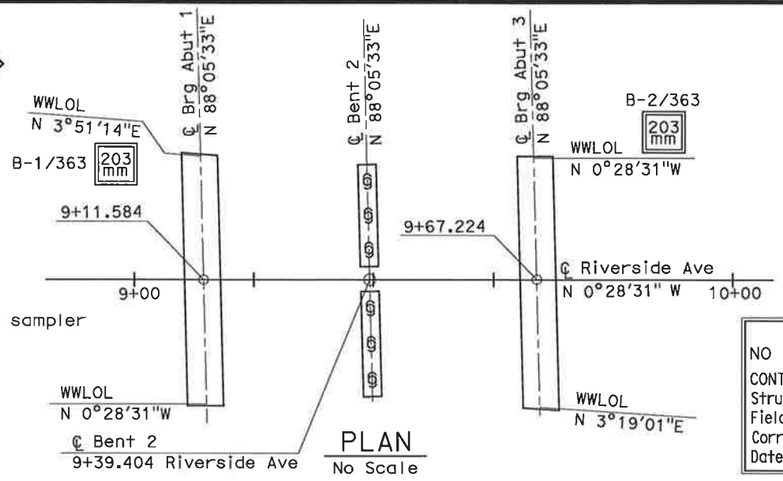
AS BUILT
NO CORRECTIONS THIS SHEET
CONTRACT No. 08-422304
Structure Rep Dave Smith
Field Corrections Date 3/8/2012
Corrections transfered by R.A.
Date Transfered 6/13/2012

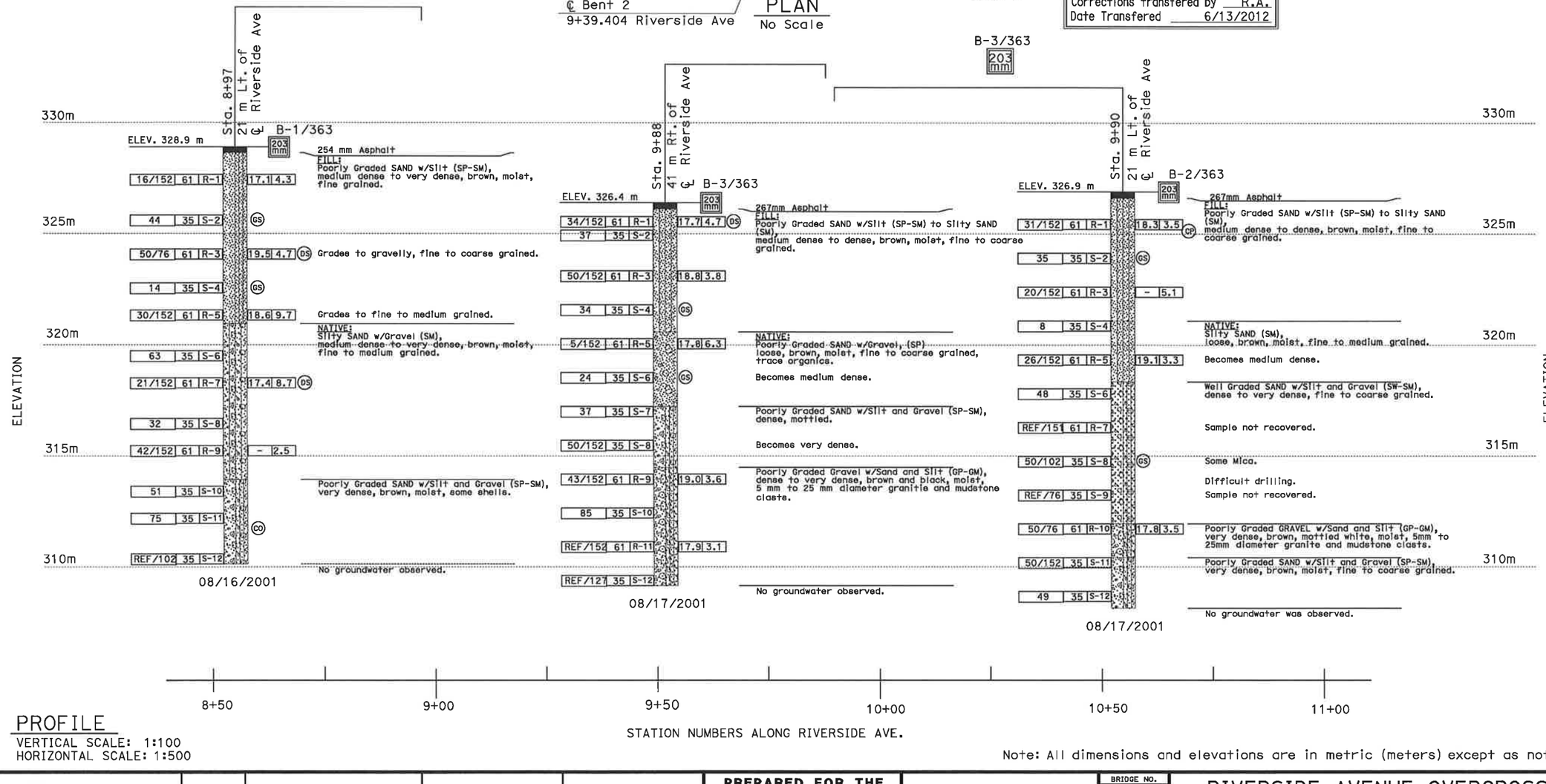
Notes :

1) Borings were drilled with Hollow-stem augers
2) Sampler and hammer data for the Modified California and SPT samplers are as follows:

Type of Sampler	Outside Diameter	Inside Diameter	Weight of Hammer	Height of drop
Mod. California	83 mm	61 mm	0.623 kN	762 mm
SPT	51 mm	35 mm	0.623 kN	762 mm

3) For relative density estimation purposes the Modified California sampler blowcounts can be converted to equivalent SPT blowcounts by multiplying blows by 0.45.
4) Water table was not encountered.

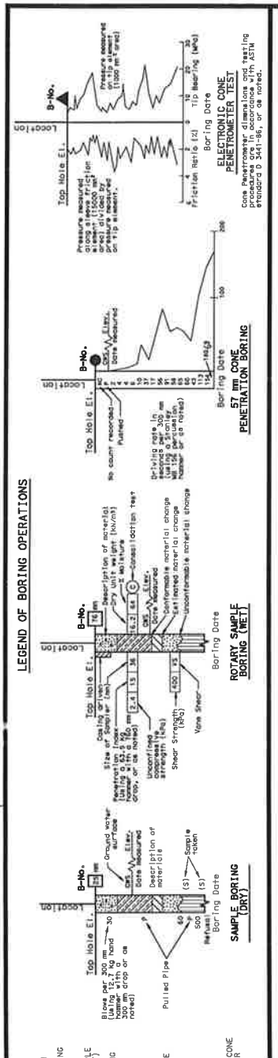




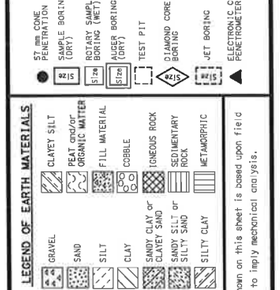
PROFILE
VERTICAL SCALE: 1:100
HORIZONTAL SCALE: 1:500

Note: All dimensions and elevations are in metric (meters) except as noted.

LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS



CONSISTENCY CLASSIFICATION FOR SOILS
According to the Standard Penetration Test

		SPT Value (Blows/ 0.3m)	
Cohesive	Very Soft	<2	
	Soft	2-4	
	Firm	5-8	
	Stiff	9-15	
	Very stiff	16-30	
	Hard	>31	
Granular	Very Loose	0-4	
	Loose	5-10	
	Medium Dense	11-30	
	Dense	31-50	
	Very Dense	>50	

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

LILY SUN	DRAWN BY	K. FERNANDES	T. ARMSTRONG	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MOHAN CHAR
DESIGN OVERSIGHT	CHECKED BY	C. SCHEYHING	FIELD INVESTIGATION BY:		PROJECT ENGINEER
9-10-09			DATE:		
SIGN OFF DATE					

BRIDGE NO. 54-1267
KILOMETER POST 32.14

RIVERSIDE AVENUE OVERCROSSING
LOG OF TEST BORINGS

GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 08224
EA 422301

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 2/23/01 9/18/05 11/30/05 4/23/01 8/13/01 11/26/01 2/19/09 6/18/09 9/01/09

SHEET 34 OF 42

FILE => 54-1267-z-ltb01.dgn

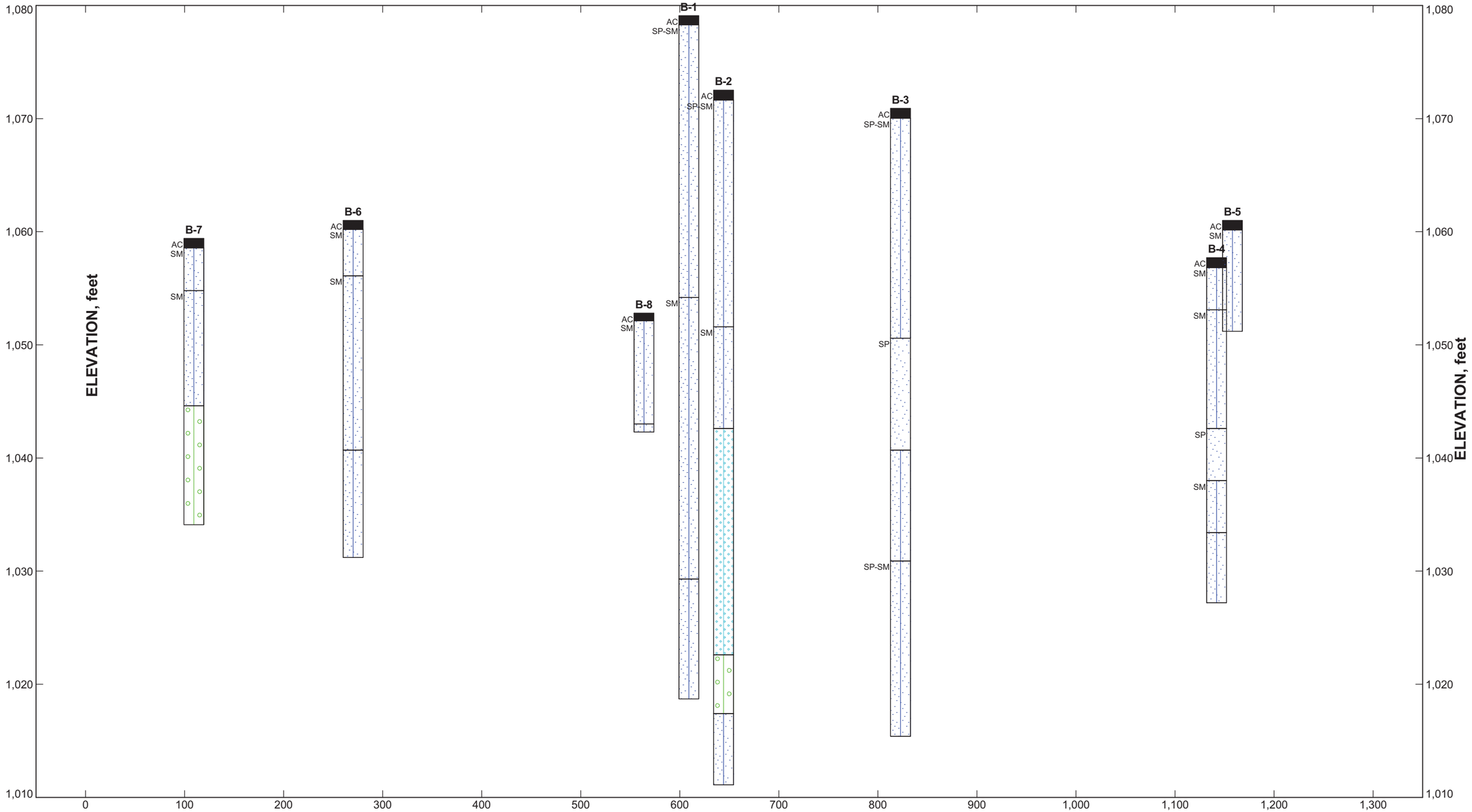
USERNAME => AECOM
DATE PLOTTED => 8/10/2012
TIME PLOTTED => 7:45:30 AM

Document Path: K:\datafls\PROJECTS\2014\2014-015\Figures\GIS\Site Plan.mxd

Note: Boring locations presented in figure are based on geotechnical exploration performed by Group Delta Inc.

Figure 2 - SITE PLAN

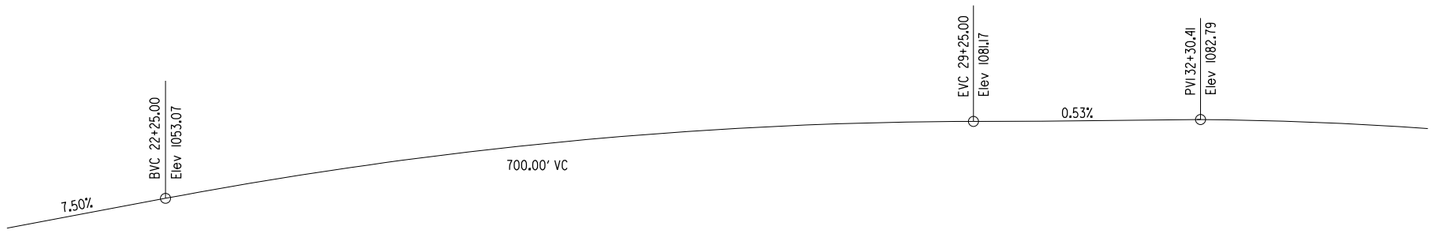
Template: BL17EL11SAMPLERS



NOTES: Boring information presented herein is based on geotechnical exploration performed by Group Delta, Inc. (GDI, 2007) for the Riverside Overhead/I-10 project.

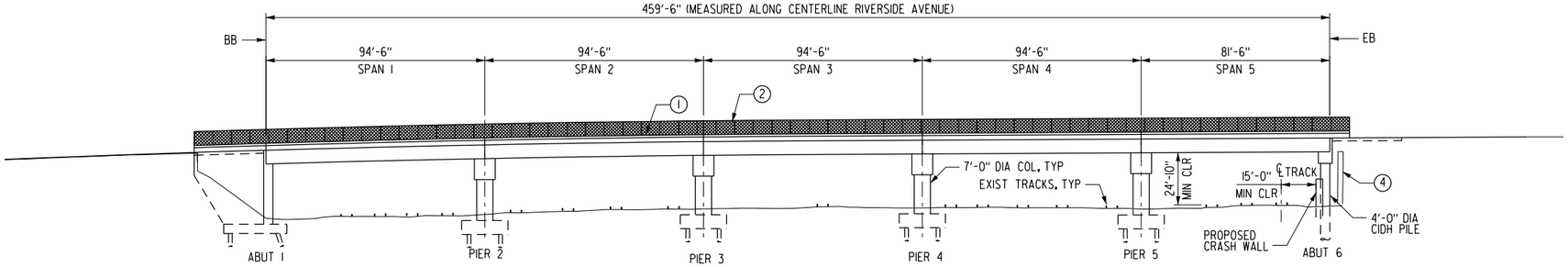
RIVERSIDE AVENUE/I-10 OVERHEAD
SUBSURFACE CROSS SECTION

APPENDIX B -
ADVANCED PLANNING STUDY DOCUMENTS FROM JACOBS



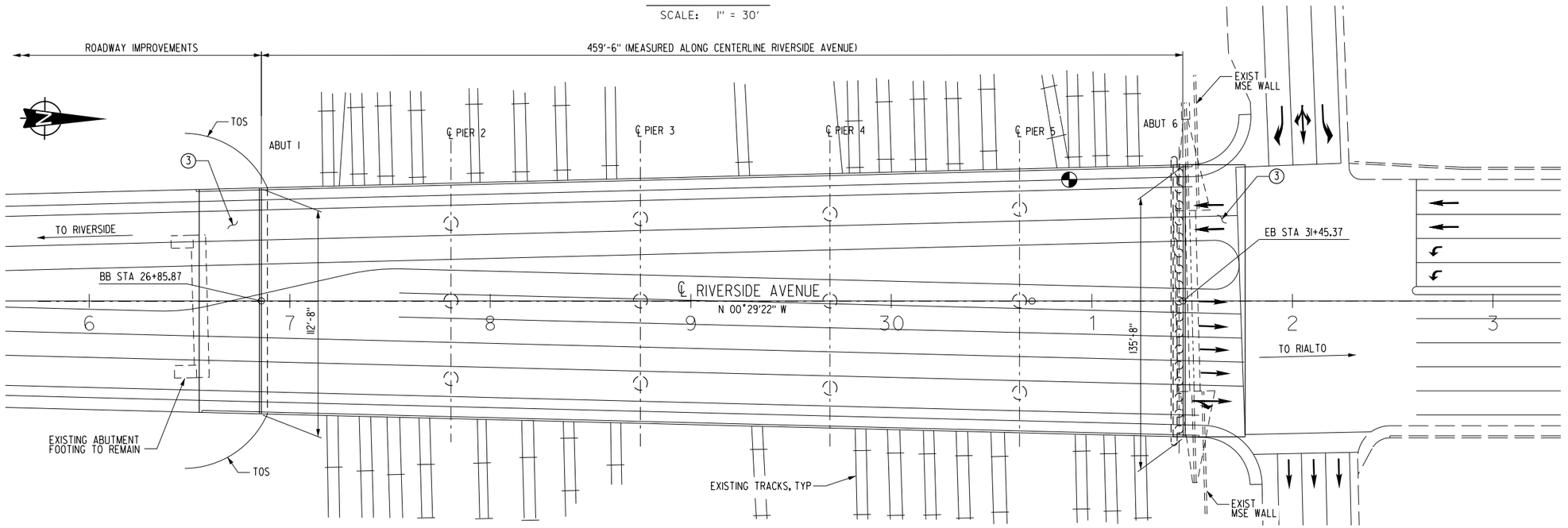
RIVERSIDE AVENUE PROFILE GRADE

N.T.S.



ELEVATION

SCALE: 1" = 30'



PLAN

SCALE: 1" = 30'

ALTERNATIVE 2

LEGEND:

- = BRIDGE WIDENING
- = INDICATES UPRR TRACKS
- = DIRECTION OF TRAFFIC

KEY NOTES:

- POINT OF MINIMUM VERTICAL CLEARANCE
- ① CONCRETE BARRIER (TYPE 26)
- ② CHAIN LINK RAILING (TYPE 7)
- ③ STRUCTURE APPROACH TYPE N(30S)
- ④ EXISTING ABUTMENT WALL TO REMAIN

REV	DATE	DESCRIPTION	BY	SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY D. HAGHIGHI
DRAWN BY P. ZUCCHI
CHECKED BY K. PIRBAZARI
APPROVED BY
DATE DECEMBER 19, 2016

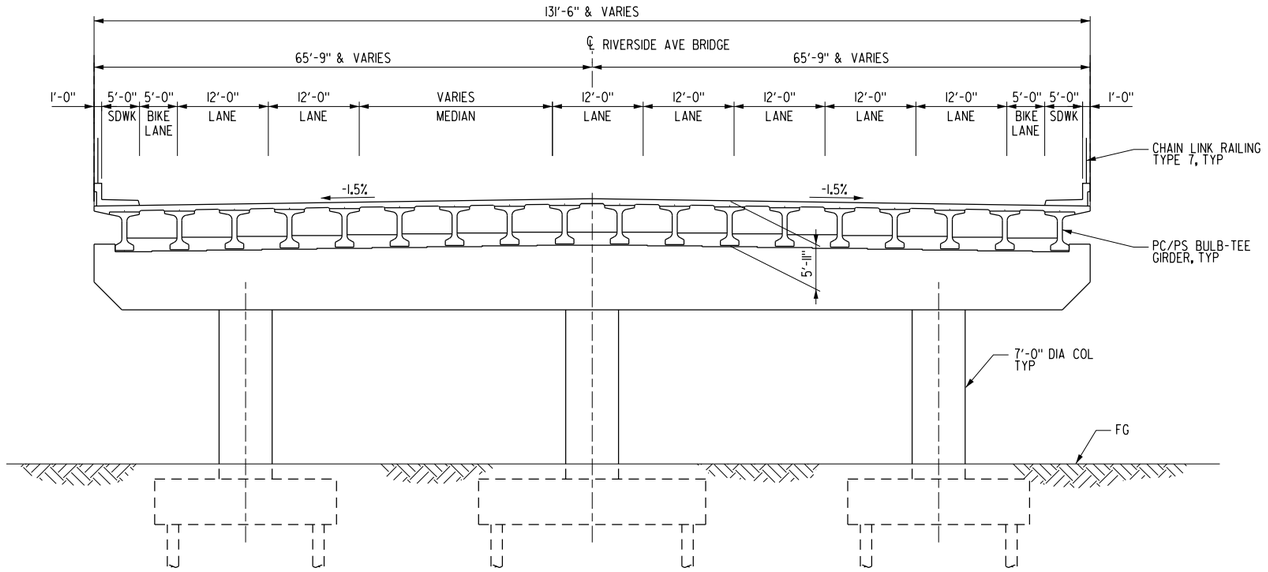
JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (REPLACEMENT)

PLANNING STUDY 1 OF 2

CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO. 1 OF 2
SCALE AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT



TYPICAL SECTION - PIER 5

SCALE: 1" = 10'

ALTERNATIVE 2

10' 0 10' 20'
GRAPHIC SCALE: 1" = 10'

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATOR	PHYSICAL ENTITY	WORK ELEMENT

zucchip
pw:\\DCICLUS01.jacobs.com:Jacobs_JLPatterson\Documents\Engineering\City Of Rialto\001- Riverside Ave UPRR Bridge Widening\Drawings\Structural\REPLACEMENT -
2:26:41 PM
12/15/2016

REV	DATE	DESCRIPTION	BY / SUB	APP

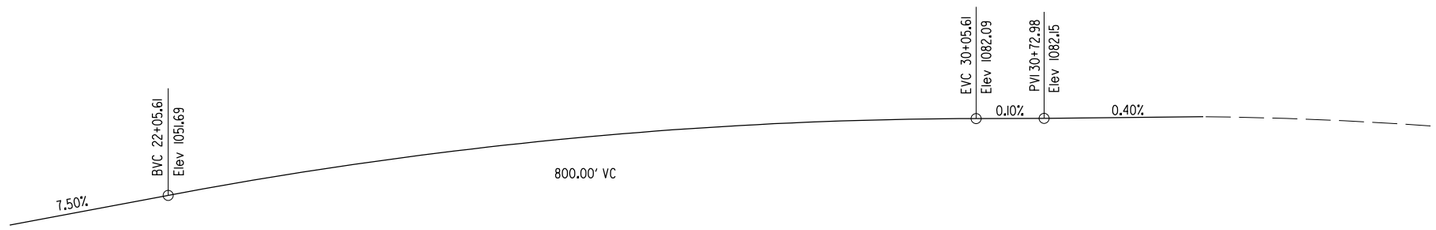
DESIGNED BY	D. HAGHIGHI
DRAWN BY	P. ZUCCHI
CHECKED BY	K. PIRBAZARI
APPROVED BY	
DATE	DECEMBER 19, 2016

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (REPLACEMENT)

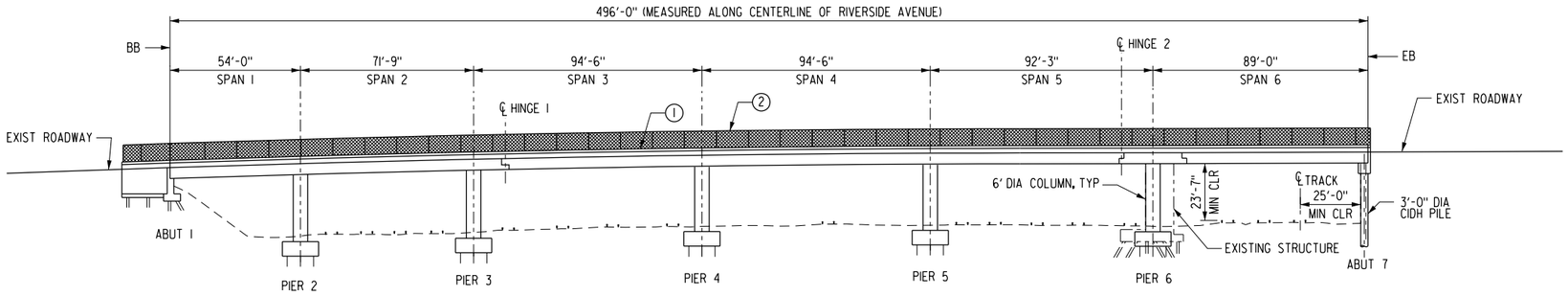
PLANNING STUDY 2 OF 2

CONTRACT NO.	
DRAWING NO.	
REVISION	SHEET NO. 2 OF 2
SCALE	AS SHOWN



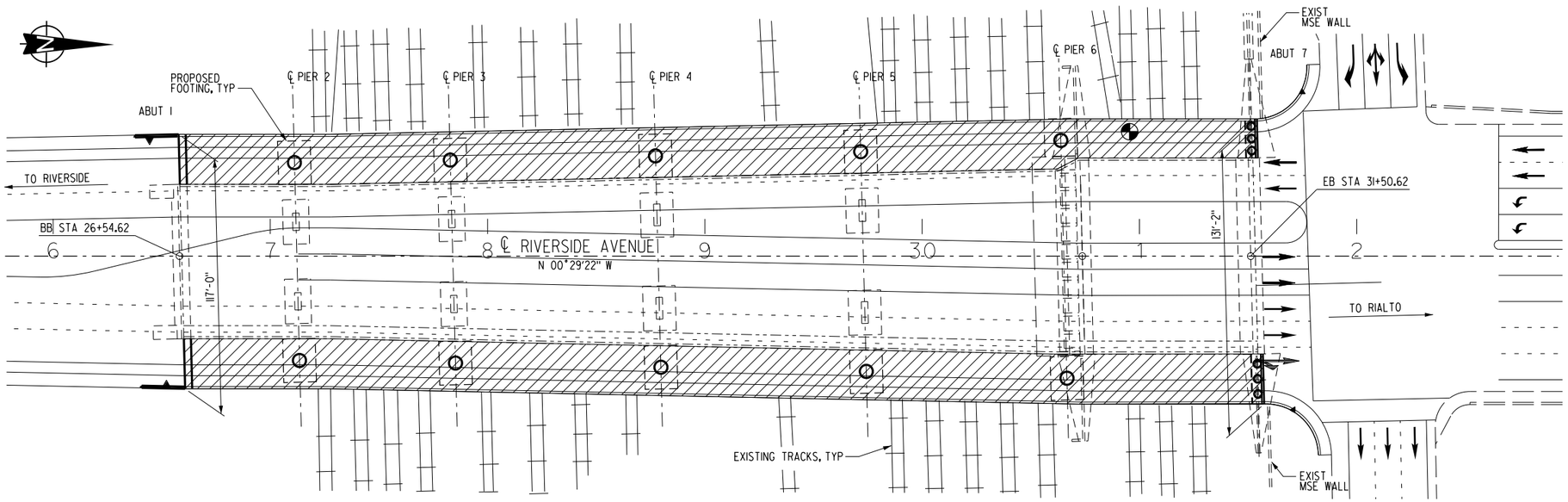
RIVERSIDE AVENUE PROFILE GRADE

N.T.S.



ELEVATION

SCALE: 1" = 30'



PLAN

SCALE: 1" = 30'

ALTERNATIVE 1

GRAPHIC SCALE: 30' 20' 10' 0 30' 60' — 1" = 30'

LEGEND:

- = BRIDGE WIDENING
- = INDICATES UPRR TRACKS
- = DIRECTION OF TRAFFIC

KEY NOTES:

- POINT OF MINIMUM VERTICAL CLEARANCE
- (1) CONCRETE BARRIER
- (2) CHAIN LINK RAILING (TYPE 7)

REV	DATE	DESCRIPTION	BY	SUB	APP

Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the OWNER and shall be held confidential and shall not be used for any purpose not provided for in agreements with the OWNER.

DESIGNED BY D. HAGHIGHI
DRAWN BY P. ZUCCHI
CHECKED BY K. PIRBAZARI
APPROVED BY
DATE DECEMBER 19, 2016

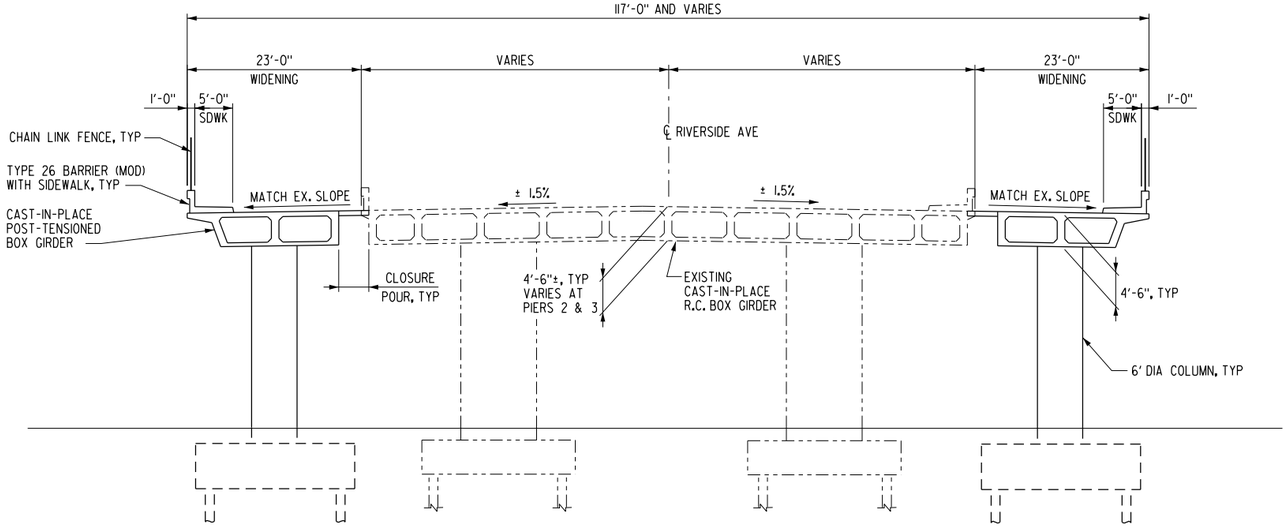
JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (WIDEN)

PLANNING STUDY 1 OF 2

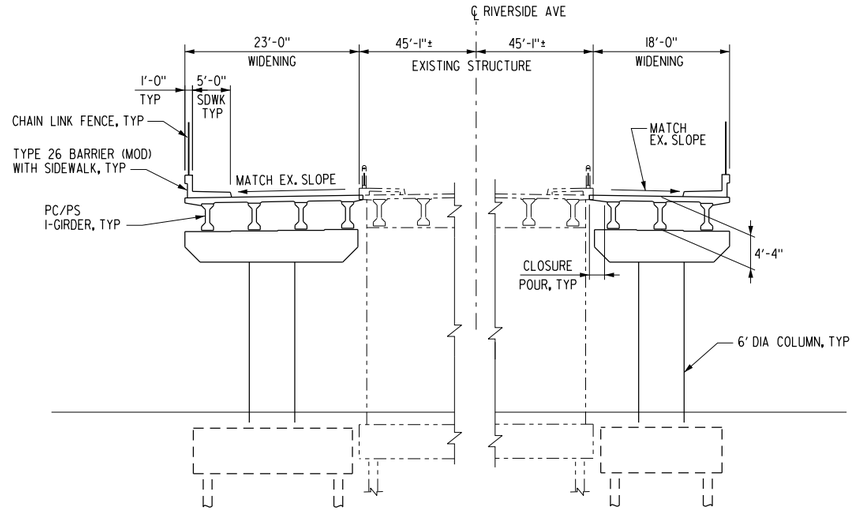
CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO. 1 OF 2
SCALE AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT



TYPICAL SECTION - PIER 2 (LOOKING NORTH)

SCALE: 1" = 10'



TYPICAL SECTION - PIER 6 (LOOKING SOUTH)

SCALE: 1" = 10'

ALTERNATIVE 1

10' 0 10' 20'

GRAPHIC SCALE: 1" = 10'

REV	DATE	DESCRIPTION	BY / SUB	APP

Information confidential
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DESIGNED BY D. HAGHIGHI
DRAWN BY P. ZUCCHI
CHECKED BY K. PIRBAZARI
APPROVED BY
DATE DECEMBER 19, 2016

JACOBS
725 TOWN & COUNTRY ROAD
SUITE 300
ORANGE, CA 92868

CITY OF RIALTO
RIVERSIDE AVE BRIDGE (WIDEN)

PLANNING STUDY 2 OF 2

CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO. 2 OF 2
SCALE AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATOR | PHYSICAL ENTITY | WORK ELEMENT

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pw:\\DCICLUSOI.jacobs.com:Jacobs-JLPatterson\Documents\Engineering\City Of Rialto\001- Riverside Ave UPRR Bridge Widening\Drawings\Structural\WIDEN-TYPICAL.dgn
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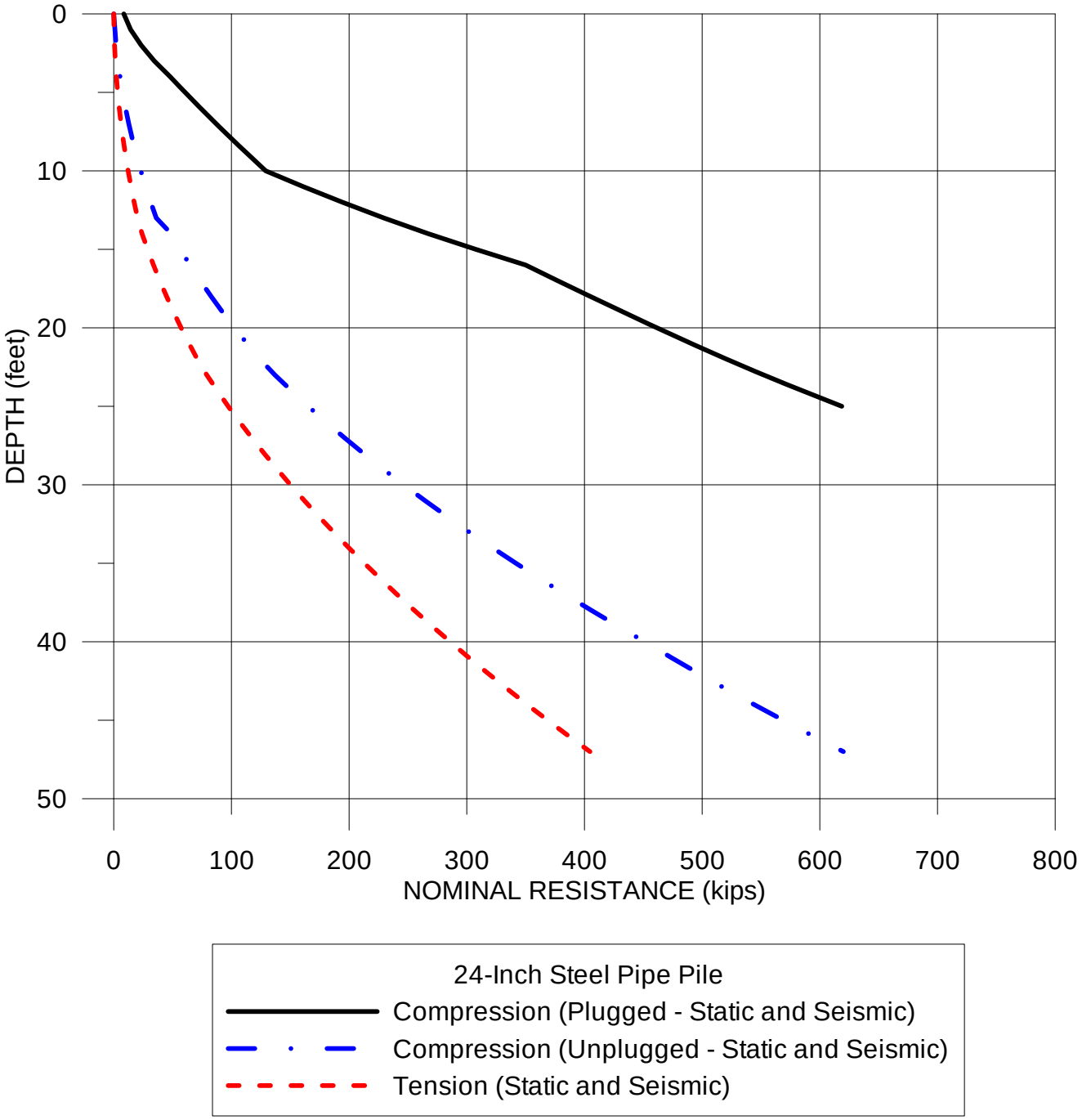
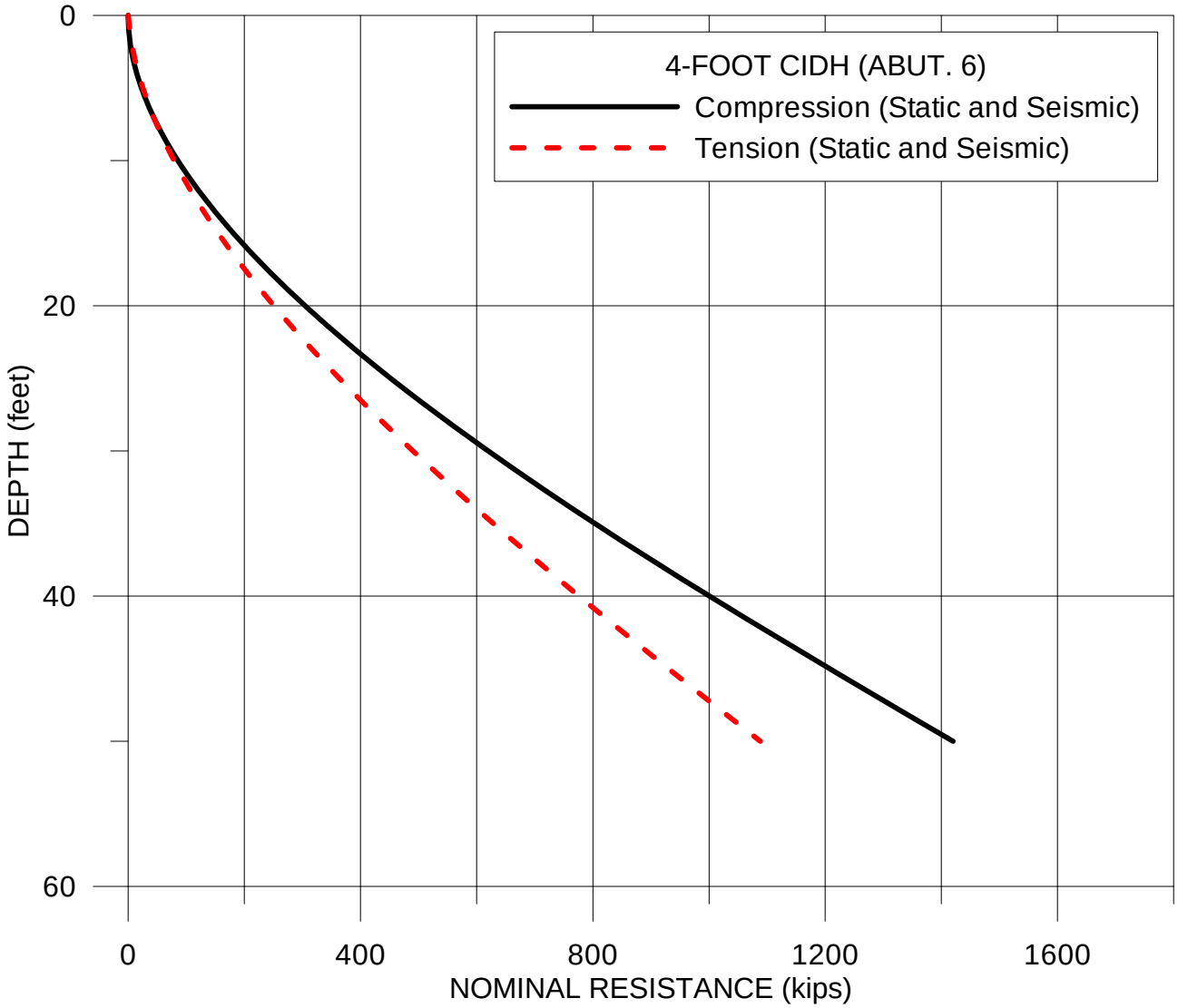
12/15/2016

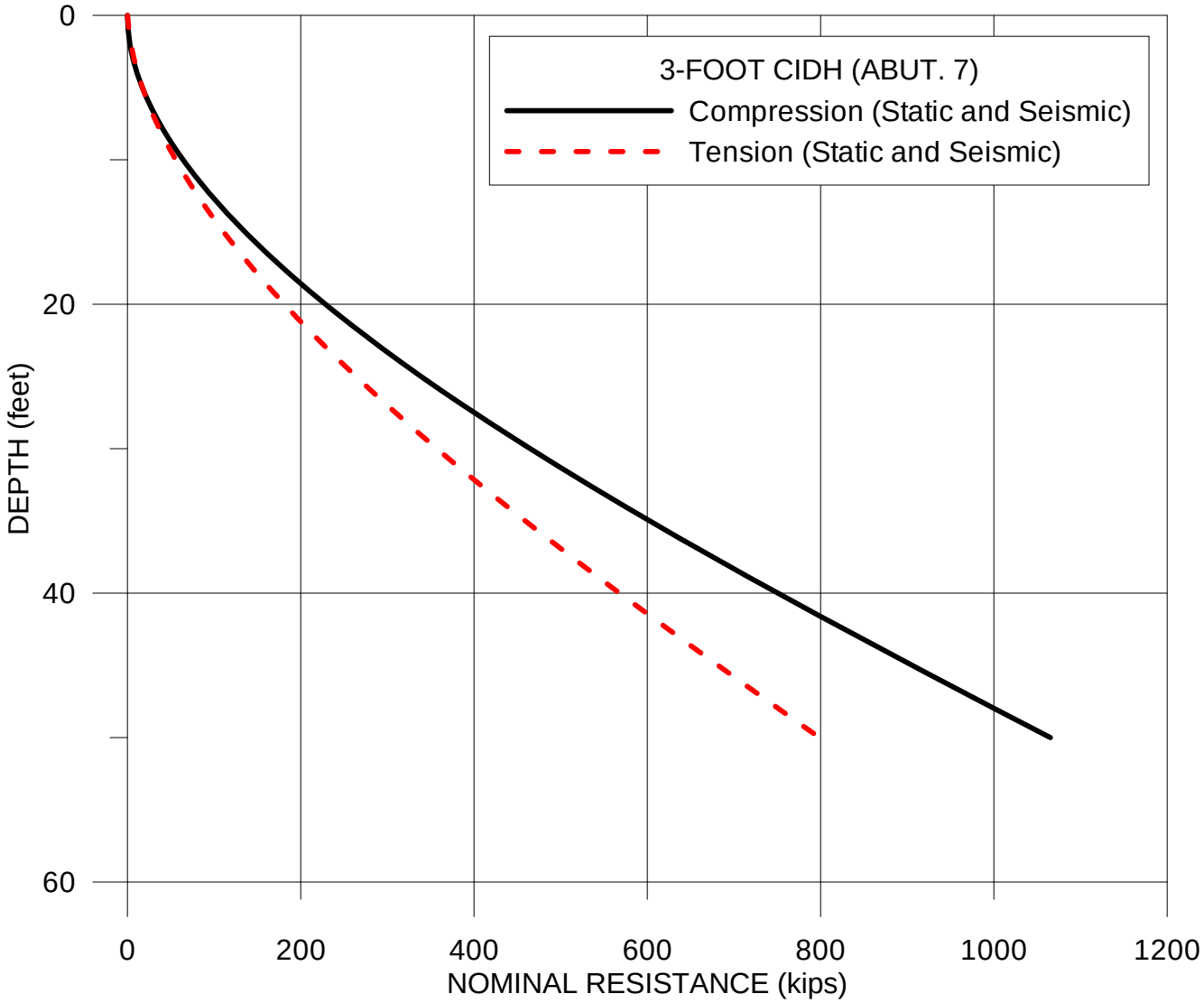
APPENDIX C -
PRELIMINARY PILE AXIAL CAPACITIES



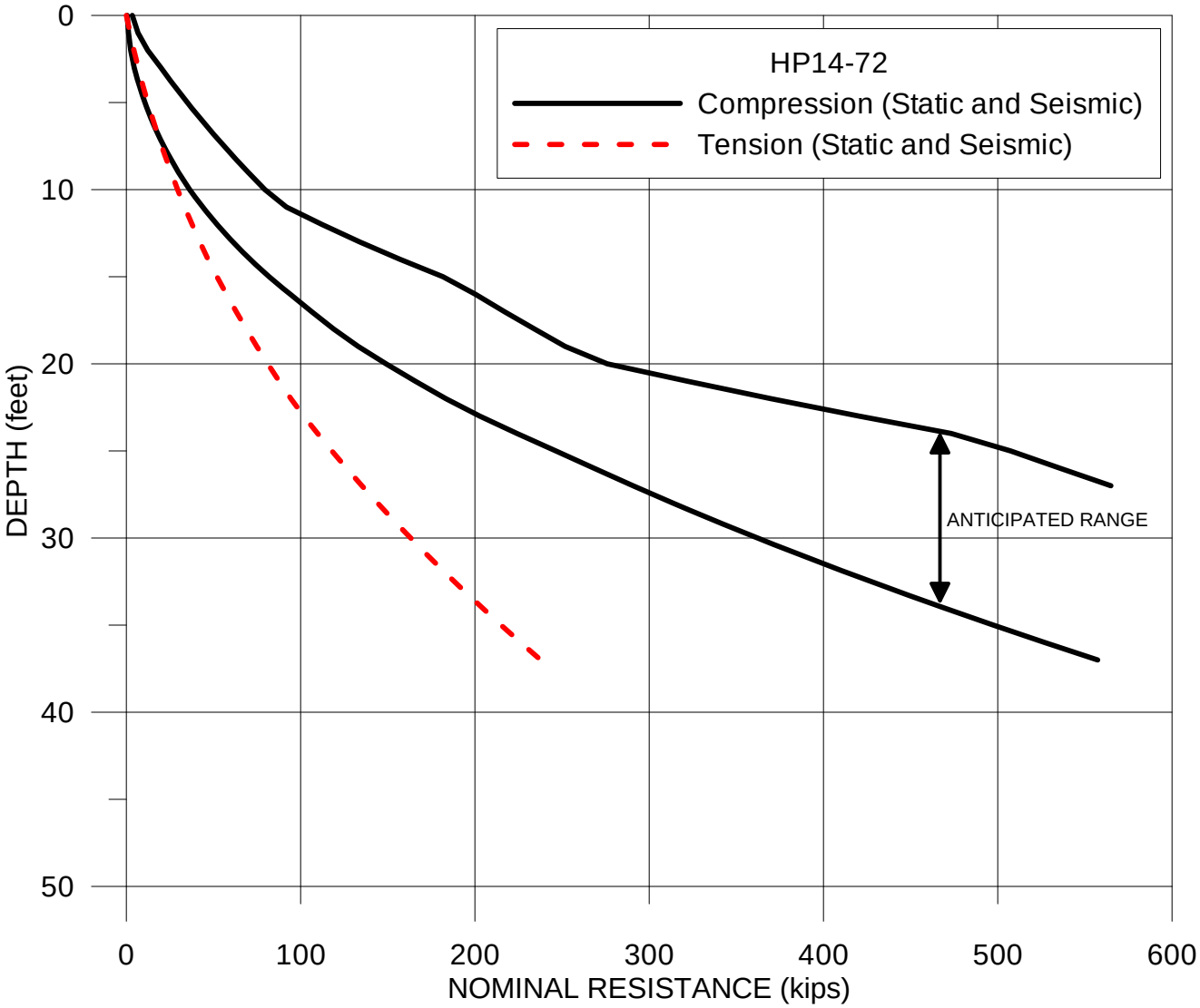
Notes:
1. Pile cut-off elevation is assumed at an elevation 1,043 feet.
2. The results shown are for a single isolated driven Pipe Pile 24x0.375" pile based on side friction and end bearing.
3. For a group of piles, a group efficiency factor should be applied as appropriate.
4. For piles spaced at 3 diameters or more, the group efficiency factor is 1. Assume a group efficiency factor of 0.8 for piles spaced at 2 diameters.
5. For LRFD design, apply a resistance factor of 0.7 for strength limit and 1 for extreme limit. Assume service limit will not govern.



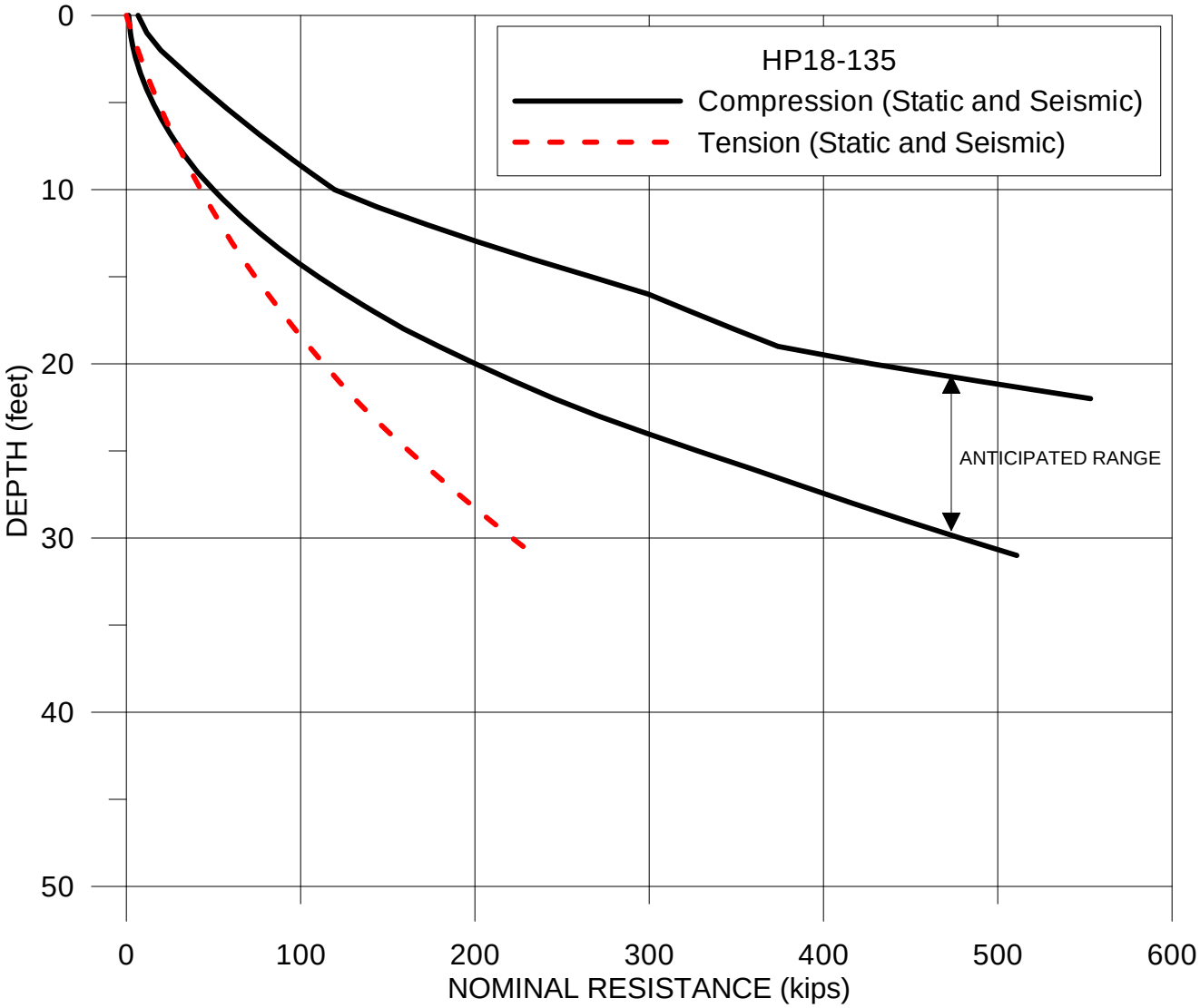
Notes:
1. Pile cut-off elevation is assumed at an elevation 1,043 feet.
2. The results shown are for a single isolated 48-inch diameter cast-in-drilled-hole (CIDH) pile. For a group of piles, a group efficiency factor should be applied as appropriate. For piles spaced at 3 diameters or more, the group efficiency factor is 1.
3. Assume a group efficiency factor of 0.8 for piles spaced at 2 diameters.
4. The nominal axial compression resistance is based on skin friction only.
5. For LRFD design, apply a resistance factor of 0.7 for strength limit and 1 for extreme limit. Assume service limit will not govern.



Notes:
1. Pile cut-off elevation is assumed at an elevation 1,043 feet.
2. The results shown are for a single isolated 36-inch diameter cast-in-drilled-hole (CIDH) pile. For a group of piles, a group efficiency factor should be applied as appropriate. For piles spaced at 3 diameters or more, the group efficiency factor is 1.
3. Assume a group efficiency factor of 0.8 for piles spaced at 2 diameters.
4. The nominal axial compression resistance is based on skin friction only.
5. For LRFD design, apply a resistance factor of 0.7 for strength limit and 1 for extreme limit. Assume service limit will not govern.



Notes:
1. Pile cut-off elevation is assumed at an elevation 1,043 feet.
2. The results shown are for a single isolated driven HP 14x72 pile based on side friction and end bearing.
3. For a group of piles, a group efficiency factor should be applied as appropriate.
4. For piles spaced at 3 diameters or more, the group efficiency factor is 1. Assume a group efficiency factor of 0.8 for piles spaced at 2 diameters.
5. For LRFD design, apply a resistance factor of 0.7 for strength limit and 1 for extreme limit. Assume service limit will not govern.



Notes:
1. Pile cut-off elevation is assumed at an elevation 1,043 feet.
2. The results shown are for a single isolated driven HP 18x135 pile based on side friction and end bearing.
3. For a group of piles, a group efficiency factor should be applied as appropriate.
4. For piles spaced at 3 diameters or more, the group efficiency factor is 1. Assume a group efficiency factor of 0.8 for piles spaced at 2 diameters.
5. For LRFD design, apply a resistance factor of 0.7 for strength limit and 1 for extreme limit. Assume service limit will not govern.

DISTRIBUTION

E-mail: Jacobs
725 Town and Country Road
Orange, CA 92868

QUALITY CONTROL REVIEWER

Somadevan Niranjanan
Associate Engineer

VRN/EMV:dr

Section 6 – Bridge Inspection Report

California Department of Transportation
Division of Maintenance

Structure Maintenance and Investigations

BRIDGE

INSPECTION

RECORDS

INFORMATION

SYSTEM

The requested documents have been generated by BIRIS.

Records for “Confidential” bridges may only be released outside the Department of Transportation upon execution of a confidentiality agreement.

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 54C0062
Facility Carried: RIVERSIDE AVE
Location : 0.1 MI S OF I-10
City : RIALTO
Inspection Date : 11/03/2011

Inspection Type

Routine	FC	Underwater	Special	Other
X				

Bridge Inspection Report

STRUCTURE NAME: RIVERSIDE AVENUE OH

CONSTRUCTION INFORMATION

Year Built : 1959
Year Widened: 1972
Length (m) : 153.3

Skew (degrees): 0
No. of Joints : 5
No. of Hinges : 2

Structure Description: Bridge was lengthened south by 5 spans for 6 spans total. South: Five continuous CIP/RC box girder (9 cells) spans with two hinges on one open end RC seated abutment (A1) and one closed end cantilever abutment (P6) and four RC column (2) bents (B2,3,4,5). North: One simple PC/PS "I" girder (16) span with CIP/RC deck on RC pier wall abutments. All supported on steel piles except northerly abutment (A7) which is supported on RC spread footing.

Span Configuration : (S) 16.2 m, 21.9 m, 29.0 m, 29.3 m, 30.2 m, 24.7 m (N) c/c

LOAD CAPACITY AND RATINGS

Design Live Load: MS-18 OR HS-20
Inventory Rating: 32.6 metric tonnes Calculation Method: LOAD FACTOR
Operating Rating: 71.6 metric tonnes Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.3 m br, 1.5 m sw, (N'ly span only), 19.5 m and varies, 1.5 m sw, 0.3 m br (E)

Total Width: 21.6 m Net Width: 19.5 m No. of Lanes: 5
Rail Description: Types 9 (spans 1 thru 5) and 11 (span 6) (W), Type 12 + CLF (E) Rail Code : 0000

Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: None.

INSPECTION COMMENTARY

REVISIONS

Updated routine photos for BIRIS and bridge book.
Re-ordered condition text below
Updated work recommendation for polyester overlay.

DECK, RAILS AND APPROACHES

Approach AC NB #2 lane has failed due to heavy truck rutting. north bound side has alligator cracks, potholes and is ravelling.

Concrete portion of east barrier has minor vertical cracks at varying distances across span.

Deck has minor to moderate size (300 mm to 600 mm maps) random map pattern cracks with

INSPECTION COMMENTARY

severe density across entire box girder section. Density is heaviest and crack width is bordering on severe over the bents.
Deck span 6 is covered with 50 mm of AC overlay that has several spalled areas and longitudinal cracks. There is spalling along the transverse joint at A7 where no expansion joint material is present. AC in NB #2 lane is also rutting from heavy trucks sitting at the light. The few areas of concrete that is exposed does not appear to have as many cracks as the box girder section.
Deck has several areas with exposed rebar near A1, 2 bars at A1, several about 6 m from A1 and again near mid span. At midspan the rebars are corroding and causing the surface concrete to begin spalling.

JOINTS

A1: Compression seal intact but show signs of leakage due to spalls on either side of joint across deck.
H3: Compression seal intact but shows signs of leakage but only has small edge spalls.
H6: Compression seal intact but shows signs of leakage but only has small edge spalls.
P6: This is a construction joint only on a paving notch.
A7: Original structure had only a paving notch, per plan and there is no indication that there is any type of joint here other than paving notch.

SUPERSTRUCTURE

Overhang soffit has minor transverse cracks with white efflorescence at each bent. Some locations the efflorescence is moderate to heavy and has brown as well as white colors.

The soffit of span 6 exhibits diagonal cracks with efflorescence at each corner.
Pier 3 & pier 6 near the hinge area show signs of water leakage.
The slope protection is severely undermined of 1.5m down the bottom of footing elevation at the face of east-end of abutment 1.

Box girder has heavy efflorescence of white, brown and black on both sides of both hinges.

Hinge H5 has efflorescence along the length with diagonal cracks at short seat corners.
Span 6 has heavy efflorescence under O.H. soffit at barrier for H3. There is moderate efflorescence.

SUBSTRUCTURE

Abutment 7 face has tight map pattern cracks across entire bottom 2.5 m.
There is a vertical expansion/control joint that has short (150 mm to 300 mm) horizontal cracks at appox 300 mm O.C. with light white efflorescence on either side. Cracks go from about 1.5 m above OG to bearing seat area.
There is one 1 hairline and 1 minor vertical crack on each side of the vertical expansion joint.

Abutment 1 shear-walls have shear cracks on both sides.

Wing-wall at abutment 7 has severe 4m tall vertical crack with exposed reinforcement near bearing seat elevation. Also there is a vertical crack/spall near the west end caused by corroding rebar with not enough concrete cover.

Bents 2, 3, 4 & 5 columns all have tight hairline map pattern cracks with possible ASR gel on the surface. All columns but not all faces and only from OG to about 2 m up

Bent/pier 6 has ASR type cracks around the base area that protrudes about 600 mm up from OG. There also is some ASR type cracking up the vertical construction joint on the west

INSPECTION COMMENTARY

side. At the east end there is an additional vertical concrete that extends the existing pier wall. This concrete also shows signs of ASR type cracking. On the north face of the old pier wall (old A1) the vertical patches appear to have ASR damage as well. The patches for construction are beginning to spall in most places. There are many hairline to minor map pattern cracks that look to be expanding and separating from the original concrete.

MISCELLANEOUS

There is a chain link overhang type fence across the length of the bridge on the east side over the sidewalk.

NOTES ON THE STRUCTURE

Due to deck geometry, the geometrics make it difficult to calculate an average number for deck width. The width is 21.6 m wide for 20.8 m into span 2, then varies from 21.6 m to 25.6 m over 102 m to P6, widens to 27.5 m for the remaining 25.1 m.

Deck areas are as follows:
71' w x 68.4' L = 4856.4 ft. sq. = 451.2 m sq
(85.16' w + 71' w)/2 x 334.6' L = 26125.6 ft. sq. = 2427.1 m sq
(90.16' w + 85.16' w)/2 x 9.6' L = 841.5 ft. sq. = 78.2 m sq
90.16' w x 88.33' L = 7963.8 ft. sq. = 739.8 m sq
Total = 39787.3 ft. sq. = 3696.3 m sq

Since calculated deck area is not within 10% of NBI item 49*52 (153.3 m x 21.6 m = 3311.3 m), there is a reasonablness error. Item 52 is the minimum out to out width of deck, not the average.

There is no physical median only a painted 2-way left turn lane.

The original, 1959 bridge was one span with 16 PC/PS "I" girders on pier wall type abutments. Abutment 1 on steel piles and abutment 2 on spread footings. The structure was lengthened to the south with the addition of 5 spans of CIP/RC box girder. Pier 6 has incorporated old A1 and is a closed, cantilevered type abutment that cantilevers to H2 on the box girder. This structure is attached to the existing pier wall (original A1) via high strength tensioned steel bars (96 ea) with 8 bars in each of 12 new cross walls. On the north face of P6 is the vertical concrete patches covering the base plates and nuts of the bolts. The new structure deck cross section is narrower than the original by the width of the west sidewalk, which is only on the old, original span. Only the east sidewalk continues for the entire length of the bridge.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	3311	sq.m.	0	3311	0	0	0
105	Reinforced Concrete Closed Webs/Box Girder	2	127	m.	123	4	0	0	
109	P/S Conc Open Girder/Beam	2	395	m.	395	0	0	0	0
205	Reinforced Conc Column or Pile Extension	2	8	ea.	0	8	0	0	
210	Reinforced Conc Pier Wall	2	27	m.	0	27	0	0	
215	Reinforced Conc Abutment	2	52	m.	26	26	0	0	

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
225	Unpainted Steel Submerged Pile	2	500	ea.	500	0	0	0	0
256	Slope Protection	2	1	ea.	1	0	0		
302	Compression Joint Seal	2	78	m.	0	0	78		
310	Elastomeric Bearing	2	22	ea.	22	0	0	0	0
333	Other Bridge Railing	2	133	m.	68	65	0		
335	Other Bridge Railing	2	185	m.	25	160	0		
358	Deck Cracking	2	1	ea.	0	0	0	1	0
359	Soffit of Concrete Deck or Slab	2	1	ea.	0	0	1	0	0

WORK RECOMMENDATIONS

RecDate: 11/03/2011
Action : Deck-Place Overlay
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Place 20 mm (3/4") polyester overlay on deck.

Deck appears to have inadequate concrete cover as evidenced by several exposed transverse rebars and areas that are beginning to spall. Part of a polyester overlay is sealing deck with methacrylate as an adhesive for the polyester. The AC should be removed from the northern span and polyester placed there as well.

RecDate: 10/08/2009
Action : Joints-Replace
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 3 YEARS
DistTarget:
EA:

Joints are in bad shape at H3 & H6 and will need replacing soon.

Inspected By : G.Haylock/RR.Morgan

Gregory Haylock (Registered Civil Engineer)

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **54C0062**
(5) INVENTORY ROUTE(ON/UNDER)- ON 1500R0450
(2) HIGHWAY AGENCY DISTRICT 08
(3) COUNTY CODE 071 (4) PLACE CODE 60466
(6) FEATURE INTERSECTED- UP RR RAIL YARD
(7) FACILITY CARRIED- RIVERSIDE AVE
(9) LOCATION- 0.1 MI S OF I-10
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000R04500
(16) LATITUDE 34 DEG 04 MIN 04 SEC
(17) LONGITUDE 117 DEG 22 MIN 12.8 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- PRESTRESS CONC
TYPE- STRINGER/MULTI-BEAM OR GDR CODE 502
(44) STRUCTURE TYPE APPR:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GDR - MULTIPLE CODE 205
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 5
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- NONE CODE 0
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1959
(106) YEAR RECONSTRUCTED 1972
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- RAILROAD 2
(28) LANES:ON STRUCTURE 05 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 22000
(30) YEAR OF ADT 2011 (109) TRUCK ADT 15 %
(19) BYPASS, DETOUR LENGTH 5 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 29.0 M
(49) STRUCTURE LENGTH 153.3 M
(50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 19.5 M
(52) DECK WIDTH OUT TO OUT 21.6 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 22.9 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 23.5 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- RAILROAD 7.44 M
(55) MIN LAT UNDERCLEAR RT REF- RAILROAD 5.5 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NOT APPLICABLE CODE N
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 79.0
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 83.9
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- OTHER PRIN ART URBAN 14
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

********** CONDITION ********** CODE

(58) DECK 3
(59) SUPERSTRUCTURE 8
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION N
(62) CULVERTS N

********* LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- MS-18 OR HS-20 5
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 71.6
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.6
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 6
(68) DECK GEOMETRY 4
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL 7
(71) WATER ADEQUACY N
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES N

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- SUP/SUB REHAB CODE 35
(76) LENGTH OF STRUCTURE IMPROVEMENT 153.3 M
(94) BRIDGE IMPROVEMENT COST $3,696,000
(95) ROADWAY IMPROVEMENT COST $739,200
(96) TOTAL PROJECT COST $6,209,280
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 23690
(115) YEAR OF FUTURE ADT 2031

********** INSPECTIONS **********

(90) INSPECTION DATE 11/11 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C)

Photo No. 1
Routine deck view looking north on Riverside.

Photo No. 1
Routine elevation view looking south easterly from east bound offramp.

54C0062 RIVERSIDE AVENUE OH 0.1 MI S OF I-10 11/03/2011 [AAAG]
101 - PHOTO-Routine-Elevation View

Photo No. 1
Panographic attempt at elevation view looking westerly. Railroad signal frame blocked view

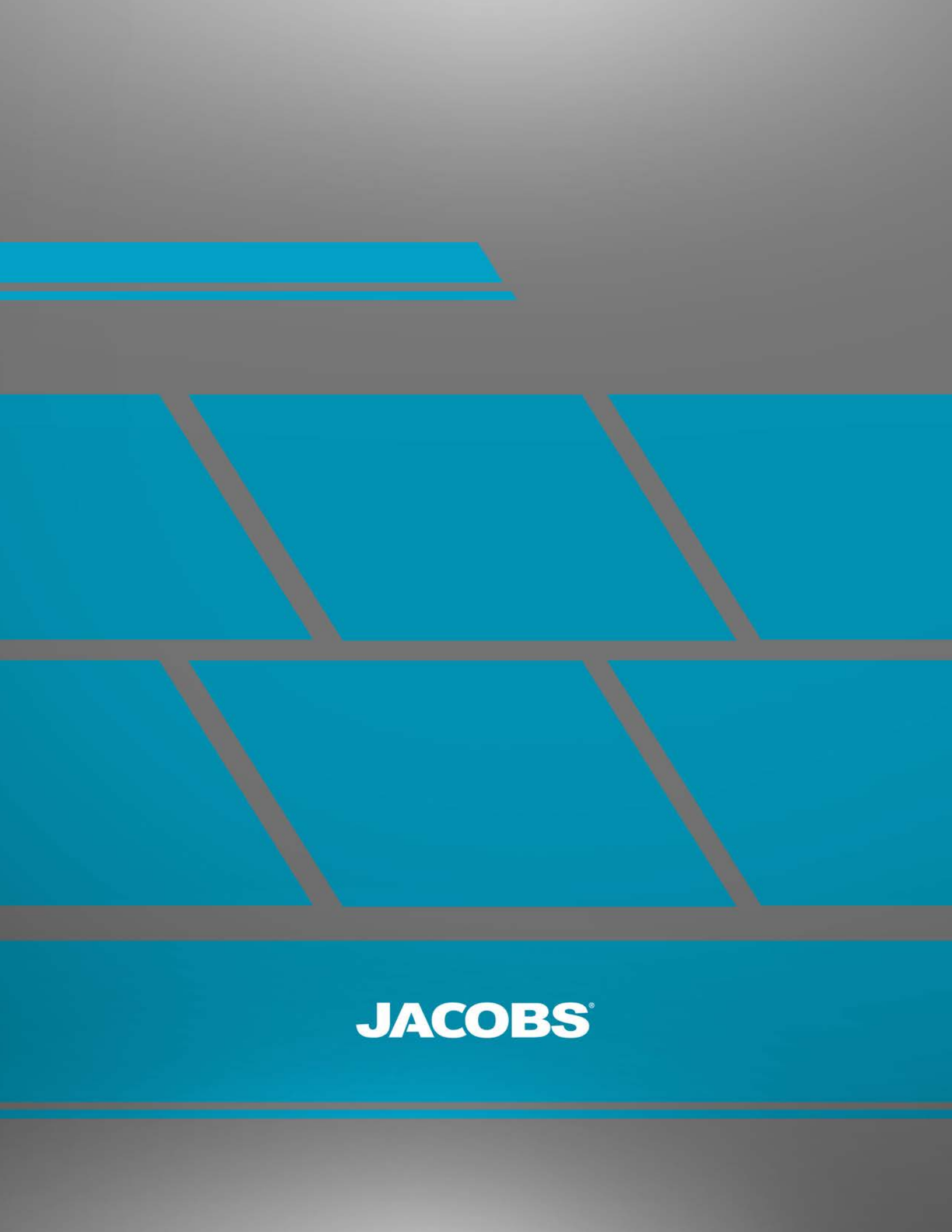

JACOBS

EXHIBIT C
Performance Metrics Form

Attachment 3. Performance Metrics Form

Trade Corridor Enhancement Program

Existing Average Annual Vehicle Volume on Project Segment	
Existing Average Annual Truck Percent on Project Segment	
Estimated Year 20 Average Annual Vehicle Volume on Project Segment with Project	
Estimated Year 20 Average Annual Truck Percent on Project Segment with Project	

Measure	**Metric**	**Project Type**	**Build**	**Future No Build**	**Change**	**Increase/ Decrease**
Congestion Reduction (Freight)	Change in Daily Vehicle Hours of Delay	All				
	Change in Daily Truck Hours of Delay	All (except rail)				
	(Optional) Person Hours of Travel Time Saved	All				
	(Optional) Daily Truck Trips Due to Mode Shift	Rail, Sea Port				
	(Optional) Daily Truck Miles Travelled Due to Mode Shift	Rail, Sea Port				
	(Optional) Other Information	All				
Throughput (Freight)	Change in Truck Volume	Highway, road, and port projects only				
	Change in Rail Volume	Rail				

	(Optional) Change in Cargo Volume	Sea port, airport				
	(Optional) Other Information	All				
System Reliability (Freight)	Truck Travel Time Reliability Index ("No Build" Only) (Optional Metric)	National and State Highway System Only				
	(Optional) Other Information	All				
Velocity (Freight)	Travel time or total cargo transport time	All				
	(Optional) Change in Average Peak Period Weekday Speed for Road Facility	Road				
	(Optional) Average Peak Period Weekday Speed for Rail Facility	Rail				
	(Optional) Other Information	All				
Air Quality	Particulate Matter (PM 10)	All				
	Particulate Matter (PM 2.5)					
	Carbon Oxide (CO2)					
	Volatile Organic Compounds (VOC)					
	Sulphur Oxides (SOx)					
	Carbon Monoxide (CO)					
	Nitrogen Oxides (NOx)					
Safety	Number of Fatalities	Road and Land Port				
	Rate of Fatalities per 100 Million VMT					

	Number of Serious Injuries					
	Number of Serious Injuries per 100 Million VMT					
	(Optional) Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries					
	(Optional) Other Information	All				
Cost Effectiveness	Cost Benefit Ratio	All				
	(Optional) Other Information	All				
Economic Development	Jobs Created	All				
	(Optional) Other Information	All				