ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
SM82 ROADWAY REHABILITATION (04-0K810)

Resolution SHOPP-P-2223-02B
(will be completed by CTC)

1. FUNDING PROGRAM

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

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the , SM 82 Roadway Rehabilitation (04-0K810), effective on, October 12, 2022 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Caltrans*, and the Implementing Agency, *Caltrans*, sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas its *Commission Programmed Project Date March 22, 2018* meeting the Commission approved the State Highway Operation and Protection Program, and included in this program of projects SM82 ROADWAY REHABILITATION (04-0K810), the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

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

4. GENERAL PROVISIONS

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

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

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

- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Local Partnership Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
- ☒ Resolution ***G-18-13*** , "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated 03/22/18.
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

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

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

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

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

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

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

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

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

5. SPECIFIC PROVISIONS AND CONDITIONS

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

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

5.3 Other Project Specific Provisions and Conditions

Attachments:

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

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Resolution _____

Rommel Pardo — 08/18/22

Rommel Pardo — Date

Project Manager

Project Applicant

_____ — _____

Name — Date

Title

Implementing Agency

For Dina El-Tawansy — 08/19/2022

Dina El-Tawansy — Date

District Director

California Department of Transportation

Michael D. Keever — APPROVED By Michael Keever at 1:55 pm, Sep 20, 2022

Tony Tavares — Date

Director

California Department of Transportation

_____ — _____

Mitchell Weiss — Date

Executive Director

California Transportation Commission

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

STATE OF CALIFORNIA ● DEPARTMENT OF TRANSPORTATION

BASELINE AGREEMENT

Date:	08/30/22 10:11:16 AM

District	EA	Project ID	PPNO	Project Manager
04	0K810	0416000142	1496J	PARDO, ROMMEL T

County	Route	Begin Postmile	End Postmile	Implementing Agency	
SM	82	12.3	15.8	PA&ED	Caltrans
				PS&E	Caltrans
				Right of Way	Caltrans
				Construction	Caltrans

Project Nickname

SM 82 Roadway Rehabilitation (04-0K810)

Location/Description

In the cities of San Mateo and Burlingame, from East Santa Inez Avenue to Murchison Drive. Rehabilitate roadway, improve drainage, and upgrade existing curb ramps and sidewalks to Americans with Disabilities Act (ADA) standards. (G13 Contingency)

Legislative Districts

Assembly:	22	Senate:	13	Congressional:	14

PERFORMANCE MEASURES

	Primary Asset	Good	Fair	Poor	New	Total	Units
Existing Condition	Pavement	0.0	15.2	0.0		15.2	Lane-miles
Programmed Condition	Pavement	15.2	0.0	0.0		15.2	Lane-miles

Project Milestone	Actual	Planned
Project Approval and Environmental Document Milestone	04/20/22	
Right of Way Certification Milestone		09/01/23
Ready to List for Advertisement Milestone		10/01/23
Begin Construction Milestone (Approve Contract)		04/01/24

FUNDING (Allocated amounts are shaded)

Component	Fiscal Year	SHOPP					Total
PA&ED	17/18	8,181					8,181
PS&E	21/22	8,181					8,181
RW Support	21/22	4,091					4,091
Const Support	23/24	12,270					12,270
RW Capital	23/24	2,215					2,215
Const Capital	23/24	86,161					86,161
Total		121,099					121,099

Supplemental Project Report

For Project Approval

On Route State Route 82 in San Mateo County

Between East Santa Inez Avenue

And Millbrae Avenue

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

Julie McDaniel, Deputy District Director,
Right of Way and Land Surveys

APPROVAL RECOMMENDED:

Rommel Pardo

Rommel Pardo, Project Manager

James Hsiao, Acting District Office Chief
Office of Design Peninsula

APPPROVED:

Helena (Lenka) Culik-Caro,
Deputy District Director, Design

July 25, 2022
Date

Supplemental Project Report

The purpose of this Supplemental Project Report is to revise the project cost estimate of the Project Report (PR) which was approved on April 20, 2022.

The original Project Report (PR) and this Supplemental PR covers two projects: Expenditure Authorization (EA) 04- 0K810 (Pavement Resurfacing, Restoration and Rehabilitation) and EA 04-1G900 (Upgrade of Pedestrian Infrastructure to Americans with Disabilities Act [ADA] Standards). The project run along El Camino Real (State Route [SR] 82) from postmile (PM) 12.3, East Santa Inez Avenue, in the city of San Mateo, to PM 15.9, Millbrae Avenue, in the city of Millbrae. The projects are in the cities of San Mateo, Burlingame, Hillsborough, and Millbrae in San Mateo County. The projects propose to rehabilitate the roadway and sidewalks, crosswalks, Accessible Pedestrian Signal (APS) systems, and Countdown Pedestrian Systems (CPSs); improve safety and visibility, remedy drainage issues, and upgrade curb ramps to ADA standards along SR 82.

The scope of the work for the project is as follows:

- Reconstruct the roadway with a new pavement structural section.
- Upgrade the existing curb ramps and sidewalks to current ADA standards at 150 locations and install new ADA-compliant directional curb ramps where needed.
- Upgrade pavement delineation within the entire project limits.
- Replace loop detectors at various locations.
- Construct drainage improvements, including asphalt concrete (AC) dike installation, and relocate drainage.

Cost/Estimate:
The original total escalated capital outlay cost (per Project Report) was estimated to be $95,784K ($94,882K for construction & $902K for ROW). The revised total project capital cost was increased by $2,456K and is now $98,340K ($95,281K for construction & $3,059K for ROW). These capital estimates will be monitored and updated during future phases, if additional or less costs are realized at that time.

The total project capital estimate was revised, due to the recent bid prices going up within the last 2-3 months and based on more recent open bid prices that have been coming out over the engineers estimates, due to inflation, supply chain, and world recent development, especially for the oil prices. In addition, real estate costs continue to increase, thus impacting ROW costs, including the required mitigation that is paid out of the ROW capital.

Schedule:

It is proposed that both EA's will be delivered as one PS&E and both schedules will be aligned and combined for future allocation, at the same time.

The following table lists the projects milestones, their dates, and their designations.

Project Milestones		Milestone Date	Milestone Designation
Program Project	M015	03/28/2018	Actual
Begin Environmental	M020	06/01/2019	Actual
Notice of Preparation	M030	03/26/2020	Actual
Notice of Intent	M035	11/01/2020	Actual*
Circulate DPR & DED Externally	M120	06/10/2021	Actual
PA&ED	M200	04/20/2022	Actual
PS&E (65%)	M300	11/01/2022	Target
PS&E to DOE	M377	03/01/2023	Target
PS&E (100%)	M380	08/01/2023	Target
Right of Way Certification	M410	09/01/2023	Target
Ready to List	M460	10/01/2023	Target
Headquarters Advertise	M480	01/01/2024	Target
Award	M495	03/01/2024	Target
Approve Contract	M500	04/01/2024	Target
Contract Acceptance	M600	04/01/2026	Target
End Project Expenditures	M800	12/03/2028	Target
Final Project Closeout	M900	12/31/2029	Target
* Actual date milestone achieved was 11/16/2020.			

Notes:
DED = Draft Environmental Document
DOE = District Office Engineer
DPR = Draft Project Report
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate

FUNDING/PROGRAMMING

The combined total capital outlay cost for both EA 04-0K810 and EA 04-1G900 is estimated to be $98,240,000 ($95,181K for construction & $3,059K for ROW). It is anticipated EA 04-0K810 & 04-1G900 will be combined into one project at fund allocation and will be advertised, awarded & managed as one construction contract.

Fund Source	**Programing by Fiscal Year**							**Current Estimate (Escalated)**
20.10.201.120 & 40.50.201.010	**Prior**	**20/21**	**21/22**	**22/23**	**23/24**	**Future**	**Programed Total**	**Current Estimate (Total)**
Component	**In Thousands of Dollars ($1,000)**							
PA&ED Support	$11,501						$11,501	$11,501
PS&E Support		$1,200	$8,181				$9,381	$9,381
Right-of-Way Support		$700	$4,091				$4,791	$4,791
Construction Support					$13,270		$13,270	$13,270
Right-of-Way Capital					$3,059		$3,059	$3,059
Construction Capital					$95,281		$95,281	$95,281
Total	$11,501	$1,900	$12,272		$111,610		$137,283	$137,283

Attachment: Project PA&ED Preliminary Cost Estimate

PROJECT

Preliminary Cost Estimate

Project EA/ID: 04 - 0K810/0420000075 & 04 - 1G900/0400020619

Type of Estimate : Draft Project Report

Program Code : SHOPP 20.10.201.120

Project Limits : 04-SM-82, PM 12.3/15.9

Description: In San Mateo County on Route 82 from Santa Inez Avenue to Millbrae Avenue

Scope : Reconstruct roadway and address drainage problems and upgrade existing curb ramps and sidewalks to current Americans with Disabilities Act (ADA)

Alternatives : 1

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 84,395,980	$ 95,280,870
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 84,395,980	$ 95,280,870
TOTAL RIGHT OF WAY COST	$ 3,059,000	$ 3,059,000
TOTAL CAPITAL OUTLAY COSTS	**$ 87,454,980**	**$ 98,339,870**
PA/ED SUPPORT	$ 11,501,000	$ 11,501,000
PS&E SUPPORT	$ 9,381,000	$ 9,381,000
RIGHT OF WAY SUPPORT	$ 4,791,000	$ 4,791,000
CONSTRUCTION SUPPORT	$ 13,270,000	$ 13,270,000
TOTAL SUPPORT COST	$ 38,943,000	$ 38,943,000
TOTAL PROJECT COST	**$ 127,000,000**	**$ 137,283,000**

Programmed Amount

	Month	Year
Date of Estimate (Month/Year)	6	2022
Estimated Construction Start (Month/Year)	4	2024
Number of Working Days =		500
Estimated Mid-Point of Construction (Month/Year)	4	2025
Estimated Construction End (Month/Year)	4	2026
Number of Plant Establishment Days		0

Estimated Project Schedule

PID Approval	6	/
PA/ED Approval	4	/
PS&E	8	/
RTL	10	/
Begin Construction	4	/

Reviewed by District O.E. or Cost Estimate Certifier

Thanh Luu — (510) 622-0747

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

Approved by Project Manager

Rommel Pardo

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

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	2,526,000
2	**Pavement Structural Section**	$	21,268,200
3	**Drainage**	$	1,453,300
4	**Specialty Items**	$	532,100
5	**Environmental**	$	14,382,400
6	**Traffic Items**	$	8,436,000
7	**Detours**	$	-
8	**Minor Items**	$	4,859,800
9	**Roadway Mobilization**	$	5,345,800
10	**Supplemental Work**	$	3,321,700
11	**State Furnished**	$	2,858,900
12	**Time-Related Overhead**	$	5,345,780
13	**Roadway Contingency**	$	14,066,000
	TOTAL ROADWAY ITEMS	**$**	**84,395,980**

Estimate Prepared By : Edgardo A. Urbano/Calvin Wong (510)-807-1670/ (510)-362-6897

Name and Title Date Phone

Estimate Reviewed By : Marc Wong

Name and Title Date Phone

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

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SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
170103	Clearing & Grubbing	LS	1	x	100,000.00	=	$	100,000
170101	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000
190101	Roadway Excavation	CY	59,875	x	32.00	=	$	1,916,000
190103	Roadway Excavation (Type Y) ADL	LS		x		=	$	500,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Impored Borrow	CY		x		=	$	-
198007	Imported Material (Shoulder Backing)	TON		x		=	$	-
XXXXXX	Some Item			x		=	$	-

TOTAL EARTHWORK SECTION ITEMS	**$**	**2,526,000**

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
153121	Remove Concrete	CY		x		=	$	-
1532XX	Remove Concrete (type)	CY		x		=	$	-
250201	Class 2 Aggregate Subbase	CY	31,500	x	50.00	=	$	1,575,000
260203	Class 2 Aggregate Base	CY	26,822	x	80.00	=	$	2,145,760
260303	CLASS 3 AGGREGATE BASE (CY)	CY	1,493	x	115.00	=	$	171,695
280010	Rapid Strength Concrete Base	CY		x		=	$	-
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
365001	Sand Cover	TON		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
280020	Asphaltic Emulsion (Concrete Base)	TON	16	x	1,103.00	=	$	17,648
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	25,500	x	127.00	=	$	3,238,500
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	17,000	x	120.00	=	$	2,040,000
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
39405X	Shoulder Rumber Strip *(HMA, Type XX Indentatior*	STA		x		=	$	-
394071	Place Hot Mix Asphalt Dike	LF		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQYD		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
401000	Concrete Pavement	CY		x		=	$	-
401108	Replace Concrete Pavement (Rapid Strength Conc	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
413115	Seal Existing Concrete Pavement Joint	LF		x		=	$	-
600017	REMOVE RETAINING WALL (LF)	LF	892		70.00	=	$	62,440
600017A	CONTRUCT RETAINING WALL (SQFT)	SQFT	4,550		1,000.00	=	$	4,550,000
401055	JOINTED PLAIN CONCRETE PAVEMENT (RSC)	CY	704		1,500.00	=	$	1,056,000
520104A	BAR REINFORCING STEEL (BUS PADS)	LB	13,627		1.00	=	$	13,627
730070	Detectable Warning Surface	SQFT	2,200	x	40.00	=	$	88,000
731502	Minor Concrete (Misc. Const)	CY		x		=	$	-
731627	Minor Concrete (Curb, Sidewalk and Curb Ramp)	CY	5,135	x	1,000.00	=	$	5,135,000
731700	REMOVE CURB	LF	43,225		15.00		$	648,375
731820	REMOVE CONCRETE SIDEWALK AND DRIVEW	CY	8,645	x	60.00	=	$	518,700
xxxxxx	Remove Asphalt Concrete	CY	98	x	76.00	=	$	7,448

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	**$**	**21,268,200**

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SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
150206	Abandon Culvert	LF		x		=	$	-
150805	Remove Culvert	LF	4,590	x	30.00	=	$	137,700
150812	Remove Pipe	LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
193114	Sand Backfill	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
510512	Minor Concrete (Box Culvert)	CY		x		=	$	-
610108	18" APC Pipe (replace 12" and 15" pipe)	LF	3,500	x	150.00	=	$	525,000
610111A	18" APC Pipe (replace Clay and Metal Pipe)	LF	750	x	150.00	=	$	112,500
610112A	18" APC Pipe (for relocation inlets)	LF	340	x	150.00	=	$	51,000
66XXXX	XXX" CSP Pipe	LF		x		=	$	-
68XXXX	Edge Drain	LF		x		=	$	-
69XXXX	XXX" Pipe Downdrain	LF		x		=	$	-
70XXXX	XXX" Pipe Riser	LF		x		=	$	-
710150	Remove Inlet	EA	34	x	1,500.00	=	$	51,000
710210	Adjust Frame and Grate to Grade	EA	25	x	1,000.00	=	$	25,000
72XXXX	Rock Slope Protection (Type and Method)	CY		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
729010	Rock Slope Protection Fabric	SQYD		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
750031A	GO Inlet with 24-12X Grate (Assume H=3.5')	EA	34	x	4,100.00	=	$	139,400
XXXXXX	Drainage (other)	LS	1	x	121,000.00	=	$	121,000

TOTAL DRAINAGE ITEMS 25% Cont. $ 1,453,300

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	10,000.00	=	$	10,000
150604	Remove Wood Fence	LF		x		=	$	-
150608	Remove Chain Link Fence	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Terminal Systems	EA		x		=	$	-
151534	Reconstruct Wood Fence	LF		x		=	$	-
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
153250	Remove Sound Wall	SQFT		x		=	$	-
190110	Lead Compliance Plan	LS	1	x	10,000.00	=	$	10,000
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	380	x	800.00	=	$	304,000
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510524	Minor Concrete (Sound Wall)	CY		x		=	$	-
511035	Architectural Treatment *(Insert Type)*	SQFT	10,300	x	7.00	=	$	72,100
511048	Apply Anti-Graffiti Coating	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall *(Insert Type)*	SQFT		x		=	$	-
518002	Sound Wall (Masonry Block)	SQFT		x		=	$	-
520103	Bar Reinf. Steel (Retaining Wall)	LB	24,000	x	2.00	=	$	48,000
800400	Chain Link Fence	LF		x		=	$	-
832005	Midwest Guardrail System	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	-	
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
8395XX	End Anchor Assembly (*Insert Type*)	EA		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839XXX	Crash Cushion *(Insert Type)*	EA		x		=	$	-
83XXXX	Concrete Barrier *(Insert Type)*	LF		x		=	$	-
730070	DETECTABLE WARNING SURFACE	SQFT	950	x	40.00	=	$	38,000
070031A	Environmental Compliance	LS	1	x	50,000.00	=	$	50,000

TOTAL SPECIALTY ITEMS $ 532,100

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SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Biological Mitigation	LS		x		=	$	-
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-
XXXXXX	Archaeological Resources	LS	1	x	390,000.00	=	$	390,000
XXXXXX	Historic Resources	LS	1	x	270,000.00	=	$	270,000
XXXXXX	Construction Monitoring by Certified Arborist	LS	-	x	-	=		-

Subtotal Environmental Mitigation $ *660,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200002	Roadside Clearing (Tree Removal)	EA	250	x	5,000.00	=	$	1,250,000
20XXXX	Highway Planting	LS	1	x	230,000.00	=	$	230,000
21011X	Imported Topsoil	CY	4,800	x	100.00	=	$	480,000
190123	Roadway Excavation (Topsoil)	CY	4,800	x	120.00	=	$	576,000
21XXXX	Suspended Pavement System	CF	168,000	x	12.00	=	$	2,016,000
20XXXX	Irrigation System	LS	1	x	630,000.00	=	$	630,000
204099	Plant Establishment Work (Year 1)	LS	1	x	50,000.00	=	$	50,000
20XXXX	Plant Establishment Work (Year 2-3) Follow-up	LS	1	x	80,000.00	=	$	80,000
	Consulting Arborist - Working Days	EA	100	x	2,400.00	=	$	240,000
995100	Water Meter Charges	LS	1	x	300,000.00	=	$	300,000
066901	Water Expenses	LS	1	x	60,000.00		$	60,000
2087XX	8" Conduit (Use for Irrigation x-overs)	LF	600	x	200.00	=	$	120,000
XXXXXX	Replace Tree	EA	-	x	-	=		-
XXXXXX	Protect Tree	EA	-	x	-	=		-
XXXXXX	Base 1 (4" Gravel Base, Geogrid & Geotextile)	SQYD	-	x	-	=		-
XXXXXX	Water Quality	LS	-	x	-	=		-

Subtotal Landscape and Irrigation $ *6,032,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA	*10*	LS	1,100	=	$	11,000
210110	Imported Topsoil (X)	CY						
210350	Fiber Rolls	LF						
210360	Compost Sock	LF						
2102XX	Rolled Erosion Control Product (X)	SQFT	100,000	x	1.50	=	$	150,000
21025X	Bonded Fiber Matrix	QFT/ACRE	100,000	x	0.20	=	$	20,000
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT	100,000	x	0.20	=	$	20,000
210430	Hydroseed	SQFT	1,900	x	80.00	=	$	152,000
210600	Compost	CY	100,000	x	1.00	=	$	100,000
210630	Incorporate Materials	SQFT						

Subtotal Erosion Control $ *453,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
074016	Construction Site Management	LS		x		=	$	-
074017	Prepare WPCP	LS		x		=	$	-
074019	Prepare SWPPP	LS		x		=	$	-
074023	Temporary Erosion Control	SQYD		x		=	$	-
074027	Temporary Erosion Control Blanket	SQYD		x		=	$	-
074028	Temporary Fiber Roll	LF		x		=	$	-
074032	Temporary Concrete Washout Facility	EA		x		=	$	-
074033	Temporary Construction Entrance	EA		x		=	$	-
074035	Temporary Check Dam	LF		x		=	$	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x		=	$	-
074038	Temp. Drainage Inlet Protection	EA		x		=	$	-
074041	Street Sweeping	LS		x		=	$	-
074042	Temporary Concrete Washout (Portable)	LS		x		=	$	-
130721A	Temporary Construction Site BMPs	LS	1	x	1,237,330.00	=	$	1,387,330
130722A	Treatment BMP	LS	1	x	5,700,000.00	=	$	5,850,000

Subtotal NPDES $ *7,237,330*

TOTAL ENVIRONMENTAL $ 14,382,400

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Some Item	LS		x		=	$	-

Subtotal Supplemental Work for NDPS $ *-*

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

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

$ -

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost		
150760	Remove Sign Structure	EA		x		=	$	-		
151581	Reconstruct Sign Structure	EA		x		=	$	-		
152641	Modify Sign Structure	EA		x		=	$	-		
5602XX	Furnish Sign Structure	LB		x		=	$	-		
5602XX	Install Sign Structure	LB		x		=	$	-		
56XXXX	XXX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-		
860090	Maintain Existing Traffic Management System	LS		x		=	$	-		
860810	Inductive Loop Detectors	EA		x		=	$	-		
86055X	Lighting & Sign Illumination	LS		x		=	$	-		
8607XX	Interconnection Facilities	LS		x		=	$	-		
8609XX	Traffic Monitoring Stations	LS		x		=	$	-		
860XXX	Signals & Lighting	LS		x		=	$	-		
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-		
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-		
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-		
XXXXXX	Preliminary Electrical Design and Estimate	LS	1	x	1,000,000.00	=	$	1,000,000		
872133	MODIFYING SIGNAL AND LIGHTING SYSTEMS	LS	1	x	4,410,000.00	=	$	4,410,000		
XXXXXX	Pedestrian Push Button Post	LS	1	x	570,000.00	=	$	570,000		
								Subtotal Traffic Electrical	*$*	*5,980,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost		
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000		
141103	Remove Yellow Thermoplastic Traffic Stripe (Hazadous Waste)	LF	16,000	x	1.00	=	$	16,000		
150710	Remove Traffic Stripe	LF		x		=	$	-		
150712	Remove Painted Pavement Marking	SQFT	8,000	x	2.00	=	$	16,000		
150714	Remove Thermoplastic Traffic Stripe	LF	50,000	x	1.00	=	$	50,000		
150742	Remove Roadside Sign	EA		x		=	$	-		
152320	Reset Roadside Sign	EA		x		=	$	-		
152390	Relocate Roadside Sign	EA		x		=	$	-		
566011	Roadside Sign (One Post)	EA		x		=	$	-		
566012	Roadside Sign (Two Post)	EA		x		=	$	-		
560XXX	Furnish Sign Panels	SQFT		x		=	$	-		
560XXX	Install Sign Panels	SQFT		x		=	$	-		
82010X	Delineator (Class X)	EA		x		=	$	-		
840504	4" Thermoplastic Traffic Stripe	LF	66,000	x	1.00	=	$	66,000		
840519	Thermoplastic Crosswalk and Pavement Marking	LF	8,000	x	5.00	=	$	40,000		
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-		
XXXXXX	Traffic Sign Cost	LS?	1	x	250,000.00	=	$	250,000		
XXXXXX	Traffic Striping (Remove & New)	LS	1	x	10,000.00	=	$	10,000		
XXXXXX	Relocation/ Removing Misc Road items	LS	1	x	40,000.00	=	$	40,000		
								Subtotal Traffic Signing and Striping	*$*	*538,000*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost		
128650	Portable Changeable Message Signs	LS	1	x	80,000.00	=	$	80,000		
								Subtotal Traffic Management Plan	*$*	*80,000*

6D - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost		
120100	Traffic Control System	LS	2	x	525,000.00	=	$	1,050,000		
120120	Type III Barricade	EA		x		=	$	-		
120143	Temporary Pavement Delineation	LF		x		=	$	-		
12016X	Channelizer	EA		x		=	$	-		
129000	Temporary Railing (Type K)	LF	74,000	x	10.00	=	$	740,000		
129100	Temp. Crash Cushion Module	EA		x		=	$	-		
129099A	Traffic Plastic Drum	EA		x		=	$	-		
839603A	Temporary Crash Cushion (ADIEM)	EA		x		=	$	-		
82010X	Delineator (Class X)	EA		x		=	$	-		
XXXXXX	Construct Pedestrian Barricade	LS	1	x	3,000.00	=	$	3,000		
XXXXXX	Miscellaneous Paving	LS	1	x	40,000.00	=	$	40,000		
XXXXXX	Relocate/ Adjust Utilities (Pull boxes, Vaults, Fire Hydrants)	LS	1	x	5,000.00	=	$	5,000		
								Subtotal Stage Construction and Traffic Handling	*$*	*1,838,000*

TOTAL TRAFFIC ITEMS	**$**	**8,436,000**

$ -

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
872002	Temporary Signal System	LS		x		=	$ -
XXXXXX	Some Item	LS		x		=	$ -

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ -

SUBTOTAL SECTIONS 1 through 7 $ 48,598,000

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
ADA Items			1.0%	$	485,980	
8B - Bike Path Items						
Bike Path Items			1.0%	$	485,980	
8C - Other Minor Items						
Other Minor Items			8.0%	$	3,887,840	
Total of Section 1-7	$ 48,598,000	x	10.0%	=	$ 4,859,800	

TOTAL MINOR ITEMS $ 4,859,800

SECTIONS 9: ROADWAY MOBILIZATION

Item code							
999990	Total Section 1-8	$ 53,457,800	x	10%	=	$	5,345,780

TOTAL ROADWAY MOBILIZATION $ 5,345,800

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	340,849.75	=	$ 340,850
066094	Value Analysis	LS	1	x	10,000.00	=	$ 10,000
066070	Maintain Traffic	LS	1	x	300,000.00	=	$ 300,000
066919	Dispute Resolution Board	LS	1	x	22,500.00	=	$ 22,500
066921	Dispute Resolution Advisor	LS	1	x	5,000.00	=	$ 5,000
066015	Federal Trainee Program	LS	1	x	64,000.00	=	$ 64,000
066610	Partnering	LS	1	x	70,000.00	=	$ 70,000
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Flagging	LS	1	x	21,000.00	=	$ 21,000
129161	Automated Flagger Assistance Devices	LS	1	x	350,000.00	=	$ 350,000

*Cost of **NPDES** Supplemental Work specified in Section 5D* = $ -

Total Section 1-8 $ 53,457,800 4% = $ 2,138,312

TOTAL SUPPLEMENTAL WORK $ 3,321,700

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	176,000.00	=	$176,000
066063	Traffic Management Plan - Public Information	LS	1	x	10,000.00	=	$10,000
066901	Water Expenses	LS					
8609XX	Traffic Monitoring Station (X)	LS					
066841	Traffic Controller Assembly	LS					
066840	Traffic Signal Controller Assembly	LS					
066062	COZEEP Contract	LS	0	x	575,000.00	=	$0
066838	Reflective Numbers and Edge Sealer	LS					
066065	Tow Truck Service Patrol	LS					
066871	Electrical Sevice Connections (New)	LS					
066916	Annual Construction General Permit Fee	LS					
XXXXXX	Some Item	Unit					

Total Section 1-8	$	53,457,800	5%	= $	2,672,890

TOTAL STATE FURNISHED $2,858,900

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$53,457,800	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$64,984,200	(used to check if project is greater than $5 million excluding contingency)

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

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	500	X	$10,692	= $	5,345,780

TOTAL TIME-RELATED OVERHEAD $ 5,345,780

SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	$	70,329,980	x	**20%**	=	$14,065,996

TOTAL CONTINGENCY $14,066,000

II. STRUCTURE ITEMS

	Bridge 1		**Bridge 2**		
DATE OF ESTIMATE	0/00/2020		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1		**Bridge 2**		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
STRUCTURES MOBILIZATION	10%	**$0**

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

Total recommended percentages includes any quantified risk based contingency from the risk register.

STRUCTURES CONTINGENCY	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

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

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	2,859,000
	A2)	SB-1210	$	0
	A3)	Environmental Mitigation	$	0
	A4)	Grantor's Appraisal Cost	$	135,000
B)	Acquisition of Offsite Mitigation		$	0
C)	C1)	Utility Relocation (State Share)	$	65,000
	C2)	Potholing (Design Phase)	$	0
D)	Railroad Acquisition		$	0
E)	Clearance / Demolition		$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)	Title and Escrow		$	0
H)	Environmental Review		$	
I)	Condemnation Settlements	0%	$	0
J)	Design Appreciation Factor	0%	$	0
K)	Utility Relocation (Construction Cost)		$	0

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$3,059,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$3,059,000**
N)	**RIGHT OF WAY SUPPORT**	**$4,791,000**

Support Cost Estimate Prepared By	Lynn White	510 914-4173
	Project Coordinator[1]	Phone
Utility Estimate Prepared By	Latorya Young	510 960-0152
	Utility Coordinator[2]	Phone
R/W Acquisition Estimate Prepared By	Grant J. Semple	510 908-3087
	Right of Way Estimator[3]	Phone

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

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

04 - SM - 82 – PM 12.3/15.9
EA 04-0K810 – 0416000142 – PPNO 1496J
EA 04-1G900 – 0400020619 – PPNO 0730D
SHOPP 20.10.201.120 – Pavement Resurfacing, Restoration and Rehabilitation (for EA 04-0K810)
SHOPP 20.10.201.378 – Upgradation of Pedestrian Infrastructure to ADA Standards (for EA 04-1G900)
April 2022

Project Report

For Project Approval

On Route State Route 82 in San Mateo County

Between East Santa Inez Avenue

And Millbrae Avenue

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

Julie McDaniel, Deputy District Director,
Right of Way and Land Surveys

APPROVAL RECOMMENDED:

Rommel Pardo, Project Manager,
Program Management

for Teblez Nemariam, District Office Chief,
Office of Design Peninsula

APPROVED:

Helena (Lenka) Culik-Caro
Deputy District Director, Design

April 20, 2022
Date

Vicinity Map

In San Mateo County on SR 82 from East Santa Inez Avenue to Millbrae Avenue

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.

April 19, 2022

ATIF ABRAR
REGISTERED CIVIL ENGINEER

DATE

Table of Contents

1. INTRODUCTION

Project Description:

This Project Report (PR) covers two projects: Expenditure Authorization (EA) 04-0K810 (Pavement Resurfacing, Restoration and Rehabilitation) and EA 04-1G900 (Upgrade of Pedestrian Infrastructure to Americans with Disabilities Act [ADA] Standards). The project run along El Camino Real (State Route [SR] 82) from post mile (PM) 12.3, East Santa Inez Avenue, in the city of San Mateo, to PM 15.9, Millbrae Avenue, in the city of Millbrae. The projects are in the cities of San Mateo, Burlingame, Hillsborough, and Millbrae in San Mateo County. The projects propose to rehabilitate the roadway and sidewalks, crosswalks, Accessible Pedestrian Signal (APS) systems, and Countdown Pedestrian Systems (CPSs); improve safety and visibility, remedy drainage issues, and upgrade curb ramps to ADA standards along SR 82.

The scope of the work for the project is as follows:

- Reconstruct the roadway with a new pavement structural section.
- Upgrade the existing curb ramps and sidewalks to current ADA standards at 150 locations and install new ADA-compliant directional curb ramps where needed.
- Upgrade pavement delineation within the entire project limits.
- Replace loop detectors at various locations.
- Construct drainage improvements, including asphalt concrete (AC) dike installation, and relocate drainage inlets at various locations.
- Replace and upgrade curbs and gutters to current standards at various locations.
- Reconstruct 21 bus pads within the project limits.

The following table lists some of the key features of the proposed project.

Project Limits	04 - SM - 82 – PM 12.3/15.9	
Number of Alternatives	Two (one Build Alternative and the No-Build Alternative)	
	Current Cost Estimate:	**Escalated Cost Estimate:**
Capital Outlay Support	$38,943,000	$38,943,000
Capital Outlay Construction	$84,042,860	$94,882,207
Capital Outlay Right of Way	$902,000	$902,000

Funding Source	SHOPP Program Code 20.10.201.120 & 20.10.201.378
Funding Year	FY 2023/24
Type of Facility	Four-lane undivided conventional highway from PM 12.3 to PM 15.2 Six-lane divided conventional highway from PM 15.2 to PM 15.9
Number of Structures	Two
SHOPP Project Output	15.2 Lane Miles, 26,000 feet of sidewalk, 192 Curb Ramps, 80 APS, 80 Pedestrian Push Buttons, 3,600 feet of Driveway and 3,860 feet of Crosswalks
Environmental Determination or Document	Environmental Impact Report (CEQA) / Environmental Impact Statement (NEPA) Section 4(f) Analysis
Legal Description	In San Mateo County, in the cities of San Mateo, Burlingame, Millbrae, and Hillsborough, on SR 82 from East Santa Inez Avenue to Millbrae Avenue
Project Development Category	Category 4B

Notes:
APS = Accessible Pedestrian Signal
CEQA = California Environmental Quality Act
FY = fiscal year
NEPA = National Environmental Policy Act
PM = post mile(s)
SHOPP = State Highway Operation and Protection Program
SM = San Mateo County
SR = State Route

2. RECOMMENDATION

The affected local agencies have been consulted with respect to the recommended project plans, their comments and views have been considered, and the local agencies are in general accord with the plans as presented. The California Department of Transportation (Caltrans) will continue to work with the affected local agencies in the future phases of the projects. Therefore, it is recommended that the projects be approved using the preferred alternatives, and proceed to the Plans, Specifications, and Estimate (PS&E) phase.

3. BACKGROUND

Project History

The Draft Project Report (DPR) was approved on June 8, 2021, within the guidelines of the State Highway Operation and Protection Program (SHOPP). The SHOPP 20.10.201.120 and 20.10.201.378 programs consist of projects with multiple assets or objectives that are being treated as a single project to maximize economies of scale and minimize impacts to the traveling public. This PR addresses the overall transportation needs on SR 82 in San Mateo County using Asset Management principles. The SHOPP Asset Management performance measures from both projects are summarized in Attachment M.

It is anticipated EA 04-0K810 and EA 04-1G900 will be combined into one project prior to fund allocation and will be advertised, awarded, and managed as one construction contract. EA 04-0K810 is a long-lead pavement resurfacing, restoration, and rehabilitation (3R) project. EA 04-1G900 is an ADA and sidewalk upgrade project. This strategy of having both projects covered under this single project report was deemed the most appropriate and efficient since the two projects have overlapping footprints, and the environmental review process of PA&ED can be done jointly. It was also deemed prudent to have both projects combined prior to fund allocation and merged into one construction contract to simplify construction contract management and public inconvenience.

EA 04-0K810 is a pavement resurfacing and restoration (2R) project addressing the deteriorating pavement condition on the section of SR 82 within the project limits. To be eligible as a 2R project, a Safety Screening had to be performed to analyze the overall safety of the facility within the project limits. The project did not pass the Safety Screening because (1) the actual fatal plus injury (F + I) collision rate was higher than the corresponding average collision rate for similar facilities statewide and (2) there were pedestrian and bicyclist needs in or near the communities within the project limits. On May 16, 2016, Caltrans Headquarters Roadway Program Advisor Brian Weber concurred with District 4's findings to change the 2R project on SR 82 to a long-lead 3R project to address the additional safety needs identified in the Safety Screening. A pavement-focused 2R project would not have addressed the additional safety work needed. The Project Initiation Report (PIR) was approved on June 30, 2017.

EA 04-1G900 brings curb ramps and sidewalks at 20 intersections in San Mateo County (in the cities of Burlingame and Hillsborough) into compliance with ADA standards. The proposed improvements included the installation of 82 curb ramps, the replacement of approximately 2.3 miles of sidewalks, the upgrading of the push buttons at the project intersections, and the reconstruction of 106 driveways (100 residential driveways and 6 commercial driveways). The Project Study Report (PSR) was approved on September 8, 2014. The PIR was approved on June 30, 2017.

This PR covers these two projects to address the need to rehabilitate the roadway and sidewalks, remedy drainage issues, and upgrade curb ramps to be ADA compliant and to improve safety and visibility along the SR 82 corridor.

The projects have been programmed under EA 04-0K810 Project Number 0416000142 and EA 04-1G900 Project Number 0400020619.

EA 04-0K810 extends on SR 82 from PM 12.3 to PM 15.9, and EA 04-1G900 extends on SR 82 from PM 13.4 to PM 14.7. Since the limits of EA 04-1G900 are completely within the limits of EA 04-0K810, it was decided to construct the two projects simultaneously. Simultaneous construction also makes possible construction efficiencies because the ADA ramps are closely tied to the final pavement and curb elevations. These two projects will be combined into a single project, EA 0K81U just after allocation for construction.

Community Interaction

Project limits encompass both residential properties and commercial establishments. Construction will impact local traffic and mobility. Measures to minimize traffic and local impacts during construction may include dispensing public notices and information about the project, coordinating with city officials and local stakeholders, and providing temporary local access as needed. The projects will need to implement outreach to the community, bicycle coalitions, and business establishments and coordinate closely with the Cities of Burlingame, Hillsborough, Millbrae, and San Mateo and the County of San Mateo. To date, there have been several community and city interaction meetings regarding the project. The most recent meeting with the public was an online public forum that opened on November 16, 2020, and closed on December 8, 2020. Another virtual meeting was held on April 20, 2021, with city officials and El Camino Real Task Force members to discuss the preferred alternative. A virtual public meeting was held on July 14, 2021, and an in-person meeting was held on July 16, 2021. CEQA scoping period for the Notice of Preparation was 3/262020-6/6/2020. Caltrans provided a website that contained a number of presentations and exhibits in lieu of a public meeting due to COVID restrictions.

In 2017, Caltrans participated in a series of meetings and workshops as part of the Burlingame El Camino Real Task Force. The task force consisted of members of the Burlingame Historical Society; the Burlingame Beautification Commission; the City of Burlingame Traffic, Parking, and Safety Commission; the City of Burlingame arborist and public works representative; Burlingame residents; and some City of Burlingame council members. The task force reviewed the two-block section of El Camino Real from Palm Drive to Sanchez Drive and made recommendations regarding trees, sidewalks, the roadway, and drainage facilities for Caltrans to consider when developing these projects. The two major recommendations of the task force were to retain the character and health of "The Grove" and to improve the safety of the roadway and sidewalks. The Project Development Team (PDT) has carefully reviewed these recommendations and public comments on the Draft Environmental Impact Report / Environmental Impact Statement (EIR/EIS), and the project design will incorporate these recommendations where feasible.

Public input on the projects was solicited during the review period for the Draft EIR/EIS, which lasted from June 10, 2021, to August 2, 2021. The public was notified of the availability of the Draft EIR/EIS by a number of methods, including postings on the Caltrans website, local newspapers, and an emailed announcement to interested agencies and individuals. During the review period, Caltrans held a virtual public hearing on Wednesday, July 14, 2021, and an in-person public hearing on Friday, July 16, 2021, to share information about the projects and collect comments on the Draft EIR/EIS from interested parties. The review period and instructions for submitting comments were also included on the first page of the Draft EIR/EIS. A total of 232 different comments were received. These comments were related to potential impacts on cultural resources, stormwater disposal, bicycle facilities,

pedestrian facilities, transit facilities, existing utilities, lighting, maintenance agreements, construction, consistency with local plans, visual impacts, the traffic management plan, school safety, ADA facilities, and other miscellaneous topics. All formal comments were addressed, and the responses were published in the Final EIR/EIS. Complete copies of the comments received and Caltrans' responses during the public review period are included in the Final EIR/EIS.

Table 3-1 lists the dates, locations, and purposes of the community and city interaction meetings that occurred between June 2019 and July 2021.

Table 3-1: Dates, Locations, and Purposes of the Community and City Interaction Meetings

Meeting Date	Location	Purpose
June 17, 2019	City Hall	Meet and greet with City of Burlingame Public Works, City Council reps.
September 24, 2019	Burlingame Library	Meet and greet with City and ECR Task Force.
November 20, 2019	Burlingame City Hall	Listening session with key stakeholder group (Citizens' Environmental Council)
January 9, 2020	Burlingame Library	Collateral review sessions with key stakeholders
January 28, 2020	Burlingame Rec Center	Public education meeting & pre-meeting walk-through w/ Millbrae City Council member
April 27, 2020	Virtual Teams meeting	Brief update to City of Burlingame
May 19, 2020	Virtual Teams meeting	Collateral review with key stakeholders
May 26, 2020	Virtual open house; comment period open from May 26 to July 6	Public scope meeting
October 30, 2020	Virtual Zoom meeting	Collateral review with key stakeholders
November 16, 2020, to January 8, 2021	Virtual open house, comment period open from November 16, 2020, to January 8, 2021	Public alternatives meeting
April 13, 2021	Virtual Zoom meeting	Collateral review with key stakeholders from the cities of Burlingame and Millbrae

Meeting Date	Location	Purpose
April 20, 2021	Virtual Zoom meeting	Stakeholder meeting with cities of Burlingame and Millbrae and task force members
July 14, 2021	Virtual public hearing	Public hearing on Draft EIR/EIS
July 16, 2021	In-person public hearing	Public hearing on Draft EIR/EIS

Notes:
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
PM = Project Manager

Existing Facility

SR 82 runs south to north for approximately 52 miles and serves as a parallel arterial to Interstate 280 and United States Highway 101.

The segment of SR 82 that is within project limits is a four-lane, undivided conventional highway with 10- to 12-foot lane widths from PM 12.3 to PM 15.2 and is a six-lane divided conventional highway with 11- to 12-foot lane widths from PM 15.2 to PM 15.9. The roadway shoulder widths range from 0 to 8 feet. Pedestrian facilities are present along both the northbound direction and the southbound direction of the highway. These facilities consist of sidewalks that are from 4 to 5 feet wide. Both sides of SR 82 serve residential and commercial land uses. Bicyclists are permitted on SR 82; however, no dedicated bicycle facilities are provided within these project limits. The posted speed limit is 35 miles per hour (mph) within these project limits and SR 82 is generally used by cars, SUVs, pickup trucks, single unit trucks, buses and fire trucks.

The existing curb ramps, sidewalks, and driveways are typically concrete. Most of the existing curb ramps do not meet current ADA standards. The Howard-Ralston Eucalyptus Tree Rows, a State of California (State)-owned historic resource, is a design landscape that exists along SR 82 in the Cities of Burlingame and Hillsborough (between PM 13.00 and PM 15.20). This resource is listed in the National Register of Historic Places (NRHP).

The major differences between the current proposal and that of the PIR, which was approved on June 26, 2017, are as follows:

- In the PIR for EA 04-0K810, the project limits were from PM 12.3 to PM 15.8. In the current proposal, the project limits are from PM 12.3 to PM 15.9.

- In the PIR for EA 04-0K810, the total number of curb ramps was 183. In the current proposal, the total number of curb ramps is 101. The reason for this reduction is that 82 of the curb ramps in EA 04-0K810 were originally programmed in the EA 04-1G900 project and therefore were duplicates.

4. PURPOSE AND NEED

Purpose:

The purposes of the projects are to preserve and extend the life of the roadway and improve ride quality, improve drainage efficiency to reduce localized flooding, enhance user visibility and safety, and enhance pedestrian infrastructure and bring it into compliance with Title II of the ADA.

Need:

This project is needed to correct roadway deficiencies and improve safety. Specifically, the project is needed due to the following:

The overall condition of the pavement is rated as poor due to signs of moderate alligator cracking and very poor ride quality, which indicate roadway structural inadequacy.

Water ponding and flooding occurs frequently during rain events due to uneven roadway surfaces and inadequate or impacted drainage systems.

Pedestrian access is impaired due to a lack of updated curb ramps and uneven sidewalks.

Pedestrian infrastructure is not compliant with state and federal ADA requirements.

Existing sidewalks lack APS systems. CPS and high-visibility striping or current devices as well as pavement markings are missing or outdated.

4A. Problem, Deficiencies, Justification

The Pavement Condition Survey for SR 82 within the project limits rates the pavement as poor, with moderate alligator cracking and very poor ride quality, indicating roadway structural inadequacy. Water ponding and local flooding occurs frequently due to uneven roadway surfaces and inadequate or damaged drainage systems. Within the project limits, the current pedestrian infrastructure is not ADA compliant and requires repair or reconstruction as mandated by the California legislature and federal regulations. Pedestrian access is limited for some users due to aging pedestrian infrastructure (e.g., uneven sidewalks) and pedestrian push buttons and curb ramps that do not meet current ADA standards. Existing crosswalks lack APS systems. The CPSs and pavement markings also need to be updated.

Table 4-1 lists the existing structures on SR 82 within these project limits.

Table 4-1: Existing Structures on SR 82 Within the Project Limits

	Structure Information	
Structure Type	**Name**	**PM Location**
Bridge	35-0098 (Black Hawk Creek)	15.04
Bridge	35-0097 (Hillsborough Creek)	13.30

4B. Regional and System Planning

Federal and State Planning

SR 82 is designated as a Principal Arterial on the National Highway System for the Moving Ahead for Progress in the 21st Century (MAP-21) Act and as an Other Principal Arterial on the California Road System. The route is not part of the National Highway Freight Network. The portion of SR 82 within the project limits is a Terminal Access Route under the Surface Transportation Assistance Act (STAA). A Terminal Access Route allows interstate STAA trucks to travel on State highways that exhibit the appropriate "T" sign.

SR 82 is not identified in the 2013 California Freight Mobility Plan, and SR 82 is not eligible to be part of the State Scenic Highway System. In addition, SR 82 is not identified as one of the 93 statutory Interregional Road System (IRRS) routes, which were established in 1989 by the Blueprint Legislation (a 10-year transportation funding package created by Assembly Bill [AB] 471, Senate Bill (SB) 300, and AB 973). SR 82 is also not part of the 11 Strategic Interregional Corridors identified in the 2015 Interregional Transportation Strategic Plan. A Transportation Concept Report is currently being developed for SR 82 to identify the 25-year concept for the corridor.

Regional Planning

The Metropolitan Transportation Commission (MTC) functions as both the Regional Transportation Planning Agency, a State designation, and the Metropolitan Planning Organization, a federal designation, for the San Francisco Bay Area. As such, MTC is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highways, airports, seaports, railroads, and bicycle and pedestrian facilities. MTC also screens requests from local agencies for State and federal grants for transportation projects to determine their compatibility with the RTP.

MTC also plays a major role in building regional consensus among the region's many transit systems. State and federal laws have also given the MTC an important role in financing Bay Area transportation improvements. Under SB 375, along with an updated RTP, each metropolitan region in California must develop a Sustainable Communities Strategy (SCS) that promotes compact, mixed-use commercial and residential development that is walkable, bikeable, and close to mass transit, jobs, schools, shopping, parks, recreation, and other amenities. MTC's Plan Bay Area

2050, adopted in October 2021, serves as the San Francisco Bay Area's RTP and SCS.

Local Planning

The City/County Association of Governments of San Mateo County (C/CAG) is the designated Congestion Management Agency for San Mateo County. C/CAG is required to prepare and adopt a Congestion Management Program (CMP) on a biennial basis. The CMP identifies strategies to respond to future transportation needs, develops procedures to alleviate and control congestion, and promotes countywide solutions.

The San Mateo County Transportation Authority administers Measure A funds (a voter-approved half-cent sales tax) for countywide transportation projects and programs.

The Grand Boulevard Initiative (GBI) is a collaboration among 19 cities, San Mateo and Santa Clara Counties, State and regional agencies (including Caltrans), and other stakeholders to improve the performance, safety, and aesthetics of SR 82. The goal is to produce a coordinated series of policy decisions that will be embraced by all jurisdictions. Caltrans District 4 has undertaken a Planning Public Engagement Contract (PPEC) effort with the goal to expand knowledge and understanding of the following: GBI and its benefits, Caltrans design flexibility, and local preferences and needs along the SR 82 corridor in San Mateo and Santa Clara Counties. Caltrans recently awarded the San Mateo County Transit District a Sustainable Communities Grant to create safe and healthy corridor communities along SR 82.

4C. Traffic

Current and Forecasted Traffic

Table 4-2a lists the current and forecasted traffic indicators for SR 82 from PM 12.3 to PM 15.2 (a four-lane undivided conventional highway). Table 4-2b lists the current and forecasted Traffic Indexes (TIs) and Equivalent Single Axle Loads (ESALs) for this segment of SR 82.

Table 4-2a: Current and Forecasted Traffic Indicators for SR 82 from PM 12.3 to PM 15.2 (Four-Lane Undivided Conventional Highway)

Indicator	Construction Year (2026)	Design Year (2046)
Count Year ADT (2020)	30,000	—
Construction Year ADT (2026)	32,000	33,400
10-Year ADT	33,400	—
Design Year ADT (2046)	38,800	—
DHV(2046)	3,300	—
D%	52.4%	—
Truck %	2.90%	—

Notes: DHV = Design Hourly Volume

— = not applicable
ADT = Average Daily Traffic
D% = directional distribution (% of traffic moving in the peak travel direction)
PM = post mile(s)
SR = State Route

Table 4-2b: Current and Forecasted Traffic Indexes and ESALs for SR 82 from PM 12.3 to PM 15.2 (Four-Lane Undivided Conventional Highway)

TI and ESAL	Calculated TI and ESALfor All Lanes	Recommended TI for All Lanes*
10-Year TI	9.00	
10-Year ESAL	803,000	
20-year TI	9.50	9.50
20-year ESAL	1,678,000	—
40-year TI	10.50	10.50
40-year ESAL	3,648,000	—

* Highway Design Manual 613.5(b) Freeway and Expressway Lanes (November 20, 2017). TI for all freeway and expressway lanes, including widening and auxiliary lanes must be the greater of either the calculated value, or 11.0 for a 20-year pavement design life, or 12.0 for a 40-year pavement design life. For roadway rehabilitation projects, use the calculated TI.

Notes:
— = not applicable
ESAL = Equivalent Single Axle Load
PM = post mile(s)
SR = State Route
TI = Traffic Index

Table 4-3a lists the current and forecasted traffic indicators for SR 82 from PM 15.2 to PM 15.9 (four-lane undivided conventional highway). Table 4-3b lists the current and forecasted Traffic Indexes and ESALs for this segment of SR 82.

Table 4-3a: Current and Forecasted Traffic Indicators for SR 82 from PM 15.2 to PM 15.9 (Six-Lane Divided Conventional Highway)

Count Year ADT (2020)	30,000	—		
Construction Year ADT (2026)	32,000	Annual Growth Rate:	0.92%	
Design Year ADT (2046)	38,800		**10-Year TI**	**10-Year ESAL**
DHV(2046)	3,300	10-Year TI Median Lane	7.00	160,000
D%	52.4%	10-Year TI Right Lane	8.50	642,000
Truck %	2.90%	—		

Notes:
— = not applicable
ADT = Average Daily Traffic
D% = directional distribution (% of traffic moving in the peak direction)
DHV = Design Hourly Volume
ESAL = Equivalent Single Axle Load
PM = post mile(s)
SR = State Route
TI = Traffic Index

Table 4-3b: Current and Forecasted Traffic Indexes and ESALs for SR 82 from PM 15.2 to PM 15.9 (Six-Lane Divided Conventional Highway)

TI and ESAL	Calculated TI and ESAL for Median Lanes	Recommended TI[1] for Median Lanes	Calculated TI and ESAL for Two Right Lanes	Recommended TI[2] for Right Lanes
20-year TI	8.00	8.00	9.50	9.50
20-year ESAL	335,000	—	1,342,000	—
40-year TI	8.50	8.50	10.00	10.00
40-year ESAL	731,000	—	2,918,000	—

1. November 20, 2017, Highway Design Manual 613.3(b) Lane Distribution Factors for Multilane Highways. TI for non-truck permitted lanes must not exceed 11 for 20-year pavement design life and 12 for 40-year pavement design life.
2. November 20, 2017, Highway Design Manual 613.5(b) Freeway and Expressway Lanes. TI for all freeway and expressway lanes, including widening and auxiliary lanes must be the greater of either the calculated value, or 11.0 for a 20-year pavement design life, or 12.0 for a 40-year pavement design life. For roadway rehabilitation projects, use the calculated TI.

Notes:
— = not applicable
ESAL = Equivalent Single Axle Load
PM = post mile(s)
SR = State Route
TI = Traffic Index

Collision Analysis

The traffic crash data discussed in this section were obtained from the Traffic Accident Surveillance and Analysis System–Transportation System Network (TASAS-TSN) using the collision data calculation summery commonly known as Table B. Actual collision rates that are greater than their corresponding average collision rates for similar facilities statewide are indicated with boldface type.

As shown in Table 4-4, a total of 83 collisions occurred on SR 82 in San Mateo County from PM 12.3 to PM 15.9 during the most-recent available 3-year period (January 1, 2018, to December 31, 2020).

Table 4-4: Comparison of Actual Collision Rates with Average Collision Rates for Similar Facilities Statewide (January 1, 2018, to December 31, 2020)

County-Route–PM Range	Number of Collisions			Actual Collision Rates Within Project Limits (col/mvm)*			Average Collision Rates for Similar Facilities Statewide (col/mvm)		
	F	F + I	Total	F	F + I	Total	F	F + I	Total
SM-82–PM 12.3/15.9	1	58	83	**0.011**	**0.65**	**0.93**	0.007	0.30	0.73

Source: Caltrans TASAS TSN database.
* **Boldface** indicates actual collision rates that are greater than their corresponding average collision rates for similar facilities statewide.
Notes:
Caltrans = California Department of Transportation
col/mvm = collision(s) per million vehicle-miles
F = fatal collision(s)
I = injury collision(s)
PM = post mile(s)
SM = San Mateo County
TASAS = Traffic Accident Surveillance and Analysis System
TSN = Transportation System Network

A review of the collision data provided for the segment of SR 82 that is within the project limits indicates that the primary collision factors are failure to yield and speeding, with most types of collisions being either broadside type or rear-end type.

The Office of Traffic Safety investigates locations with high concentrations of collisions if such locations are identified in the Table C reports generated by Caltrans Headquarters. Safety improvements, if needed, are recommended as part of the Table C investigations. This segment of SR 82 was flagged for investigation on TASAS Table C in 2018 with a recommendation of no action.

However, the projects will give Caltrans an opportunity to address safety along the corridor while still adhering to the projects purpose and need and the projects scope. Decision sight and stopping sight distances will be analyzed and considered during PS&E phase, see section 5 for more details. Initially, EA 04-0K810 was a pavement resurfacing and restoration (2R) project addressing the deteriorating pavement condition on the section of SR 82 within the project limits. To be eligible as a 2R project, a Safety Screening had to be performed to analyze the overall safety of the facility within the project limits. The project did not pass the Safety Screening because (1) the actual fatal plus injury (F + I) collision rate was higher than the corresponding average collision rate for similar facilities statewide and (2) there were pedestrian and bicyclist needs in or near the communities within the project limits. Together, the implementation of new pavement, pavement markings, drainage systems, and lane lines as part of these projects will improve the safety of the corridor. It is anticipated that the projects scope of work will increase safety along El Camino Real.

5. ALTERNATIVES

5A. Viable Alternatives

These projects have two viable alternatives: one Build Alternative with an option to underground the existing utilities and the No-Build Alternative. This section focuses on the Build Alternative and its option.

The project is recommended for approval using the Build Alternative.

Under the Build Alternative, the roadway will maintain its existing 44- to 46-foot width, including two 10- to 11-foot wide travel lanes in each direction. A new sidewalk will have the same alignment as the existing sidewalk, but it will be widened to 6 feet where it is adjacent to the curb, and 5 feet where there is a planting area between the curb and the sidewalk. Due to existing constraints, the proposed sidewalk will be widened to 4 feet at spot locations. Projects location map is provided as Attachment A, preliminary layout plans are provided as Attachment B, and typical cross sections are provided as Attachment C. After reviewing the comments that were received during the public comment period (June 10, 2021, to August 2, 2021), it was determined that no changes to the Build Alternative were necessary.

Proposed Engineering Features

The proposed Build Alternative will involve the following activities:

- Reconstruct the roadway with new pavement structural sections and reconstruct new bus pads within the project limits. See Attachment D for the Materials Recommendation.

- Install 183 ADA-compliant directional curb ramps at 43 intersections and reconstruct existing nonstandard sidewalks and driveways to current ADA standards within the project limits except where it is physically infeasible to do so. See Attachment D for the Materials Recommendation (structural section) for the design of sidewalks and driveways.

- Remove 34 existing drainage inlets and install new drainage inlets, depending on the proposed curb ramp location and configuration, and connect each to an existing manhole. Modify 25 existing drainage inlets (raise the grate to grade) when reconstructing the roadway. Replace the existing corrugated steel pipe (CSP) and vitrified clay pipe (VCP) with alternative pipe culvert (APC). Upgrade existing pipe that is less than 18 inches in diameter to 18-inch diameter pipe or greater. See Attachment E for the Preliminary Drainage Recommendation.

- Remove and replace 14 existing retaining walls within the project limits with new retaining walls. The existing retaining walls are in poor condition, with significant deterioration (cracking) of the concrete. Most of the existing retaining walls are swelling because tree roots are growing against them, and as a result, some walls are leaning outward toward the sidewalk. Architectural treatment will be considered and incorporated during the PS&E phase.

- Relocate and adjust traffic signal poles, light poles, signs, utility cabinets, fire hydrants, and potentially other utilities. The Office of Geotechnical Design has provided recommendations for traffic lighting foundations. See Attachment F for the details of the Geotechnical Recommendation.

- Install APS systems and CPSs at 21 intersections. These projects will also install 3 Pedestrian Hybrid Beacons (PHBs).

- Consider the design option to underground the utilities. The City of Burlingame Public Works Department is evaluating a design option for the Build Alternative that would relocate the existing electrical transmission, telecommunications, and cable television lines that currently run along poles above the roadway. These lines would be relocated underground from Barroilhet Avenue (PM 12.9) to Ray Drive/Rosedale Avenue (PM 15.2) in the city of Burlingame. The undergrounding is being coordinated and funded by the City of Burlingame and is not part of the scope of these projects. Undergrounding work will not conflict with roadway construction. It is

anticipated undergrounding work will either be performed prior to or concurrently with roadway construction activities.

- Install a new approach railing on either end of the existing Black Hawk Creek Bridge (Bridge No. 35-0098), at PM 15.08. See Attachment E for the Preliminary Drainage Recommendation.

Nonstandard Design Features

The Highway Design Manual (HDM) establishes uniform policies, procedures, and standards to carry out for Caltrans State highway design functions. These projects will allow various existing nonstandard design features to remain to minimize impacts to the Howard-Ralston Eucalyptus Tree Rows, which is a State historic resource and listed in the NRHP. The nonstandard design features include lane widths, shoulder widths, median widths, angle of intersection, turning traffic, left-turn lane widths, right-turn lane widths, corner sight distance (right turn), corner sight distance (left turn), stopping sight distance and sidewalk widths. A Design Standard Decision Document (DSDD) has been prepared and was approved on June 8, 2021, for these projects. Table 5-1, below, lists nonstandard design features which were included in the approved DSDD.

Table 5-1: Approved Nonstandard Design Features Within the Project Limits

Nonstandard Feature	Direction	Existing	Proposed	Standard	Standard Index*
Lane widths	NB/SB	8–10 ft	8–10 ft	**11 ft**	**HDM Index 301.1**
Shoulder widths	NB/SB	2–7 ft	2–7 ft	**8 ft**	**HDM Index 301.1**
Median width	—	1–11 ft	1–11 ft	12 ft	HDM Index 305.1(2)
Angle of intersection	NB/SB	25–73 deg.	25–73 deg.	75 deg.	HDM Index 403.3
Turning traffic	NB/SB	0 ft	0 ft	4 ft	HDM Index 403.6(1)
* **Bold** = Boldface HDM standards; underline = Underlined HDM standards.					

Notes:
— = not applicable
HDM = Highway Design Manual
NB = northbound
SB = southbound

The remaining nonstandard design features will require detailed design and analysis to determine which exact trees will be saved and which will be removed, it have been agreed to document the remaining nonstandard design features during PS&E phase of the project development. Table5-2, below lists the nonstandard design features which will be documented and approved during PS&E phase.

Table 5-2: Non-Approved Nonstandard Design Features Within the Project Limits

Nonstandard Feature	Direction	Existing	Proposed	Standard	Standard Index*
Left-turn lane widths	NB/SB	9–11 ft	9–11 ft	**12 ft**	**HDM Index 405.2(2)(a)**
Right-turn lane width	NB/SB	8–10 ft	8–10 ft	**12 ft**	**HDM Index 405.3(2)(a)**
Corner sight distance for Unsignalized Intersection (right turn)	NB/SB	30 ft – 273 ft	TBD	438 ft	HDM Index 405.1(2)(a)
Sidewalk (Contiguous to Curb)	NB/SB	0 ft – 6 ft	TBD	6 ft	HDM Index 100.2
Sidewalk (Separated by Planting Strip)	NB/SB	0 ft – 4.5 ft	TBD	5 ft	HDM Index 100.2
Corner sight distance for Unsignalized Intersection (left turn)	NB/SB	2 ft – 287 ft	TBD	525 ft	HDM Index 405.1(2)(a)
Stopping sight distance for Signalized Intersection	NB/SB	19 ft – 170 ft	TBD	250 ft	HDM Index 405.1(2)(c)

* **Bold =** Boldface HDM standards; underline = Underlined HDM standards.

Notes:
— = not applicable
HDM = Highway Design Manual
SB = southbound
NB = northbound
TBD = To Be Determined

Utility and Other Owner Involvement

There are known existing utilities, including electrical transmission, telecommunications, and cable television lines, that currently run (on poles aboveground and underground) along the roadway for the entire length of the project limits. There are also city waterlines, stormwater drainage systems, and sewerage systems within the project limits. In addition, Caltrans has some existing stormwater drains along the highway within the project limits. The utilities within the project limits will be further investigated in the next phase of these projects.

Highway Planting

Replacement highway planting will be included to meet environmental commitments, assist with the visual integration of SR 82 into its surroundings, and comply with Caltrans policy. The roadway and drainage improvements will require the removal of an estimated 300 to 350 of the approximately 700 trees within the project limits, including approximately 250 trees that contribute to the Howard-Ralston Eucalyptus Tree Rows. Replacement planting of street trees will strive for a 1:1 replacement within the constraints of the clear recovery zone and sight distance requirements. A contract growing arrangement will be needed to obtain the quantity of trees required for replacement planting. To ensure the success of the replacement planting,

additional projects features will include permanent irrigation systems, soil amendments and conditioners, and a 3-year plant establishment period. The mitigation and treatment for the Howard-Ralston Tree Rows, a resource on the National Register of Historic Places, will be done consistent with the Memorandum of Agreement between Caltrans and the State Historic Preservation Officer that was signed 2/22/22.

To the extent feasible, existing mature trees will be preserved. Preservation efforts will include protection during construction through fencing or other physical barriers; minimization of root pruning and damage during excavation through use of hand digging, hydraulic or pneumatic air excavation technology, and/or directional boring; and the use of alternative sidewalk designs to avoid impacts to tree roots (e.g., bridging roots and reducing the excavation depth as appropriate and feasible). During the Construction phase, a Certified Consulting Arborist will need to be present during excavation within the driplines of large trees. New sidewalks will include subbase materials that discourage future sidewalk displacement or other damage from tree roots. These materials may be engineered soils or modular pavement support systems; they will be further investigated during the PS&E phase.

Replacement highway planting, irrigation systems, and other planting improvements will be implemented with the roadway contract, along with a 1-year plant establishment period. A separate contract to provide an additional 2-year plant establishment period will immediately follow completion of the first year of plant establishment.

The replacement highway planting and plant establishment work is part of the PS&E package and is estimated to cost $6,032,000.

Erosion Control

Erosion control measures will be used to address soil stabilization and sedimentation. Design pollution prevention Best Management Practices (BMPs) are permanent measures to improve stormwater quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces after construction is complete. For these projects, vegetated surfaces will be maximized primarily through preservation of existing mature trees and vegetation and replacement highway planting. Additional standard Caltrans erosion control measures will be used to protect and meet water quality requirements. These measures may include items such as mulch and fiber rolls. Additional treatments such as compost, hydroseeding, hydromulching, and rolled erosion control product (blanket) may be used for bioswales. Detailed erosion control plans and cost estimates will be developed during the PS&E phase. It is estimated that the erosion control work, which will be separate from the replacement highway planting, will cost $453,000.

Cost Estimates

The total capital cost for the year 2022 was approximately $84,944,860. This cost consists of $84,042,860 for construction and $902,000 for right of way cost.

The total escalated capital cost is $95,784,000. See Attachment H for more detail.

Right of Way Data

Please refer to Section 6D.

5B. Rejected Alternatives

No-Build Alternative

Under the No-Build Alternative, the condition of SR 82 within the project limits would continue as it is. The pavement, sidewalks, and drainage systems would continue to deteriorate, and there would be no pedestrian improvements. The project purpose and need would not be met, so this alternative was rejected.

Previously Considered Alternatives

During early project development, in the Project Approval and Environmental Document (PA&ED) phase, the PDT identified two possible Build Alternatives in addition to the No-Build Alternative. The two Build Alternatives were:

1. Roadway Rehabilitation with or without Undergrounding of Utilities

2. Road Diet with or without Undergrounding Utilities

The Build Alternative consists of roadway rehabilitation with a design option to underground the utilities. If the option is selected, the City of Burlingame would undertake the utility work; this work would not be included in the Caltrans contract. The City of Burlingame is currently seeking funding for the utility work.

The Road Diet Alternative was eliminated from further consideration, as discussed below.

Road Diet Alternative Deemed to Be Nonviable

The Howard-Ralston Eucalyptus Tree Row falls within the project limits. This State-owned historic resource is listed on the NRHP. Due to the scope of work of the Road Diet Alternative and the anticipated construction activities that would be required in close proximity to this historic resource, the Road Diet Alternative was expected to have a negative impact on the Howard-Ralston Eucalyptus Tree Row. To potentially limit these impacts, the Road Diet Alternative was proposed as follows.

The Road Diet Alternative would narrow El Camino Real by permanently eliminating a lane in each direction and moving the curb and gutter toward the centerline of the

roadway. The reduction in roadway width would affect the roadway capacity and convert El Camino Real from four lanes (two lanes in each direction) to three lanes (one lane in each direction and a single center left-turn-only lane). Inclusion of bike lanes would not be possible under the Road Diet Alternative due to the physically narrower road and the increased width of the planting strips between the sidewalk and the curb. The potential benefit of this alternative would be to minimize impacts to the trees that are part of the Howard-Ralston Eucalyptus Tree Row by moving some construction activities away from the trees.

To determine the feasibility of the Road Diet Alternative, the PDT performed an analysis to determine if the potential benefits outweighed the potential costs.

This holistic approach helped the PDT to better understand the Road Diet Alternative. Ultimately, the goal of the Road Diet Alternative was to save a significant number of the trees that are expected to be removed with Alternative 1 (Roadway Rehabilitation with or without Undergrounding of Utilities). However, after further studies, it was determined the Road Diet Alternative would only reduce the number trees to be removed by about 2% (i.e., about five individual trees). The screening criteria also identified that the Road Diet Alternative would significantly increase delay and congestion along the El Camino Real corridor and would have other significant negative impacts like, spillage of traffic in City's neighborhood resulting delay and congestion on City's side streets, also. On February 8, 2021, the PDT reviewed the screening criteria findings and determined that the Road Diet Alternative was not a viable alternative. Therefore, the Project Report will only presented two alternatives: the Build Alternative and the No-Build Alternative

The PDT concluded that the potential benefits of the Road Diet Alternative did not outweigh the potential negative effects identified in the Road Diet studies.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

The projects construction work will include the excavation of unpaved areas that in the past have been subject to surface deposition of leaded fuel emissions (i.e., aerially deposited lead [ADL]). In particular, constructing the proposed retaining walls will displace fairly large volumes of soils that, given their proximity to the roadway and the history of significant traffic volumes on El Camino Real, very likely are contaminated with ADL from the period of leaded fuel use. Also, some of the planned sidewalk-widening work could result in the need to excavate and manage lead-contaminated soils.

There has not been any site investigation work within the project limits in the past because there have not been any notable soil-disturbing projects in the corridor that would initiate the need for a site investigation. As a result, there is essentially no data or knowledge about the level of lead contamination in the soils that will be excavated. Therefore, the Hazardous Waste Branch will perform a site investigation during the

PS&E phase to characterize and quantify the levels of contaminants found in the soils of the proposed excavation areas. The results of the investigation will be used to estimate the cost of managing and disposing of the surplus excavated soils. The cost to dispose of the contaminated soil will be approximately $500,000. See Attachment G (Risk Register) for details.

The scope of the site investigation will not be limited to screening for surface-deposited metals (e.g., ADL), as several known commercial operations along the projects corridor have released hazardous materials into the subsurface. These commercial sites include several current and former gasoline stations and two dry cleaners. These commercial sites spilled and released hazardous materials within their site boundaries, but the accumulation of these subsurface releases and the dispersion of the materials once they reached the groundwater table have expanded their range. The proximity of these sites to the projects corridor could mean that the groundwater contaminant plumes have reached the corridor's subsurface. There are elements of the proposed projects work (e.g., the traffic signal installations) that require 15-foot deep foundation excavations that might encounter these contaminants.

Given that the groundwater table elevation fluctuates over the years, it is likely that unsaturated subsurface soils and saturated soils have been contaminated by the groundwater plumes. The water table depths have been measured for many years in monitoring wells used to study these gas station and dry cleaner sites, and the monitoring results have shown that the planned traffic signal foundation excavations could disturb soils contaminated with fuel hydrocarbons and chlorinated solvents associated with dry cleaning. There are four or five intersections within the project limits that are the planned locations for traffic signal installations that are near these gasoline station or dry cleaner sites and therefore may be impacted. The Hazardous Waste Branch's site investigation will include soil and groundwater sampling to determine how these groundwater contaminant plumes might affect the projects scope and cost.

6B. Value Analysis

Deputy Directive (DD)-92-R1 requires an approved Federal Highway Administration (FHWA) Value Analysis (VA) study be performed on all projects with a cost of over $25 million. The project cost estimate for 0K810 is over $25 million, so the project exceeds the threshold established in Caltrans DD-92-R1 for undertaking a VA study, and a VA study was performed in November 2021 for the project. The Value Analysis team provided the following alternatives:

- Implement cold in-place recycling (CIR) (i.e., reuse existing pavement materials in place)

- Use bioretention/flow-through planters in lieu of using off-site treatment of stormwater

The Office of Materials and Pavement, the Office of Landscape Architecture, and the Office of Water Quality reviewed and agreed to strive to incorporate these alternatives.

6C. Resource Conservation

These projects will minimize the removal of existing landscape items as much as possible. Some existing subbase materials may also be utilized, reducing the need for new construction material for roadway and sidewalk structural sections.

In addition, the projects will salvage existing electrical items such as signal poles, mast arms, and cabinet boxes. The items that can be salvaged and their corresponding quantities will be determined during PS&E Design phase.

Various alternative construction techniques will be considered to minimize and avoid impacts to the trees within the project limits. Techniques may include targeted hand-troweling around tree roots, tree trimming, modifying sidewalk widths, and varying sidewalk setbacks. Other minimization methods may also include meandering sidewalks, strategic sidewalk structural sections at specific locations, and use of directional boring for utility installations.

6D. Right of Way

General

A Right of Way Data Sheet has been prepared for the preferred alternative based on the projects scope of work and the maps provided by the Division of Design. The Right of Way Data Sheet also provides estimated cost information (see Attachment I). Most of the construction work currently in the projects scope will be within the existing State right of way. Temporary Construction Easements (TCEs) and city permits will be needed to allow access to construct the curb ramp upgrades. The projects will require 127 parcels; 115 of the parcels will require a Permit to Enter and Construct (PTE&C) and 8 of the parcels will require a TCE.

Utilities

The projects will likely have impacts on existing utilities. The utilities that may be impacted by the projects include Pacific Gas and Electric Company (PG&E) electrical and gas lines, AT&T Inc. communication lines, and cities' sewage and water lines. Underground utilities will be positively identified and relocated during the PS&E phase. Their design will be modified or the utility will be relocated, as appropriate.

6E. Environmental Compliance

The projects EIR/EIS has been prepared in accordance with Caltrans' environmental procedures and State and federal environmental regulations. The EIR/EIS is the

appropriate document for the proposed projects. The Final EIR/EIS was approved on April 19, 2022 (see Attachment J for details).

The preferred alternative will not affect any archaeological resources or any tribal cultural resources. Under the Build Alternative, the projects will include sidewalk replacement, curb ramp upgrades, roadway pavement reconstruction, drainage work, installation of APS systems and CPSs, with associated relocations, adjustments, and upgrading of traffic signal poles, light poles, signs, utility cabinets, fire hydrants, and other utilities (such as gas, fiber optic cables, sewer, and water lines). These actions have the potential to affect historic resources within the Area of Potential Effects (APE). The four historic resources with an "Adverse Effect" determination are the Howard-Ralston Eucalyptus Tree Rows; 1479 El Camino Real, in Burlingame; 1265 El Camino Real, in Burlingame; and 1041 El Camino Real, in Burlingame. The State Historic Preservation Officer (SHPO) concurred on a Finding of Adverse Effect on October 22, 2021. The Memorandum of Agreement (MOA) for the resolution of the effects was execute between the SHPO and Caltrans on February 17, 2022.

California Public Resources Code (PRC) Section 5024 requires State agencies to identify and protect State-owned historical resources that meet NRHP listing criteria. This section further requires Caltrans to inventory State-owned structures in its rights of way. Sections 5024(f) and 5024.5 require State agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing State-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU) between Caltrans and the SHPO, effective January 1, 2015. For most federal-aid projects on the State Highway System, compliance with the Section 106 Programmatic Agreement (PA) will satisfy the requirements of PRC Section 5024. The projects will comply with the Section 106 PA.

6F. Air Quality Conformity

The projects are exempt from the requirement to determine air quality conformity per Title 40 Code of Federal Regulations (CFR) Section 93.126. Therefore, an air quality study is not required.

6G. Title VI Considerations

Title VI of the Civil Rights Act of 1964 prohibits discrimination based upon race, color, and national origin. Specifically, Title 42 United States Code (USC) Section 2000d states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Caltrans recognizes its leadership role and unique responsibility in State government to eliminate transportation barriers that have divided communities and amplified

racial inequities. Caltrans is committed to provide more equitable transportation for all Californians by creating more transparent, inclusive, and ongoing consultation and collaboration processes and engaging with the communities most impacted by structural racism in transportation decision-making, policies, processes, planning, design, and construction. Caltrans is also committed to increase pathways to opportunity for minority-owned and disadvantaged business enterprises and for individuals who face systemic barriers to employment. The goal is to create a more resilient transportation system that distributes the benefits and burdens of the system more equitably to the current and future generations of Californians.

The projects will not cause disproportionately high and adverse effects on any minority, low-income, or low-mobility populations. The projects will not reduce or limit access to businesses or residences, including shopping areas, schools, hospitals, or recreation areas.

6H. Noise Abatement Decision Report

The projects will not add any new traffic lanes and will not change the existing vertical or horizontal alignment of the projects route; therefore, the projects are not a Type I project under 23 CFR 772. The projects does not involve the construction, removal, or modification of existing sound walls, so these are not Type II projects. Therefore, these are Type III projects under 23 CFR 772, and a traffic noise study is not required. Refer to "Constructability" / "Issues" in Section 7 for a summary of construction noise issues.

6I. Life-Cycle Cost Analysis

A Life-Cycle Cost Analysis was performed on May 19, 2021. See Attachment K for details of the analysis.

6J. Reversible Lanes

Reversible lanes are not applicable to these projects.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

The public review period for the Draft EIR/EIS lasted from June 10, 2021 to August 2, 2021. During the review period, Caltrans held a virtual public hearing on Wednesday, July 14, 2021, and an in-person public hearing on Friday, July 16, 2021, to share information about these projects and collect comments on the Draft EIR/EIS from interested parties. Caltrans received a total of 232 different comments. The formal comments were addressed, and the responses are published in the Final EIR/EIS. These comments were related to potential impacts on cultural resources, stormwater disposal, bicycle facilities, pedestrian facilities, transit facilities, existing utilities, lighting, maintenance agreements, construction, consistency with local plans, visual impacts, the traffic management plan, school safety, ADA facilities, and other

miscellaneous topics. All formal comments were addressed, and the responses were published in the Final EIR/EIS. Complete copies of the comments received and Caltrans' responses during the public review period are included in the Final EIR/EIS.

Caltrans Equity Statement

Caltrans recognizes its leadership role and unique responsibility in State government to eliminate transportation barriers that have divided communities and amplified racial inequities. Caltrans is committed to provide more equitable transportation for all Californians by creating more transparent, inclusive, and ongoing consultation and collaboration processes and engaging with the communities most impacted by structural racism in transportation decision-making, policies, processes, planning, design, and construction. To achieve these goals, Caltrans is developing public outreach methodologies for increasing participation by disadvantaged community members and local community-based organizations (CBOs) to ensure that they have a voice on projects effecting those communities. Caltrans is also committed to increase pathways to opportunity for minority-owned and disadvantaged business enterprises and for individuals who face systemic barriers to employment. The goal is to create a more resilient transportation system that distributes the benefits and burdens of the system more equitably to the current and future generations of Californians.

There was no Community Impact Assessment prepared because these projects do not create any disparity to the disadvantaged community.

Environmental Justice

Information used in identifying potential environmental justice issues are documented in corridor plans so transportation projects guarantee the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income. This applies to the scope of the project, from the early stages of transportation planning and investment decision making through construction, operations and maintenance. Executive Order 12898, issued in 1994, gave a renewed emphasis on Environmental Justice in Minority Populations and Low-Income Populations by federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. There are three fundamental principles at the core of environmental justice:

- To identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The District 4 Planning Viewer Website was used to determine environmental justice community, and no environmental justice community was identified in or near the project area.

California Climate Investments Priority Populations

According to SB 535, Disadvantaged communities are disproportionately affected by environmental pollution, low income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of educational attainment. In AB 1550, low-income communities are census tracts with median household incomes at or below 80 percent of the statewide median income or with median incomes at or below the threshold designated as low income by the U.S. Department of Housing and Community Development. Both SB 535 and AB 1550 direct at least 25 percent of Greenhouse Gas Reduction Fund should go to projects within and for the benefit of disadvantaged communities and at least 10 percent (an additional 10 percent) to go for low-income households or communities.

The PDT has identified no SB 535 or AB 1550 communities in or near the project area.

Equity Priority Communities

MTC's Equity Priority Communities (EPC) (previously known as Communities of Concern) index is based on eight American Community Survey (ACS) 2014-2018 tract-level variables. The development of MTC's EPC was a part of the Equity Framework within the Regional Transportation Plan. The framework includes equity measures to analyze scenarios and define disadvantaged communities. These variables included minority populations, low-income areas, less English proficient populations, seniors (age 75 and older), zero-vehicle households, single-parent households, people with disabilities, and rent-burdened households. EPCs within the RTP area are rated at high and highest levels of concern, meaning these communities are burdened by multiple socioeconomic factors.

No EPCs in or near the project area were identified.

Route Matters

The projects does not involve a route adoption, a transfer of highway locations, a re-designation, a rescission, a relinquishment, or an access control modification.

Permits

Table 7-1 lists the permits, reviews, and approvals that will likely be required for the projects.

Table 7-1: Permits and Approvals Achieved/Needed

Agency	Permit/Approval
SHPO	• Concurrence with the HPSR historic property eligibility determination, the FOE, and the MOA • Concurrence with individual Section 4(f) analyses was achieved on November 18, 2021.
San Francisco Bay RWQCB	Waste Discharge Requirements under the Porter-Cologne Water Quality Control Act; NPDES approval for projects with a work area of 1 acre or more
City of San Mateo	Permit to Enter and Construct
Town of Hillsborough	Permit to Enter and Construct
City of Burlingame	Permit to Enter and Construct
City of Millbrae	Permit to Enter and Construct

Notes:
FOE = Finding of Effect
HPSR = Historic Property Survey Report
MOA = Memorandum of Agreement
NPDES = National Pollutant Discharge Elimination System
RWQCB = Regional Water Quality Control Board
SHPO = State Historic Preservation Officer

Cooperative Agreements

Cooperative agreements between the State and stakeholders may be necessary if existing utilities are to be relocated underground. One potential cooperative agreement will be between Caltrans and the City of Burlingame regarding the undergrounding of the overhead utilities, if the option to relocate these utilities is ultimately incorporated into the construction contract. If needed, the cooperative agreement will cover the roles and responsibilities of the signatories and the capital funding requirements. Therefore, this Project Report (PR) will serve as the basis for any future cooperative agreements with the City of Burlingame or other cities.

Other Agreements: Maintenance Agreement

There is a delegated maintenance agreement dated July 1, 2001, resolution number 69-2001, between the City of Burlingame and Caltrans. The agreement delegates the sidewalk maintenance responsibility to the City and the sidewalk reconstruction responsibility to Caltrans. The agreement will be evaluated in the Design phase to see if updates are needed.

Transportation Management Plan

A Transportation Management Plan (TMP), which is a plan to be implemented during construction to assist and minimize impacts to the traveling public, will be required for the projects. The TMP will provide public information such as press releases and notifications to groups that may be impacted by the projects (e.g., motorists, bicyclists, local businesses, pedestrians). Visible elements such as lane closures, portable changeable message signs, flaggers, and the California Highway Patrol's Construction Zone Enhanced Enforcement Program (COZEEP) may be implemented as part of the TMP. Preliminary TMP elements and costs, including a traffic

maintenance strategy, are provided in the Transportation Management Plan Data Sheet. The TMP will be further refined in subsequent phases of the projects. See the discussion of the Build Alternative for possible temporary lane reductions during stage construction.

The Transportation Management Plan Data Sheet has been prepared for the projects. See Attachment L for details.

Graffiti Control

Graffiti control measures, including special coatings, will be evaluated for use on vertical surfaces such as retaining walls during the PS&E phase. control may be considered on vertical surfaces such as retaining walls. Use of special graffiti control coatings may be considered during the PS&E phase.

Asset Management

Director's Policy 35 (DP-35) calls for maximizing the effectiveness of transportation investments through performance-driven asset management in conformance with 23 CFR 515 and Section 14526 of the California Government Code. Per this policy, Caltrans is required to determine the most effective way to apply its available resources to benefit the condition and performance of the State Highway System and its assets. This requirement is achieved by a robust Asset Management program and is implemented through the Asset Management plans, such as the State Highway System Management Plan and the District Performance Plans. The projects have been initiated, developed, and programmed in alignment with the departmental Asset Management plans. In the PA&ED phase, efforts have been made to meet or surpass the performance of the projects at the programming milestone (Milestone 015).

The programmed performance measures for EA 04-0K810 and EA 04-1G900 are presented in Table 7-2a and Table 7-2b, respectively.

Table 7-2a: Previously Programmed Performance Measures for the EA 04-0K810 Project

Activity Detail	Unit of Measurement	Quantity	Assets in Good Cond.	Assets in Fair Cond.	Assets in Poor Cond.	New Asset Added
Mainline existing asphalt pavement rehabilitation	Lane miles	20.63	—	4.497	16.133	—
Existing shoulders	SF	50,688	—	—	50,688	—
Energy dissipation and other elements (e.g., RSPs, DIs, FESs)	EA	59	—	—	59	—
ADA: Repair existing sidewalks	LF	26,000	—	—	26,000	—
ADA: Repair/upgrade curb ramps	EA	183	—	—	183	—
ADA: Install APS systems	EA	80	—	—	80	—
ADA: Relocate pedestrian push-button posts	EA	80	—	—	80	—
ADA: Modify driveway	LF	3600	—	—	3600	—
ADA: Modify crosswalks	LF	3860	—	M	3860	—
ADA: Deficient elements	Deficient elements	1330	—	—	1330	—

Notes:
— = not applicable
ADA = Americans with Disabilities Act
APS = Accessible Pedestrian Signal
Cond. = condition
DI = drainage inlet
EA = each
EA = Expenditure Authorization
FES = flared end section
LF = linear feet
RSP = rock slope protection
SF = square feet

Table 7-2b: Previously Programmed Performance Measures for the EA 04-1G900 Project

Activity Detail	Unit of Measurement	Quantity	Assets in Good Cond.	Assets in Fair Cond.	Assets in Poor Cond.	New Asset Added
ADA: Repair/upgrade curb ramps	EA	82	—	—	82	—

Notes:
— = not applicable
Cond. = condition
EA = each
EA = Expenditure Authorization

The currently proposed performance measures for EA 04-0K810 are shown in Table 7-3. The currently proposed performance measures for EA 04-1G900 remain the same as the previously programmed performance measures (see Table 7-2b).

Table 7-3: Currently Proposed Performance Measures for the EA 04-0K810 Project

Activity Detail	Unit of Measurement	Quantity	Assets in Good Cond.	Assets in Fair Cond.	Assets in Poor Cond.	New Asset Added
Asphalt pavement major rehabilitation	Lane miles	15.178	—	15.178	—	—
Energy dissipation and other elements (e.g., RSPs, DIs, FESs)	EA	59	—	—	59	—
ADA: Repair existing sidewalks	LF	26,000	—	—	26,000	—
ADA: Repair/upgrade curb ramps	EA	110	—	—	110	—
ADA: Install APS systems	EA	80	—	—	80	—
ADA: Relocate pedestrian push-button posts	EA	80	—	—	80	—
ADA: Modify driveway	LF	3600	—	—	3600	—
Crosswalks	LF	3860	—	—	3860	—
ADA: Deficient elements	Deficient elements	390	—	—	390	—
Existing Complete Streets elements	LF	29,860	—	—	29,860	—

Notes:
— = not applicable
ADA = Americans with Disabilities Act
APS = Accessible Pedestrian Signal
Cond. = condition
DI = drainage inlet
EA = each
EA = Expenditure Authorization
FES = flared end section
LF = linear feet
RSP = rock slope protection

The proposed asphalt pavement major rehabilitation performance measure is about 15.2 lane miles, which is consistent with the most-current asset management performance measures and the State database. The performance measure for shoulders has been eliminated, as the Headquarters Office of Pavement Programming does not want the Asset Management Tool to track shoulders anymore. The number of ADA curb ramps was 183. It is now reduced to 101 because the difference (82 ADA curb ramps) is already covered under EA 04-1G900. The quantities for modifying the existing sidewalks and crosswalks in poor condition remain the same as they were in the PIR. These are now listed under Complete Streets in the Asset Management Tool. The SHOPP Asset Management Performance Measures are provided as Attachment M.

Complete Streets

Caltrans Director's Policy 37 (2021) "establishes Caltrans' organizational priority to encourage and maximize walking, biking, transit, and passenger rail as a strategy" to meet State goals and foster vibrant communities. This project will align with the policy by improving sidewalks to meet ADA standards, incorporating a landscaped buffer between the sidewalk and the roadway where feasible, and improving crossings of El Camino Real with installation of PHBs.

Currently, bicyclists are permitted on SR 82; however, no dedicated bicycle facilities are provided within these project limits. The PDT has discussed the merits of including bike lanes in the various alternatives and design options for the projects and has determined that they will not be included in the projects due to the expected impacts on traffic and transit operations, cultural resources, and visual resources. These projects will improve bicycle crossings at intersection within the project limits. Also, additional bike signs will be added in both directions to improve awareness for motorists. A parallel bike route is provided on California Avenue.

Complete Streets elements have been evaluated and are listed in Attachment N. Complete Streets guidelines will be considered and will be incorporated where possible during the PS&E phase.

Climate Change Consideration

The Office of Environmental Engineering conducted a construction-related greenhouse gas (GHG) emissions analysis for the projects. See Attachment O for the details of the analysis. Table 7-4 is a summary of results of the construction-related GHG emissions analysis.

Table 7-4: Summary of the Construction-Related GHG Emissions Analysis

	Parameters			Project Total
Build Alternative	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	CO_2e (metric tons)*
Total emissions	1343.81	0.35	0.04	1236.01
Annual emissions	447.94	0.12	0.01	412.00

* Gases are converted to CO_2e by multiplying by their GWP. Specifically, GWP is a measure of how much energy the emission of 1 ton of a gas will absorb over a given period relative to the emission of 1 ton of CO_2.

Notes:
CH_4 = methane
CO_2 =- carbon dioxide
CO_2e =- carbon dioxide equivalent
GHG = greenhouse gas
GWP = global-warming potential
N_2O = nitrous oxides

Broadband and Advanced Technologies

As outlined in California Streets and Highways Code, Chapter 2, 2030 (d), where feasible, Caltrans shall use advanced technologies and communications systems in

transportation infrastructure that recognize and accommodate advanced automotive technologies.

Pursuant to Assembly Bill 1549 (2016) and Caltrans Deputy Directive (DD)-116, collaboration between Caltrans and agencies working on broadband deployment is encouraged and when feasible, plans for additional wired broadband facilities are accommodated.

To determine the feasibility of collaborative broadband installations and/or the incorporation of advanced technologies, the following accommodations were considered:

- Wired broadband facility: The project sites are not within the Broadband Middle Mile Network and the project sites and scopes offer no potential for broadband collaboration or vendor involvement. The project will protect in place any existing broadband infrastructure encountered during project activities.

- Fueling opportunities for zero-emission vehicles (ZEVs): Due to the project sites and scopes, deployment of ZEV charging infrastructure is not feasible.

- Provision of infrastructure-to-vehicle communications for transitional or full autonomous vehicles: Due to the project sites and scopes, deployment of infrastructure-to-vehicle communications is not feasible.

Constructability

Details

The pavement reconstruction for the project will require the use of excavators to remove existing pavement, graders and vibratory compactors to place the subbase and base material, and asphalt paving machines to place the asphalt concrete which will primarily be performed during daytime.

The projects will be constructed in multiple stages and will ensure that at least one lane is open to traffic in each direction at all times. If complete closure of the highway is unavoidable, the traffic will be re-routed. The project length will be divided into multiple segments. The construction work will be staggered in these segments to minimize delay and inconvenience to the public. The exact locations and the number of these segments will be determined in the PS&E phase.

Drainage work for the projects will require the use of excavators and/or backhoes for trenching and vibratory compactors for pipe backfill.

Sidewalk replacement and curb ramp upgrades will require the use of jackhammers and other concrete removal equipment, the installation of concrete formwork using hand tools, and concrete placement using concrete pumps.

The traffic signal and lighting upgrades will require the use of drilling machines for the construction of the foundations for the new signals and cranes for the placement of the new signals and lighting poles and mast arms.

Issues

As mentioned in Section 6H, Noise Abatement Decision Report, above, a traffic noise study is not required for the projects because these are not a Type 1 project per 23 CFR 772. However, because hundreds of receptors are in close proximity to the project limits and portions of the projects will likely be constructed at night, construction noise was evaluated.

The Construction Noise Analysis Report identifies the noise mitigation measures that can be used, where feasible and reasonable, to help reduce noise and meet noise requirements. See Attachment P for the details of that report.

During the PS&E phase, a Non-Standard Special Provision (NSSP) will be added to the contract to require the preparation of a Noise Control and Monitoring Plan to describe how the contractor will minimize noise levels during construction and comply with Section 216 of the California Streets and Highways Code and Section 14-8.02 of the Caltrans Standard Specifications.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

Project funding is provided by the 2020 SHOPP under program code 20.10.201.120 (Pavement Resurfacing, Restoration and Rehabilitation) for EA 04-0K810 and SHOPP program code 20.10.201.378 (Upgradation of Pedestrian Infrastructure to ADA Standards) for EA 04-1G900. EA 04-0K810 has construction capital of $86,061,000. EA 04-1G900 has construction capital of $9,120,000. The combined construction capital of $95,181,000 has been programmed for the 2023/24 program year.

It has been determined that these projects are eligible for federal-aid funding.

Programming

Tables 8-1, and 8-2 summarize the EA 04-0K810 and EA 04-1G900 programmed funds for support, right of way, and construction capital for the project.

Table 8-1: EA 04-0K810 Programmed Funds

Fund Source	Fiscal Year Estimate										
20.10.201.120	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Component	In thousands of dollars ($1,000)										
PA&ED Support	1818	2727	2727	909	—	—	—	—	—	—	8,181
PS&E Support	—	—	—	2726	4092	1363	—	—	—	—	8,181
Right of Way Support	—	—	—	1364	2045	682	—	—	—	—	4,091
Construction Support	—	—	—	—	—	2044	3068	3068	3068	1022	12,270
Right of Way	—	—	—	—	—	2215	—	—	—	—	2,215
Construction	—	—	—	—	—	86061	—	—	—	—	86,061
Total:	1818	2727	2727	4999	6137	92365	3068	3068	3068	1022	120,999

Notes:
— = not applicable
EA = Expenditure Authorization
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate

Table 8-2: EA 04-1G900 Programmed Funds

Fund Source	Fiscal Year Estimate							
40.50.201.010	Prior	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Component	In thousands of dollars ($1,000)							
PA/ED Support	—	—	—	—	—	—	—	3,320
PS&E Support	—	—	—	600	600	—	—	1,200
Right of Way Support	—	—	—	—	350	350	—	700
Construction Support	—	—	—	—	—	—	1,000	1,000
Right of Way	—	—	—	—	—	844	—	844
Construction	—	—	—	—	—	4,560	4,560	9,120
Total:	—	600	600	1,000	950	5,754	5,560	16,184

Notes:
— = not applicable
EA = Expenditure Authorization
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate

Estimate

The combined total programmed amount for capital outlay is $98,240,000. The combined total escalated capital outlay cost for both EA 04-0K810 and EA 04-1G900 is estimated to be $95,784,000 (the construction cost is $94,882,207, and the right of way cost is $902,000). See the Preliminary Cost Estimate (provided as Attachment H).

The cost was escalated at 3.2% per year to the mid-point of construction (April 2024).

The support cost ratio is 41%.

9. DELIVERY SCHEDULE

The following table lists the projects milestones, their dates, and their designations.

Project Milestones		Milestone Date	Milestone Designation
Program Project	M015	03/28/2018	Actual
Begin Environmental	M020	06/01/2019	Actual
Notice of Preparation	M030	03/26/2020	Actual
Notice of Intent	M035	11/01/2020	Actual*
Circulate DPR & DED Externally	M120	06/10/2021	Actual
PA&ED	M200	04/20/2022	Actual
PS&E (65%)	M300	11/01/2022	Target
PS&E to DOE	M377	03/01/2023	Target
PS&E (100%)	M380	08/01/2023	Target
Right of Way Certification	M410	09/01/2023	Target
Ready to List	M460	10/01/2023	Target
Headquarters Advertise	M480	01/01/2024	Target
Award	M495	03/01/2024	Target
Approve Contract	M500	04/01/2024	Target
Contract Acceptance	M600	04/01/2026	Target
End Project Expenditures	M800	12/03/2028	Target
Final Project Closeout	M900	12/31/2029	Target
* Actual date milestone achieved was 11/16/2020.			

Notes:
DED = Draft Environmental Document
DOE = District Office Engineer
DPR = Draft Project Report
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate

10. RISKS

A formal Risk Assessment Plan has been prepared for the projects. Risks were assessed and are being managed for critical elements that affect project delivery or costs through the PA&ED, PS&E, and Construction phases.

The Risk Register, which summarizes the identified risks, is provided as Attachment G. The Risk Register will be maintained and updated for subsequent project development phases.

A list of the high-level risk statements from the Risk Register follows:

- As a result of public controversy over the removal of trees from the historic Howard-Ralston Eucalyptus Tree Rows, there are issues that may delay the projects. This will have a huge impact on cost and schedule of the projects.

- Due to the high level of controversy surrounding the projects, legal action against the Environmental Document may result in additional cost and time. (The controversy could result in the projects being unparred; the probability of this result is very high, though the cost impact would be low.)

- Uncertainty over obtaining the local funds needed to underground the overhead utilities may delay the project schedule, resulting in additional cost and time (to obtain easements, etc.) should this option be pursued.

11. EXTERNAL AGENCY COORDINATION

Federal Highway Administration

The projects are considered to be a Delegated Project in accordance with current Stewardship and Oversight Agreement between the FHWA and Caltrans, which was signed on May 28, 2015.

Other Agencies

The projects require coordination with the following agencies:

- Regional Water Quality Control Board:
  - Water Quality Certification

- Local agency: Possible cooperative agreements with City of Burlingame

- SHPO: Concurrence on the Finding of Effect, Section 4(f), and Memorandum of Agreement

12. PROJECT REVIEWS

District Program Advisor	Robert Camargo	02/25/2021
Headquarters SHOPP Program Advisor	Gurinderpal Bhullar	02/25/2021
District Maintenance	Jeff Butte	02/25/2021
Headquarters Project Delivery Coordinator	Robert Effinger	02/25/2021
Project Manager	Rommel Pardo	02/25/2021
FHWA	Lanh Phan	02/25/2021

District Safety Review	Haixiong Xu	02/25/2021
Constructability Review	Robert Kobal	02/25/2021

13. PROJECT PERSONNEL

Table 13-1 lists the project personnel by their names, titles or offices, and telephone numbers.

Table 13-1: Project Personnel by Names, Titles, and Telephone Numbers

Name	Title/ Office	Telephone Number
Rommel Pardo	Project Manager	(510) 714-5474
Yolanda Rivas	Senior Environmental Planner	(510) 506-1461
Erwin Madlangbayan	Transportation Engineer, Traffic Safety	(510) 622-0153
Irene Liu	Branch Chief, Hydraulics	(510) 846-0237
Lance Hall	Office of Corridor Management South/West - Highway Operations/TMP	(510) 772-8603
Robert Camargo	Program Advisor	(510) 219-8435
Ashok Das	Branch Chief, Engineering Services Materials	(510) 407-2639
Rick D'Onofrio	Materials Design Engineer, Materials	(510) 691-2819
Mahmood Momenzadeh	Branch Chief, DES Geotechnical	(510) 286-5732
Tung Nguyen	Transportation Engineer, DES Geotechnical	(510) 622-1775
Christopher Risden	Branch Chief, DES Geotechnical	(510) 622-8757
Rifaat Nashed	Engineering Geologist, DES Geotechnical	(510) 622-1773
Chris Wilson	Branch Chief, Hazardous Waste	(510) 286-5647
Carlos Mora	Branch Chief, Water Quality	(510) 725-2500
Norman Gonsalves	Branch Chief, Storm Water Treatment	(510) 421-7425
David Mars	Associate Right of Way Agent, Right of Way	(510) 908-8853
Hanna Khoury	Branch Chief, Utility Engineering	(510) 406-9926
Celia Mccuaig	Office Chief, Advance Planning	(510) 508-5708
Byron Jiang	Branch Chief, Advance Planning	(510) 926-0627
Teblez Nemariam	Office Chief, Design South, Peninsula	(510) 286-7189
Marc Wong	Senior Engineer, Design South, Peninsula	(510) 807-1727
Atif Abrar	Project Engineer, Design South, Peninsula	(510) 821-1259
Danilo Amora	Senior Engineer, Maintenance Services	(510) 715-7701
Sergio Ruiz	Complete Streets Coordinator	(510) 622-5773
Kimberly White	Branch Chief, Landscape Architecture	(510) 286-6370
Adrienne St John	Landscape Architecture	(510) 418-0430
Frances Schierenbeck	Senior Environmental Planner, Office of Cultural Resource Studies	(510) 504-2723

Notes:
DES = Division of Engineering Services
R/W = Division of Right of Way and Land Surveys

14. ATTACHMENTS (Number of Pages)

A. Project Location Map (1)
B. Preliminary Layout Plans (40)
C. Typical Cross Sections (2)
D. Materials Recommendation (4)
E. Preliminary Drainage Recommendation (1)
F. Geotechnical Recommendation (15)
G. Risk Register (3)
H. Preliminary Cost Estimate (10)
I. Right of Way Data Sheet (7)
J. Environmental Impact Report/ Statement (Cover & Signature Page) (3)
K. Life-Cycle Cost Analysis (8)
L. Transportation Management Plan Data Sheet (2)
M. SHOPP Performance Measures (2)
N. Complete Streets Elements Evaluation (6)
O. Stormwater Data Report (Long Form) (1)
P. Construction Noise Analysis Report

Attachment A
Project Location Map


SAN BRUNO
EL CAMINO REAL
SAN FRANCISCO INTERNATIONAL AIRPORT
04-SM-82-PM 15.9
PROJECT LOCATION
SAN ANDREAS LAKE
Millbrae Ave
BURLINGAME
HILLSBOROUGH
E Santa Inez Ave
3rd Ave
Crystal Springs Rd
04-SM-82-PM 12.3
N
1 MILE
CALTRANS BAY AREA AV GRAPHICS MAP - SR-82 EL CAMINO REAL ADA REHAB PROJECT 041522

Attachment B
Preliminary Layout Plans

INDEX OF PLANS

SHEET No. DESCRIPTION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN SAN MATEO COUNTY
IN BURLINGAME, HILLSBOROUGH, SAN MATEO, AND MILLBRAE
FROM EAST SANTA INEZ AVENUE TO MILLBRAE AVENUE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

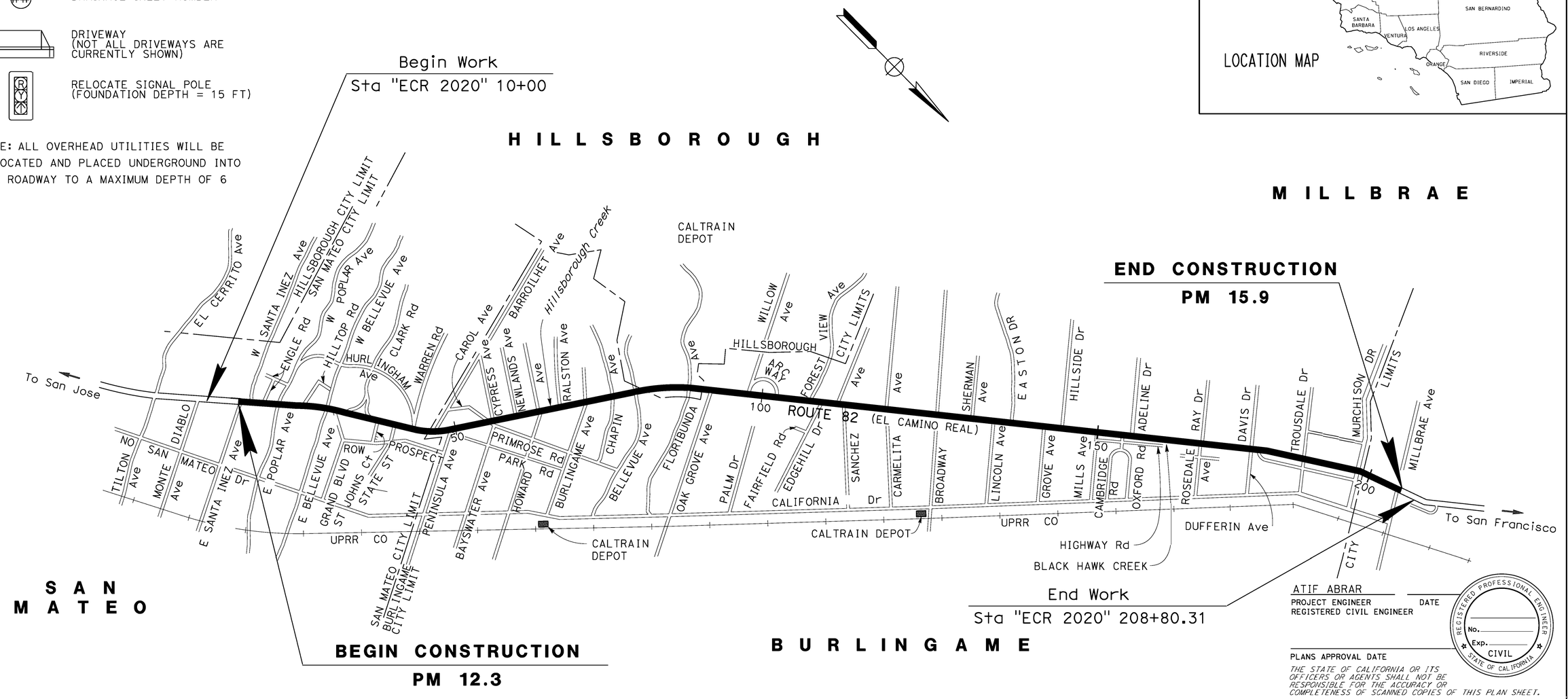
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

LOCATION MAP

LEGEND:

- PAVEMENT STRUCTURAL SECTION
- RIGHT OF WAY
- DRAINAGE INLET (DI)
- ## DRAINAGE INLET NUMBER
- DRIVEWAY (NOT ALL DRIVEWAYS ARE CURRENTLY SHOWN)
- R Y X T RELOCATE SIGNAL POLE (FOUNDATION DEPTH = 15 FT)

NOTE: ALL OVERHEAD UTILITIES WILL BE RELOCATED AND PLACED UNDERGROUND INTO THE ROADWAY TO A MAXIMUM DEPTH OF 6 FT.



ATIF ABRAR
PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

CONTRACT No.	04-0K8100
PROJECT ID	0416000142

LAST REVISION 00-00-00
DATE PLOTTED => 25-MAY-2021
TIME PLOTTED => 12:22

PROJECT MANAGER: ROMMEL PARDO
DESIGN MANAGER: STEPHEN D. HAAS

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

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

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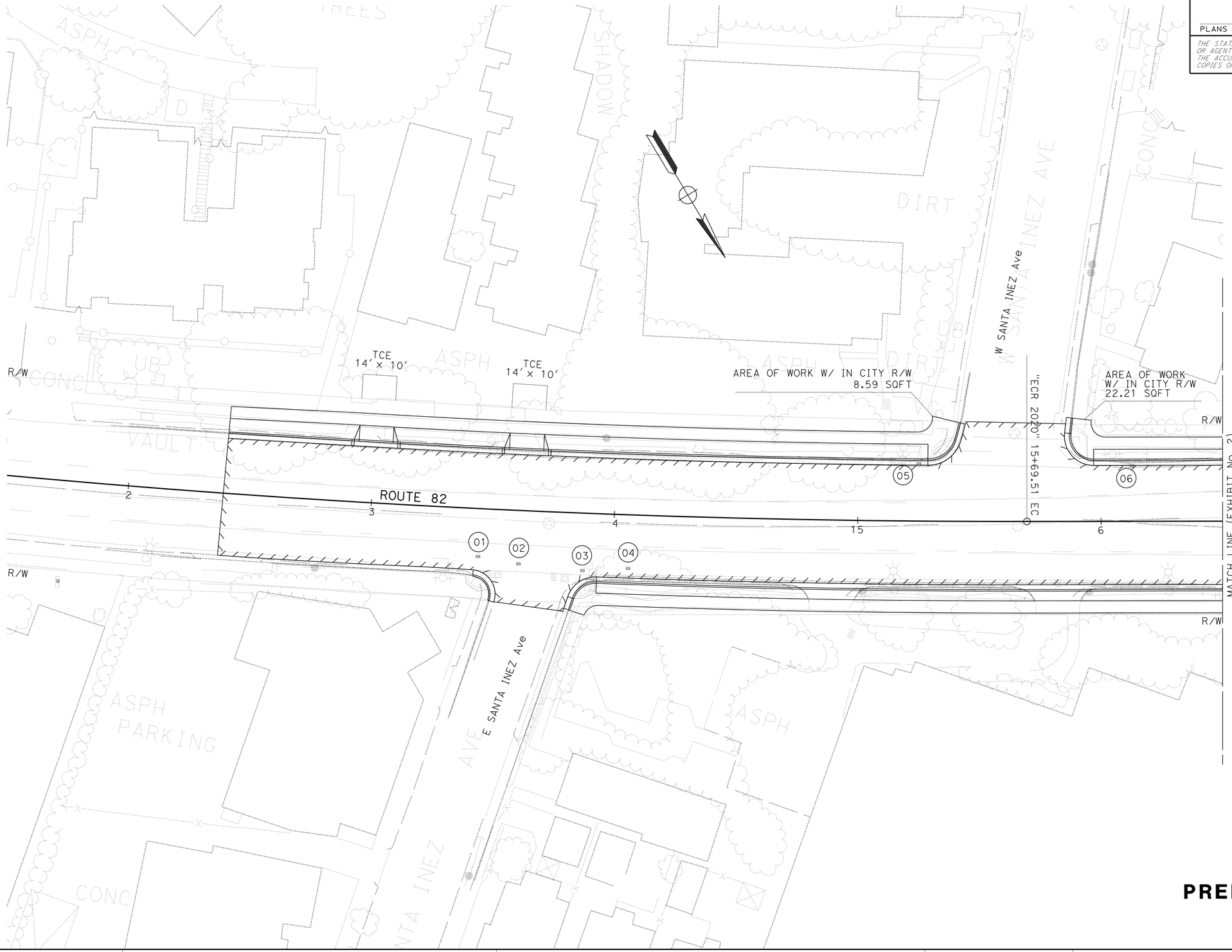

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

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

LAST REVISION | DATE PLOTTED => 25-MAY-2021
00-00-00 | TIME PLOTTED => 12:19

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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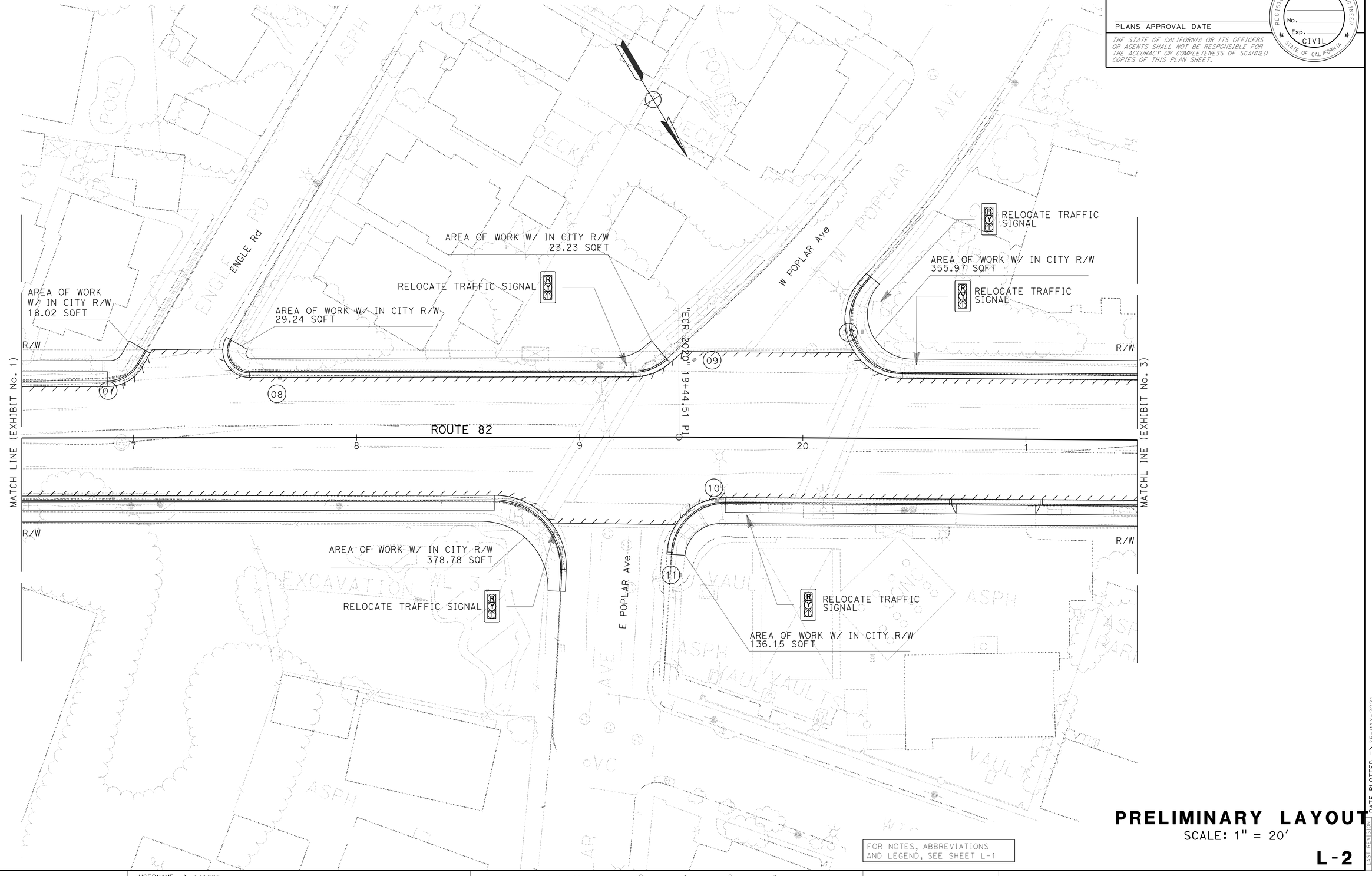

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-2

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DGN FILE => 20201202_L_002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
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Exp.
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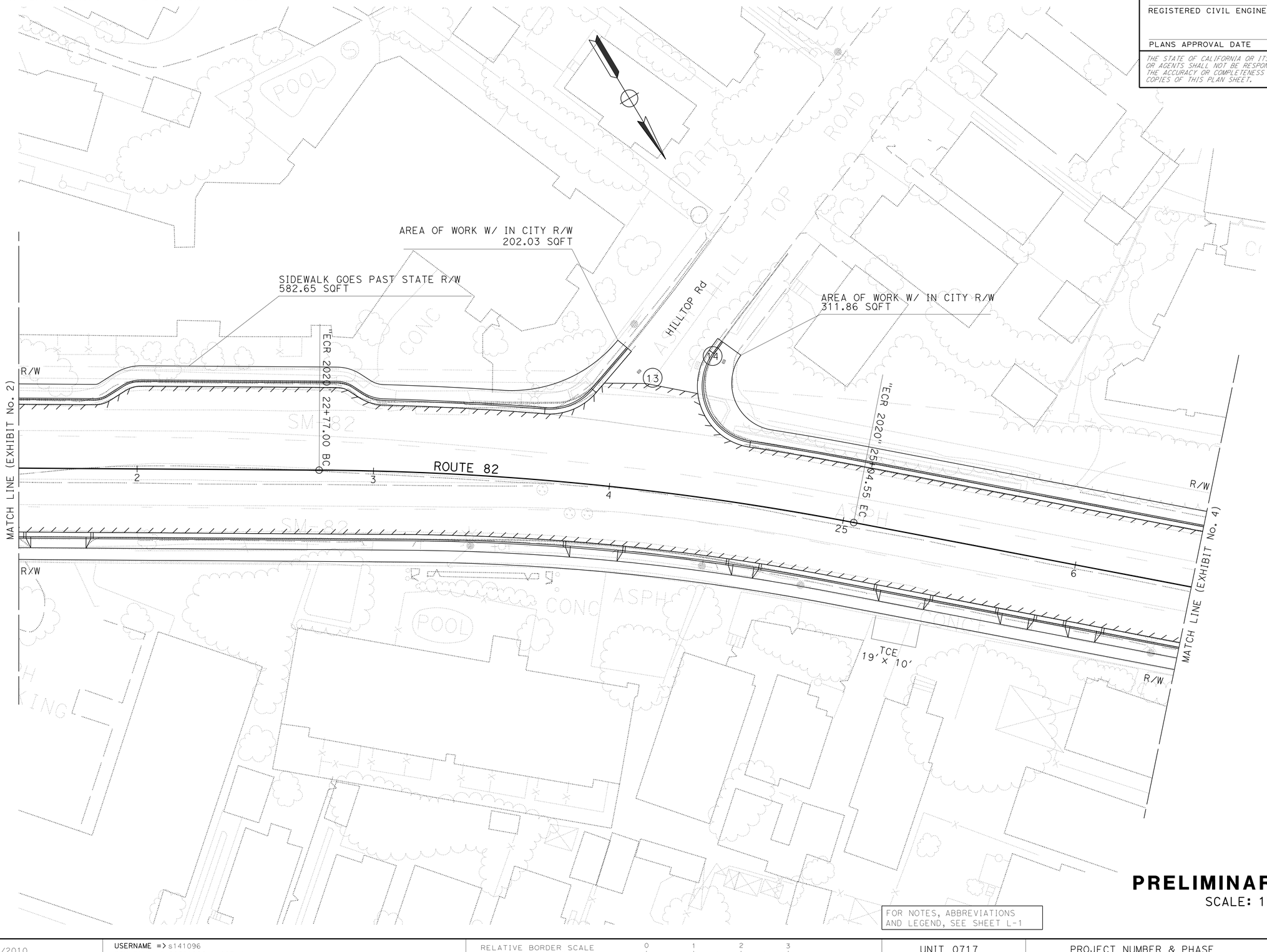

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-3

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

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PLANS APPROVAL DATE

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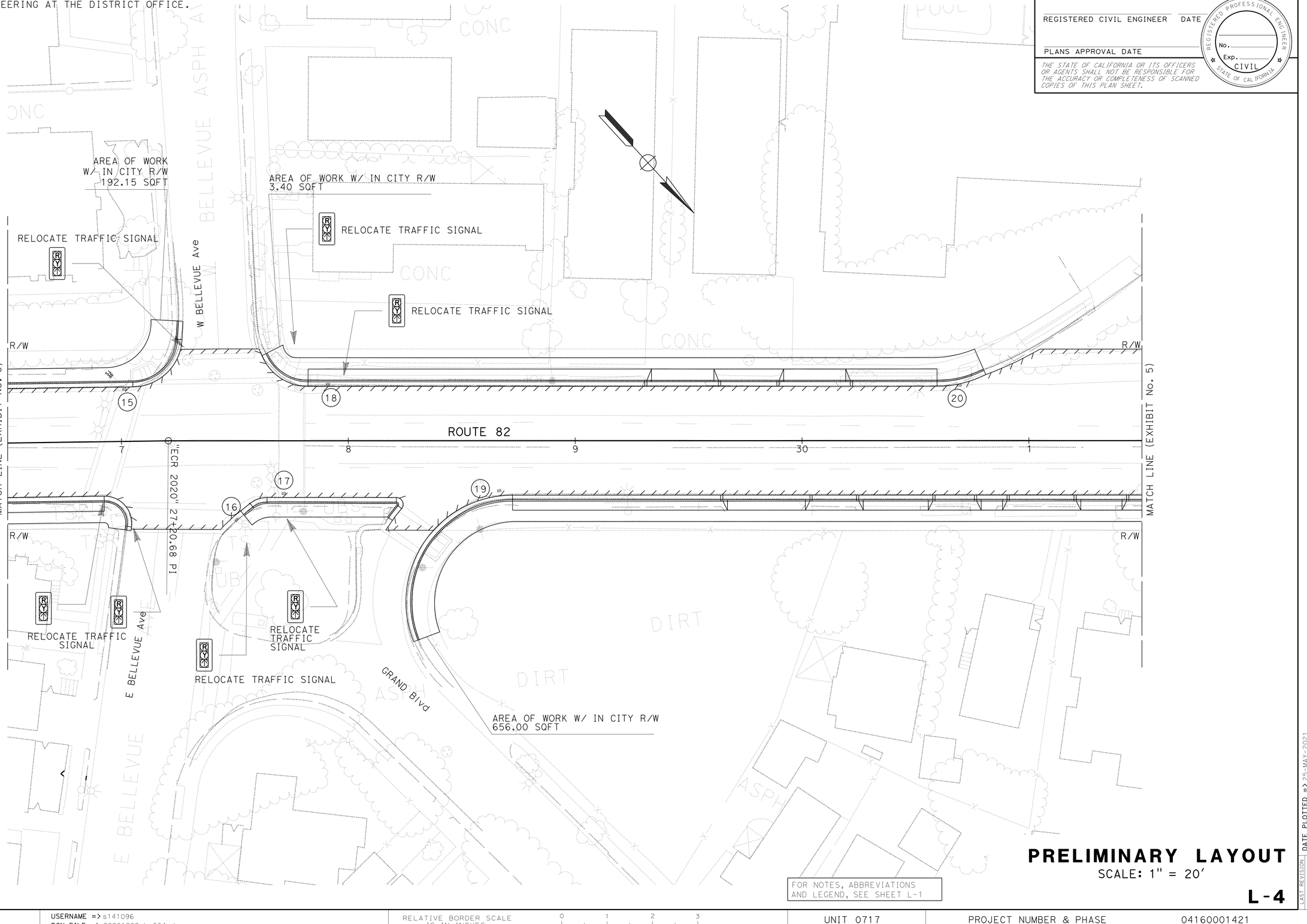

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-4

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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STATE OF CALIFORNIA

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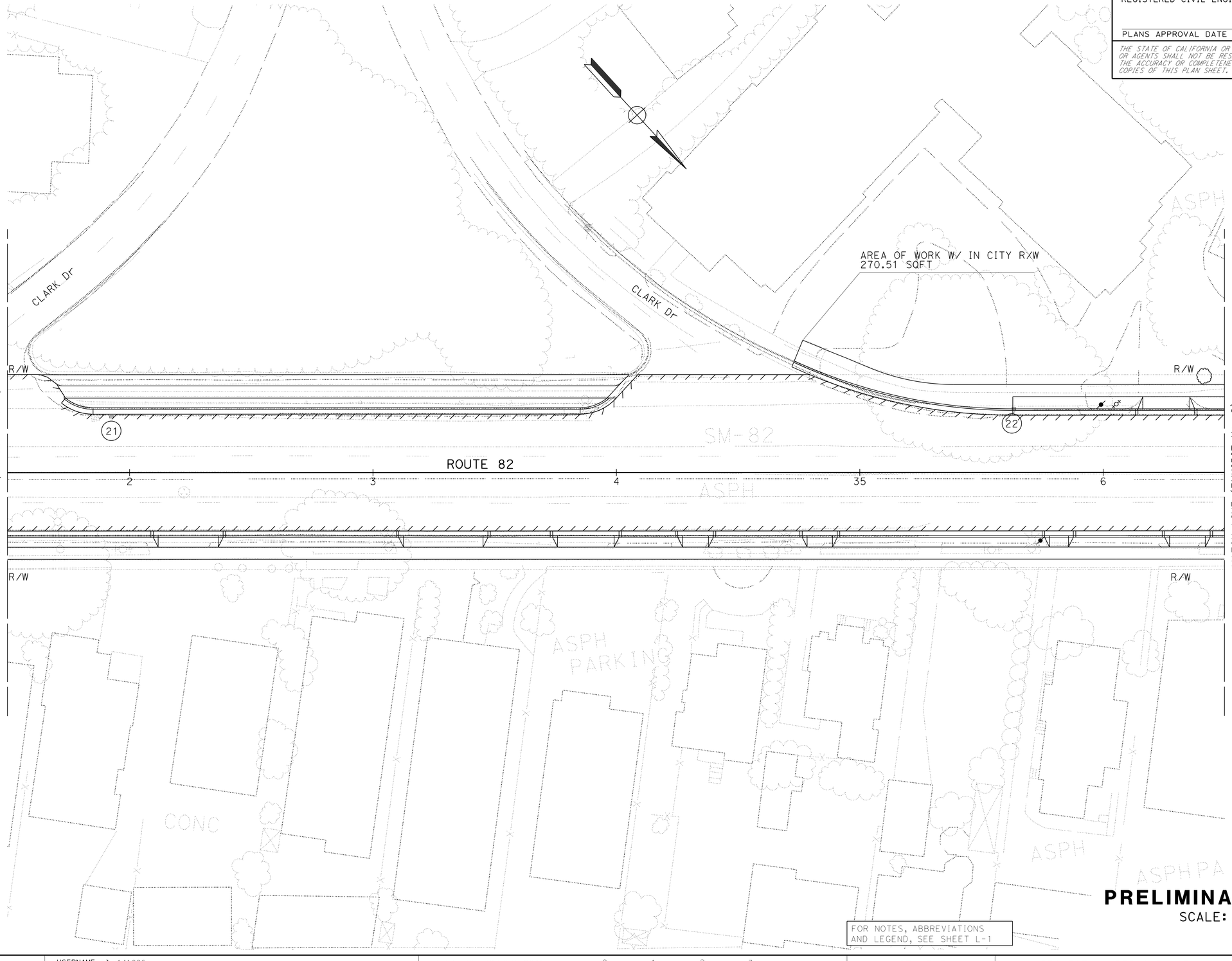

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-5

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

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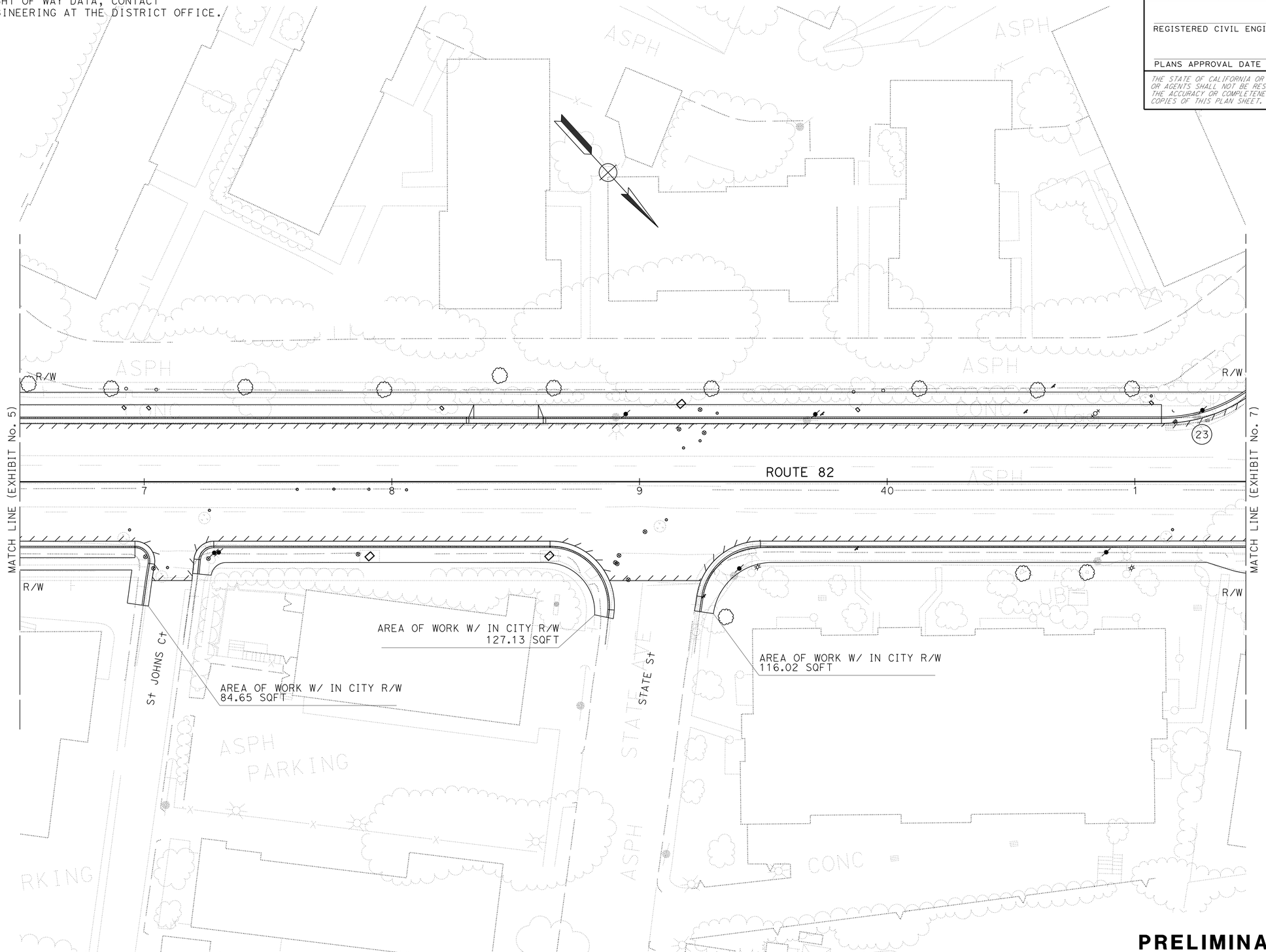

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-6

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UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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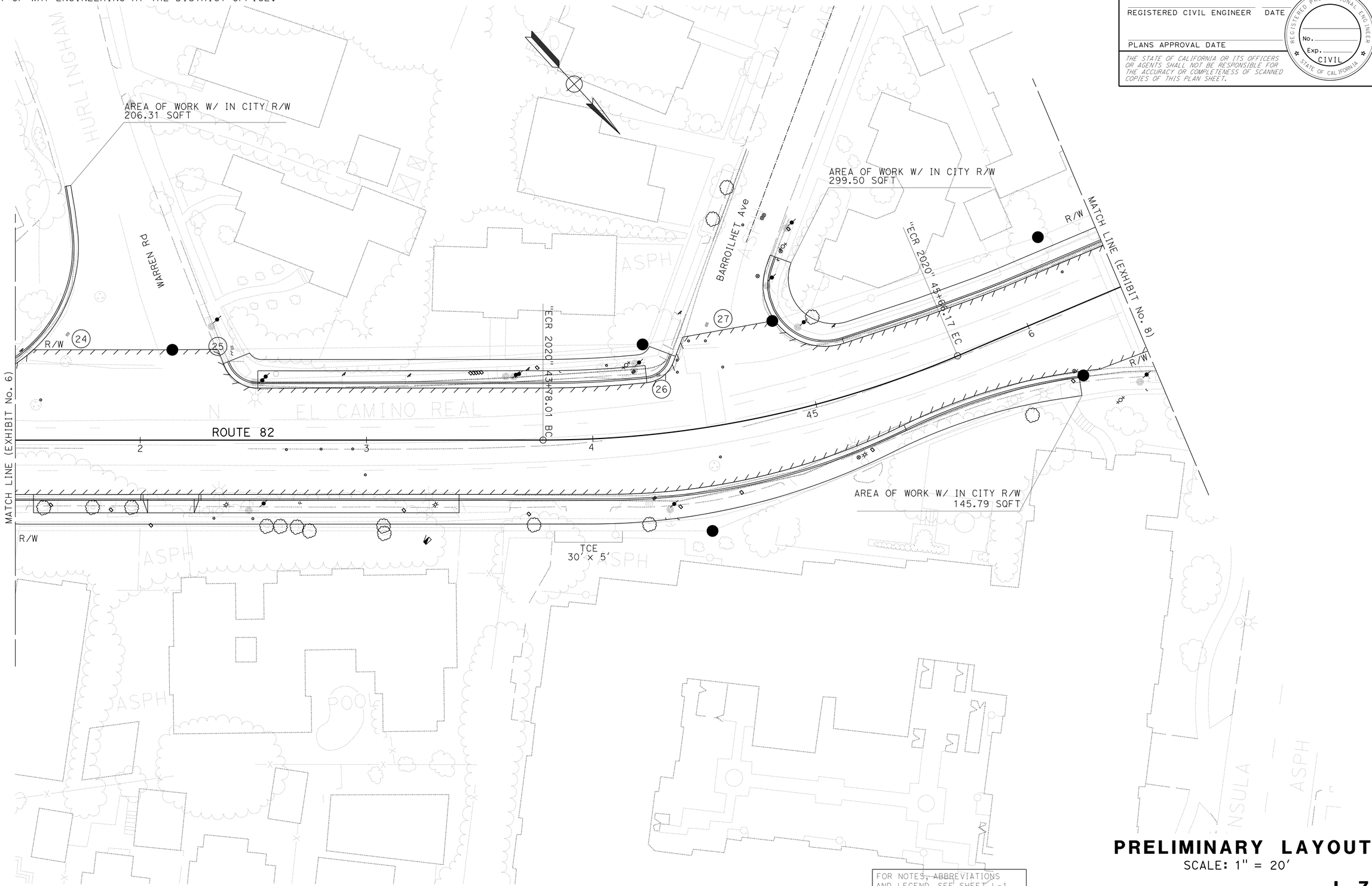

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-7

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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Exp.
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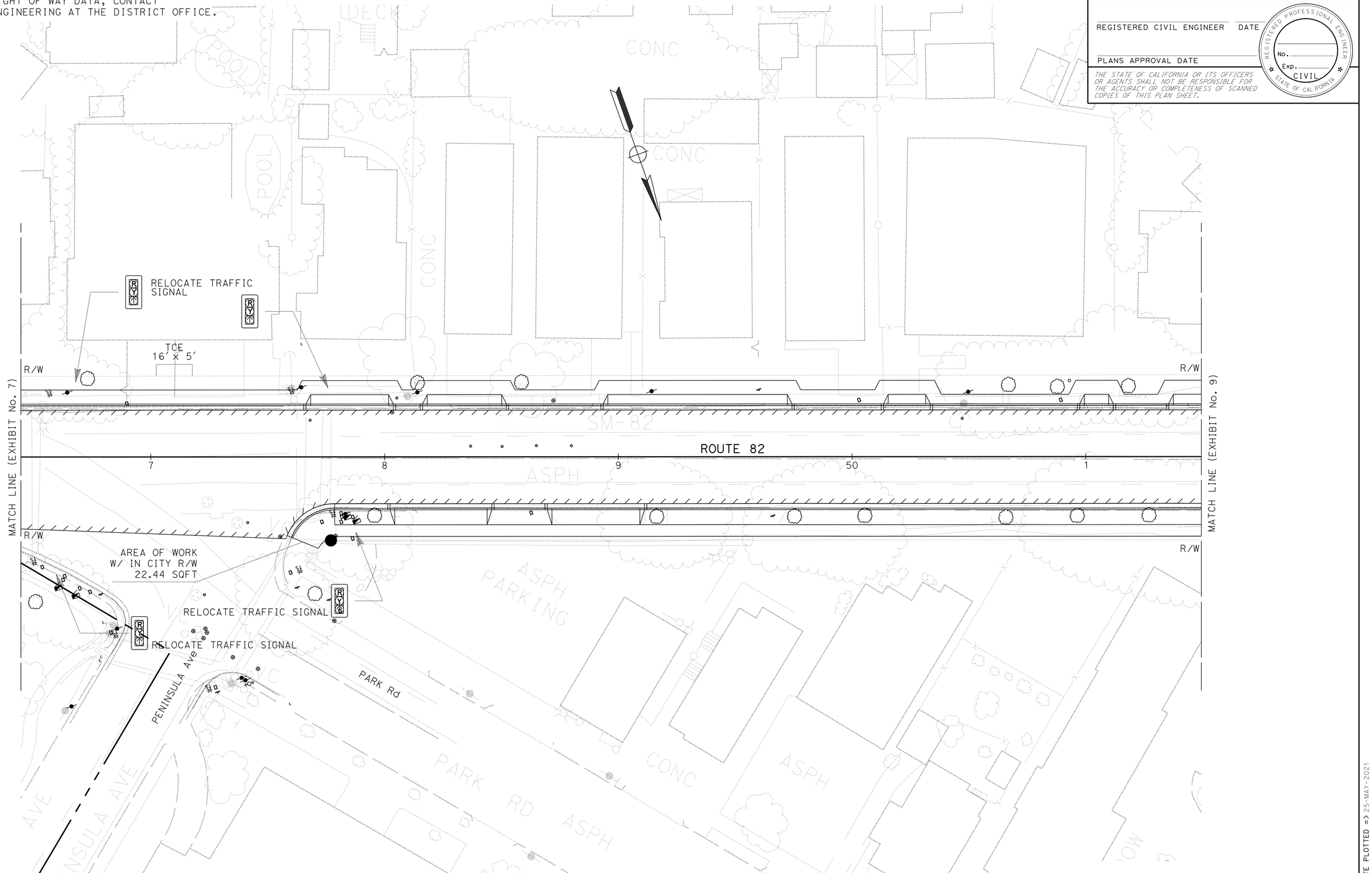

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-8

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_008.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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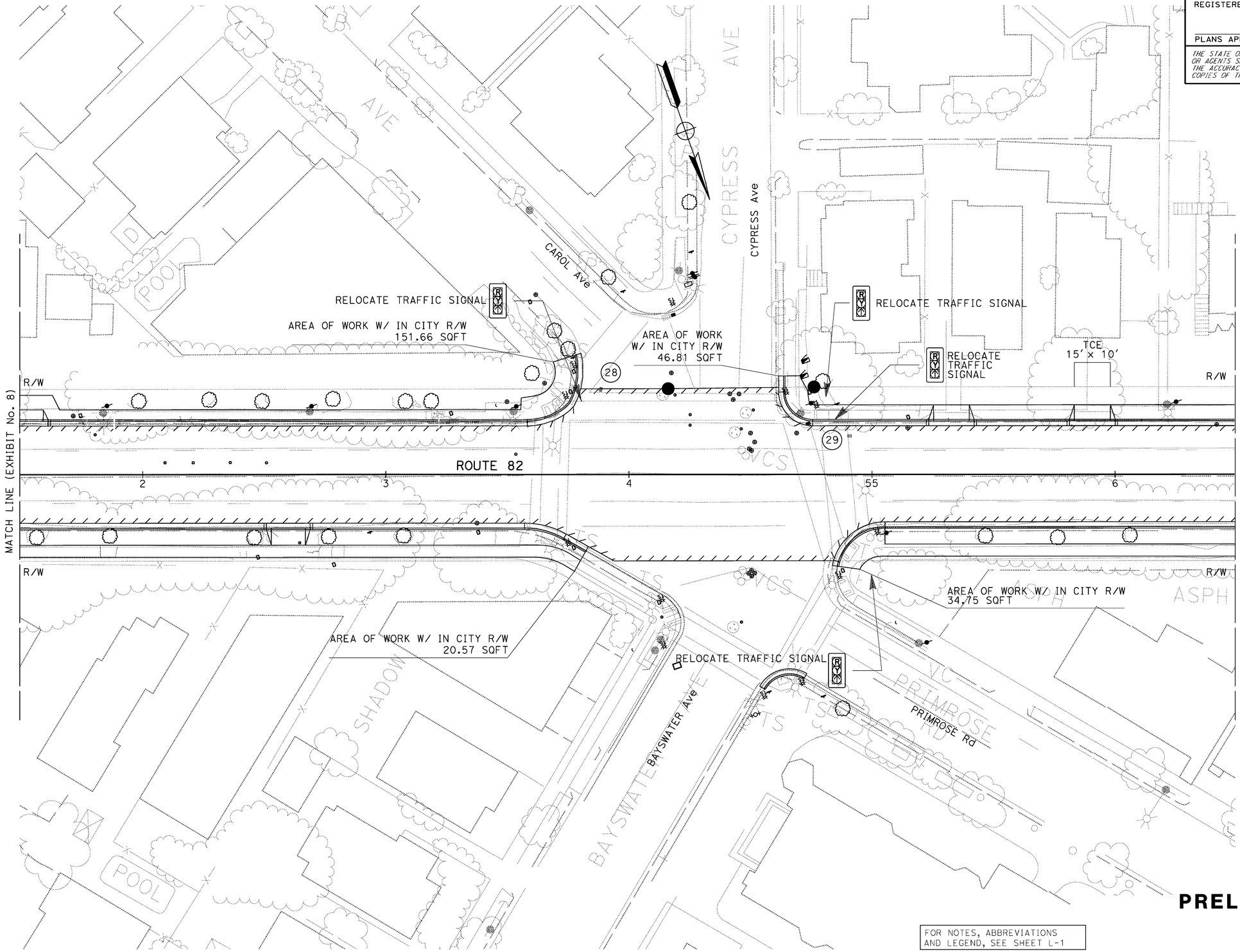

PRELIMINARY LAYOUT

SCALE: 1" = 20'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

L-9

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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LAST REVISION | DATE PLOTTED => 25-MAY-2021 | TIME PLOTTED => 12:20 | 00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 20201202_L_009.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0717 | PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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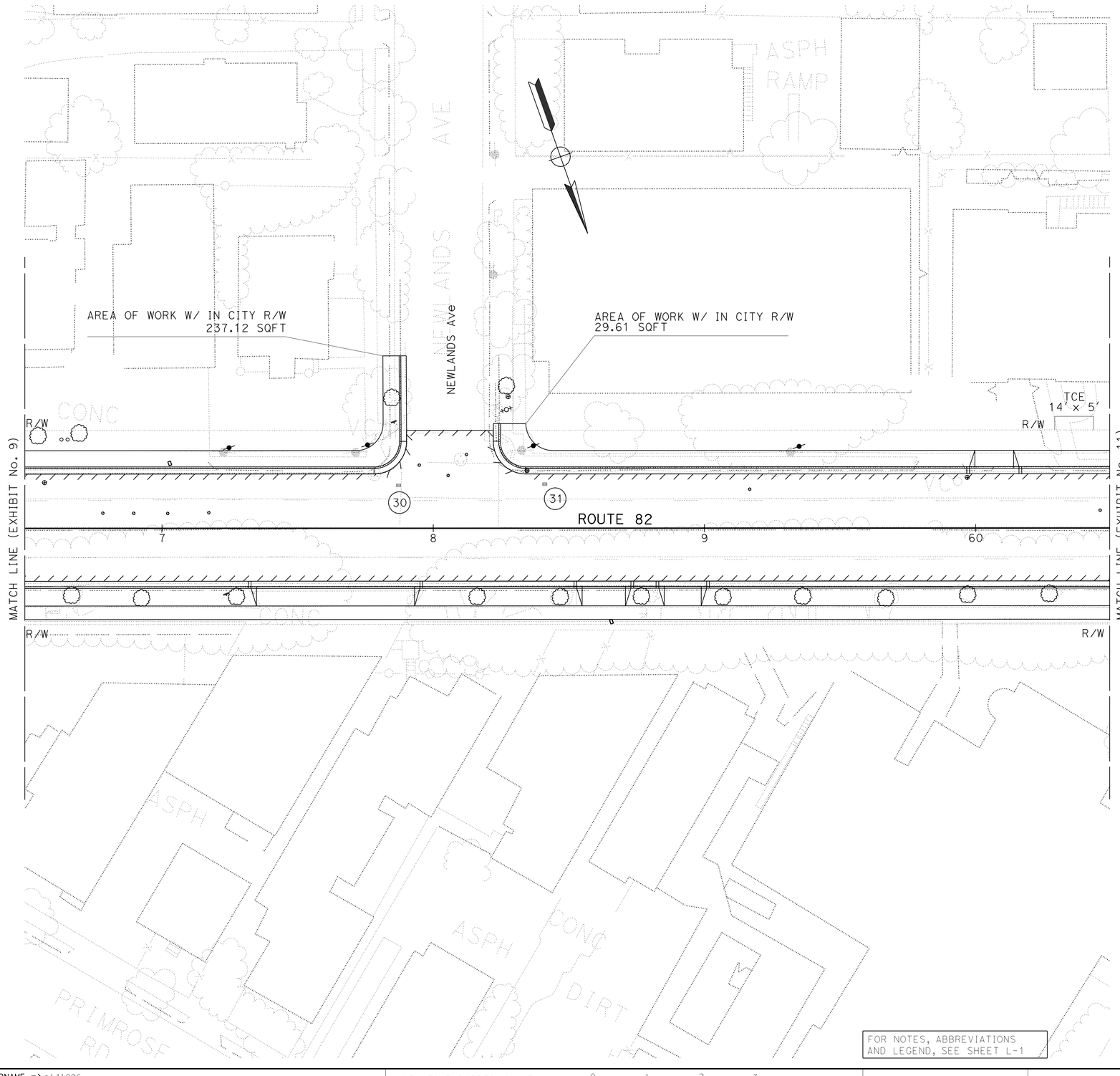

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

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

LAST REVISION DATE PLOTTED => 25-MAY-2021
00-00-00 TIME PLOTTED => 12:20

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 20201202_L_010.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0717
PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
No.
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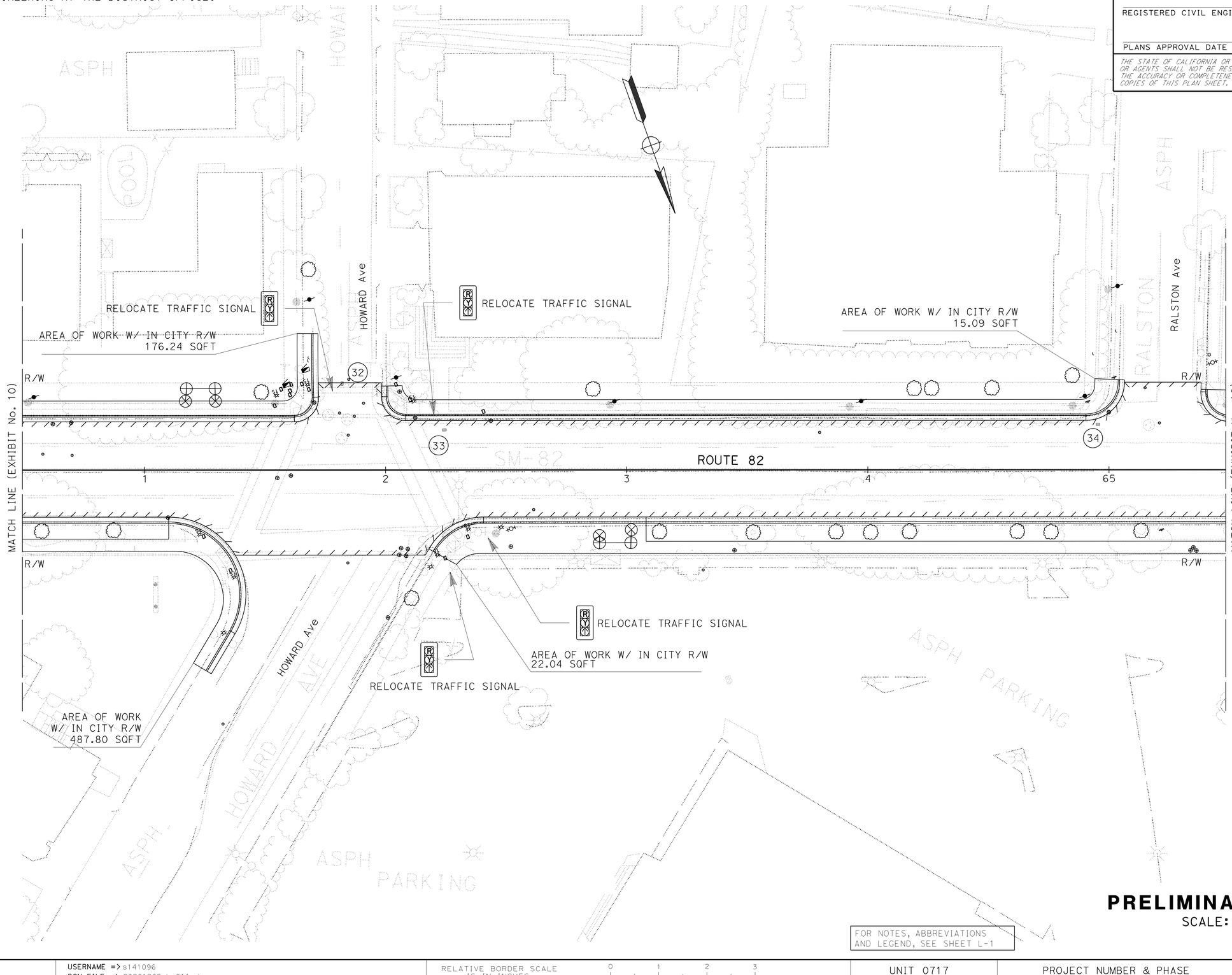

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-11

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

LAST REVISION DATE PLOTTED => 25-MAY-2021
00-00-00 TIME PLOTTED => 12:20

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_011.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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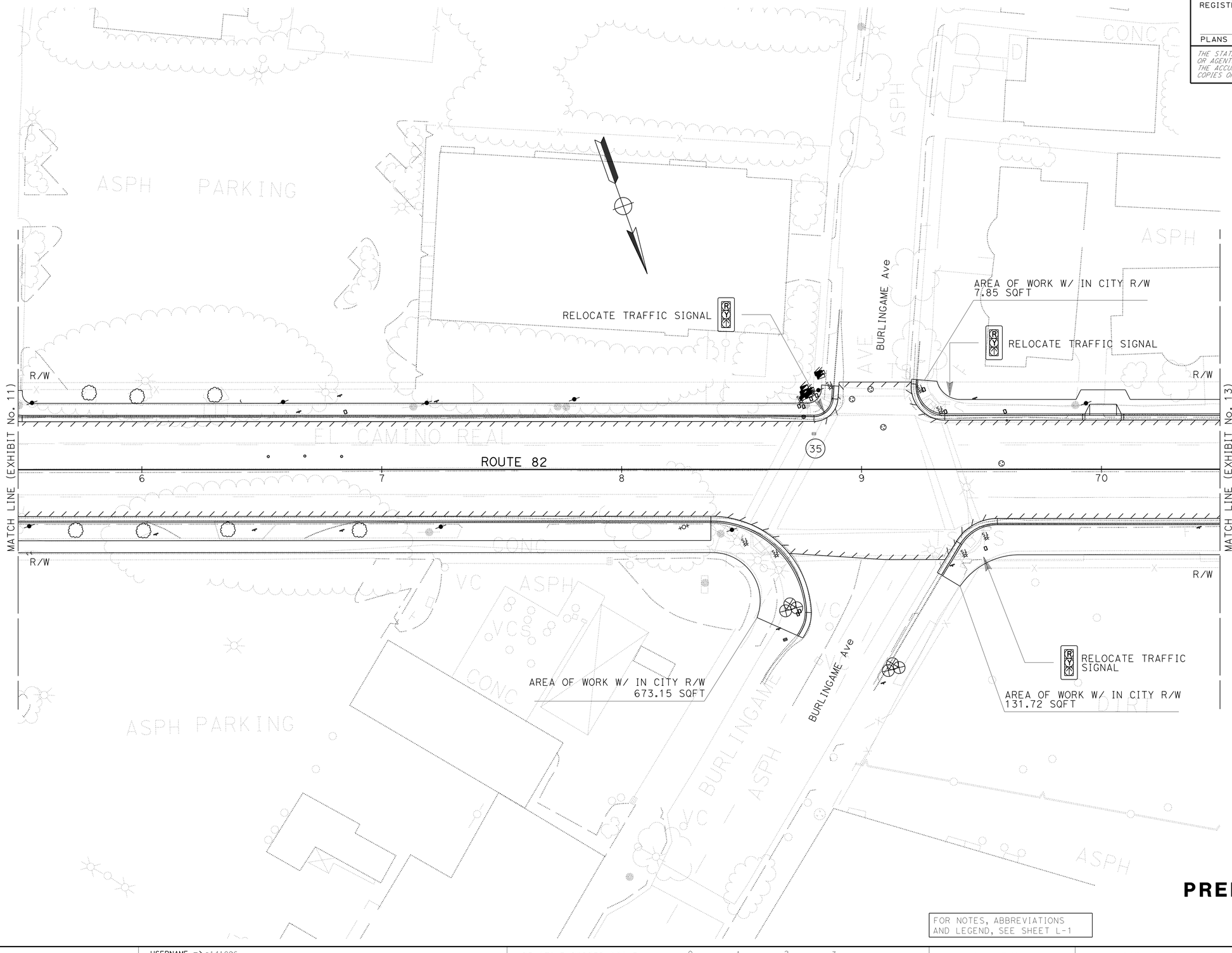

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-12

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_012.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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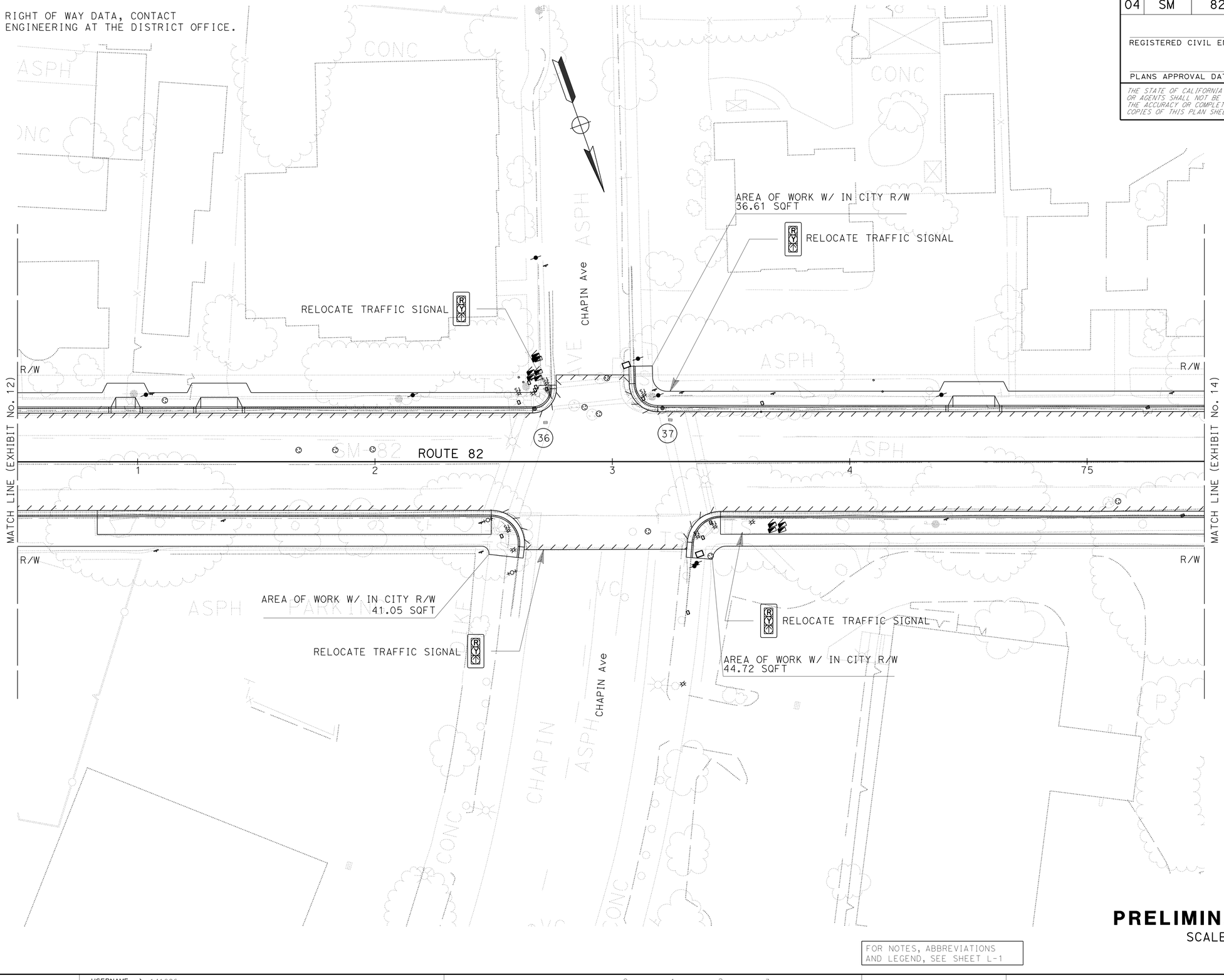

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-13

REVISED BY | DATE REVISED

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DESIGN

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LAST REVISION | DATE PLOTTED => 25-MAY-2021
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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_013.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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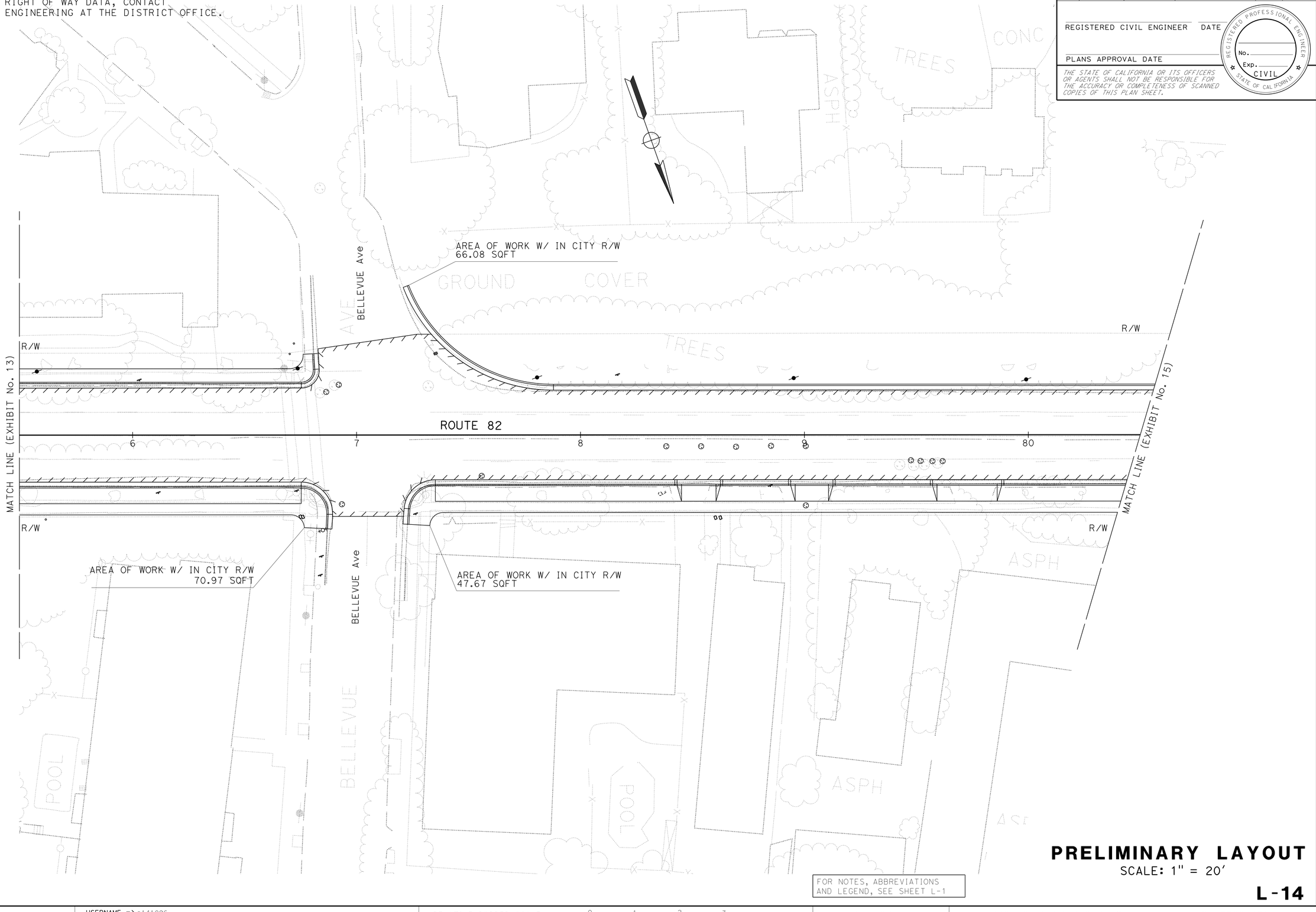

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

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DATE PLOTTED => 25-MAY-2021

TIME PLOTTED => 12:20

BORDER LAST REVISED 7/2/2010

USERNAME => s141096

DGN FILE => 20201202_L_014.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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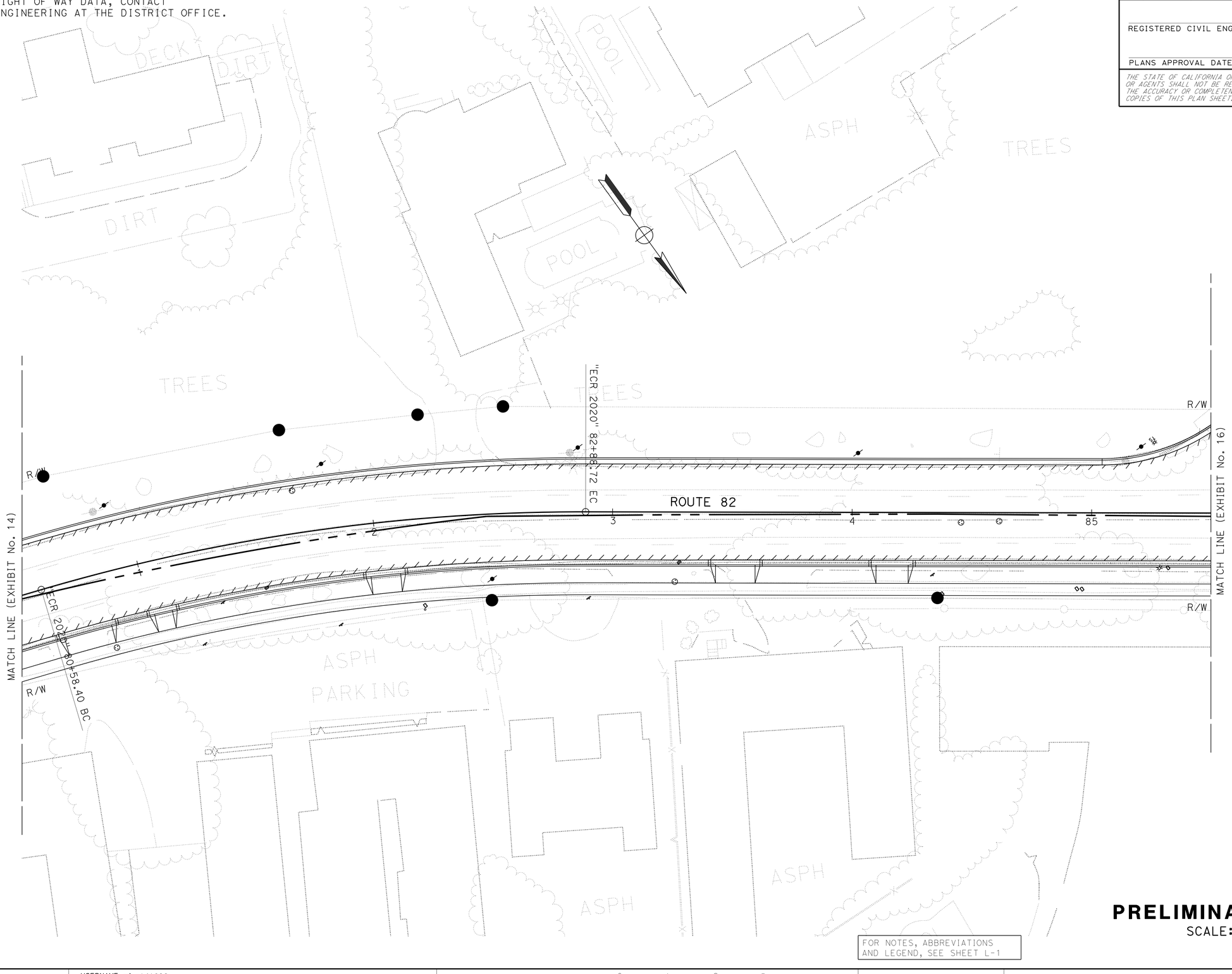

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-15

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_015.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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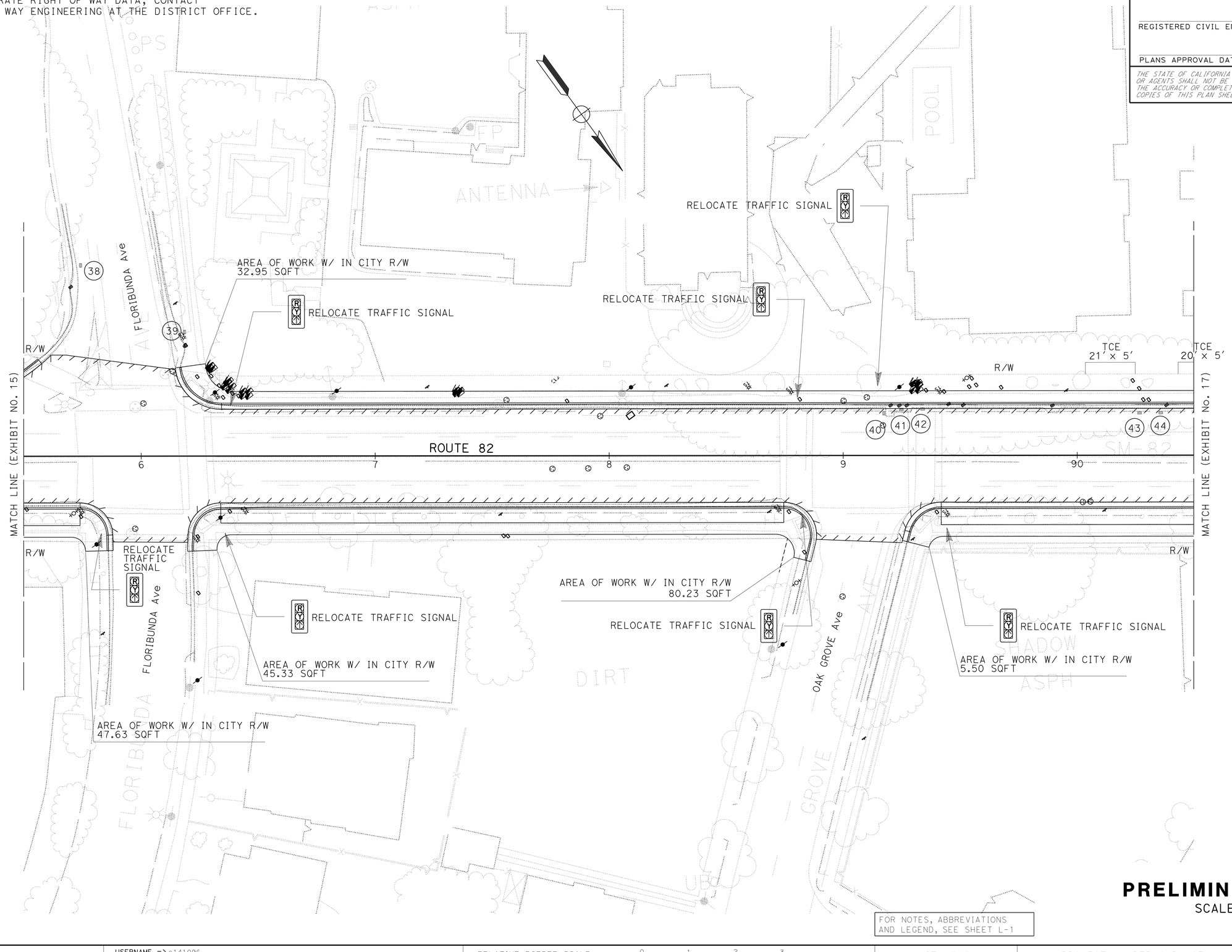

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-16

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BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 20201202_L_016.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0717 | PROJECT NUMBER & PHASE 04160001421

NOTE:

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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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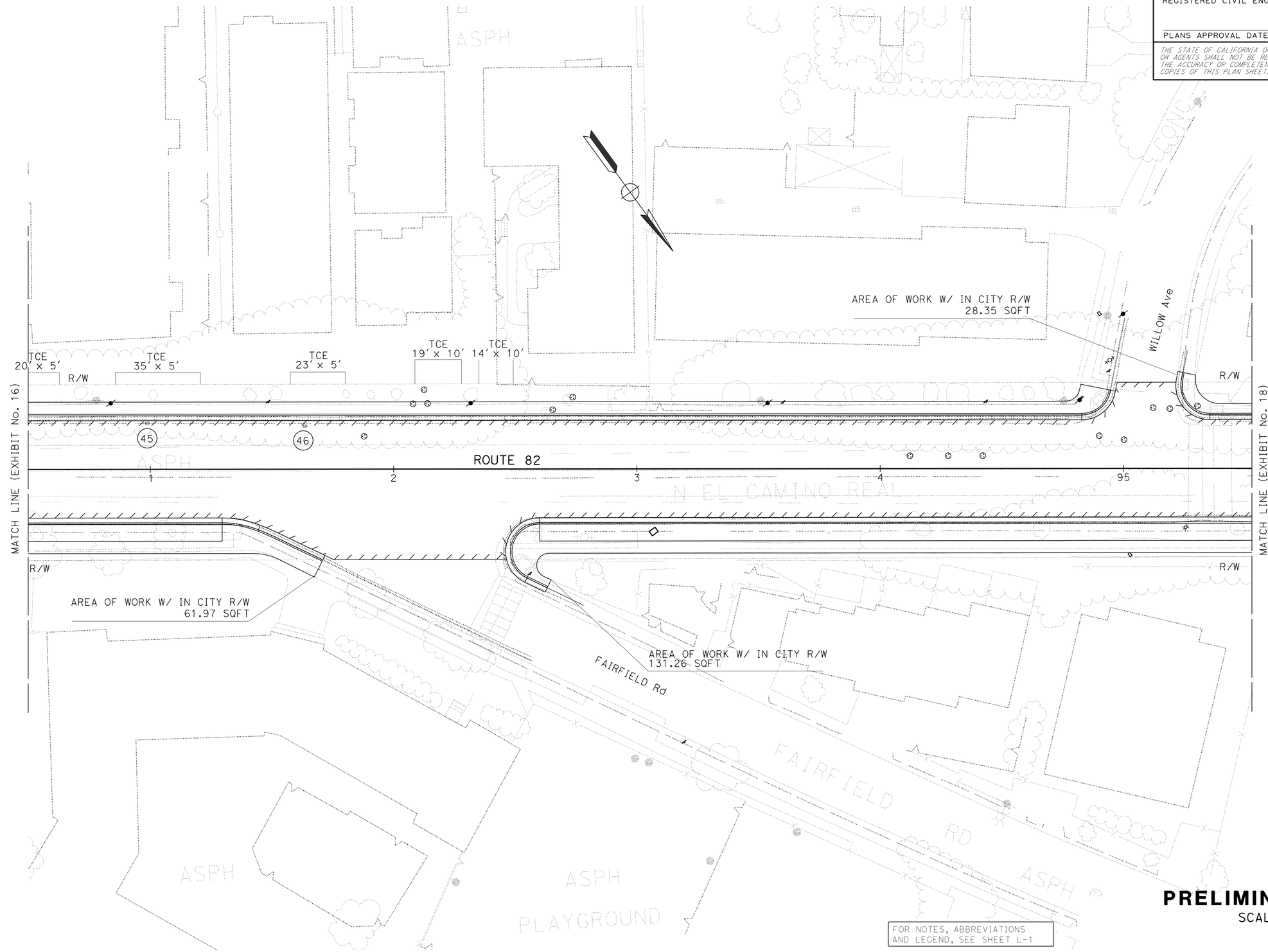

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-17

LAST REVISION DATE PLOTTED => 25-MAY-2021
TIME PLOTTED => 12:21

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_017.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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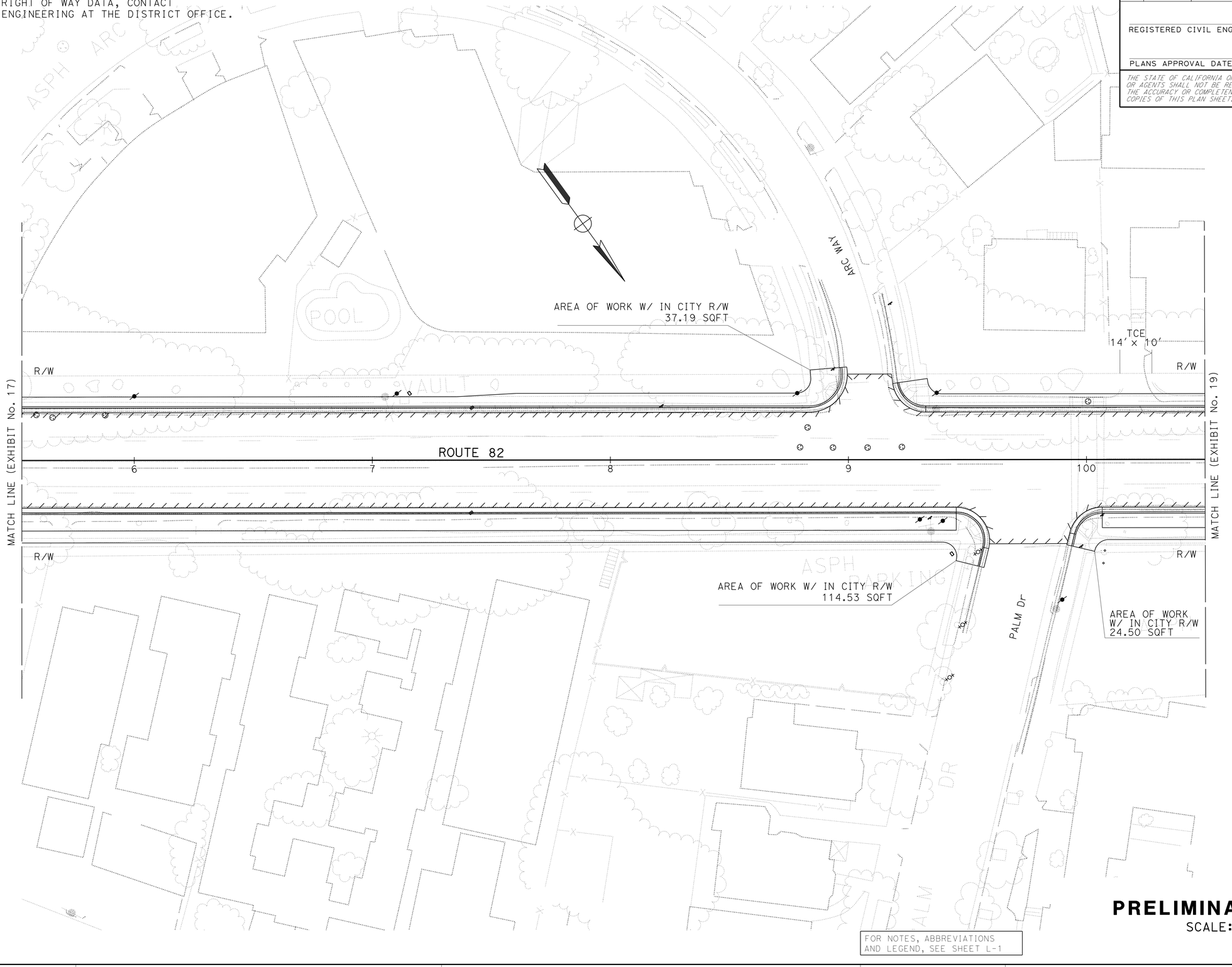

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-18

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_018.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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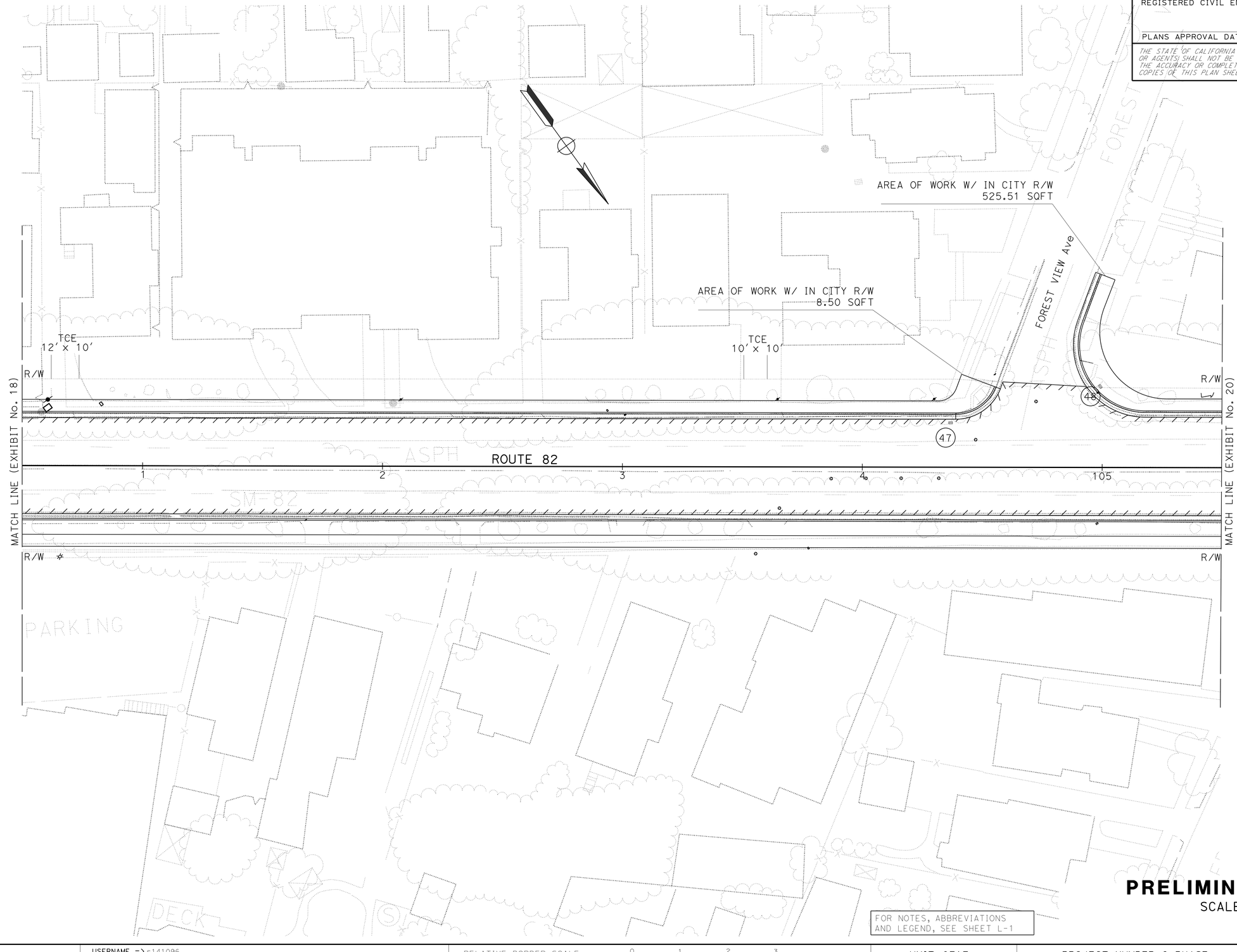

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-19

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USERNAME => s141096
DGN FILE => 20201202_L_019.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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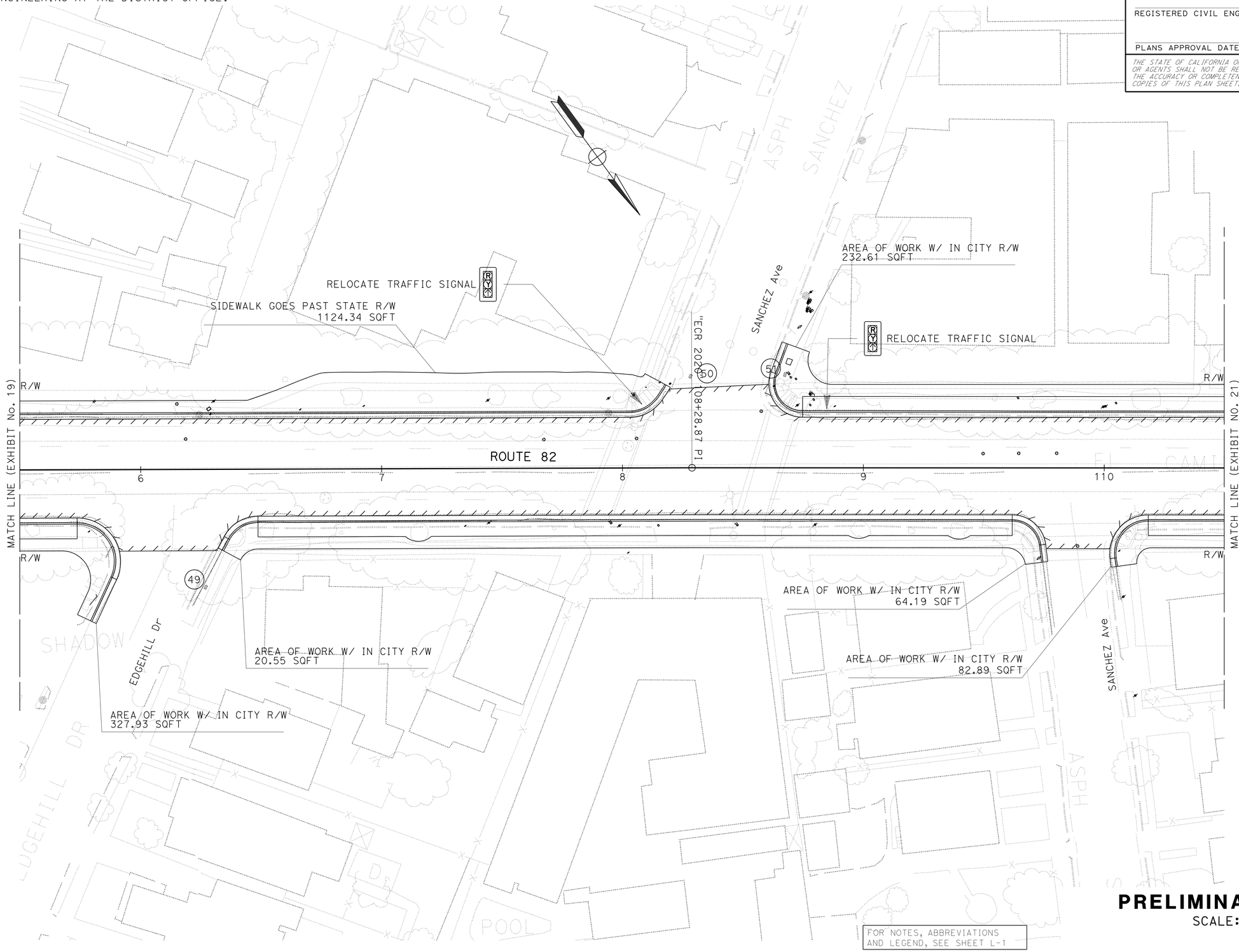

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-20

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BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 20201202_L_020.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0717 | PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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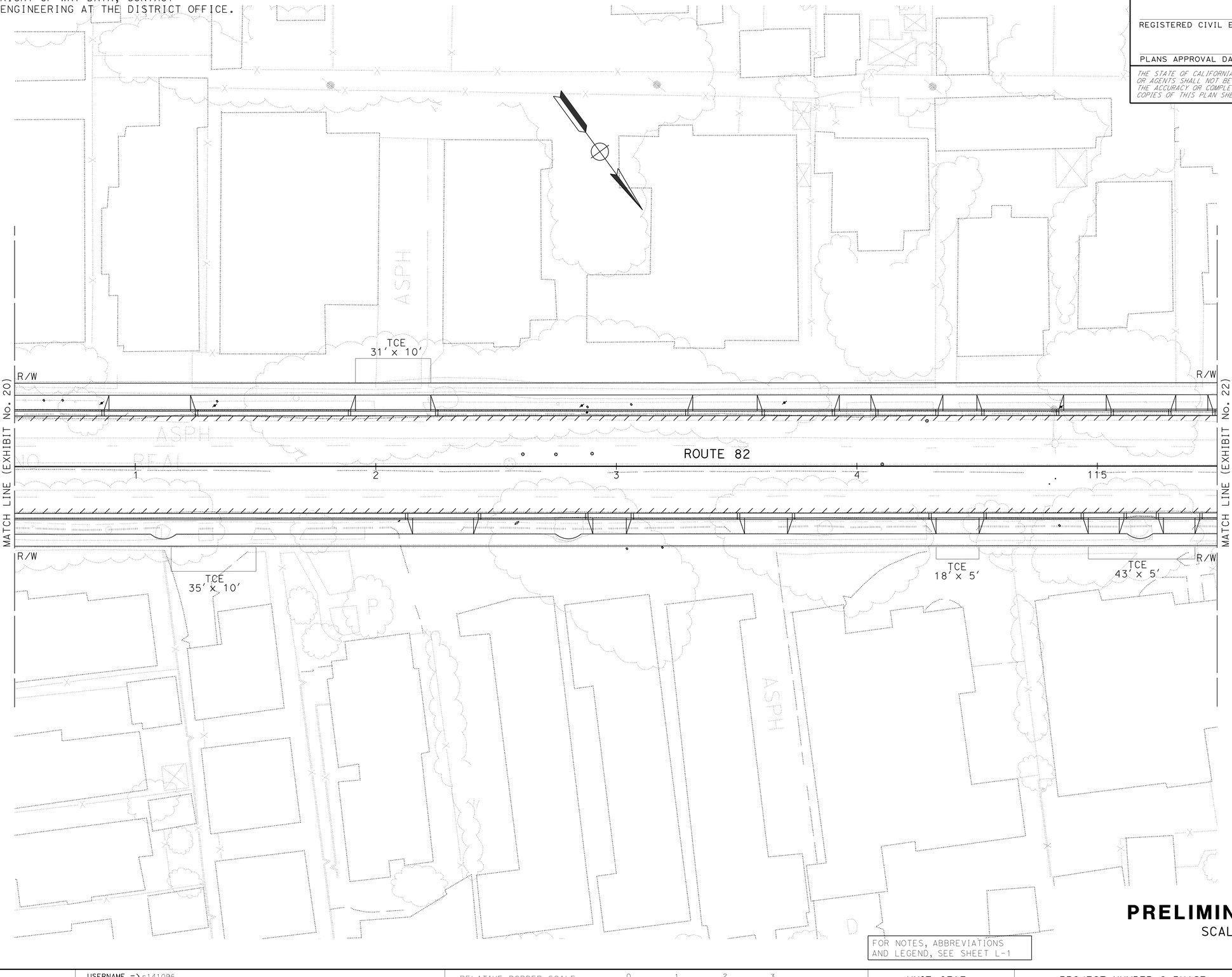

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20′

L-21

REVISED BY | DATE REVISED

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_021.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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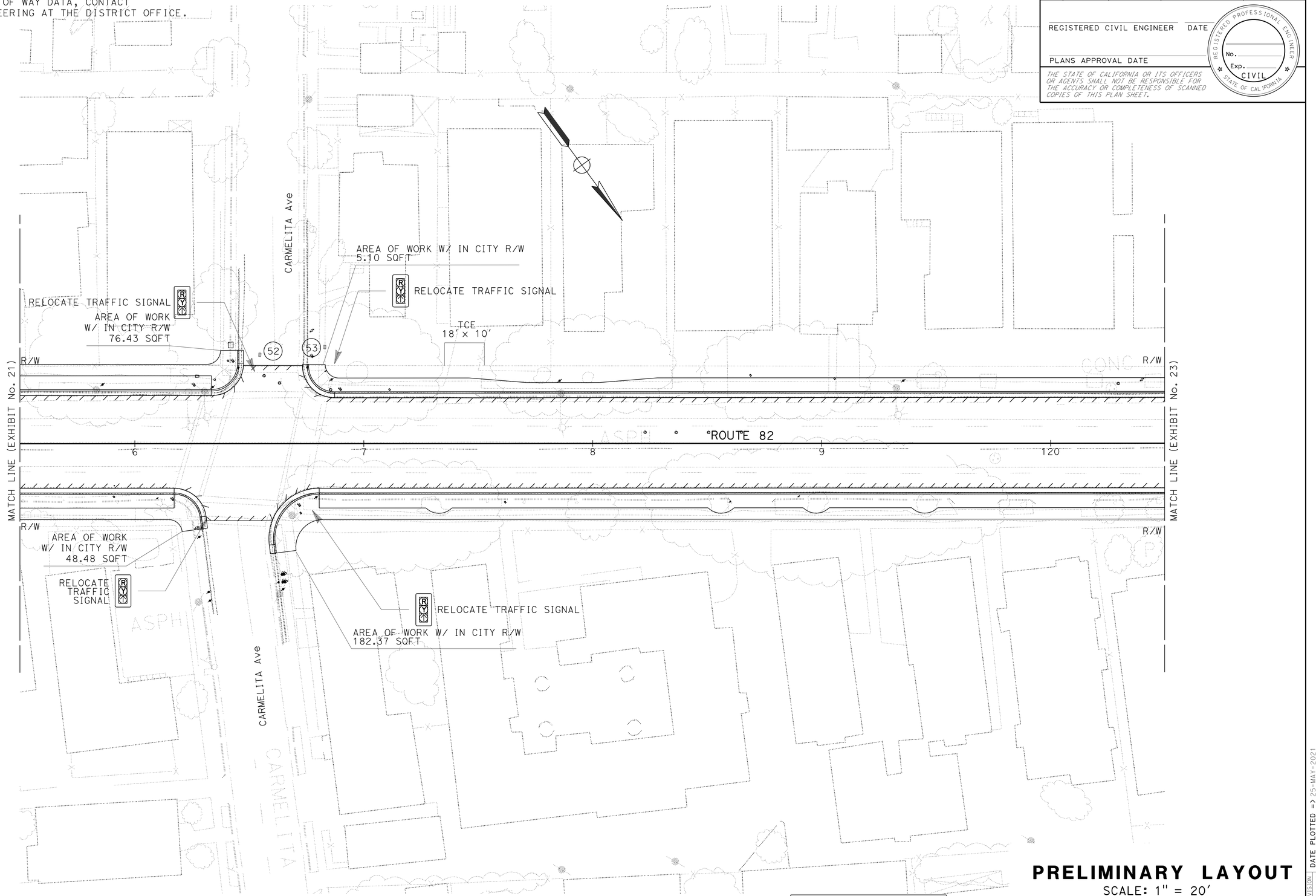

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-22

REVISED BY | DATE REVISED

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_022.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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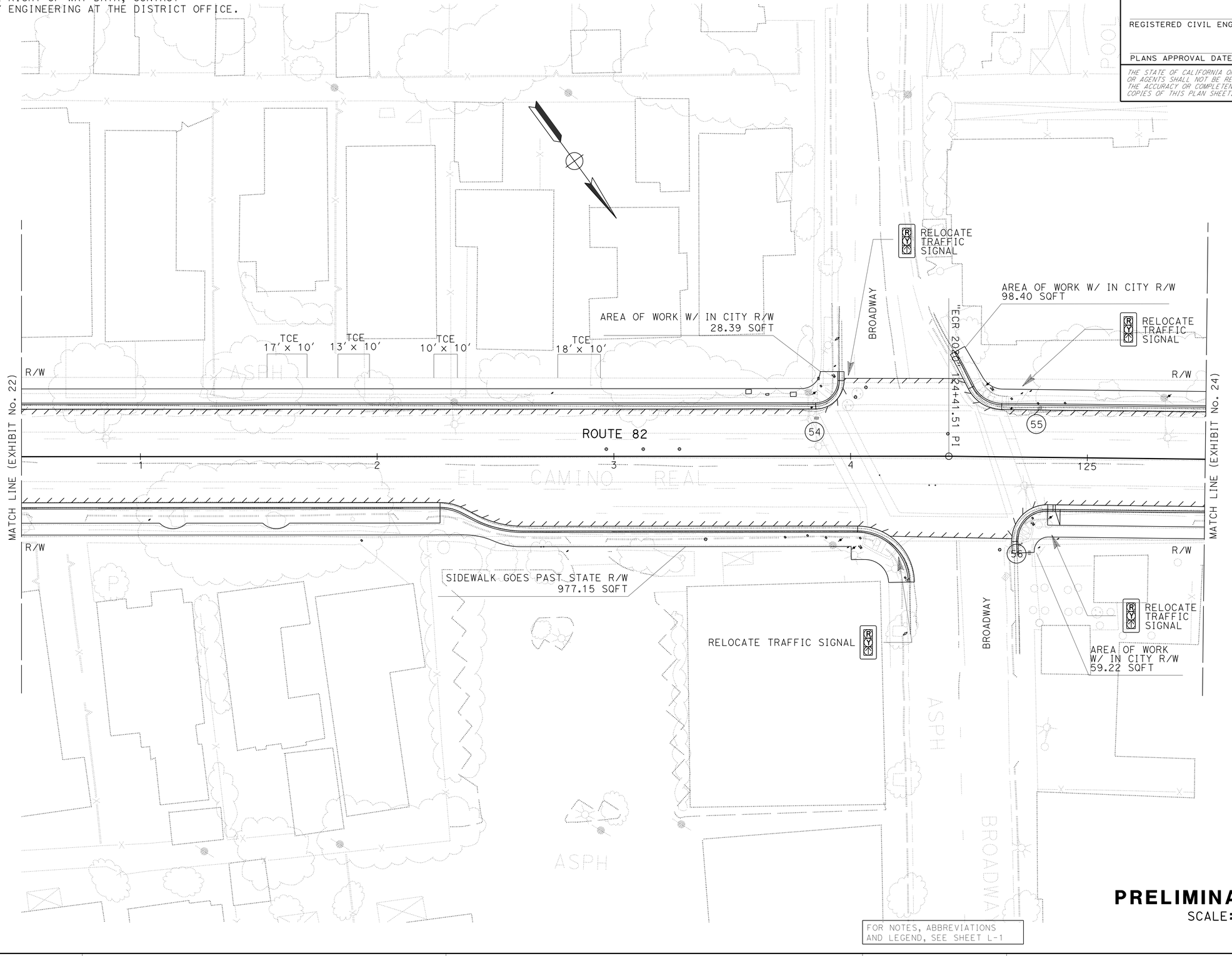

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20′

L-23

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

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DESIGN

LAST REVISION | DATE PLOTTED => 25-MAY-2021
00-00-00 | TIME PLOTTED => 12:21

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_023.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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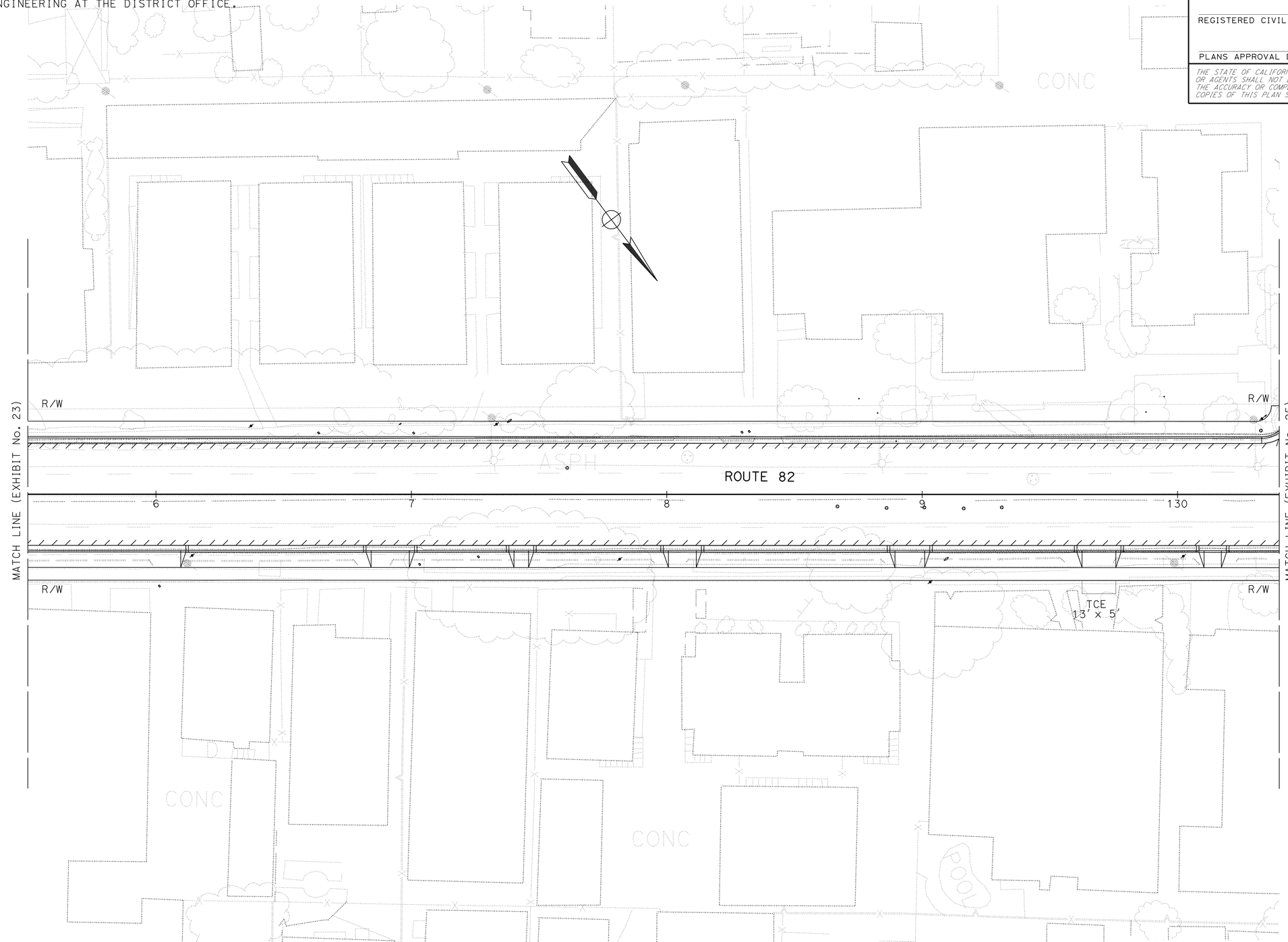

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-24

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

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LAST REVISION | DATE PLOTTED => 25-MAY-2021
00-00-00 | TIME PLOTTED => 12:21

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_024.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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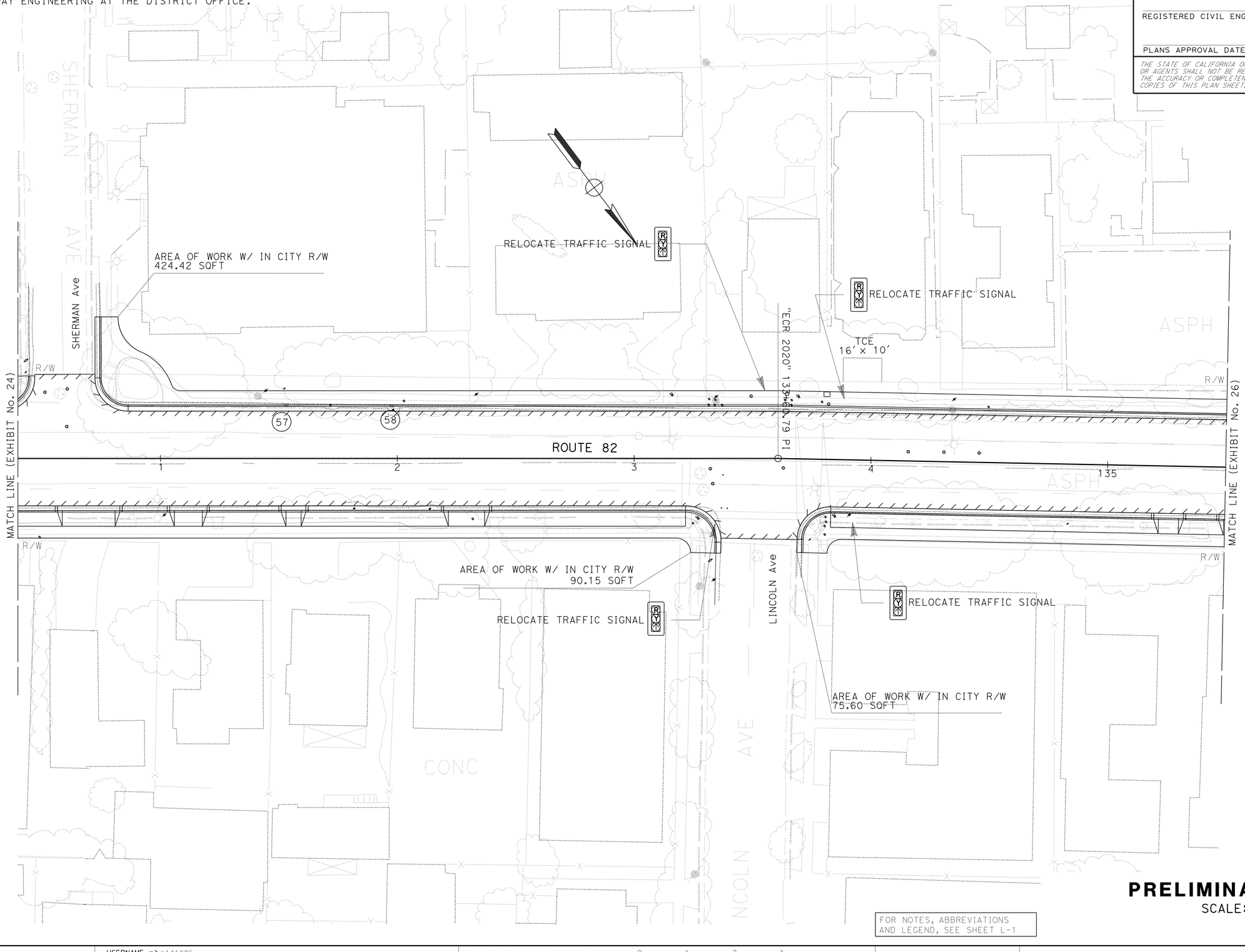

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-25

REVISED BY | DATE REVISED

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LAST REVISION | DATE PLOTTED => 25-MAY-2021
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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_025.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

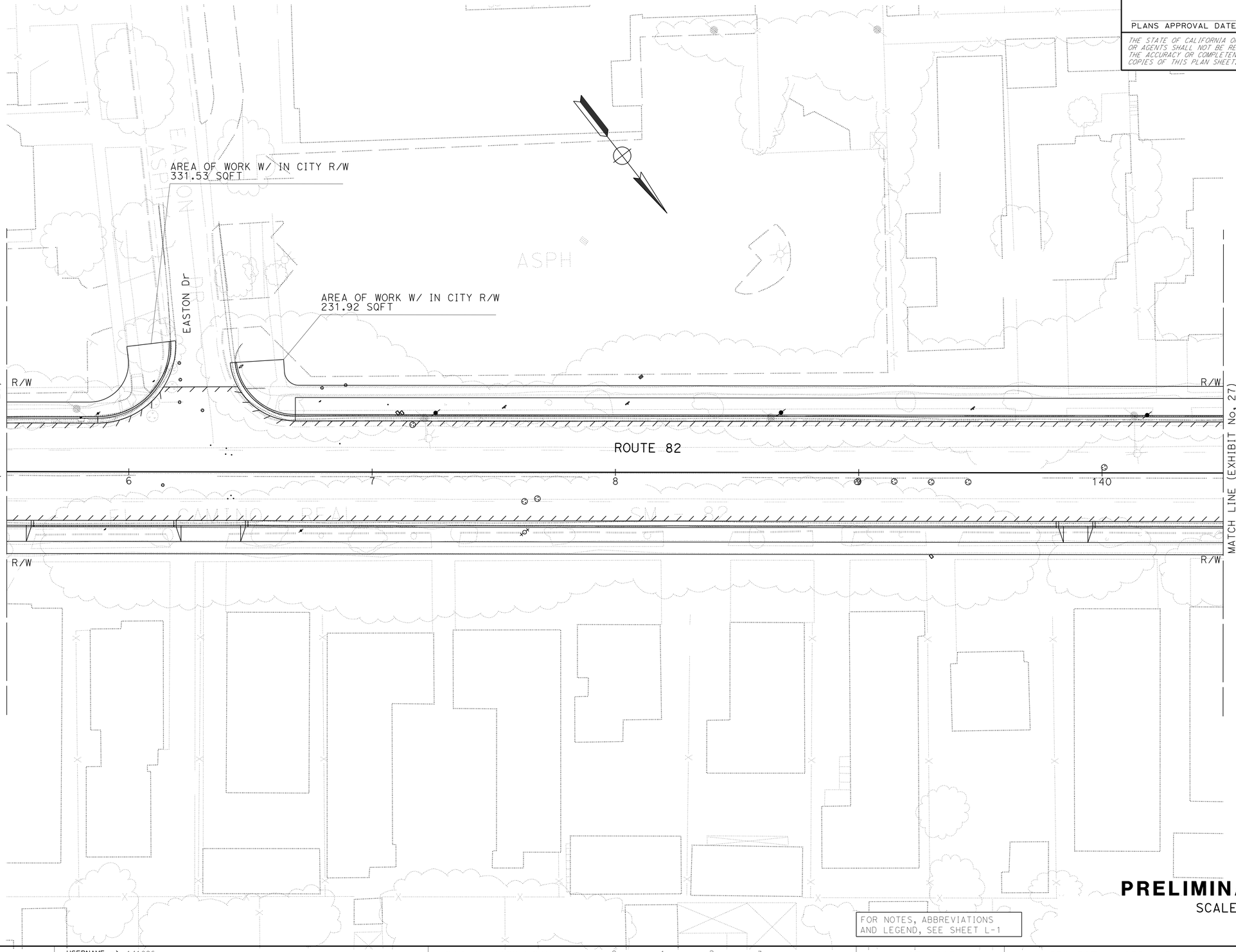
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-26

REVISED BY | DATE REVISED

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_026.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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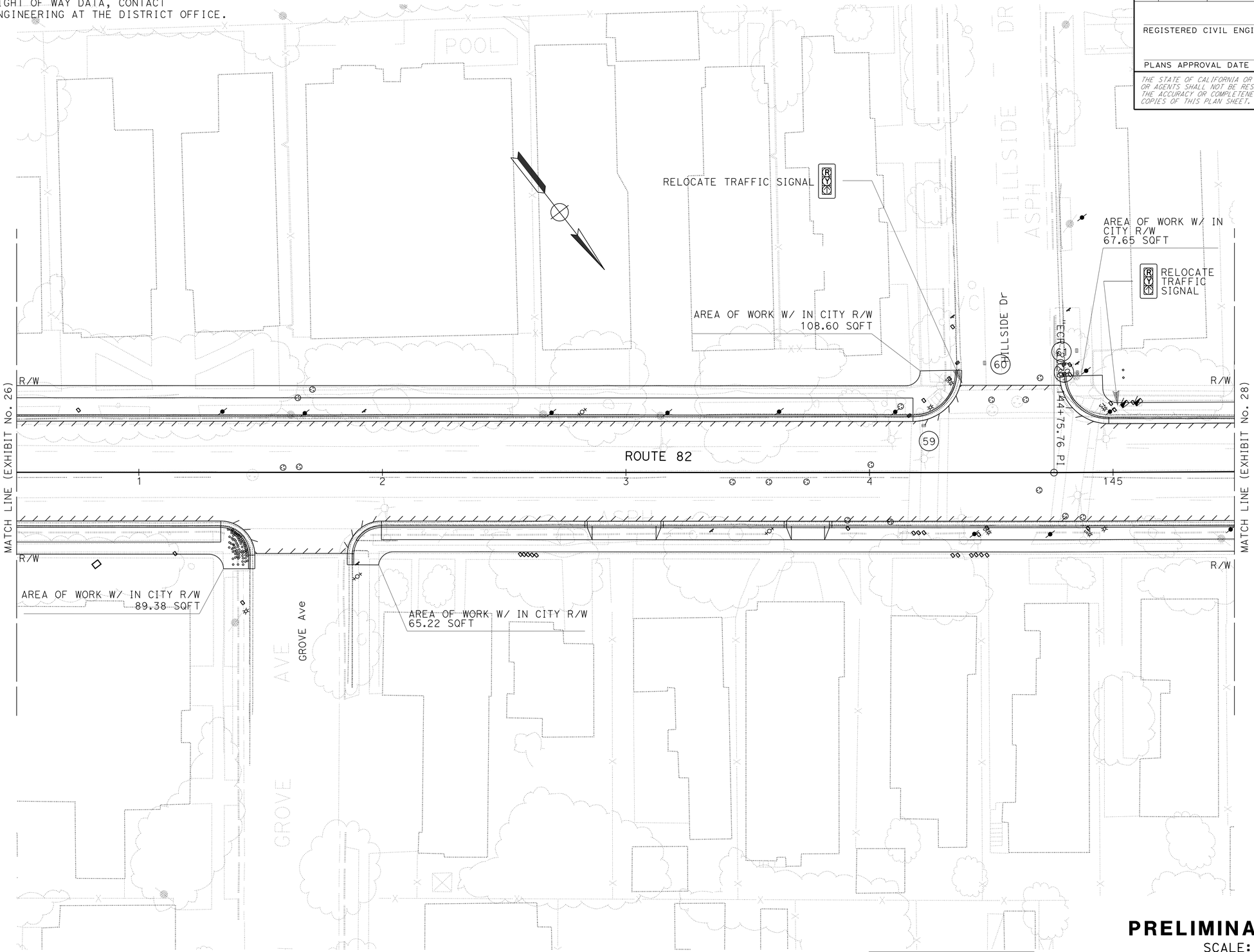

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-27

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

Caltrans

LAST REVISION | DATE PLOTTED => 25-MAY-2021
00-00-00 | TIME PLOTTED => 12:21

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_027.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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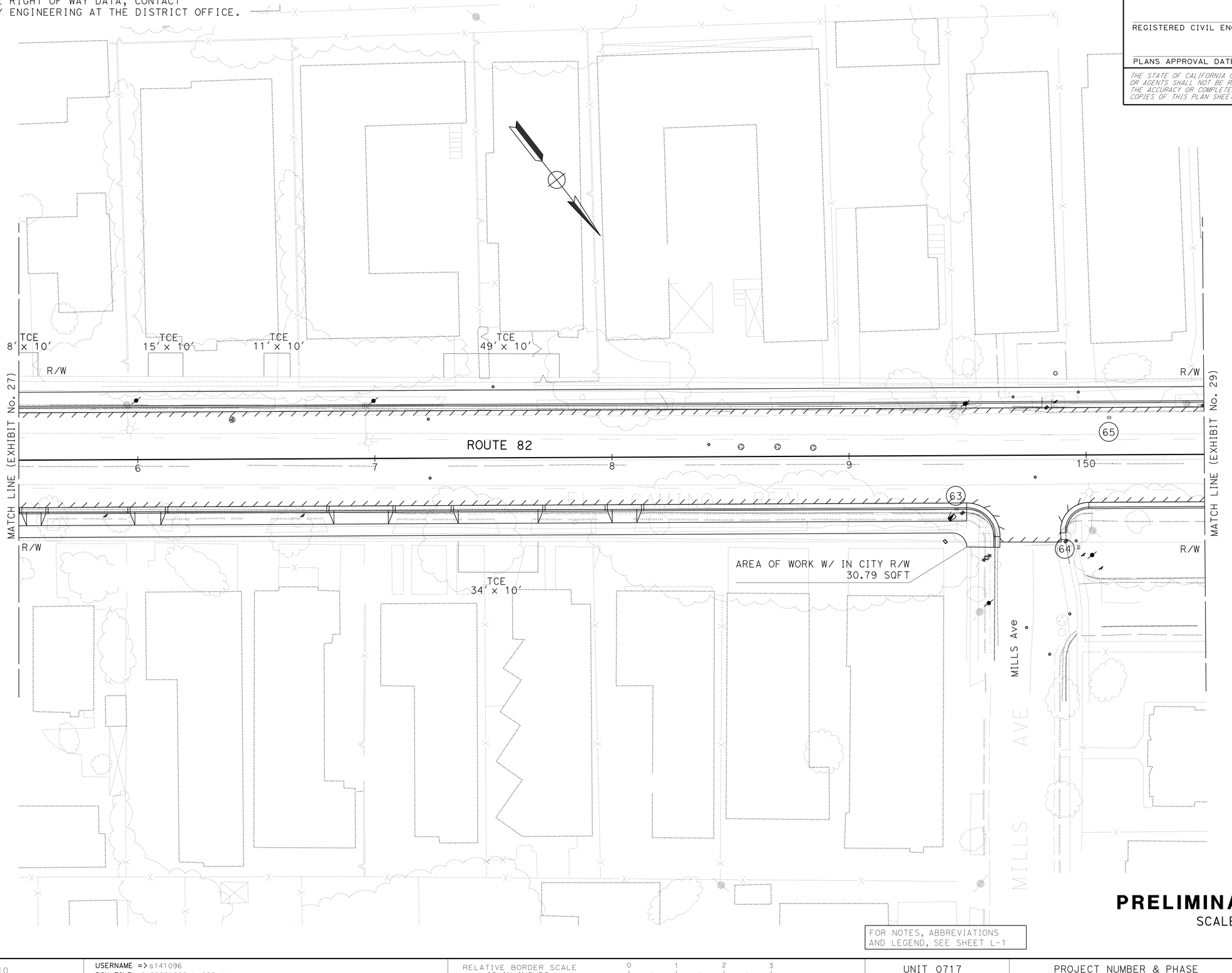

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20′

L-28

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_028.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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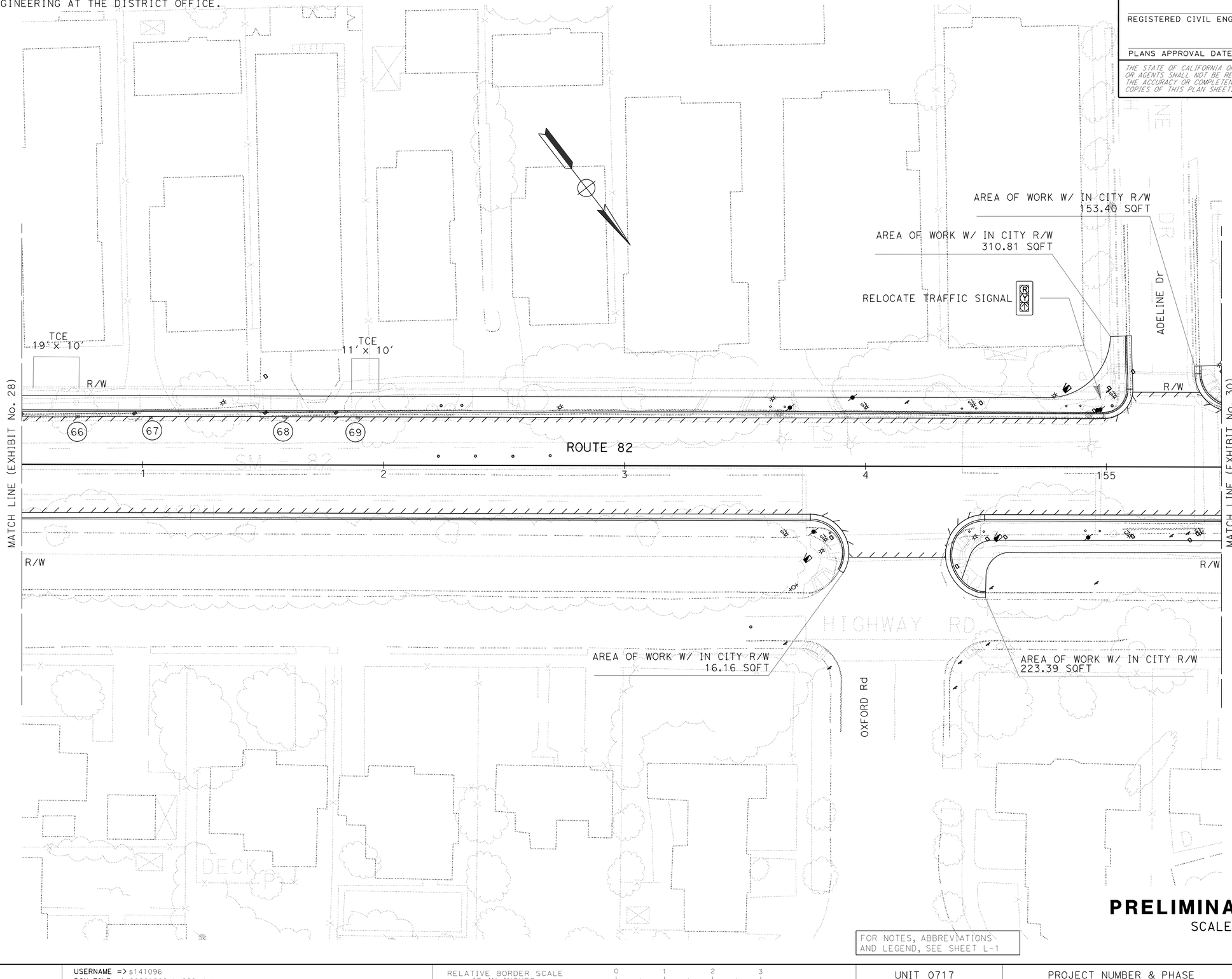

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-29

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DESIGN

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_029.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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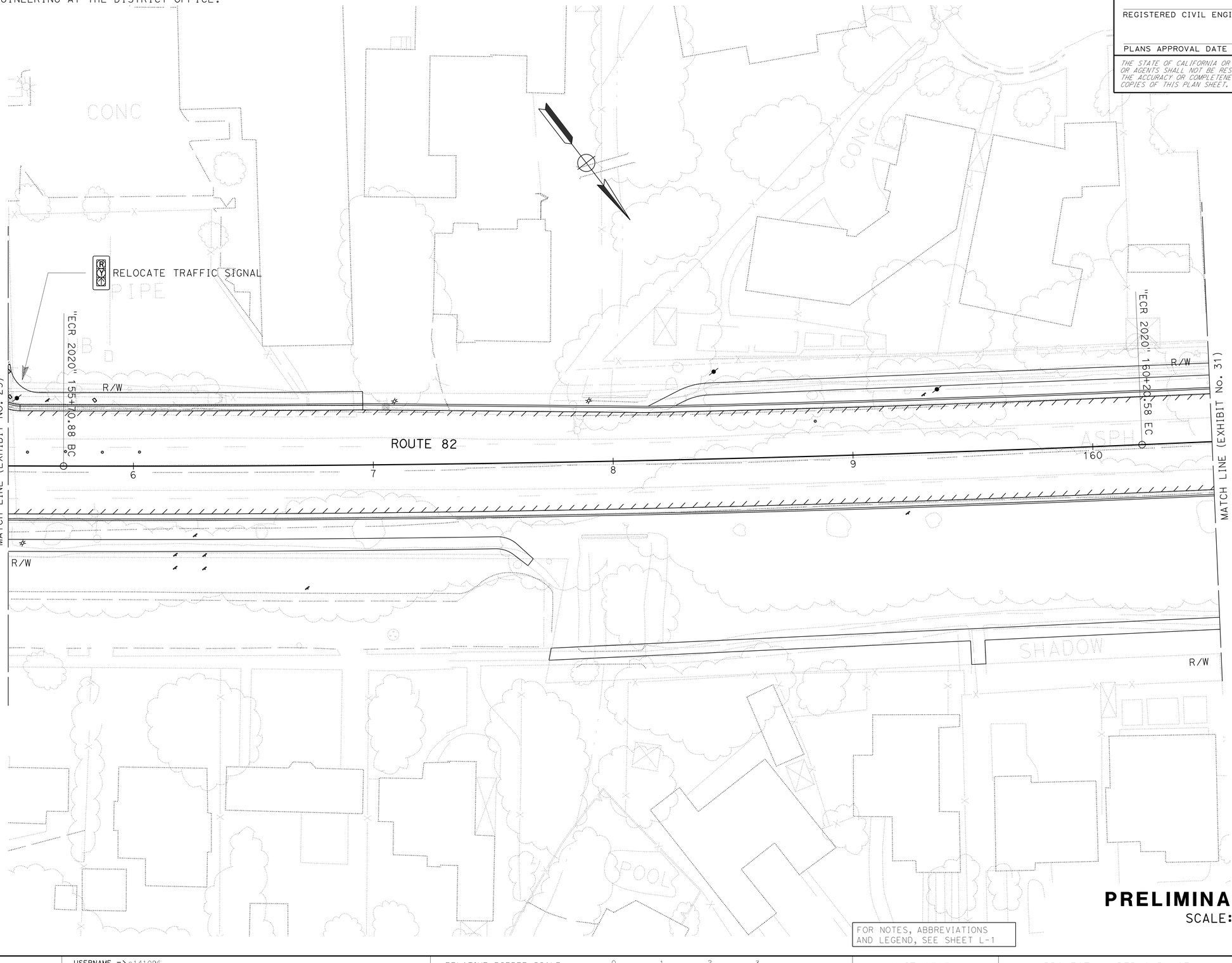

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-30

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USERNAME => s141096
DGN FILE => 20201202_L_030.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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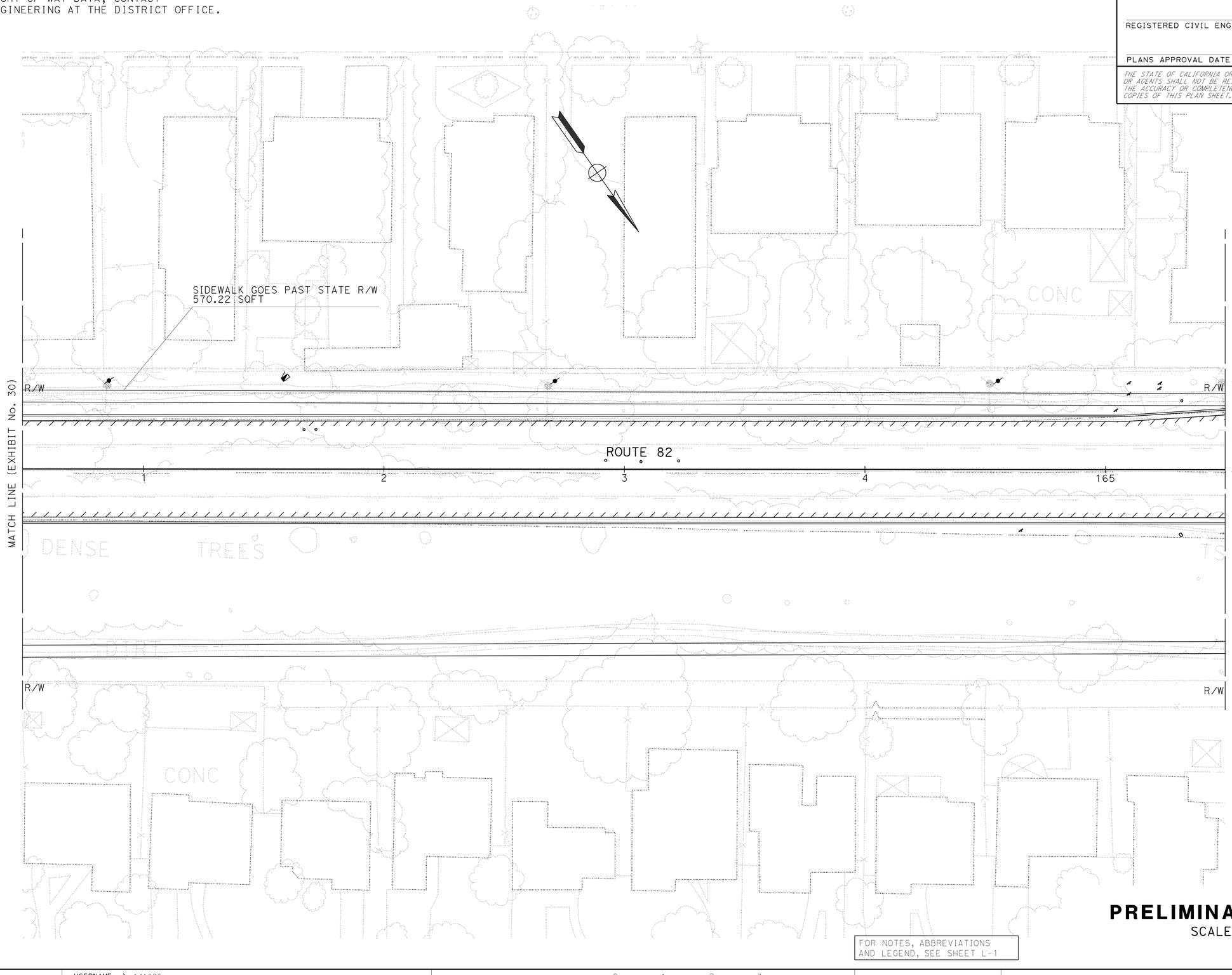

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-31

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DESIGN

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LAST REVISION | DATE PLOTTED => 25-MAY-2021 | TIME PLOTTED => 12:22 | 00-00-00

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_031.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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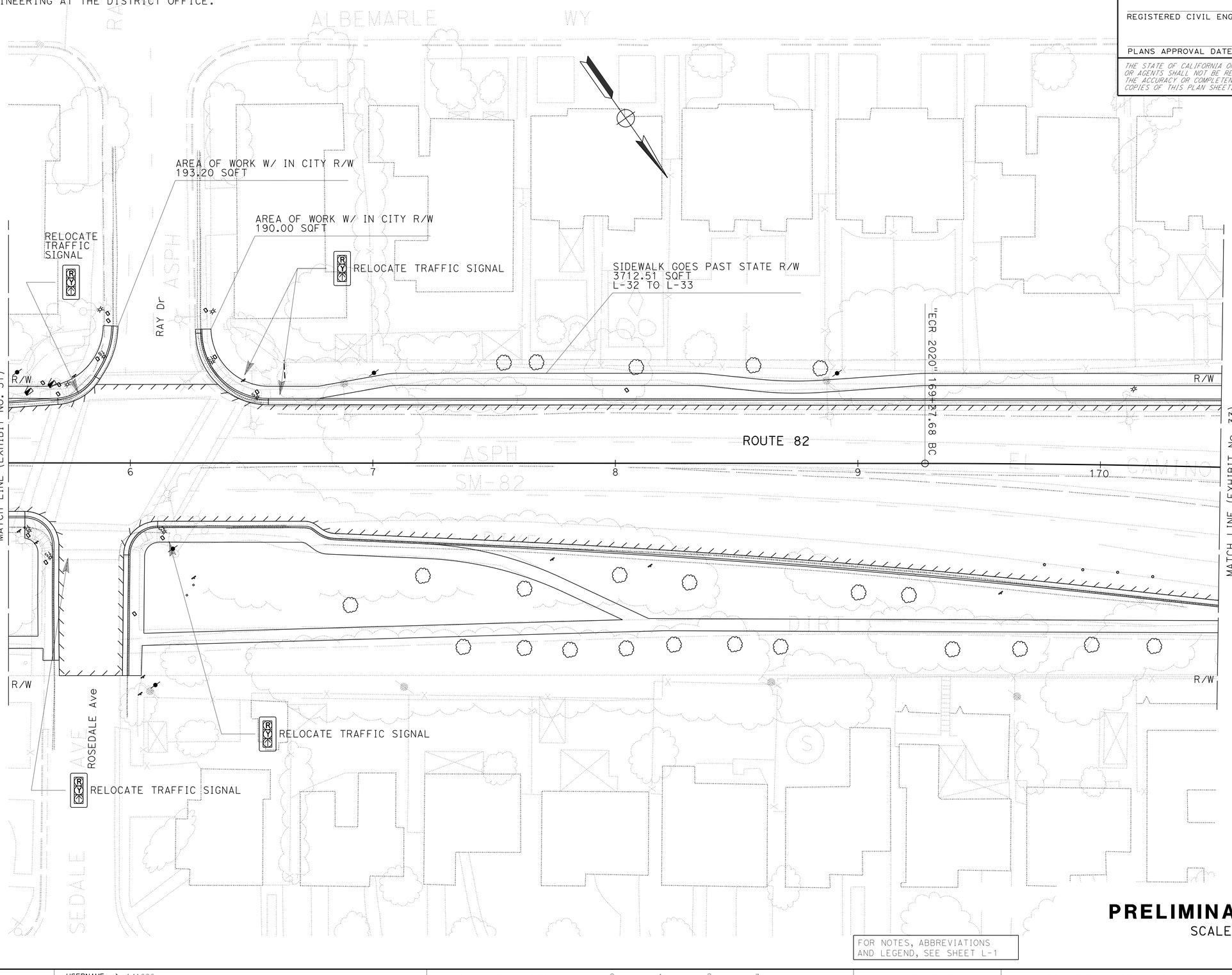

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-32

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USERNAME => s141096
DGN FILE => 20201202_L_032.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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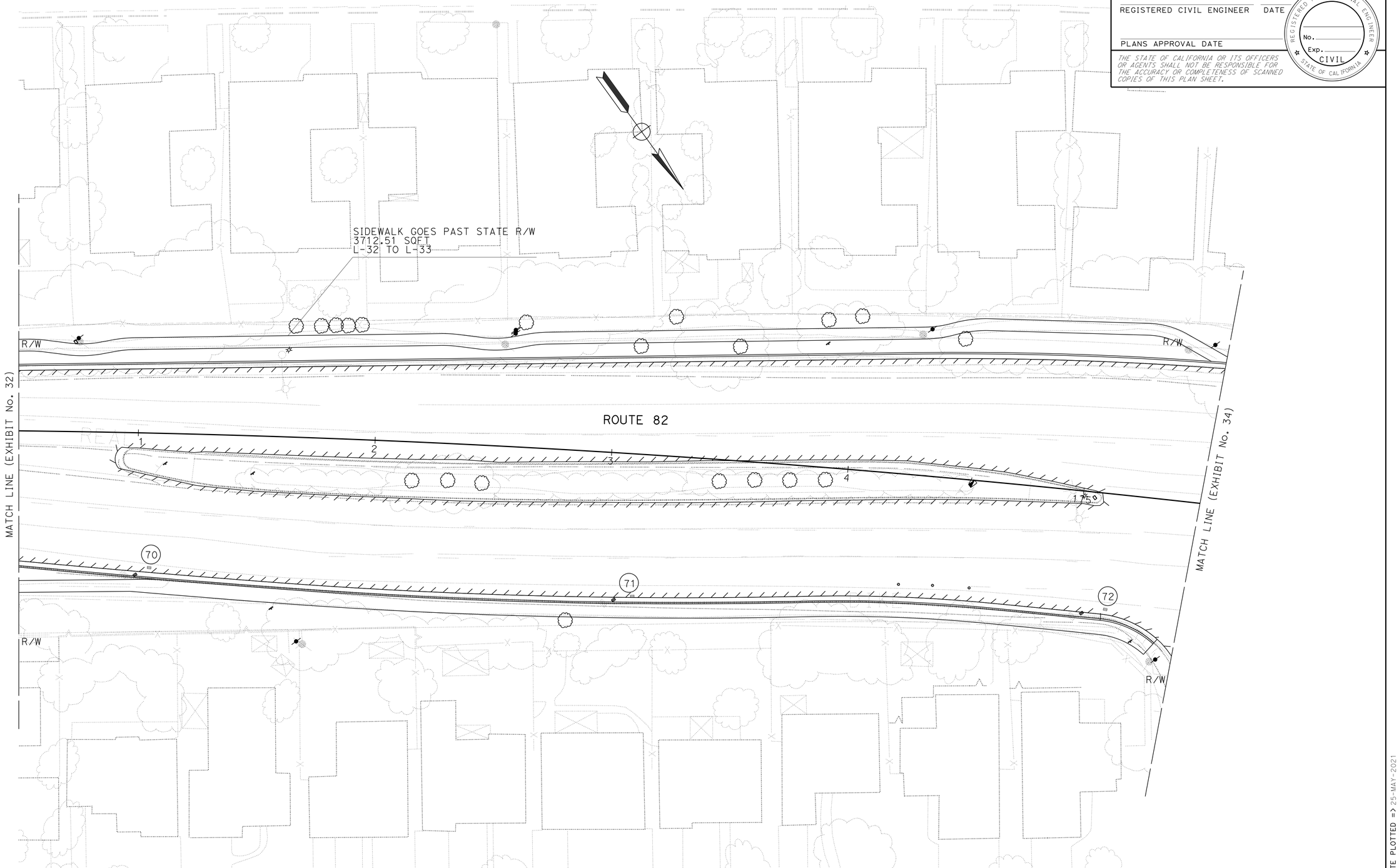

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-33

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USERNAME => s141096
DGN FILE => 20201202_L_033.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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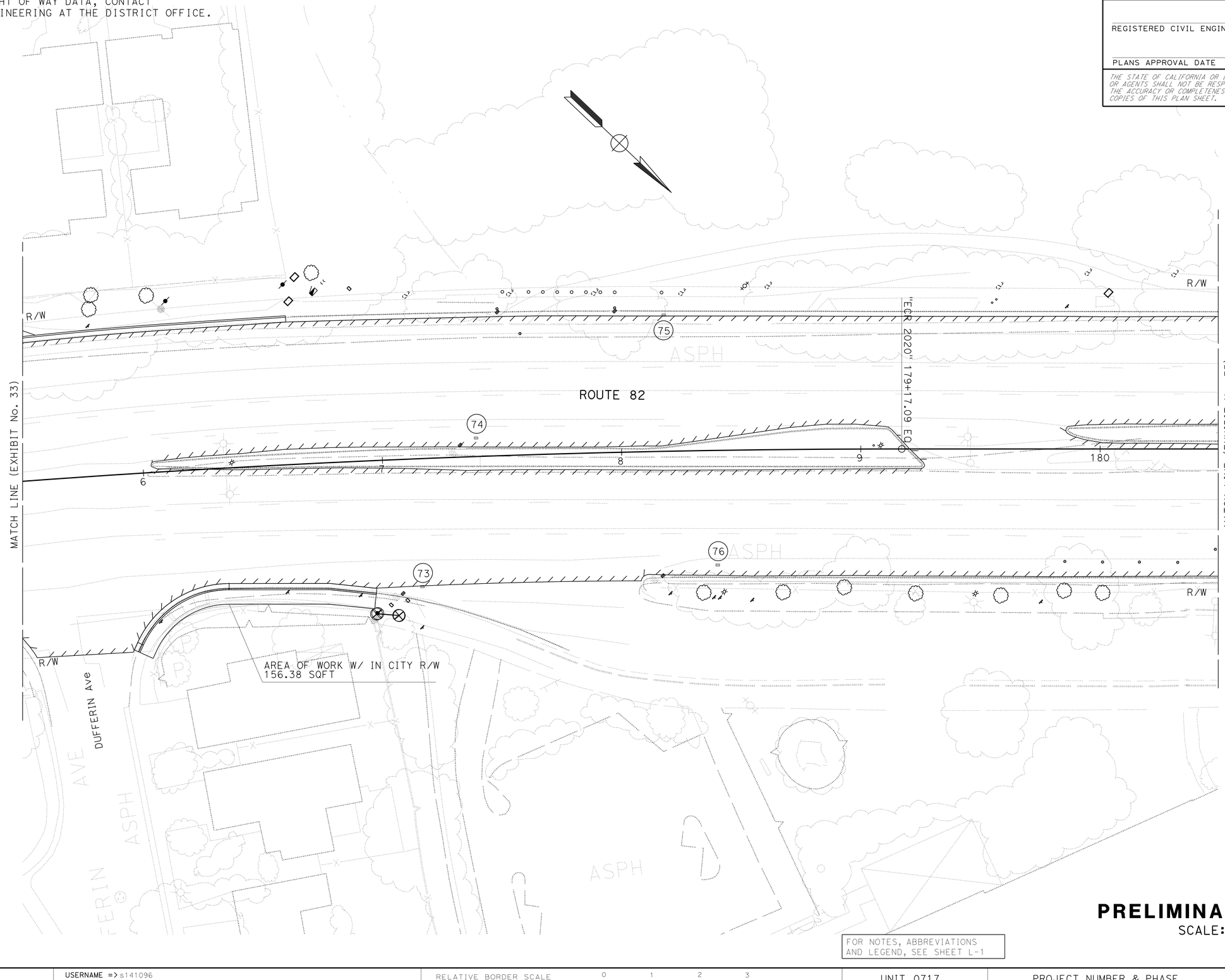

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-34

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USERNAME => s141096
DGN FILE => 20201202_L_034.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-35

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USERNAME => s141096
DGN FILE => 20201202_L_035.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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NOTE:

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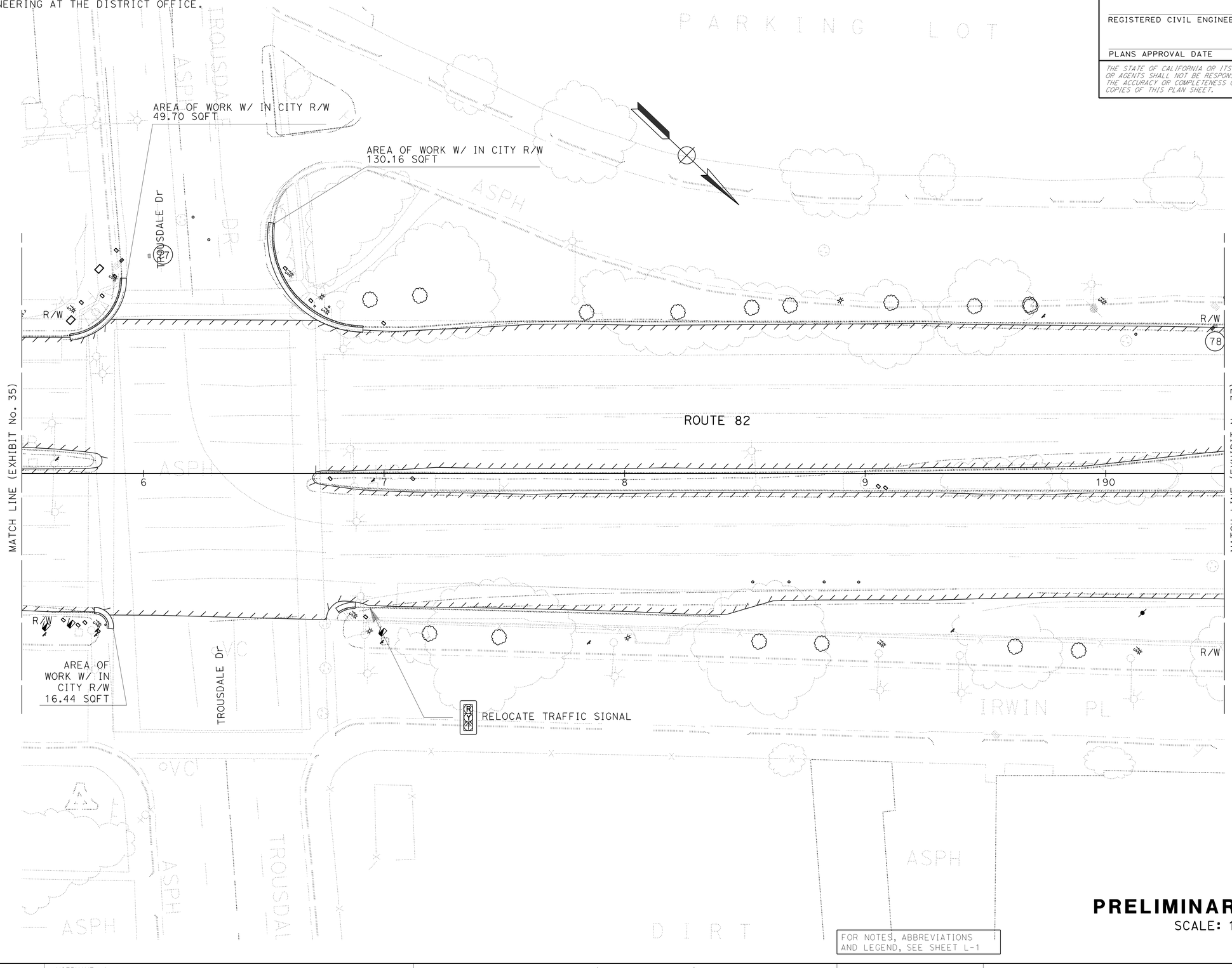

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-36

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CALCULATED-DESIGNED BY | CHECKED BY | FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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DESIGN

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096

DGN FILE => 20201202_L_036.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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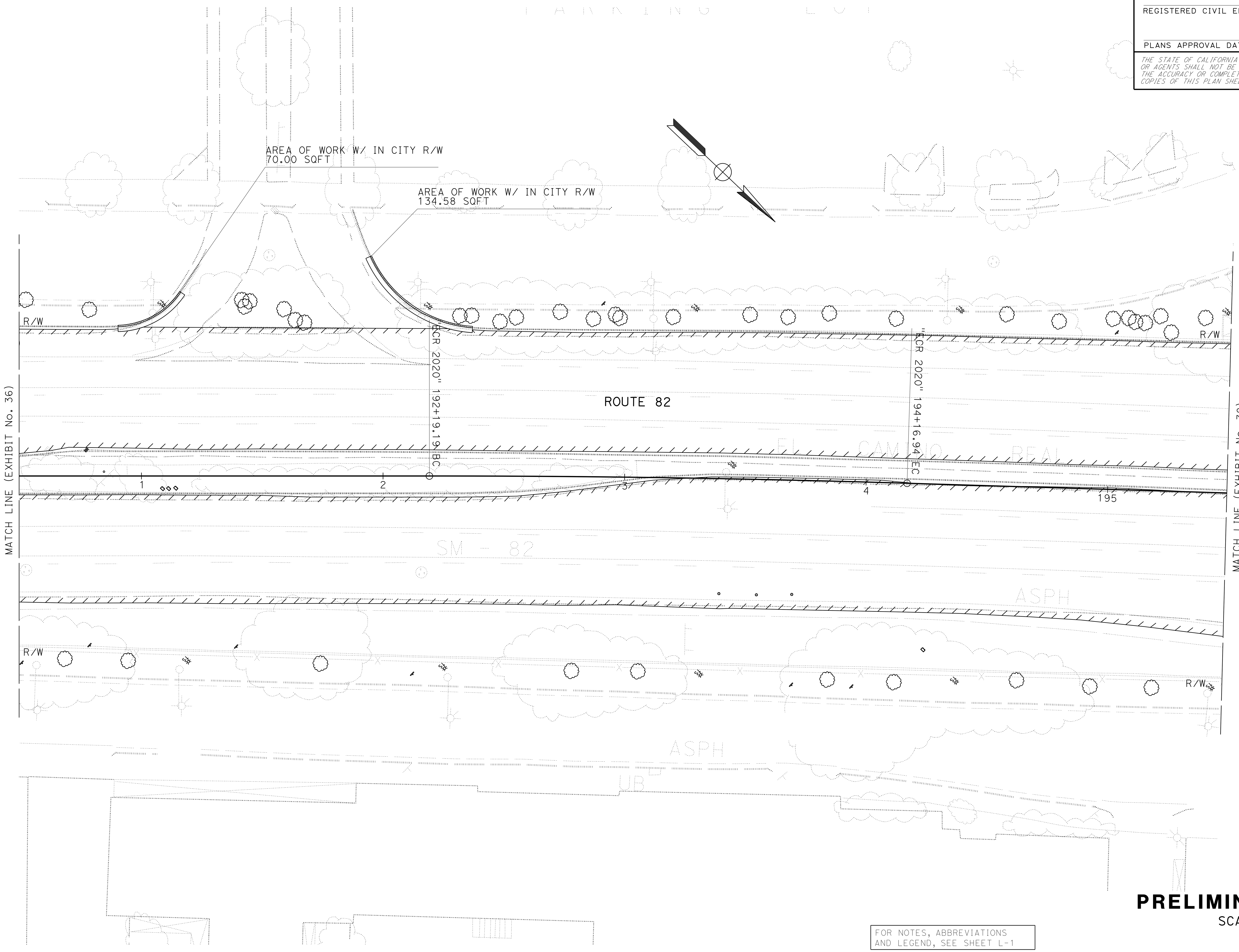
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

NOTE:

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



PRELIMINARY LAYOUT

SCALE: 1" = 20'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

L-37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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BORDER LAST REVISED 7/2/2010

USERNAME => s141096

DGN FILE => 20201202_L_037.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

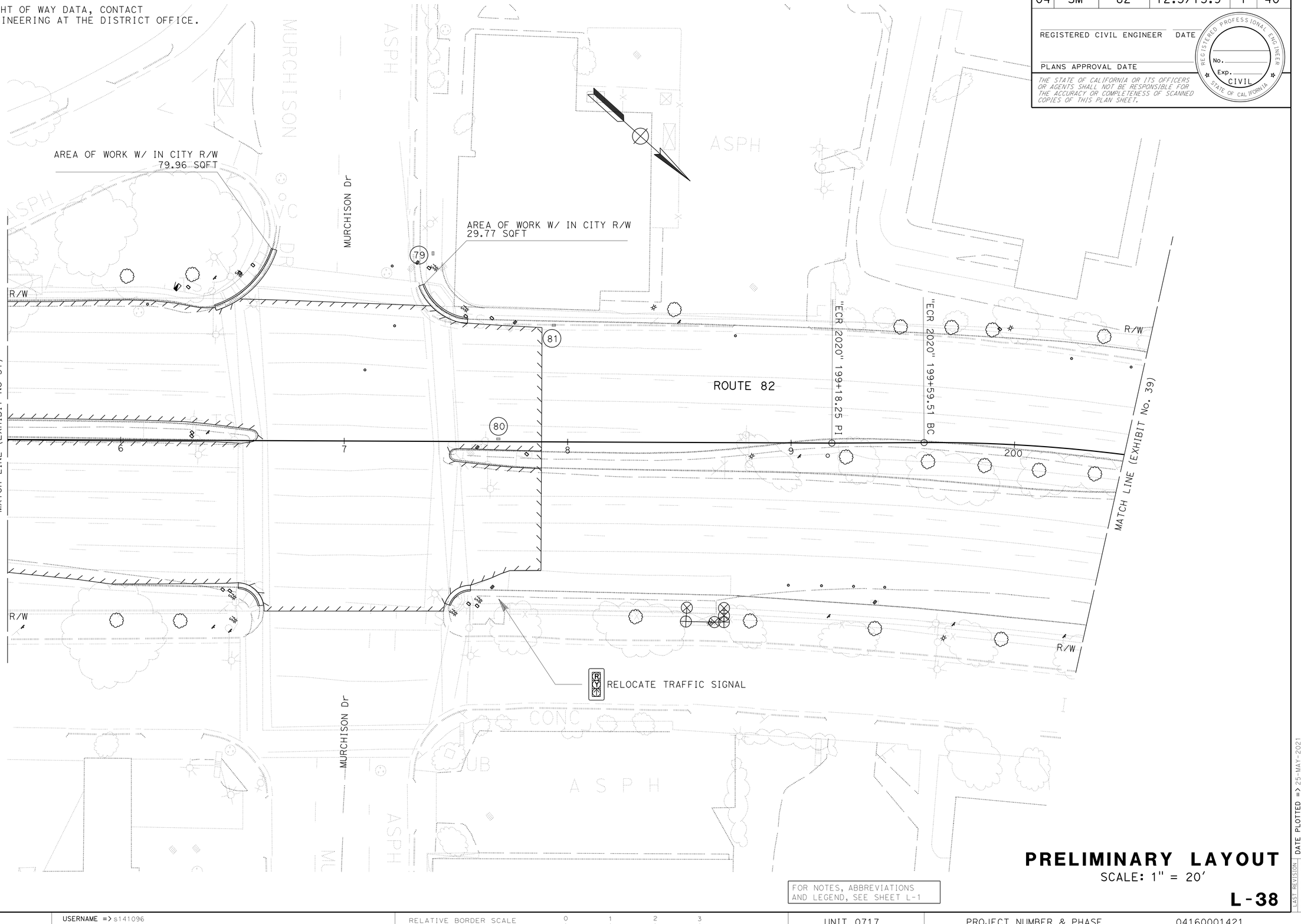
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-38

REVISED BY | DATE REVISED

CALCULATED-
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LAST REVISION | DATE PLOTTED => 25-MAY-2021
00-00-00 | TIME PLOTTED => 12:22

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 20201202_L_038.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

NOTE:

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

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	12.3/15.9	1	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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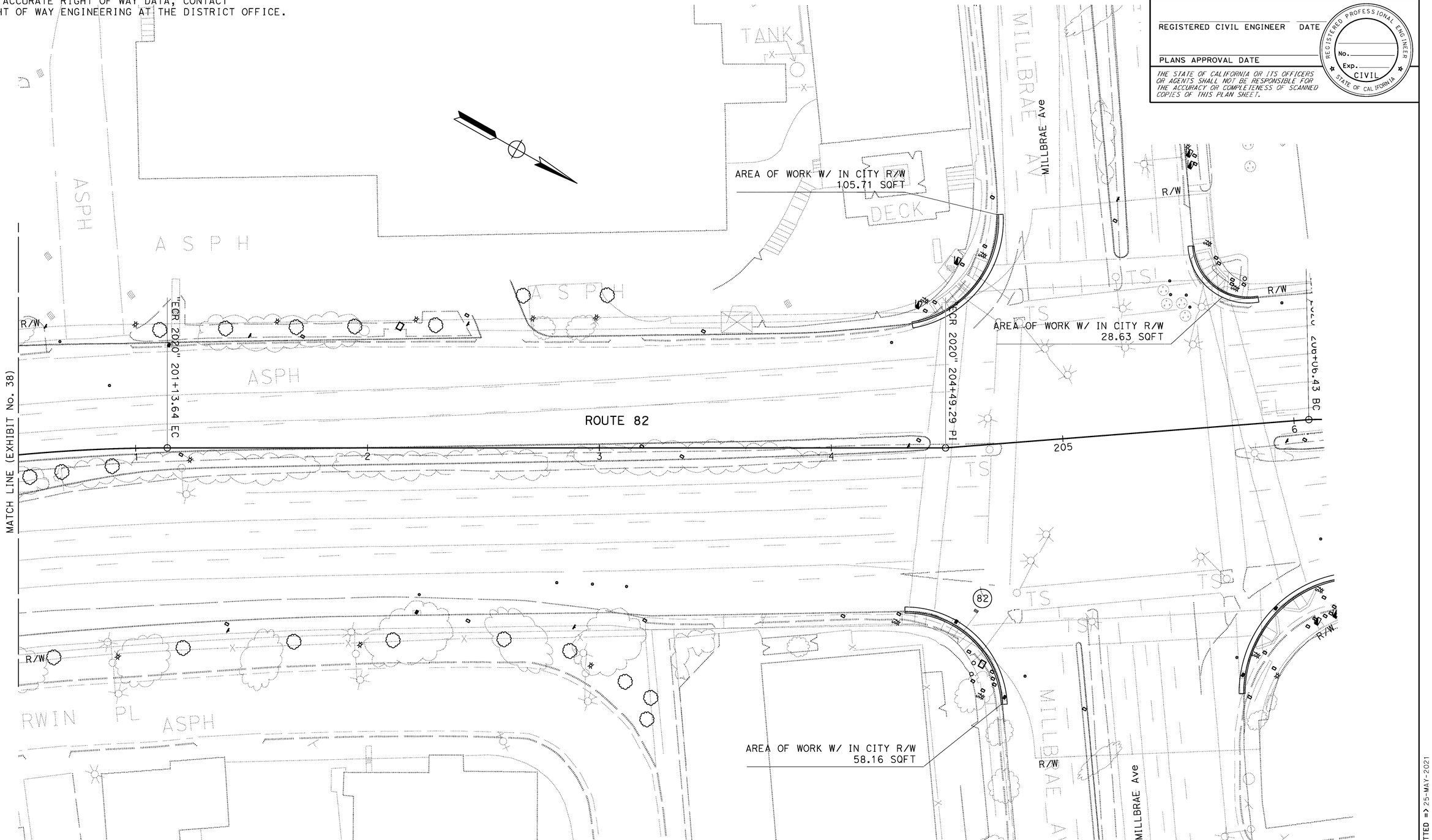

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

PRELIMINARY LAYOUT

SCALE: 1" = 20'

L-39

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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USERNAME => s141096
DGN FILE => 20201202_L_039.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0717

PROJECT NUMBER & PHASE 04160001421

Attachment C
Typical Cross Sections

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

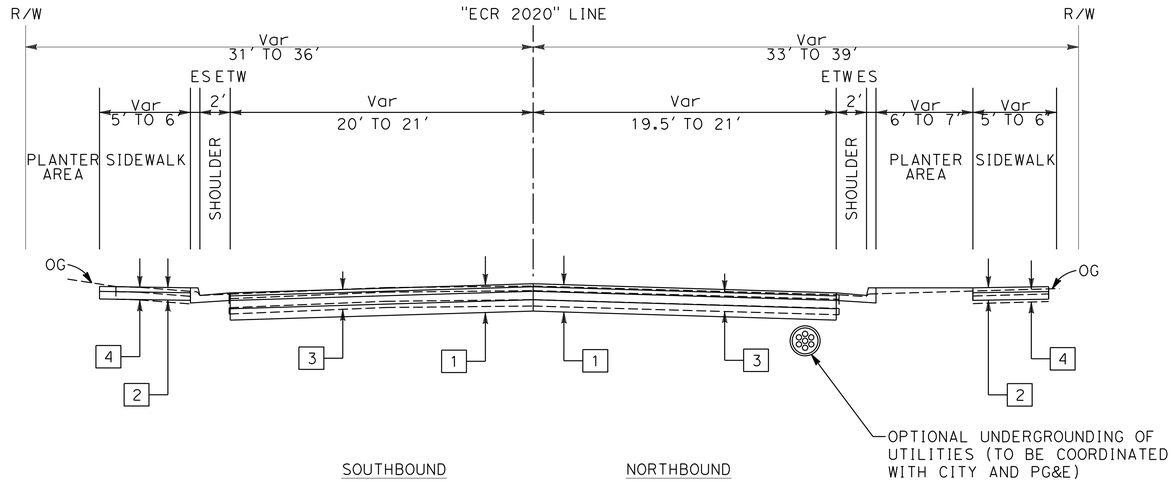
TYPICAL PAVEMENT STRUCTURE SECTIONS

1 — 0.20' RHMA-G / 0.30' HMA-A / 0.55' AB-CLASS 2 / 0.75' AS-CLASS 2 OR 0.70' JPCP / 1.00' AB-CLASS 2

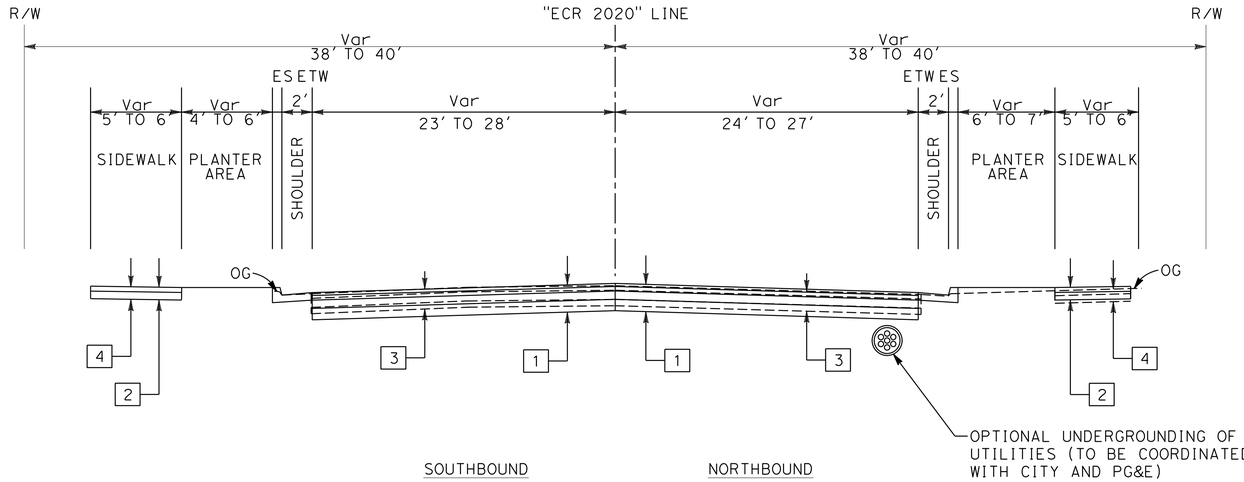
2 — 0.33' PCC / 0.50' AB CLASS 2

3 — Exist / 0.30' Var AC / 0.60' AC BASE/ 0.50' CTB / 0.33' CRUSHER BASE/ 0.50' IMPORTED SUBBASE

4 — Exist / 0.33' PCC / 0.50' AS



"ECR 2020" 45+00 TO "ECR 2020" 77+00
"ECR 2020" 86+00 TO "ECR 2020" 150+00



"ECR 2020" 12+40 TO "ECR 2020" 45+00

PRELIMINARY TYPICAL CROSS SECTIONS

NO SCALE

X-1

LAST REVISION: DATE PLOTTED => 5/20/2021
00-00-00 TIME PLOTTED => 11:12:05 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => | DGN FILE => ...\20210519_SM82_Conceptual Typ Xsection X-1.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0717 | PROJECT NUMBER & PHASE | 04160001421

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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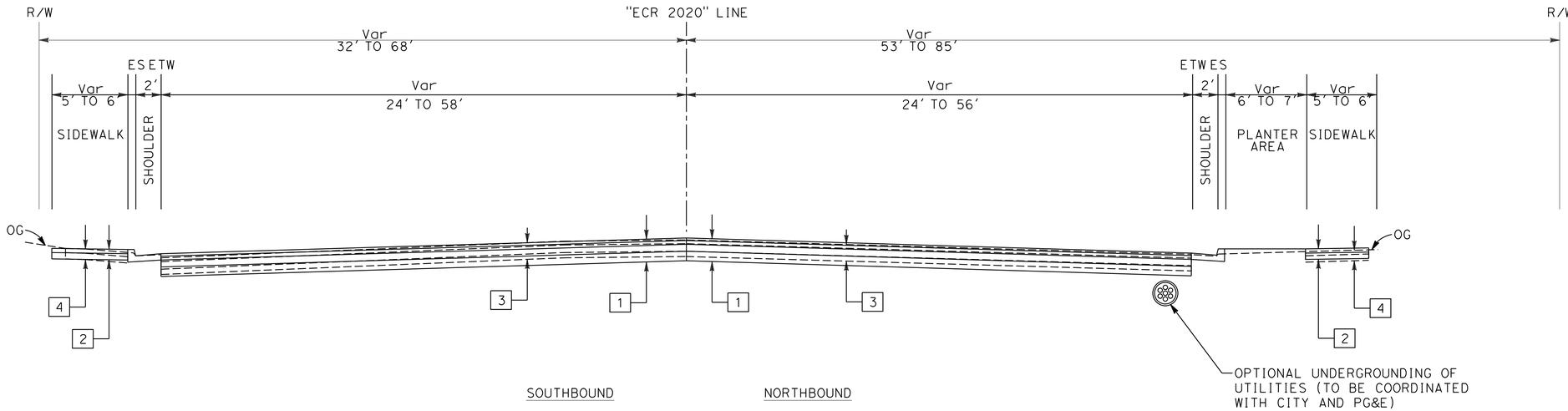
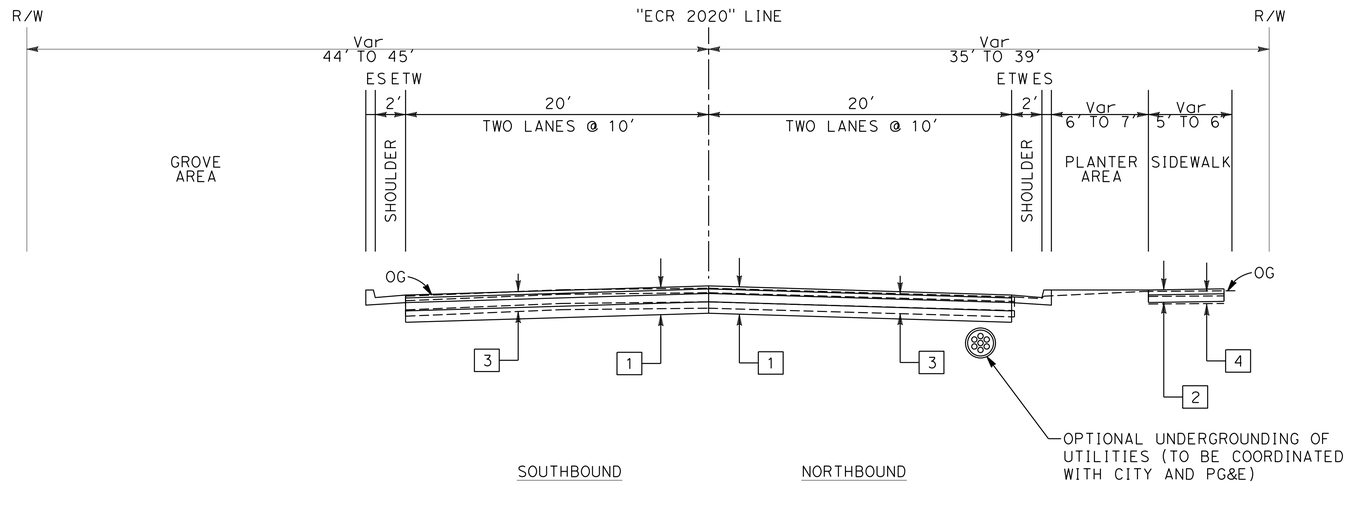


"ECR 2020" 166+33 TO "ECR 2020" 206+00



"ECR 2020" 77+00 TO "ECR 2020" 86+00

PRELIMINARY TYPICAL CROSS SECTIONS

NO SCALE

X-2

REVISED BY | DATE REVISED

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LAST REVISION 00-00-00 | DATE PLOTTED => 5/20/2021 | TIME PLOTTED => 11:11:08 AM

BORDER LAST REVISED 7/2/2010 | USERNAME => | DGN FILE => ...\20210519_SM82_Conceptual Typ Xsection X-2.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0717 | PROJECT NUMBER & PHASE 04160001421

Attachment D
Materials Recommendation

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

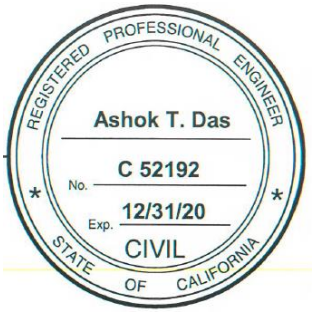
Making Conservation.
a California Way of Life

To: MR. STEPHEN HAAS
Senior Transportation Engineer
Office of Design South- Peninsula

Date: August 19, 2020

File: 04-SM-82 PM 12.3/15.9
Project ID: 0416000142
EA: 0K810
Rehab Roadway (3R)
Upgrade Curb Ramps to ADA

Attn: ATIF ABRAR



Ashok Das

From: Michael Atum
Materials Design Engineer
Engineering Services - Materials "B"

Concurred by: Ashok Das, P.E.
District Materials Engineer
District Branch Chief, Materials

Subject: **MATERIALS RECOMMENDATIONS FOR PROJECT REPORT (PR)**

This memo is in response to your memo dated 6/2/2020 requesting materials recommendations from our office for rehabilitation of State Route (SR) 82 from East Santa Inez Avenue to Millbrae Avenue in the Cities of San Mateo, Hillsborough, Burlingame and Millbrae in San Mateo County, PM 12.3 to 15.9. The project proposes restoration, resurfacing, and rehabilitation (3R) of SR 82 within the specified Post Miles. Additional improvements include the following.

1. Address drainage problems.
2. Upgrade existing curb ramps and sidewalks to ADA standard.
3. Install curb ramps.
4. Upgrade pedestrian push buttons.
5. Reconstruct driveways from PM 13.4 to 14.7 on SR 82.
6. Construct new bus pad.

Information supplied for the request are:

- Location Map.
- Layout plans.
- Typical cross section
- Request memo

EXISTING CONDITIONS

State Route (SR) 82, an urban conventional facility in its entirety, is approximately 52

miles long extending between Interstate I-280 and I-880, and links San Jose and San Francisco. The portion of SR 82 within the project limits is a six-lane divided / four lanes undivided flexible pavement highway. The roadway shoulders range from zero to eight feet.
Pedestrian facilities are provided on both northbound and southbound directions of the conventional highway. Our office visited SR 82 within the project limit on 7/23/2020 to ascertain pavement conditions. Visual inspection showed the four-lane undivided segment of the roadway to have transverse and horizontal cracks and rutting in both the NB/SB directions. The segment of the roadway with six-lanes divided pavement appeared to be in fair condition with a few spot cracks, rutting and pavement discoloration.

AS BUILTS

Records from DRS show that SR 82, within the project limits, has had few improvements in both northbound and southbound directions and has flexible pavement, curb, gutter, and sidewalk with the following existing materials layers.

Contract Number	Post Miles	Directions	Materials	Layer Thicknesses (ft)	Year
#04-0E4104 Mainline overlay	11.8/13.8	Northbound & Southbound (NB/SB)	AC AC Base CTB Crusher base Imported subb	0.3 Var. 0.6 0.50 0.33 0.50	2007
#04-0C6404 Mainline overlay	12.3/15.8	NB (median), SB (median/right)	AC AB CTB	Var. Var var	2002
#04-0C6404 Sidewalk Section	12.3/15.8	SB/NB	PCC AS	0.33 0.50	2002

PAVEMENT STRUCTURAL SECTION DESIGN RECOMMENDATIONS

A previous materials recommendation memo was prepared and sent to Design South Peninsula on 10/12/2016 for the same project in PID phase. Therefore, since the project scope has not changed, this new materials recommendations for the SR 82 project now in project report (PR) phase will be the same as previous PID phase memo with a few upgrades. As this project proposes to reconstruct the roadway with new pavement sections, the 40-year multilayer HMA pavement previously recommended will be revised using Mechanistic Empirical (ME) for adequacy, and 40-

year design life rigid pavement from the PID phase will be checked for accuracy of design. Please note that materials thicknesses of this rigid and flexible pavement are only for estimating purposes. The final designs must be based on deflection studies, existing pavement coring, and current R-value to be done during PS&E phase. Life Cycle Cost Analysis (LCCA) is required in the 3R rehabilitation project to evaluate the pavement design alternatives, per CT HDM. The following Tables show the two 40-year pavement options.

Option 1: Multiple Layers, 40-yr Design Life Flexible Pavement Section	
Traffic Index (T.I.) $_{(40yr)}$ = 8.5 R-value = 15 (conservative value for the area).	
Materials	Thicknesses (ft)
RHMA-G HMA-A AB-Class 2 AS-Class2	0.20 0.30 0.55 0.75

Option 2: Rigid (JPCP) 40-yr Design Life Pavement Structural Section	
Traffic Index (T.I.) ≤ 9. (HDM Table 623.1E) Subgrade Soil Type II (i.e. 10 ≤ R-value ≤ 40	
Materials	Thicknesses (ft)
JPCP AB-Class2	0.70 1.00

Regarding mitigation of invasive tree roots in the SR 82 roadway structural section, be aware that Materials do not have any innovative pavement design that could address the problem now, as requested. In the interim, our office has redesigned the two pavement options in the Tables above with thinner materials sections. With properly compacted roadway subgrade to reduce oxygen and water intrusion that support growth of the tree roots underground, either one of these pavement options could be selected with LCCA tools to reduce impact of tree roots on the roadway.

ADDITIONAL MATERIALS RECOMMENDATIONS

UPGRADE CURB RAMPS
Upgrade existing curb ramps to ADA per plans and as shown in this memo.

Sawcut and remove PCC and base/subbase if impacted for the curb ramps, sidewalks, and place back PCC upgrade and base/subbase if removed in all locations as needed. Refer to Caltrans Standard plans Section A87A, A88A and Design Information Bulleting (DIB) 82-05 Section 4.1.

NEW PEDESTRIAN SIDEWALK
For proposed new pedestrian sidewalks place the materials as follows: 0.33' PCC/0.50' AB Class-2.

VEHICLE DRIVEWAYS
For proposed new Vehicle concrete Driveways (including walkways that cross driveways) place the materials as follows: 0.50' PCC / 0.50' AB-Class2.

RECONSTRUCT DRIVEWAYS – COMMERCIAL OR RESIDENTIAL.
Reconstruct existing driveways from PM 13.4 to 14.7 per plans. See Caltrans Standard Plans Section A87A.

NEW BUS PAD
As requested, we recommend use of SamTrans bus pad design as shown in Standard Bus Stop Bus Pad Section plans, per Caltrans Highway Design Manual (HDM) Section 626.4(3).

LEGEND
RHMA-G = Rubberized Hot Mix Asphalt Gap Graded.
HMA-A = Hot Mix Asphalt Type A.
AB-2 = Aggregate base Class Two.
AS-2 = Aggregate subbase (2).
JPCP = Jointed Plain Concrete Pavement.

If you have any question, please call Michael Atum at (510) 286-7198.

C: ADas, Matum, Daily File, Route File.

Attachment E
Preliminary Drainage Recommendation

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: Marc Wong
Senior Engineer
Office of Design south Peninsula

Attn: Atif Abrar

Date: February 4, 2021

File: 04-SM-82 PM 12.3/15.8
EA 04-0K810K
0416000142
Roadway Rehabilitation

From: PoTin Leung
Transportation Engineer
Engineering Services II - Hydraulics

Subject: Preliminary Drainage Recommendations for Roadway Rehabilitation on SM82 PM 12.3/15.8 (from East Santa Inez Ave to Murchison Drive) in cities of San Mateo and Burlingame

Per your request, the Hydraulics Branch has completed the Preliminary Drainage Study for the above project.

Based on your preliminary location map, preliminary layouts, cross sections and field visit in Feb 2021. We have the following preliminary recommendations.

Upgrade curb ramp area:

- There is approximate 34 existing inlets may need to be relocated depend on the proposed ADA ramp location and configuration

Resurfacing Mainline:

- There is approximate 25 existing inlets may need to be modified (Raise grate to grade)

Existing Drainage Pipe

- All existing Corrugated Steel Pipe (CIP) and Vitrified Clay Pipe (VCP) will be replaced with alternative pipe culvert (APC)
- All existing pipe below 18" will be upgraded to 18" or greater.

All recommendations are preliminary and subject to changes base on the final plans.

If you have any questions or require additional information, please contact me at potin.leung@dot.ca.gov or Khai Leong at 510-407-2610

Attachment F
Geotechnical Recommendation

M E M O R A N D U M

Making Conservation
A California Way of Life

To: STEPHEN HAAS
Branch Chief
Office of Design South - Peninsula

Date: August 17, 2020

File: 04-SM-82-PM 12.3/15.9
EFIS 0416000142
EA 04-0K810
ADA Ramps and
Various Retaining Walls

Attn: Atif Abrar

From: TUNG NGUYEN
Transportation Engineer
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

MAHMOOD MOMENZADEH
Chief, Branch C
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

RIFAAT NASHED
Engineering Geologist
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

CHRISTOPHER RISDEN
Chief, Branch D
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

Subject: **DISTRICT PRELIMINARY GEOTECHNICAL REPORT**

Introduction

This District Preliminary Geotechnical Report (DPGR) is prepared in accordance with the Caltrans Geotechnical Design Report Guidelines dated January 2020 for the proposed project located on State Route 82 in San Mateo County from PM 12.3 to PM 15.9. The purpose of this report is to summarize our preliminary study and to provide preliminary geotechnical recommendations for the project based on the request from the Office of Design South – Peninsula dated June 12, 2020.

Project Description

This project proposes to reconstruct the roadway, address drainage problems, upgrade existing curb ramps and sidewalks to current Americans with Disabilities Act (ADA) standards, relocate 68 traffic signals at 18 intersections, and construct 11 retaining walls with a maximum height of 4.5 feet from East Santa Inez Avenue to Millbrae Avenue in the Cities of San Mateo, Hillsborough, Burlingame and

Millbrae in San Mateo County on State Route (SR) 82 (PM 12.3 to PM 15.9). The project site and alignment are shown in location map and project layout map, Figure 1 and Figure 2 (Appendix A), respectively. The following tables summarize information for project traffic signals and retaining walls as provided by the Design.

Table 1: Proposed Traffic Signals

SM - 82	INTERSECTION	SIGNALIZED INTERSECTION		NON-SIGNALIZED INTERSECTION
		Relocate Traffic Signals	Relocate CCTV	
PM		EACH	EACH	
12.3	El Camino Real & E Santa Inez Ave			X
12.4	El Camino Real & W Santa Inez Ave			X
12.4	El Camino Real & Engle Rd			X
12.4	El Camino Real & E Poplar Ave/W Poplar Ave	5		
12.5	El Camino Real & Hilltop Ave			X
12.6	El Camino Real & E Bellevue Ave/W Bellevue Ave	7		
12.6	El Camino Real & Grand Blvd			X
12.7	El Camino Real & Clark Dr			X
12.7	El Camino Real & Clark Dr			X
12.8	El Camino Real & St. Johns Ct			X
12.8	El Camino Real & State St			X
12.9	El Camino Real & Warren Rd			X
12.9	El Camino Real & Barroilhet Ave			X
13.0	El Camino Real & Peninsula Ave	4		
13.1	El Camino Real & Bayswater Ave/Cypress Ave/Primrose Rd	4		
13.2	El Camino Real & Newlands Ave			X
13.2	El Camino Real & Howard Ave	4		
13.3	El Camino Real & Ralston Ave			X
13.4	El Camino Real & Burlingame Ave	3		
13.4	El Camino Real & Chapin Ave	4		
13.5	El Camino Real & Bellevue Ave			X

Table 1: Proposed Traffic Signals (Continued)

SM - 82	INTERSECTION	SIGNALIZED INTERSECTION		NON-SIGNALIZED INTERSECTION
		Relocate Traffic Signals	Relocate CCTV	
PM		EACH	EACH	
13.7	El Camino Real & Floribunda Ave	3		
13.8	El Camino Real & Oak Grove Ave	4		
13.8	El Camino Real & Fairfield Rd			X
13.9	El Camino Real & Willow Ave			X
13.9	El Camino Real & Arc Way/Palm Dr			X
14.0	El Camino Real & Forest View Ave			X
14.1	El Camino Real & Edgehill Dr			X
14.1	El Camino Real & Sanchez Ave	2		
14.1	El Camino Real & Sanchez Ave			X
14.3	El Camino Real & Carmelita Ave	4		
14.4	El Camino Real & Broadway	4	2	
14.5	El Camino Real & Sherman Ave			X
14.6	El Camino Real & Lincoln Ave	4		
14.6	El Camino Real & Easton Dr			X
14.7	El Camino Real & Grove Ave			X
14.8	El Camino Real & Hillside Dr	2		
14.9	El Camino Real & Mills Ave			X
15.0	El Camino Real & Adeline Dr/Oxford Rd	3		
15.2	El Camino Real & Rosedale Ave/Ray Dr	7		
15.4	El Camino Real & Dufferin Ave			X
15.6	El Camino Real & Trousdale Dr	1		
15.8	El Camino Real & Murchison Dr	1		
15.9	El Camino Real & Millbrae Ave	X		
TOTAL		**66**	**2**	
		19 Signalized Intersections		**25 Non-Signalized Intersections**

Table 2: Description of the Proposed Earth Retaining System (ERS)

ID No.	ERS Type	Begin	End	Length, feet	Max. Design Height, feet	Note
		Sta.	Sta.			
1L	TBD	93+20	94+82	162	4.5	
2L	TBD	99+47	100+22	75	4.5	
3R	TBD	100+14	103+08	294	4.5	
4L	TBD	100+35	100+73	38	4.5	
5L	TBD	100+85	101+27	42	4.5	
6L	TBD	102+82	103+68	86	4.5	
7L	TBD	122+08	122+37	29	4.5	
8L	TBD	122+53	122+95	42	4.5	
9L	TBD	123+12	123+86	74	4.5	
10L	TBD	146+06	146+56	50	4.5	
11L	TBD	146+78	147+44	66	4.5	

All elevations referenced within this report are based on the North American Vertical Datum of 1988 (NAVD 88) unless otherwise noted.

Exception to Policy

Design exceptions on all nonstandard features will be deferred to the next phase as provided in the PIR document dated June 2017. However, design exceptions will be listed in the geotechnical reports for only items relating to geotechnical recommendations.

Geotechnical Investigation

The following geotechnical investigations have been carried out recently within the project limits:

Geotechnical investigation of a sinkhole 1.5 ft wide and 1 ft deep at PM 14.25 dated February 26, 2018 repaired with compacted backfill.

Geotechnical investigation of sinkhole 2.5 ft wide and 1 ft deep at PM 12.38 dated May 18, 2020 repaired with the injection of polyurethane foam.

District Preliminary Geotechnical Design Report dated June 4, 2013 for the 04-1G020K Project with subsurface investigation recommendations.

Subsurface and groundwater investigation reports for removal and cleanup of underground storage tanks (UST) at various locations within and/or nearby the project site are shown in the following Table.

Table 3: List of Documents Reviewed and Used for this Study

Location No.	Document	Year	Author/Source	SR 82 Post Mile
1	LOTB/Investigation Reports (346 N El Camino Real, San Mateo at Intersection with Poplar Avenue, Former Unocal Service Station #0195)	1991 to 1993	GeoTracker Kaprealian Engineering, Inc.	12.41
2	LOTB/Investigation Reports (402 N El Camino Real, San Mateo at Intersection with Poplar Avenue, Arco Service Station #0725)	1989 to 2018	GeoTracker Converse Environmental West, Stantec Antea Group, and bp	12.42
3	LOTB/Investigation Reports (610 N El Camino Real, San Mateo at Intersection with Grand Avenue, Former Chevron Service Station #90056)	1989 to 2001	GeoTracker Western Geologic Resources and Gettler-Ryan, Inc.	12.60
4	LOTB/Investigation Reports (260 N El Camino Real, Burlingame at Intersection with Burlingame Avenue, Former Chevron Service Station #90571)	2004 to 2012	GeoTracker Gettler-Ryan, Inc., Secor Int. Inc., Conestoga-Rovers Assoc.	13.37

Table 3: List of Documents Reviewed and Used for this Study (Continued)

Location No.	Document	Year	Author/ Source	SR 82 Post Mile
5	LOTB/Investigation Reports (1480 Broadway Avenue, Burlingame, 76 Service Station #0670)	1988 to 2020	GeoTracker Applied Geosystems, Delta, Stantec and Arcadis	14.42
6	LOTB/Investigation Reports (1810 El Camino Real, Burlingame at Intersection with Trousdale Drive, Former Chevron Service Station #9-8165)	1990 to 2012	GeoTracker Cambria Env. Technology, Inc., Pacific Env. Group, Conestoga-Rovers Assoc.	15.59
7	LOTB/Investigation Reports (1883 El Camino Real, Burlingame at Intersection with Murchison Drive, Holiday Cleaners)	2008 to 2010	GeoTracker LFR, Inc.	15.78
8	LOTB/Investigation Reports (1876 El Camino Real, Burlingame at Intersection with Murchison Drive, 76 Service Station #3798)	1991 to 2020	GeoTracker Kaprealian Eng., Inc., GHD, Delta, Stantec and Arcadis	15.79
9	LOTB/Investigation Reports (5 El Camino Real, Millbrae at Intersection with Millbrae Avenue, 76 Service Station #3676)	2005 to 2019	GeoTracker Delta, GHD, Stantec and Arcadis	15.94

Note that As-Built Logs of Test Borings from Caltrans database BIRIS or GeoDog are not available for this project stretch along SR 82.

Geotechnical conditions

Geology

Regional Geology

The project site is located within the California Coast Ranges geomorphic province. The project area is located in the San Francisco Bay block east of the San Andreas fault (USGS, Map I-2390). In the San Francisco Bay Block, sheared rock (mélange) of the Franciscan Complex is the dominant unit at its edges and borders the flat lands between San Carlos and San Mateo.

The Colma Formation underlies much of the historic alluvial plains southeast from San Bruno at least as far south as Burlingame and possibly to San Mateo. The Colma Formation is overridden by rocks of the Franciscan Complex and Merced Formation in the Serra Fault zone. The Colma terrace sequence has been obliterated or obscured by urban development.

Holocene deposits in the project area are widely disturbed and urban developments on the gently sloping areas have modified or obscured these deposits.

Artificial fill in the project area consists of natural and man-made materials emplaced by various methods. Most of the modern fills are engineered while many of the old fills were random mixtures of rock, soil, and waste materials.

Site Geology

The project area is located in the flat marine terraces along the San Francisco Peninsula. The flat lands gently slope from precipitous cliffs in the west to alluvial plains and tidal marsh of San Francisco Bay in the east. The project area is underlain by artificial fill, Holocene-aged alluvial fan, fluvial deposits and basin deposits. Also, the project sits upon Pleistocene-aged alluvial fan, fluvial deposits and Colma Formation. According to USGS geologic map (Figure 3, Appendix B) of the Montara Mountain and San Mateo County (USGS, I-1390, Reference #1), the geologic units underlie the project area are:

- Sedimentary deposits undivided (QTs) of Holocene and Pliocene age: consist of predominantly fine grained to coarse grained clastic deposits.

- Coarse-grained alluvium (Qac) of Holocene age: consists of unconsolidated, moderately sorted sand and gravel forming stream

levees, fans, and flood plains. Locally contains lenticular interlayers of well-sorted silt, sand, and gravel. Interfingers with medium grained alluvium and colluvial deposits. Maximum thickness less than 75ft.

- Older alluvium (Qoa) of Pleistocene age consists of weathered, unconsolidated to moderately consolidated gravel, sand, silt and clay in various proportions and combinations. Chiefly older alluvial fan deposits.

- Colma Formation (Qc) of Pleistocene age consists of weakly consolidated, moderately well bedded yellowish-gray and tan sandy clay and silty clay and silty sand, and friable light to reddish-brown, poorly sorted to well sorted sand and gravel. Thin to thick bedded with cross bedding commonly present in friable sands. Silty sand beds commonly contain zones of scattered chert pebbles. Total thickness exceeds 100 ft.

Top Soils

The majority of the project area is underlain by soil classified as urban and orthents, cut and fill-Urban land complex, these soils are classified as Hydraulic Soil A and D, respectfully. Group A soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transition. Group D soils have a high runoff potential when thoroughly wet. Since the soil is classified as Urban Land, many properties such as shrink-swell and erodibility, have not been rated (The USDA, 1998, Reference #2).

Surface Conditions

The project site is located within a relatively urbanized environment, and the surrounding landscape includes mixed residential and commercial development. Foothill woodlands in undeveloped areas and ruderal grasslands and ornamental landscaping in urban and residential areas are the dominant vegetation types in the region.

The portion of the route within the project limits is a four to six lane conventional highway with no High Occupancy Vehicle (HOV) or Transit Priority lanes. Transit service within the project limits are provided by San Mateo County Transit and Caltrain. Bicyclists are permitted on SR 82, but without dedicated bicycle facilities or bicycle route designation. SR 82 is a busy retail corridor with direct access to individual businesses and residential properties. Federal Portions of the Howard-Ralston Eucalyptus Tree Rows are within the project limits. The trees are a scenic,

cultural, and environmental resource, and the National Historic Register includes the Howard-Ralston Eucalyptus Tree Rows. The topography of the project site is generally flat with 0 to 5% slopes. All sheet flows are toward the gutters and engineered drainage system.

Subsurface Conditions

Subsurface conditions are described herein for separate locations based on available information from review of documents mentioned in the geotechnical investigations section. Borings from these documents are obtained and included in Appendix C.

Location No. 1 at 360 El Camino, San Mateo (south of intersection with Poplar Street): A review of the logs of borings completed during well installation at the site indicates that the site is underlain by up to 5 feet of fill material. Below fill are interbedded clay, silty clay, silt, clayey and sandy silt, clayey sand, and clayey or sandy gravel to a maximum depth of exploration 35 ft.

Location No. 2 at 402 El Camino Real, San Mateo (north of intersection with Poplar Street): Based on a review of historical soil boring logs of the site, subsurface conditions consist of fill underlain by clay, silt, sand, gravel and mixture of these materials. In the area close to SR 82, the fill is about 6 ft thick underlain by stiff to very stiff silty and sandy clay and dense clayey sand/gravel to the maximum depth of exploration.

Location No. 3 at 610 El Camino Real, San Mateo (at Intersection with Grand Avenue): The subsurface conditions of this intersection consist of up to 1.5 ft thick fill which is underlain by various alternating beds of clayey silts, silty sands, gravelly sands, sandy and silty gravels to the maximum depth of exploration 50 ft below ground surface.

Location No. 4 at 260 El Camino Real, Burlingame (at Intersection with Burlingame Avenue): At the area close to SR 82, the soil beneath the site consists of silty, sandy, gravelly, and pebbly clay, sandy silt, and silty and clayey sand with varying amounts of pebbles, silts, sands, and gravels from the ground surface to the maximum of exploration 35 ft.

Location No. 5 at 1480 Broadway Avenue, Burlingame (at Intersection with El Camino Real): The subsurface conditions of the site consist of 2 ft thick fill underlain by sandy lean clay, sandy silt with gravel, clayey and silty sand, and clayey gravel. Below these fine-grained materials with some coarse-grained interbeds are bedrock (sandstone, siltstone and shale) which was encountered beneath the site at depths ranging from 14 to 31.5 feet below the ground surface.

Location No. 6 at 1810 El Camino Real (at Intersection with Trousdale Drive): The subsurface conditions of this site consist of up to 5 ft fill underlain by inorganic clays and silts, interbedded clayey and silty sands, silty gravel and gravel with minor amounts of day and silt to the maximum depth of exploration.

Location No. 7 at 1883 El Camino Real, Burlingame (at Intersection with Murchison Drive): The subsurface conditions of the site consist of about 5 ft thick fill underlain by clay, clayey silt, clayey sand, silty sand and sand. These materials are interbedded with each other to the maximum depth of exploration 16 ft.

Location No. 8 at 1886 El Camino Real, Burlingame (at Intersection with Murchison Drive): The subsurface conditions of the site consist of up to 9 ft thick fill underlain by interlayered clay, sandy or silty clay, silty sand, clayey sand, sand, and clayey gravel to the maximum depth of exploration 50 ft.

Location No. 9 at 5 El Camino Real, Millbrae (at Intersection with Millbrae Avenue): The subsurface conditions of the site consist of up to 10 ft fill which is underlain by a complex composed of interlayers of clay, sand, silty sand, clayey sand and gravel to the maximum depth of exploration 45 ft.

Scour is not a design concern for the project.

Groundwater

The groundwater depth varies greatly along State Route 82 within the project limits. The following table (Table 4) summarized groundwater information for various locations along the project area based on GeoTracker data sources listed in Table 3.

Table 4: Measured Groundwater Information

Location No.	Ground Surface Elevation, feet	Groundwater Table		Date Measured	Notes
		Depth, feet	Elevation, feet		
1	19.63 to 21.69	15.58 to 19.05	2.44 to 4.14	11/18/1991to 6/13/1992	Borings MW1 through MW6

Table 4: Measured Groundwater Information (Continued)

Location No.	Ground Surface Elevation, feet	Groundwater Table		Date Measured	Notes
		Depth, feet	Elevation, feet		
2	21.43 to 23.78	4.28 to 15.64	8.14 to 17.15	12/13/1990 to 8/6/2014	Borings MW-1/MW-1R
3	39.97 to 41.94	14.16 to 36.38	5.56 to 25.81	6/1/1989 to 5/16/1997	Borings MW-2, MW-4, MW-6
4	40.34 to 42.56	3.08 to 18.66	21.68 to 37.12	10/2/1990 to 2/8/2012	Borings MW-5, MW-6, MW-7
5	31.98 to 32.99	4.41 to 13.26	18.87 to 28.47	6/16/1987 to 2/13/2019	Borings MW-1/1R, ATMW-2, DMWW-5
6	20.34 to 20.94	7.20 to 18.82	1.52 to 13.74	10/28/1991 to 2/2/2009	Borings C-6, C-7
7	30.09 to 32.64	6.87 to 10.62	20.38 to 23.77	6/15/2009 to 6/10/2010	Borings MW-1 through MW-4
8	20.34 to 24.48	3.87 to 12.91	11.31 to 20.39	8/31/1989 to 1/23/2020	Borings MW-5/5A, MW-6/6A/6AR, MW-18, MW-19
9	25.58 to 41.64	13.66 to 31.26	2.42 to 23.89	8/21/2001 to 8/8/2019	All Borings

Groundwater elevations change seasonally depending on the amount of rainfall. For the purpose of design, groundwater is assumed to be 8 ft below the existing ground surface.

The following table shows the main direction of groundwater flow and approximate gradient which are obtained from GeoTracker reports.

Table 5: Groundwater Flow Information

Location No.	Approximate Groundwater Flow Direction	Average Groundwater Hydraulic Gradient
1	Toward the East-Northeast	0.012 to 0.036
2	Toward the East-Northeast	0.008 to 0.023
3	Toward the North-Northwest	0.007 to 0.016
4	Toward the North-Northeast	0.05
5	Toward the Northeast	0.026 to 0.027
6	Toward the North-Northeast	0.01 to 0.04
7	Toward the North-Northeast	0.01 to 0.013
8	Toward the Northeast	0.05
9	Toward the East-Northeast	0.02 to 0.04

Groundwater data are included in Appendix C along with GeoTracker borings for separate listed locations.

Note that stream or surface water body is not present at the project site.

Seismicity

Ground Motion Parameters

The project site may be subject to strong ground motions from nearby earthquake sources during the design life of the retaining walls. Based on available subsurface information and Standard Penetration Test correlations for determining shear wave velocity, the shear wave velocities (V_{S30}) for the upper 100 feet of soil are estimated to be varied from about 280 to 320 m/s. Therefore, an average shear wave velocity 300 m/s or 984 ft/sec (Appendix D) is used for the project.

The Design Response Spectrum was determined using the Caltrans ARS Online (v. 3.0.2) web tool. Caltrans Seismic Design Criteria Version 2.0 requires the use of a probabilistic spectrum based on the USGS probability of exceedance of 5% in 50 years (a 975-year return period).

Using the USGS Interactive Deaggregation Tool, the controlling probabilistic fault scenario for the site was determined to have mean magnitude of M = 7.63 and

mean site-source distance of approximately 3.1 to 3.5 miles. The average peak ground acceleration (PGA) is 0.8g (Appendix D).

Table 6: Recommended Ground Motion Parameters for Geotechnical Design

Site Parameters			Design Ground Motion Parameters (Return Period = 975 years)			
Locations		Shear-Wave Velocity VS30, m/sec (ft/sec)	Horizontal Peak Ground Acceleration (HPGA)(1), g	Mean Earthquake(2) M, Moment Magnitude	Mean Site-to-Fault/Rupture Surface Distance(2) Rrup	
Latitude, degrees	Longitude, degrees				km	mi
37.579385	122.357709	300 (984)	0.77	7.63	5.7	3.54
37.580308	122.359361	300 (984)	0.77	7.63	5.6	3.48
37.580637	122.359761	300 (984)	0.77	7.63	5.6	3.48
37.580463	122.359646	300 (984)	0.77	7.63	5.6	3.48
37.580832	122.360319	300 (984)	0.77	7.63	5.6	3.48
37.583887	122.365831	300 (984)	0.78	7.63	5.3	3.30
37.587882	122.372628	300 (984)	0.79	7.63	5.0	3.11

1. Based on the Caltrans web tool ARS Online (Version 3.0.2)
2. Based on hazard de-aggregation analysis for the design HPGA using the web based USGS Unified Hazard Tool (Edition: Dynamic: Conterminous U.S. 2014 (update) (V4.2.0)).

Fault Rupture

No active or potentially active faults cross the project site, therefore, surface fault rupture does not exist.

Liquefaction Potential

Based on available data of subsurface conditions, groundwater, and PGA provided above, our preliminary evaluation for liquefaction potential showed that liquefaction does not exist in the locations of proposed retaining walls due to the presence of stiff clayey and dense sandy materials. However, because of strong shaking motion, seismic settlement of dry sandy materials or localized liquefaction may occur due to the presence of medium dense sandy lenses. These lenses aren't continuous layers and shouldn't be problematic. The

magnitude of potential seismic settlement at the designated locations shall be evaluated and included in the final geotechnical design report. Lateral spreading due to sloping ground conditions or open stream banks does not exist.

GEOTECHNICAL DESIGN EVALUATION

The project site is located in the fairly flat area, no major fills are proposed for the project, therefore, landslide and slope instability are not concerns for the project.

As provided in the project descriptions section, traffic signals are proposed at 19 signalized intersections and 25 non-signalized intersections. However, the traffic lighting types are not available during this PGDR preparation process. Therefore, it is assumed that all traffic lighting are corresponding to 2018 Caltrans standard plans. Furthermore, 11 retaining walls are proposed for the project with the maximum retaining height of 4.5 ft. We will evaluate retaining heights and loading cases based on survey data and cross sections when they are available to us.

Based on the project information available, there are no major geotechnical concerns for the project in the aspects of design as well as constructability. Construction of foundations for traffic signals and retaining walls may impact on traffic control and right of way. We will evaluate these impacts during the PS&E phase for the project when more design information is available. Conflicts with existing utilities is anticipated for construction of traffic lighting foundations. Drainage works may require excavation and backfill. Roadway section shall be recommended by District Materials.

RECOMMENDATIONS

Based on the subsurface conditions of the project site, we recommend the following:

All standard traffic lighting should be supported on 2 to 2.5 ft diameter cast-in-drilled-hole (CIDH) concrete piles presented in Caltrans 2018 Standard Plans. Any non-standard traffic lighting shall be evaluated based on their design loading to be provided by Structure Design.

Based on available subsurface information Caltrans standard retaining walls of all types (1, 1A, 5 or 6) on spread footing with provision with sub-excavation of unsuitable soil material and replacement with imported fill could be used.

We examine the need for pile foundation support where needed in later stage of the project.

Groundwater is likely anticipated during construction of CIDH concrete piles. Therefore, the wet method with slurry is required to construct these piles. Some cuts with maximum slope of 1.5 to 1 (horizontal to vertical) or flatter slope ratios may be required to remove existing walls if right of way is allowable. Otherwise, temporary shoring is needed as required by Cal-OSHA for any vertical cut 5 ft or more. We will provide final recommendations during PS&E phase when more information is available. Backfill and/or compaction of materials below the structure section should conform with the 2018 Caltrans standard specifications.

Depending on the results of our studies in design stage, we may need to perform limited subsurface exploration to provide more refined foundation recommendation.

REFERENCES

(1) Geology Map of The Montara Mountain and San Mateo 7.5' Quadrangles, San MateoCounty, California By EarL H. Pampeyan, 1994. USGS, I-2390

(2) http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.apxs

REPORT COPY LIST

Tim Pokrywka, Chief, Office of Geotechnical Design – West
RPardo (Project Management)
ADas (District 4 Materials Engineer)
District 4 Environmental Unit
http://svgcgeodog.dot.ca.gov/

APPENDICES

Appendix A: Location Map and Project Layout

Appendix B: Geology Map

Appendix C: Borings and Groundwater Data

Appendix D: Seismic Design Data

If you have any questions, please contact Tung Nguyen/Rifaat Nashed at 510-622-1775/510-622-1773 or Mahmood Momenzadeh/Chris Risden at 510-286-5732/510-622-8757.

Attachment G
Risk Register

RISK REGISTER LEVEL	2	PROJECT NAME	SM - RTE 82 In the Cities of San Mateo and Burlingame, Rehabilitate Roadway, Improve Drainage & Reconstruct Curb Ramps.	DIST-EA	04-0K810 (0416000142)	Project Manager	Rommel Pardo	RISK MANAGER	Gurmukh Thiara / Pradeep Narra / Daniel Y. Chang	TOTAL COST (Capital +Support)	$0.00
PROJECT PHASE	PA&ED	PDT MEMBERS		RISK ASSESSMENT INFORMATION						TOTAL DAYS (Construction + Initial review (30 days)+ Closeout (60 days))	90

Risk Identification						Probability	Cost Impact		Time Impact		Phase	Individual Risk	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current Status/ Assumptions	Rating	Rating	Score	Rating	Score	ENG/ CON	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	1	Environmental	Bird Nesting Season	Nesting birds, protected from harassment under the Migratory Bird Treaty Act, may delay construction during the nesting season.	The majority of work is planned to occur on existing paved areas. However, there are a lot of trees surrounding the work area. Environmental suggests that work to be performed outside of bird nesting season in the affected areas.	3-Moderate	02-Low	6	02-Low	6	ENG	Low probability of bird nesting impacting this type of work, as most of the work will be on existing paved areas.	Mitigate	Construction work to avoid the nesting season if possible. If needed, appropriate mitigation measures will need to be installed to deter the birds from nesting. If construction activities need to take place during the nesting season, preconstruction surveys will need to be conducted prior to the start of construction activities. If nesting birds are encountered near construction activity, contractor will need to stop all nearby construction activities and notify the biologist. Construction activities will only proceed when the area is cleared by the biologist and field engineer.	Environmental	6/1/2021
Active	2	Construction	Extra Dig-outs and repaving of Asphalt Concrete	During construction, new distressed asphalt locations that are not called out on plans may be found or increased deterioration of existing locations may occur. This would lead to additional work resulting in additional costs and time.	There is a lag between the time, design investigated the project site and the beginning of actual construction work. More pavement damage may appear since pavement was evaluated for improvement.	3-Moderate	04-Moderate	12	02-Low	6	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Field reviews will be conducted to identify potential dig out locations during design. Distressed areas will be identified and addressed in plans and BEES. This risk captures unanticipated potential dig-outs and asphalt repairs that may materialize in construction. The project contingency should cover additional costs of repair due to time lag between Design's site investigation and actual construction.	Construction	6/1/2021
Active	3	Construction	Asphalt Price Index Fluctuations	Oil price fluctuation may increase amount of oil based products leading to increase in Bid Item amount over and above originally estimated in the BEES resulting in additional cost to the project.	Engineer's estimate may have been put together during time of lower petroleum pricing. Uptrending oil rates may affect pricing on a paving project of this magnitude.	2-Low	02-Low	4	02-Low	4	CON	Supplemental Work Item will cover a limited increase in California Crude Oil Price Index, risk covers any extra cost increase.	Accept	Project BEES will account for Adjustments for Price Index Fluctuations in the Supplemental Work Item #066670.This risk will capture additional cost of price fluctuations over and above the amount set aside in Supplemental Work as oil price is on a rising trend.	PM	6/1/2021
Active	4	Construction	Unidentified Facilities Conflicts	Unanticipated existing State facilities may be encountered and may lead to conflicts during construction. The unanticipated conflicts may result in additional costs and schedule delays.	Unanticipated state facilities may be encountered during excavation for signal poles, drainage and curb ramp improvements.	3-Moderate	04-Moderate	12	02-Low	6	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	Existing utilities including Electrical and Irrigation facilities will be verified during design phase and included in the project plans.	Design	6/1/2021
Active		Design	Utility Relocation	Known existing utilities within the project work area needed to be relocated, may be delayed prior to construction leading to readjustment in project schedule resulting in additional cost and schedule delays.	Potholing is not performed yet to identify existing utilities.	3-Moderate	04-Moderate	12	04-Moderate	12	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Potholing will be performed in PS&E phase. ROW to coordinate early with utility owners for the timely completion of needed utility relocations.	ROW	6/1/2021
Active	6	Construction	Unidentified Utility Conflicts	Unanticipated utilities may be encountered during construction leading to extra work for relocation or mitigation resulting to additional project costs and schedule delays.	Unanticipated underground utilities may be found during excavation for drainage and curb ramp improvements.	3-Moderate	04-Moderate	12	02-Low	6	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	Known existing utilities will be verified during design phase and accounted for in the project plans. Contractors will request Underground Service Alert (USA) for the area of work prior to the start of underground construction activities and contact affected utilities owner if necessary. Potholing will be performed for any known identified utilities prior to the start of construction activities. If unanticipated utilities are encountered in the field contractor will notify the construction manager / field engineer and take appropriate step as directed.	Construction	6/1/2021
Active	6	Environmental	Hazardous Material	No site investigation has been performed so far. Hazardous material found during field investigation may be higher than anticipated resulting in additional project cost.	$500k place holder amt. since Site Investigation Report not performed.	2-Low	04-Moderate	8	02-Low	4	ENG	Based on the input from PDT.	Accept	Hazardous material testing will be requested and performed during PS&E phase for a full evaluation of potential hazardous waste and/or contamination issues.	Environmental	6/1/2021
Active	6	Construction	Hazardous Material	Unanticipated hazardous materials encountered during construction may require mitigation, removal and disposal resulting in additional costs to the project.	Assume hazardous waste cost in the estimate. Unanticipated hazardous waste may include excess soluble lead in the asphalt pavement grinding mixed with thermoplastic paint which may require a hazardous waste disposal site.	3-Moderate	04-Moderate	12	02-Low	6	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Hazardous material testing will be performed during PS&E phase. If any unanticipated Haz mat is discovered during construction, RE to use contingency funds to cover the additional cost.	Environmental	6/1/2021
Active	7	Construction	Coordination Issues With Concurrent Projects	This project may conflict with other on-going major construction projects within the area resulting to schedule delays and additional project cost.	On-going projects may logistically conflict with this project schedule.	3-Moderate	02-Low	6	04-Moderate	12	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	Project has been programmed as long lead project. Schedule will be prepared prior to RTL to mitigate possible work schedule conflicts between major projects.	Environmental	6/1/2021

Printed Date: 6/3/2021

RISK REGISTER LEVEL	2	PROJECT NAME	SM - RTE 82 In the Cities of San Mateo and Burlingame, Rehabilitate Roadway, Improve Drainage & Reconstruct Curb Ramps.	DIST-EA	04-0K810 (0416000142)	Project Manager	Rommel Pardo	RISK MANAGER	Gurmukh Thiara / Pradeep Narra / Daniel Y. Chang	TOTAL COST (Capital +Support)	$0.00
PROJECT PHASE	PA&ED	PDT MEMBERS		RISK ASSESSMENT INFORMATION						TOTAL DAYS (Construction + Initial review (30 days)+ Closeout (60 days))	90

Risk Identification						Probability	Cost Impact		Time Impact		Phase	Individual Risk	Risk Response				
Status	ID #	Category	Title	Risk Statement	Current Status/ Assumptions	Rating	Rating	Score	Rating	Score	ENG/ CON	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	8	PM	Coordination with Locals	Project work may impact local streets leading to local agency to require enhancements or apply constraints on the project resulting to additional costs and schedule delays.	The project location is located within the limits of several cities who may impose certain constraints on the work activities.	3-Moderate	02-Low	6	02-Low	6	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Design and the PM will need to coordinate effectively with the local agencies during PS&E phase of the project. Lane closures and detours along with affected existing city utilities will need to be communicated to the city for review and comments and will be addressed during PS&E.	PM	6/1/2021
Active	11	Construction	Traffic Congestion	Currently, all work will be during night. Locals may require enhancements or apply constraints on the project that would lead to extra costs and delays.	All work to be done during night time.	2-Low	04-Moderate	8	01-Very Low	2	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Avoid	All work to be done during night time. Project plans will be submitted to the local agencies for review.	Construction	6/1/2021
Active	12	Construction	American Disability Act (ADA)	The project may not meet Americans with Disabilities Act (ADA) requirements leading to change in scope resulting to additional costs and schedule delays.	Project may not upgrade all side walks. Site condition may preclude placement of ADA compliant curb ramps.	2-Low	02-Low	4	02-Low	4	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Avoid	Curb ramp locations were surveyed and will be individually designed into the project during PS&E phase. This risk captures unforeseen ADA issues during construction that may have been missed during design of the project.	Construction	6/1/2021
Active	13	Design	Inadequate as-built info	The available as-builts and R/W information may not reflect actual field conditions, leading to extra costs associated with any changes.	Survey and field investigations will be performed during design phase.	2-Low	02-Low	4	02-Low	4	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	PDT will explore all possible sources to gather information on existing field conditions. The design phase will be completed with all available as-builts and survey data.	Environmental	6/1/2021
Active	12	Construction	Staging Loop Detector Work	Potential damage to loop detectors during paving operations may result in additional cost and system operation disruptions.	Existing loop detectors will be incorporated into plans to be protected in place.	1-Very Low	02-Low	2	02-Low	2	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Project plans and specification will show that contractors are to protect in place existing electrical facilities that are to remain.	Design	6/1/2021
Active	13	Environmental	Public Controversy over Tree Removal	As a result of public controversy over removal of trees from the historic tree rows, execution of the MOA and resolution of the adverse effects may be delayed, delaying DED and PA&ED.	SHPO is aware of public controversy and will try to address public issues prior to reaching concurrence on Caltrans' Adverse Finding of Effect,	5-Very High	08-High	40	08-High	40	ENG	The tree rows, including historic and non-historic trees are an important resource to the residents of Burlingame and Hillsborough.	Mitigate	Public meetings will be conducted at the earliest and public comments/concerns will be addressed during PA&ED phase. Environmental will start consultation with agencies on constant basis to evaluate the impact.	Environmental	6/1/2021
Active	14	Environmental	Cultural Resources-Historic Structures	Evaluation of impact to historic properties adjacent to R/W may take longer than expected resulting in additional project cost and time.	Cultural documents will need be prepared, which may cause delay to PA&ED.	3-Moderate	04-Moderate	12	04-Moderate	12	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	Environmental to work closely with regulatory agencies and start the process early.	Environmental	6/1/2021
Active	15	Environmental	Visual Impacts	As a result of significant impact to the visual character of the tree rows, mitigation plan may be required to minimize the impact resulting in additional cost and time.	Avoidance and minimization measures may have to be evaluated for each block.	4-High	08-High	32	04-Moderate	16	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	If needed, PDT to work on developing visual mitigationthat helps replanting trees and a distinct visual character.	Environmental	6/1/2021
Active	16	Environmental	Cultural Resources-Archeology	Potential discovery of unforeseen cultural resources during construction would impact schedule and possibly require mitigation at additional cost.	Some known cultural sites exist in the project vicinity.	2-Low	04-Moderate	8	02-Low	4	CON	Based on input of PDT and Department's experience with past projects of similar nature.	Accept	If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the findings.	Environmental	6/1/2021
Active	17	Environmental	4f Evaluation	Due to the presence of properties eligible for protection under 4(f), the federal review of the project to demostrate whether no prudent and feasible alternatives exist to impacting the historic resources may result in schedule delay.	A full 4(f) evaluation under HQ-DEA and Legal review will be conducted	4-High	02-Low	8	04-Moderate	16	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	Design to develop layout & cross section plans early during PA&ED, providing information on impacts to historic properties from underground utilities, drainage, depth of disturbanceand roadway construction.	Environmental	6/1/2021
Active	18	Environmental	Legal Challenge to EIR/EIS	Due to the high level of controversy, any legal action against environmental document may result in additional cost and time.	Public controversy is expected due to significant environmental impect. This may result in unparring the project.	5-Very High	02-Low	10	08-High	40	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	The plan will be to conduct extensive public outreach in addition to the public scoping and DED meetings to address public concerns.	Environmental	6/1/2021
Active	19	ROW	Temporary Construction Easements (TCE's)	Private owners may delay issuing the permits for project activities outside of state right of way, resulting in project delays and additional project cost.	TCE's may be required for work performed outside state right of way.	2-Low	02-Low	4	04-Moderate	8	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Avoid	ROW will start early coordination with pertinent agencies/owners for agreements.	RW	6/1/2021
Active		PM	Undergrounding of OH PG&E Wires	Uncertainty of local funds for undergrounding of OH Utilities may delay the project schedule resulting in additional cost & time.	OH PG&E wires need to be relocated underground before the new trees can be palnted.	4-High	04-Moderate	16	04-Moderate	16	ENG	Based on the input from PDT.	Avoid	PM to start early discussion with locals to resolve the funding for utility relocation.	PM	6/1/2021

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PROJECT PHASE	PA&ED	PDT MEMBERS		RISK ASSESSMENT INFORMATION						TOTAL DAYS (Construction + Initial review (30 days)+ Closeout (60 days))	90

Risk Identification						Probability	Cost Impact		Time Impact		Phase	Individual Risk	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current Status/ Assumptions	Rating	Rating	Score	Rating	Score	ENG/ CON	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active		Environmental	Mitigation Plan (Tree Replacement)	Regulatory agencies may require offsite mitigation tree planting resulting in additional project cost.	Tree removal may trigger need for offsite mitigation.	4-High	04-Moderate	16	04-Moderate	16	ENG	Based on the input from PDT.	Accept	Environmental to work with agencies to determine any need for offsite mitigation. PM to consult management if any additional mitigation measures are needed.	Environmental	6/1/2021
Active	24	Environmental	Coordination with Environmental Agencies	Extensive coordination with permitting agencies will be required, which may lead to additional time needed to complete the environmental process resulting in additional cost and schedule delays.	Permits will be required from various agencies.	4-High	02-Low	8	04-Moderate	16	ENG	Based on input of PDT and Department's experience with past projects of similar nature.	Mitigate	Environmental to continue constant coordination efforts with permitting agencies and work towards the timely processing of all the required permits.	Environmental	6/1/2021

Attachment H
Preliminary Cost Estimate

PROJECT

Preliminary Cost Estimate

Project EA/ID: 04 - 0K810/0420000075 & 04 - 1G900/0400020619

Type of Estimate : Draft Project Report
Program Code : SHOPP 20.10.201.120
Project Limits : 04-SM-82, PM 12.3/15.9
Description: In San Mateo County on Route 82 from Santa Inez Avenue to Millbrae Avenue
Scope : Reconstruct roadway and address drainage problems and upgrade existing curb ramps and sidewalks to current Americans with Disabilities Act (ADA)
Alternatives : 1

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 84,042,860	$ 94,882,207
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 84,042,860	$ 94,882,207
TOTAL RIGHT OF WAY COST	$ 902,000	$ 902,000
TOTAL CAPITAL OUTLAY COSTS	**$ 84,944,000**	**$ 95,784,000**
PA/ED SUPPORT	$ 11,501,000	$ 11,501,000
PS&E SUPPORT	$ 9,381,000	$ 9,381,000
RIGHT OF WAY SUPPORT	$ 4,791,000	$ 4,791,000
CONSTRUCTION SUPPORT	$ 13,270,000	$ 13,270,000
TOTAL SUPPORT COST	**$ 38,943,000**	**$ 38,943,000**
TOTAL PROJECT COST	**$ 124,000,000**	**$ 135,000,000**

Programmed Amount

	Month	Year
Date of Estimate (Month/Year)	6	2021
Estimated Construction Start (Month/Year)	4	2024
Number of Working Days =	500	
Estimated Mid-Point of Construction (Month/Year)	4	2025
Estimated Construction End (Month/Year)	4	2026
Number of Plant Establishment Days	0	

Estimated Project Schedule

PID Approval	6	/
PA/ED Approval	3	/
PS&E	8	/
RTL	10	/
Begin Construction	4	/

Reviewed by District O.E. or Cost Estimate Certifier

Thanh Luu	xx/xx/xxxx	(510) 622-0747
Office Engineer / Cost Estimate Certifier	**Date**	**Phone**

Approved by Project Manager

Rommel Pardo	xx/xx/xxxx	
Project Manager	**Date**	**Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	2,526,000
2	**Pavement Structural Section**	$	21,060,700
3	**Drainage**	$	1,453,300
4	**Specialty Items**	$	532,100
5	**Environmental**	$	14,382,400
6	**Traffic Items**	$	8,436,000
7	**Detours**	$	-
8	**Minor Items**	$	4,839,100
9	**Roadway Mobilization**	$	5,323,000
10	**Supplemental Work**	$	3,312,600
11	**State Furnished**	$	2,847,500
12	**Time-Related Overhead**	$	5,322,960
13	**Roadway Contingency**	$	14,007,200
	TOTAL ROADWAY ITEMS	**$**	**84,042,860**

Estimate Prepared By : Edgardo A. Urbano/Calvin Wong (510)-807-1670/ (510)-362-6897

Name and Title | Date | Phone

Estimate Reviewed By : Marc Wong

Name and Title | Date | Phone

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

$ -

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
170103	Clearing & Grubbing	LS	1	x	100,000.00	=	$	100,000
170101	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000
190101	Roadway Excavation	CY	59,875	x	32.00	=	$	1,916,000
190103	Roadway Excavation (Type Y) ADL	LS		x		=	$	500,000
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Impored Borrow	CY		x		=	$	-
198007	Imported Material (Shoulder Backing)	TON		x		=	$	-
XXXXXX	Some Item			x		=	$	-

TOTAL EARTHWORK SECTION ITEMS $ 2,526,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD		x		=	$	-
153121	Remove Concrete	CY		x		=	$	-
1532XX	Remove Concrete (type)	CY		x		=	$	-
250201	Class 2 Aggregate Subbase	CY	31,500	x	50.00	=	$	1,575,000
260203	Class 2 Aggregate Base	CY	26,822	x	80.00	=	$	2,145,760
260303	CLASS 3 AGGREGATE BASE (CY)	CY	1,493	x	96.00	=	$	143,328
280010	Rapid Strength Concrete Base	CY		x		=	$	-
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
365001	Sand Cover	TON		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
280020	Asphaltic Emulsion (Concrete Base)	TON	16	x	1,100.00	=	$	17,600
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	25,500	x	120.00	=	$	3,060,000
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	17,000	x	120.00	=	$	2,040,000
393003	Geosynthetic Pavement Interlayer	SQYD		x		=	$	-
39405X	Shoulder Rumber Strip *(HMA, Type XX Indentatior*	STA		x		=	$	-
394071	Place Hot Mix Asphalt Dike	LF		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQYD		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
401000	Concrete Pavement	CY		x		=	$	-
401108	Replace Concrete Pavement (Rapid Strength Conc	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
413115	Seal Existing Concrete Pavement Joint	LF		x		=	$	-
600017	REMOVE RETAINING WALL (LF)	LF	892		70.00	=	$	62,440
600017A	CONTRUCT RETAINING WALL (SQFT)	SQFT	4,550		1,000.00	=	$	4,550,000
401055	JOINTED PLAIN CONCRETE PAVEMENT (RSC)	CY	704		1,500.00	=	$	1,056,000
520104A	BAR REINFORCING STEEL (BUS PADS)	LB	13,627		1.00	=	$	13,627
730070	Detectable Warning Surface	SQFT	2,200	x	40.00	=	$	88,000
731502	Minor Concrete (Misc. Const)	CY		x		=	$	-
731627	Minor Concrete (Curb, Sidewalk and Curb Ramp)	CY	5,135	x	1,000.00	=	$	5,135,000
731700	REMOVE CURB	LF	43,225		15.00		$	648,375
731820	REMOVE CONCRETE SIDEWALK AND DRIVEW/	CY	8,645	x	60.00	=	$	518,700
xxxxxx	Remove Asphalt Concrete	CY	98	x	70.00	=	$	6,860

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 21,060,700

$ -

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
150206	Abandon Culvert	LF		x		=	$	-
150805	Remove Culvert	LF	4,590	x	30.00	=	$	137,700
150812	Remove Pipe	LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
193114	Sand Backfill	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
510512	Minor Concrete (Box Culvert)	CY		x		=	$	-
610108	18" APC Pipe (replace 12" and 15" pipe)	LF	3,500	x	150.00	=	$	525,000
610111A	18" APC Pipe (replace Clay and Metal Pipe)	LF	750	x	150.00	=	$	112,500
610112A	18" APC Pipe (for relocation inlets)	LF	340	x	150.00	=	$	51,000
66XXXX	XXX" CSP Pipe	LF		x		=	$	-
68XXXX	Edge Drain	LF		x		=	$	-
69XXXX	XXX" Pipe Downdrain	LF		x		=	$	-
70XXXX	XXX" Pipe Riser	LF		x		=	$	-
710150	Remove Inlet	EA	34	x	1,500.00	=	$	51,000
710210	Adjust Frame and Grate to Grade	EA	25	x	1,000.00	=	$	25,000
72XXXX	Rock Slope Protection (Type and Method)	CY		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
729010	Rock Slope Protection Fabric	SQYD		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
750031A	GO Inlet with 24-12X Grate (Assume H=3.5')	EA	34	x	4,100.00	=	$	139,400
XXXXXX	Drainage (other)	LS	1	x	121,000.00	=	$	121,000

TOTAL DRAINAGE ITEMS 25% Cont. $ 1,453,300

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	10,000.00	=	$	10,000
150604	Remove Wood Fence	LF		x		=	$	-
150608	Remove Chain Link Fence	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Terminal Systems	EA		x		=	$	-
151534	Reconstruct Wood Fence	LF		x		=	$	-
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
153250	Remove Sound Wall	SQFT		x		=	$	-
190110	Lead Compliance Plan	LS	1	x	10,000.00	=	$	10,000
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY	380	x	800.00	=	$	304,000
510133	Class 2 Concrete (Retaining Wall)	CY		x		=	$	-
510524	Minor Concrete (Sound Wall)	CY		x		=	$	-
511035	Architectural Treatment *(Insert Type)*	SQFT	10,300	x	7.00	=	$	72,100
511048	Apply Anti-Graffiti Coating	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall *(Insert Type)*	SQFT		x		=	$	-
518002	Sound Wall (Masonry Block)	SQFT		x		=	$	-
520103	Bar Reinf. Steel (Retaining Wall)	LB	24,000	x	2.00	=	$	48,000
800400	Chain Link Fence	LF		x		=	$	-
832005	Midwest Guardrail System	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	-	
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
8395XX	End Anchor Assembly (*Insert Type*)	EA		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839XXX	Crash Cushion *(Insert Type)*	EA		x		=	$	-
83XXXX	Concrete Barrier *(Insert Type)*	LF		x		=	$	-
730070	DETECTABLE WARNING SURFACE	SQFT	950	x	40.00	=	$	38,000
070031A	Environmental Compliance	LS	1	x	50,000.00	=	$	50,000

TOTAL SPECIALTY ITEMS $ 532,100

$ -

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Biological Mitigation	LS		x		=	$	-
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-
XXXXXX	Archaeological Resources	LS	1	x	390,000.00	=	$	390,000
XXXXXX	Historic Resources	LS	1	x	270,000.00	=	$	270,000
XXXXXX	Construction Monitoring by Certified Arborist	LS	-	x	-	=		-

Subtotal Environmental Mitigation $ *660,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200002	Roadside Clearing (Tree Removal)	EA	250	x	5,000.00	=	$	1,250,000
20XXXX	Highway Planting	LS	1	x	230,000.00	=	$	230,000
21011X	Imported Topsoil	CY	4,800	x	100.00	=	$	480,000
190123	Roadway Excavation (Topsoil)	CY	4,800	x	120.00	=	$	576,000
21XXXX	Suspended Pavement System	CF	168,000	x	12.00	=	$	2,016,000
20XXXX	Irrigation System	LS	1	x	630,000.00	=	$	630,000
204099	Plant Establishment Work (Year 1)	LS	1	x	50,000.00	=	$	50,000
20XXXX	Plant Establishment Work (Year 2-3) Follow-up	LS	1	x	80,000.00	=	$	80,000
	Consulting Arborist - Working Days	EA	100	x	2,400.00	=	$	240,000
995100	Water Meter Charges	LS	1	x	300,000.00	=	$	300,000
066901	Water Expenses	LS	1	x	60,000.00		$	60,000
2087XX	8" Conduit (Use for Irrigation x-overs)	LF	600	x	200.00	=	$	120,000
XXXXXX	Replace Tree	EA	-	x	-	=		-
XXXXXX	Protect Tree	EA	-	x	-	=		-
XXXXXX	Base 1 (4" Gravel Base, Geogrid & Geotextile)	SQYD	-	x	-	=		-
XXXXXX	Water Quality	LS	-	x	-	=		-

Subtotal Landscape and Irrigation $ *6,032,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA	*10*	LS	1,100	=	$	11,000
210110	Imported Topsoil (X)	CY						
210350	Fiber Rolls	LF						
210360	Compost Sock	LF						
2102XX	Rolled Erosion Control Product (X)	SQFT	100,000	x	1.50	=	$	150,000
21025X	Bonded Fiber Matrix	SQFT/ACRE	100,000	x	0.20	=	$	20,000
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT	100,000	x	0.20	=	$	20,000
210430	Hydroseed	SQFT	1,900	x	80.00	=	$	152,000
210600	Compost	CY	100,000	x	1.00	=	$	100,000
210630	Incorporate Materials	SQFT						

Subtotal Erosion Control $ *453,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
074016	Construction Site Management	LS		x		=	$	-
074017	Prepare WPCP	LS		x		=	$	-
074019	Prepare SWPPP	LS		x		=	$	-
074023	Temporary Erosion Control	SQYD		x		=	$	-
074027	Temporary Erosion Control Blanket	SQYD		x		=	$	-
074028	Temporary Fiber Roll	LF		x		=	$	-
074032	Temporary Concrete Washout Facility	EA		x		=	$	-
074033	Temporary Construction Entrance	EA		x		=	$	-
074035	Temporary Check Dam	LF		x		=	$	-
074037	Move In/ Move Out (Temporary Erosion Control)	EA		x		=	$	-
074038	Temp. Drainage Inlet Protection	EA		x		=	$	-
074041	Street Sweeping	LS		x		=	$	-
074042	Temporary Concrete Washout (Portable)	LS		x		=	$	-
130721A	Temporary Construction Site BMPs	LS	1	x	1,237,330.00	=	$	1,387,330
130722A	Treatment BMP	LS	1	x	5,700,000.00	=	$	5,850,000

Subtotal NPDES $ *7,237,330*

TOTAL ENVIRONMENTAL $ **14,382,400**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Some Item	LS		x		=	$	-

Subtotal Supplemental Work for NDPS $ -

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

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

$ -

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost		
150760	Remove Sign Structure	EA		x		=	$	-		
151581	Reconstruct Sign Structure	EA		x		=	$	-		
152641	Modify Sign Structure	EA		x		=	$	-		
5602XX	Furnish Sign Structure	LB		x		=	$	-		
5602XX	Install Sign Structure	LB		x		=	$	-		
56XXXX	XXX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-		
860090	Maintain Existing Traffic Management System	LS		x		=	$	-		
860810	Inductive Loop Detectors	EA		x		=	$	-		
86055X	Lighting & Sign Illumination	LS		x		=	$	-		
8607XX	Interconnection Facilities	LS		x		=	$	-		
8609XX	Traffic Monitoring Stations	LS		x		=	$	-		
860XXX	Signals & Lighting	LS		x		=	$	-		
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-		
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-		
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-		
XXXXXX	Preliminary Electrical Design and Estimate	LS	1	x	1,000,000.00	=	$	1,000,000		
872133	MODIFYING SIGNAL AND LIGHTING SYSTEMS	LS	1	x	4,410,000.00	=	$	4,410,000		
XXXXXX	Pedestrian Push Button Post	LS	1	x	570,000.00	=	$	570,000		
						Subtotal Traffic Electrical			*$*	*5,980,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost		
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000		
141103	Remove Yellow Thermoplastic Traffic Stripe (Hazadous Waste)	LF	16,000	x	1.00	=	$	16,000		
150710	Remove Traffic Stripe	LF		x		=	$	-		
150712	Remove Painted Pavement Marking	SQFT	8,000	x	2.00	=	$	16,000		
150714	Remove Thermoplastic Traffic Stripe	LF	50,000	x	1.00	=	$	50,000		
150742	Remove Roadside Sign	EA		x		=	$	-		
152320	Reset Roadside Sign	EA		x		=	$	-		
152390	Relocate Roadside Sign	EA		x		=	$	-		
566011	Roadside Sign (One Post)	EA		x		=	$	-		
566012	Roadside Sign (Two Post)	EA		x		=	$	-		
560XXX	Furnish Sign Panels	SQFT		x		=	$	-		
560XXX	Install Sign Panels	SQFT		x		=	$	-		
82010X	Delineator (Class X)	EA		x		=	$	-		
840504	4" Thermoplastic Traffic Stripe	LF	66,000	x	1.00	=	$	66,000		
840519	Thermoplastic Crosswalk and Pavement Marking	LF	8,000	x	5.00	=	$	40,000		
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-		
XXXXXX	Traffic Sign Cost	LS?	1	x	250,000.00	=	$	250,000		
XXXXXX	Traffic Striping (Remove & New)	LS	1	x	10,000.00	=	$	10,000		
XXXXXX	Relocation/ Removing Misc Road items	LS	1	x	40,000.00	=	$	40,000		
						Subtotal Traffic Signing and Striping			*$*	*538,000*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost		
128650	Portable Changeable Message Signs	LS	1	x	80,000.00	=	$	80,000		
						Subtotal Traffic Management Plan			*$*	*80,000*

6D - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost		
120100	Traffic Control System	LS	2	x	525,000.00	=	$	1,050,000		
120120	Type III Barricade	EA		x		=	$	-		
120143	Temporary Pavement Delineation	LF		x		=	$	-		
12016X	Channelizer	EA		x		=	$	-		
129000	Temporary Railing (Type K)	LF	74,000	x	10.00	=	$	740,000		
129100	Temp. Crash Cushion Module	EA		x		=	$	-		
129099A	Traffic Plastic Drum	EA		x		=	$	-		
839603A	Temporary Crash Cushion (ADIEM)	EA		x		=	$	-		
82010X	Delineator (Class X)	EA		x		=	$	-		
XXXXXX	Construct Pedestrian Barricade	LS	1	x	3,000.00	=	$	3,000		
XXXXXX	Miscellaneous Paving	LS	1	x	40,000.00	=	$	40,000		
XXXXXX	Relocate/ Adjust Utilities (Pull boxes, Vaults, Fire Hydrants)	LS	1	x	5,000.00	=	$	5,000		
						Subtotal Stage Construction and Traffic Handling			*$*	*1,838,000*

TOTAL TRAFFIC ITEMS	**$**	**8,436,000**

$ -

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		= $	-
19801X	Imported Borrow	CY/TON		x		= $	-
390132	Hot Mix Asphalt (Type A)	TON		x		= $	-
26020X	Class 2 Aggregate Base	TON/CY		x		= $	-
250401	Class 4 Aggregate Subbase	CY		x		= $	-
130620	Temporary Drainage Inlet Protection	EA		x		= $	-
129000	Temporary Railing (Type K)	LF		x		= $	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		= $	-
80010X	Temporary Fence (Type X)	LF		x		= $	-
872002	Temporary Signal System	LS		x		= $	-
XXXXXX	Some Item	LS		x		= $	-

* Includes constructing, maintaining, and removal

TOTAL DETOURS **$ -**

SUBTOTAL SECTIONS 1 through 7 $ 48,390,500

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items							
	ADA Items				1.0%	$	483,905
8B - Bike Path Items							
	Bike Path Items				1.0%	$	483,905
8C - Other Minor Items							
	Other Minor Items				8.0%	$	3,871,240
	Total of Section 1-7	$	48,390,500	x	10.0%	= $	4,839,050

TOTAL MINOR ITEMS **$ 4,839,100**

SECTIONS 9: ROADWAY MOBILIZATION

Item code							
999990	Total Section 1-8	$	53,229,600	x	10%	= $	5,322,960

TOTAL ROADWAY MOBILIZATION **$ 5,323,000**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	340,849.75	= $	340,850
066094	Value Analysis	LS	1	x	10,000.00	= $	10,000
066070	Maintain Traffic	LS	1	x	300,000.00	= $	300,000
066919	Dispute Resolution Board	LS	1	x	22,500.00	= $	22,500
066921	Dispute Resolution Advisor	LS	1	x	5,000.00	= $	5,000
066015	Federal Trainee Program	LS	1	x	64,000.00	= $	64,000
066610	Partnering	LS	1	x	70,000.00	= $	70,000
066204	Remove Rock and Debris	LS		x		= $	-
066222	Locate Existing Crossover	LS		x		= $	-
XXXXXX	Flagging	LS	1	x	21,000.00	= $	21,000
129161	Automated Flagger Assistance Devices	LS	1	x	350,000.00	= $	350,000
	*Cost of **NPDES** Supplemental Work specified in Section 5D*					= $	-
	Total Section 1-8	$	53,229,600		4%	= $	2,129,184

TOTAL SUPPLEMENTAL WORK **$ 3,312,600**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	176,000.00	=	$176,000
066063	Traffic Management Plan - Public Information	LS	1	x	10,000.00	=	$10,000
066901	Water Expenses	LS					
8609XX	Traffic Monitoring Station (X)	LS					
066841	Traffic Controller Assembly	LS					
066840	Traffic Signal Controller Assembly	LS					
066062	COZEEP Contract	LS	0	x	575,000.00	=	$0
066838	Reflective Numbers and Edge Sealer	LS					
066065	Tow Truck Service Patrol	LS					
066871	Electrical Sevice Connections (New)	LS					
066916	Annual Construction General Permit Fee	LS					
XXXXXX	Some Item	Unit					

Total Section 1-8	$ 53,229,600	5%	= $	2,661,480	
			TOTAL STATE FURNISHED		**$2,847,500**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$53,229,600	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$64,712,700	(used to check if project is greater than $5 million excluding contingency)

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

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	500	X	$10,646	= $	5,322,960

TOTAL TIME-RELATED OVERHEAD	**$**	**5,322,960**

SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	$	70,035,660	x	**20%**	=	$14,007,132
				TOTAL CONTINGENCY		**$14,007,200**

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	0/00/2020		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
STRUCTURES MOBILIZATION	10%	**$0**

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

Total recommended percentages includes any quantified risk based contingency from the risk register.

STRUCTURES CONTINGENCY	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ------ Division of Structures Date

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	698,000
	A2)	SB-1210	$	0
	A3)	Environmental Mitigation	$	0
	A4)	Grantor's Appraisal Cost	$	135,000
B)	Acquisition of Offsite Mitigation		$	0
C)	C1)	Utility Relocation (State Share)	$	65,000
	C2)	Potholing (Design Phase)	$	0
D)	Railroad Acquisition		$	0
E)	Clearance / Demolition		$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)	Title and Escrow		$	0
H)	Environmental Review		$	
I)	Condemnation Settlements	0%	$	0
J)	Design Appreciation Factor	0%	$	0
K)	Utility Relocation (Construction Cost)		$	0

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$902,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$902,000**
N)	**RIGHT OF WAY SUPPORT**	**$4,791,000**

Support Cost Estimate Prepared By	Lynn White Project Coordinator[1]	510 914-4173 Phone
Utility Estimate Prepared By	Latorya Young Utility Coordinator[2]	510 960-0152 Phone
R/W Acquisition Estimate Prepared By	Grant J. Semple Right of Way Estimator[3]	510 908-3087 Phone

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

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

Attachment I
Right of Way Data Sheet

TO: Design South - Peninsula

Date **April 18, 2022**
Dist 04 Co SM
Rte 82 PM 12.3/15.9
EA 0K810 (04-1600-0142)
ADA Ramps & 3R

Attention: ATIF ABRAR
Senior Transportation Engineer
Design South - Peninsula

From: MONA POON
Right of Way Resource Manager **D.S. #7472**

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on February 11, 2022 and the following assumptions and limiting conditions.

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

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

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

[ ] 4. This estimate does not include $_____right of way costs previously incurred on the project, which may affect the total project right of way costs for programming purposes.

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

Right of Way Lead Time will require a minimum of **24** months after we begin receiving final right of way requirements (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of **18** months prior to the date of certification of the project. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.

_____
Right of Way Resource Manager

Attachments:

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

RIGHT OF WAY DATA SHEET

TO: Design South - Peninsula

Date 4/15/2022 D.S. # 7472

Dist. 04 Co. SM Rte 82 PM 12.3/15.9

EA 0K8100(0416000142)

ATTN: Atif Abrar

Project Description: ADA Ramps & 3R

SUBJECT: Right of Way Data - Alternate No.

1. Right of Way Cost Estimate:

		Current Value (Future Use)	Escalation Rate	Escalated Value
A.	Acquisition, including Excess Lands, Damages, and Goodwill	$630,000.00	7 %	$698,000.00
	Permits			$4,000.00
	Environmental Mitigation			$0.00
	Grantor's Appraisal Cost			$135,000.00
B.	Utility Relocation (State Share)	$65,000.00	%	$65,000.00
C.	Railroad (from page 6)			$0.00
D.	Relocation Assistance	$0.00	%	$0.00
E.	Clearance Demolition	$0.00	%	$0.00
F.	Title and Escrow Fees	$0.00	%	$0.00
G.	TOTAL ESCALATED VALUE			$902,000.00
H.	Construction Contract Work	$0.00		
I.	Railroad Phase 4 Costs	$0.00		

2. Anticipated Date of Right of Way Certification 9/1/2023

3. Parcel Data:

	Type	Dual/Appr		Utilities	
X			U4-1		
A	115		-2		
B	8		-3		
C			-4	1	
D			U5-7	4	
E	XXXX		-8		
F	XXXX		-9		
Total	123				

RR Involvements	
None	X
C&M Agrmt	
R/W Agrmt	
Design	
Const.	
Lic/RE/Clauses	

Misc R/W Work	
RAP Displ	0
Clear Demo	0
Const. Permits	0
Condemnation	0

Areas: Right of Way ____ No. Excess Parcels ____ Excess ____

Enter PMCS Screens ____ By ____

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

5. Provide a general description of the right of way and excess lands required(zoning, use, major improvements critical or sensitive parcels, etc.).
No right of way required. ☑
There are 123 parcels required for this project. 93 PTE&C'S are needed from city property in San Mateo and Burlingame and 30 TCE's are required from residential & commercial properties.

6. Is there an effect on assessed valuation? (If yes explain)
Yes ☐ Not Significant ☐ No ☑

7. Are utility facilities or rights of way affected? Yes ☑ No ☐
If yes, attach Utility Information Sheet Exhibit 01-01-05)

8. Are railroad facilities or rights of way affected? Yes ☐ No ☑
If yes, attach Railroad Information Sheet Exhibit 01-01-06)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes ☐ None evident ☑
(If yes, attach memorandum per Procedural Handbook Volume 1, Section 101.011)

10. Are RAP displacements required? Yes ☐ No ☑
(If yes, provide the following information)

No. of personal property relocations _____

No. of single family _____ No. of business/non profit _____

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

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

11. Are material borrow and / or disposal sites required? Yes ☐ No ☑
(If yes, explain)

12. Are there potential relinquishments / abandonments? Yes ☐ No ☑
(If yes, explain)

13. Are there any existing and/or potential Airspace sites? Yes ☐ No ☑
(If yes, explain)

14. Are there Environmental Mitigation costs? Yes ☑ No ☐
(If yes, explain)
Permit costs of $4,000 are required for a CEQA EIR filing fee .

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less that PMCS lead time and / or if significant pressures for project advancement are anticipated.)

PYPSCAN lead time (from Regular R/W to project certification) 24 months.

16. Is it anticipated that all Right of Way work be performed by CALTRANS staff?
Yes ☑ No ☐ (If no, discuss)

Assumptions and Limiting Conditions

- This data sheet was completed without a hazardous waste/materials report.
- Information on this data sheet was based on maps provided by Atif Abrar on 2/11/2022

Evaluation Prepared By: Lynn White

Right of Way: Name _____ Date 04/15/2022

Railroad: Name Alden Chalk Date 04/15/2022

Utilities: Name _____ Date 03.10.2022

Recommended for Approval:

_____
Right of Way Capital Cost Coordinator

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

_____
Chief, R/W Appraisal Services

April 18, 2022
Date

cc: Program Manager
Project Manger

UTILITY INFORMATION SHEET

1. Utility owners located within project limits:
PG&E (Gas & Electrical), AT&T(unknown), City Sewerage, City Water

2. Facilities potentially impacted by project (if known, include Owners(s) & facility type(s)):
PG&E (Gas & Electrical $20,000), AT&T(unknown $15,000), Sewerage ($10,000), Water ($10,000) per Atif Abrar, PE.(03/18/2021)

3. Anticipated Workload:

X	Utility Verification required	
X	Positive Identification	$55,000
X	Utility Relocation	$10,000
	Other (Specify)	

4. Additional information concerning anticipated utility involvements (include limiting conditions and a narative addressing likelihood that conflicts will occur);

_____ Involves possible relocation of electric transmission facilities
(If X'd, Data sheet should be forwarded to environmental)

_____ Utility agreements will be required for this project due to CCW on public utility facilities for all public utility relocations and adjustments, including but not limited to, manhole cover adjustments to grade (unless determined & specified in writing by the Utility Engineering Workgroup (UEW) that none are required for this project). A minimum lead-time of 12 months from PA&ED to RWC is needed to secure the utility agreement(s) and specifications as required for the RWC and PS&E milestones. Leadtime requires that UEW provide RW Utilities with a conflict memo and maps no later than the PA&ED milestone.

5. PMCS input information

U4-1		Owner Expense Involvements
U4-2		State Expense Involvements (*Conventional, No Fed Aid)*
U4-3		State Expense Involvements *(Freeway, No Fed Aid)*
U4-4	1	State Expense Involvements *(Conventional or Freeway, Fed Aid)*
U5-7	4	Verifications - without involvements
U5-8		Verifications - 50% involvements
U5-9		Verifications resulting in involvements

NOTE: The sum of U-4's must equal the sum of ½ of the U5-8's and all of the U5-9's.

ESTIMATED STATE SHARE OF COSTS $ 65,000.00

Prepared by: Latorya Young

Latorya Young
Right of Way Utility Coordinator

03.10.2022
Date

Right of Way Workplan

Date: 4/18/22

Project ID No:	0416000142
Project Manager:	R.Pardo
Programmed RW Support:	$4,091,000
PA&ED Date or Transmittal:	4/28/22
RWC Date:	9/1/23
Prepared by:	D.Mars

Please note that this estimate only contains the hours needed by RW Agents. You must also obtain an estimate from RW Engineering for a complete support cost total for the Office of Right of Way.

100.05 Phase K — Start Date: — End Date:

(Data Sheet & PID)		Hours Needed
0850	Acq/P&M O.C.	
0856	Proj. Coord.	

150 Phase K — Start Date: — End Date:

(Data Sheet & PID)		Hours Needed
0850	Acq/P&M O.C.	
0851	Appraisals O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt.	
0860	Appraisals	
0867	Railroad	
0869	Utilities	

160 Phase 0 — Start Date: — End Date:

(Util. Verifications, RR study, PR, &/or Updated Datasheet)		Hours Needed
0850	Acq./P&M O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt.	
0860	Appraisals	
0865	Acquisitions	
0867	Railroad	
0869	Utilities	
0876	Rap	
0882	Clerical	

165 Phase 0 — Start Date: — End Date:

(Permits)		Hours Needed
0850	Acq./P&M O.C.	0
0856	Proj. Coord.	0
0865	Acquisitions	0
0882	Clerical	0

185 Phase 1 — Start Date: — End Date:

(Updated datasheet, if needed)		Hours Needed
0850	Acq/P&M O.C.	20
0852	Utilites O.C.	20
0856	Proj. Coord.	60
0859	Capital Mgmt.	20
0763	Data Mgmt Staff	40
0854	Data Mgmt O.C.	5
0869	Utilities	60

255 Phase 1 — Start Date: — End Date:

(Certification - PSE)		Hours Needed
0856	Proj. Coord.	20
0860	Appraisals	
0865	Acquisitions	5
0867	Railroad	
0869	Utilities	5
0876	RAP	

100.25 Phase 2 — Start Date: 4/28/2022 — End Date: 9/1/2024

(Project Mgmt)		Hours Needed
0850	Acq /P&M O.C.	20
0856	Proj. Coord.	120
0859	Capital Mgmt	20
0854	Data Mgmt O.C.	20
0763	Data Mgmt Staff	30

195 Phase 2 — Start Date: — End Date:

(Prop Mgmt & Excess Land)		Hours Needed
0851	Appraisals O.C.	
0856	Proj. Coord.	
0860	Appraisals	
0872	Prop Mgmt	
0875	Excess Lands	
0874	Airspace	
0882	Clerical	

200 Phase 2 — Start Date: 4/28/2022 — End Date: 9/1/2024

(Utilities)		Hours Needed
0852	Utilites O.C.	20
0856	Proj. Coord.	
0859	Capital Mgmt	
0869	Utilities	120
0882	Clerical	5

225 Phase 2 — Start Date: 4/28/2022 — End Date: 9/1/2023

(Pre-Cert Work)		Hours Needed
0850	Acq /P&M O.C.	20
0851	Appraisals O.C.	20
0856	Proj. Coord.	40
0859	Capital Mgmt	20
0860	Appraisals	1500
0865	Acquisitions	2500
0867	Railroad	5
0868	Acq. Spec. (R.A.)	
0873	Demolition	
0876	RAP	
0882	Clerical	0

245 Phase 2 — Start Date: 9/2/2023 — End Date: 9/1/2024

(Post-Cert Work)		Hours Needed
0850	Acq /P&M O.C.	10
0851	Apprasisals O.C.	10
0859	Capital Mgmt	25
0860	Appraisals	50
0865	Acquisitions	80
0867	Railroad	
0868	Acq. Spec. (R.A.)	
0873	Demolition	
0876	RAP	
0882	Clerical	

Total hours required (RW Agents Only): **4840**

Total RW COS (RW Agents Only): **$653,400**

Phase 2 only COS (RW Agents Only): **$625,725**

Approved By:

Allison Paich
District Office Chief
RW Acquisitions & Project Management Services

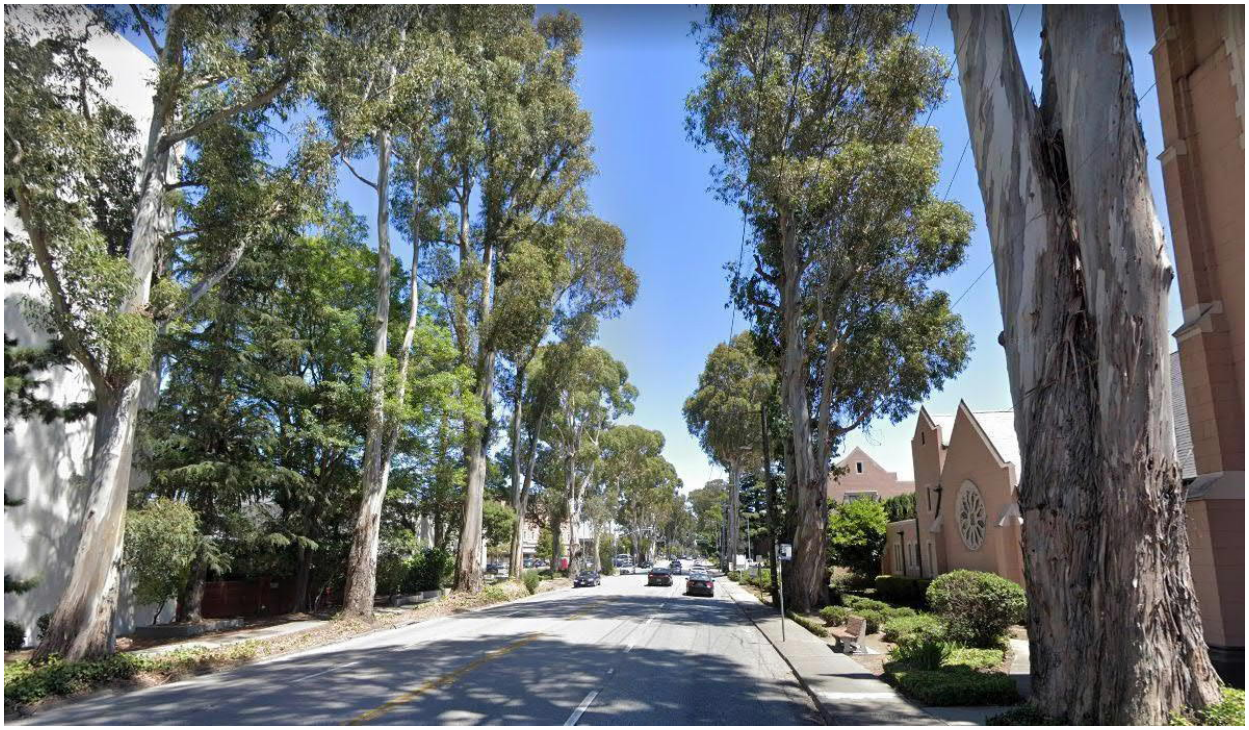
Please contact Matt Goetz for R/W Surveys and R/W Engineering Support Cost Estimates

Attachment J
Environmental Impact Report / Statement

El Camino Real Roadway Renewal Project

SAN MATEO COUNTY, CALIFORNIA
04-SM-82 – PM 12.3/15.9
EA 04-0K810 / Project ID 0416000142
EA 04-1G900 / Project ID 0400020619

Final Environmental Impact Report/Environmental Impact Statement, Final Section 4(f) Evaluation, and Record of Decision



Prepared by the
State of California, Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

Caltrans

April 2022

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the proposed project located in San Mateo County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives have been considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures. The Draft Environmental Impact Report/Environmental Assessment circulated to the public for 53 days between June 10, 2021 and August 2, 2021. Comments received during this period and Caltrans' responses are included in Chapter 5. Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated. Additional copies of this document and the related technical studies are available for review at the Caltrans District 4 office at 111 Grand Avenue, Oakland, CA 94612. A link to this document may be found at the following website https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-san-mateo-82-el-camino-real-project or www.elcaminorealproject.com.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please send an email to Alejandro Lopez at Alejandro.Lopez@dot.ca.gov or call (510) 385-6856. You may also use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

FHWA Highway ID No. P082(026)

SCH: 2020059037
04-SM-82 – PM 12.3/15.9
EA No. 04-0K810 & 04-1G900
Project No. 0416000142 & 0400020619

Rehabilitate State Route 82 (El Camino Real) from East Santa Inez Avenue (Postmile 12.3) in the City of San Mateo to Millbrae Avenue (Postmile 15.9) in the City of Millbrae

Final Environmental Impact Report/Environmental Impact Statement and Final Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C), 49 USC 303, and/or 23 USC 138

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies:
City of Burlingame and California Transportation Commission

04/19/2022
Date

Dina El-Tawansy

Dina A. El-Tawansy
District 4 Director
California Department of Transportation
CEQA/NEPA Lead Agency

The following persons may be contacted for more information about this document:

Yolanda Rivas
California Department of Transportation, District 4
P.O. Box 23660, MS 8B
Oakland, CA 94623-0660
(510) 506-1461

Abstract: The purpose of the project is to preserve and extend the life of the roadway and improve ride quality; improve drainage efficiency; enhance pedestrian access by upgrading infrastructure and bringing it into compliance with Title II of the Americans with Disabilities Act; and enhance user visibility and safety. The Build Alternative would require the removal of approximately 250 trees that contribute to the Howard-Ralston Eucalyptus Tree Rows (a historic resource listed on the National Register of Historic Places) resulting in an adverse effect to this resource. The Build Alternative would require the removal of 300 to 350 trees within the project limits resulting in a moderate-high to high degree of visual change within the project limits. Mitigation measures for the loss of trees include a commitment to replant any trees removed by the project where possible and a formalized Long-Term Management Plan to address needed removals and replacements within the boundaries of the Tree Rows beyond the duration of the project. Tree replanting and the Long-Term Management Plan will follow the Secretary of the Interior Standards for the Treatment of Historic Properties.

Attachment K
Life-Cycle Cost Analysis

40 Year Flexible (RHMA W/HMA) Pavement vs 40 Year Rigid (JPCP) Pavement

RealCost Input Data

1. Economic Variables	
Value of Time for Passenger Cars ($/hour)	$12.80
Value of Time for Single Unit Trucks ($/hour)	$31.70
Value of Time for Combination Trucks ($/hour)	$31.70

2. Analysis Options	
Include User Costs in Analysis	Yes
Include User Cost Remaining Service Life Value	Yes
Use Differential User Costs	Yes
User Cost Computation Method	Calculated
Include Agency Cost Remaining Service Life Value	Yes
Traffic Direction	Both
Analysis Period (Years)	55
Beginning of Analysis Period	2024
Discount Rate (%)	4.0
Number of Alternatives	2

3. Project Details and Quantity Calculations	
State Route	SR-82
Project Type	Rehabilitation
Project Name	Pavement Resurfacing, Restoration, Rehabilitation and ADA
Maintenance Service Level	1
Local Region	District 4
County	SM 12.3/15.9
Climate Region	North Coast
Analyzed By	Atif Abrar
Mileposts	
Begin	
End	
Length of Project (miles)	3.60
Comments	40 Year Flexible Pavement vs 40 Year Rigid Pavement

4. Traffic Data	
AADT Construction Year (total for both directions)	32,000
Cars as Percentage of AADT (%)	97.1
Single Unit Trucks as Percentage of AADT (%)	2.9
Combination Trucks as Percentage of AADT (%)	0.0
Annual Growth Rate of Traffic (%)	0.9
Speed Limit Under Normal Operating Conditions (mph)	35
No of Lanes in Each Direction During Normal Conditions	2
Free Flow Capacity (vphpl)	2169
Queue Dissipation Capacity (vphpl)	1700
Maximum AADT (total for both directions)	215,092
Maximum Queue Length (miles)	5

5. Maintenance and Rehabilitation Sequence	
Alternative 1	
Final Pavement Surface	
Design Life	
Activity 1 Name	Rehab Flexible (HMA W/ RHMA) Pavement 40-Year
Activity 1 Year of Action	2024
Activity 1 Annual Maintenance Cost ($1000)	69.12
Activity 1 Activity Service Life (Year)	40
Activity 2 Name	CAPM HMA W/ RHMA
Activity 2 Year of Action	2064
Activity 2 Annual Maintenance Cost ($1000)	50.4
Activity 2 Activity Service Life (Year)	10
Activity 3 Name	REHAB HMA W/ RHMA (20YR)
Activity 3 Year of Action	2074
Activity 3 Annual Maintenance Cost ($1000)	69.12
Activity 3 Activity Service Life (Year)	40
Activity 4 Name	CAPM HMA
Activity 4 Year of Action	2114
Activity 4 Annual Maintenance Cost ($1000)	8.8
Activity 4 Activity Service Life (Year)	5
Activity 5 Name	REHAB HMA (20YR)
Activity 5 Year of Action	2119
Activity 5 Annual Maintenance Cost ($1000)	23.2
Activity 5 Activity Service Life (Year)	5
Activity 6 Name	
Activity 6 Year of Action	2124
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 2	
Final Pavement Surface	
Design Life	
Activity 1 Name	Rehab Rigid (JPCP) Pavement 40-Year
Activity 1 Year of Action	2024
Activity 1 Annual Maintenance Cost ($1000)	11.52
Activity 1 Activity Service Life (Year)	45.0
Activity 2 Name	CAPM (CPR C)
Activity 2 Year of Action	2069
Activity 2 Annual Maintenance Cost ($1000)	43.2
Activity 2 Activity Service Life (Year)	5.0
Activity 3 Name	CAPM (CPR B)
Activity 3 Year of Action	2074
Activity 3 Annual Maintenance Cost ($1000)	21.6
Activity 3 Activity Service Life (Year)	10
Activity 4 Name	
Activity 4 Year of Action	2084
Activity 4 Annual Maintenance Cost ($1000)	0
Activity 4 Activity Service Life (Year)	0
Activity 5 Name	
Activity 5 Year of Action	2084
Activity 5 Annual Maintenance Cost ($1000)	1

Activity 5 Activity Service Life (Year)	0
Activity 6 Name	
Activity 6 Year of Action	2084
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 3	
Final Pavement Surface	
Design Life	
Activity 1 Name	NEW/RECONST HMA W/RHMA (20YR)
Activity 1 Year of Action	2024
Activity 1 Annual Maintenance Cost ($1000)	0
Activity 1 Activity Service Life (Year)	23
Activity 2 Name	CAPM HMA W/ RHMA
Activity 2 Year of Action	2047
Activity 2 Annual Maintenance Cost ($1000)	0
Activity 2 Activity Service Life (Year)	10
Activity 3 Name	REHAB HMA W/ RHMA (20YR)
Activity 3 Year of Action	2057
Activity 3 Annual Maintenance Cost ($1000)	0
Activity 3 Activity Service Life (Year)	23
Activity 4 Name	CAPM (PR A)
Activity 4 Year of Action	2080
Activity 4 Annual Maintenance Cost ($1000)	5
Activity 4 Activity Service Life (Year)	10
Activity 5 Name	
Activity 5 Year of Action	2090
Activity 5 Annual Maintenance Cost ($1000)	0
Activity 5 Activity Service Life (Year)	0
Activity 6 Name	
Activity 6 Year of Action	2090
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 4	
Final Pavement Surface	
Design Life	
Activity 1 Name	NEW/RECONST CRCP (20YR)
Activity 1 Year of Action	2024
Activity 1 Annual Maintenance Cost ($1000)	0
Activity 1 Activity Service Life (Year)	30
Activity 2 Name	CAPM (PR C)
Activity 2 Year of Action	2054
Activity 2 Annual Maintenance Cost ($1000)	0
Activity 2 Activity Service Life (Year)	5
Activity 3 Name	CAPM (PR B)
Activity 3 Year of Action	2059
Activity 3 Annual Maintenance Cost ($1000)	0
Activity 3 Activity Service Life (Year)	10
Activity 4 Name	CAPM (PR A)
Activity 4 Year of Action	2069
Activity 4 Annual Maintenance Cost ($1000)	0
Activity 4 Activity Service Life (Year)	10

Activity 5 Name	20
Activity 5 Year of Action	2079
Activity 5 Annual Maintenance Cost ($1000)	0
Activity 5 Activity Service Life (Year)	0
Activity 6 Name	
Activity 6 Year of Action	2079
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0

Alternative 1	Multiple Layers, 40 Year Design Life Flexible Pavement
Number of Activities	3

Activity 1	Rehab Flexible (HMA W/ RHMA) Pavement 40-Year	
Agency Construction Cost ($1000)	$15,000.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	320	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	40.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	69.12	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	30	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		

Activity 2	CAPM HMA W/ RHMA
Agency Construction Cost ($1000)	$719.00
User Work Zone Costs ($1000)	
Work Zone Duration (days)	20
No of Lanes Open in Each Direction During Work Zone	1
Activity Service Life (years)	10.0
Activity Structural Life (years)	
Maintenance Frequency (years)	1
Agency Maintenance Cost ($1000)	50.4
Work Zone Length (miles)	2.00
Work Zone Speed Limit (mph)	30
Work Zone Capacity (vphpl)	1510
Traffic Hourly Distribution	Weekday Double-Peak
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)	

Inbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		

Activity 3	REHAB HMA W/ RHMA (20YR)	
Agency Construction Cost ($1000)	$719.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	20	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	40.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	69.12	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	30	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		

Alternative 2	Rigid (JPCP) Pavement Design
Number of Activities	3

Activity 1	Rehab Rigid (JPCP) Pavement 40-Year	
Agency Construction Cost ($1000)	$17,100.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	320	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	45.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	11.52	
Work Zone Length (miles)	5.00	
Work Zone Speed Limit (mph)	30	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		

Inbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		

Activity 2	CAPM (CPR C)	
Agency Construction Cost ($1000)	$120.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	20	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	5.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	43.2	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	30	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	4
Second period of lane closure	22	24
Third period of lane closure		

Activity 3	CAPM (CPR B)	
Agency Construction Cost ($1000)	$130.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	20	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	10.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	21.6	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	30	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Outbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Deterministic Results

Total Cost	**Alternative 1: Multiple Layers, 40 Year Design Life Flexible Pavement**		**Alternative 2: Rigid (JPCP) Pavement Design**	
	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)
Undiscounted Sum	$19,235	$143	$18,051	$311
Present Value	$16,645	$132	$17,406	$301
EUAC	$753	$6	$787	$14

Attachment L
Transportation Management Plan
Data Sheet

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Costs)

Co/Rte/PM SM-82-PM 12.3/15.9 EA 04-0K810 Project Engineer Atif Abrar

ID 0416000142

Project Limit East Santa Inez to Millbrae Avenue in the Cities of San Mateo, Hillsborough, Burlingame and Millbrae in San Mateo County

Project Description Reconstruct roadway, address drainage & upgrade existing curb ramps & sidewalks to current ADA standards on SR 82 as well as to install/reconstruct Curb ramps, upgrade push buttons, and reconstruct driveways

1) Public Information

- ☐ a. Brochures and Mailers $
- ☒ b. Press Release
- ☐ c. Paid Advertising $
- ☐ d. Public Information Center/Kiosk $
- ☐ e. Public Meeting/Speakers Bureau
- ☐ f. Telephone Hotline
- ☐ g. Internet, E-mail
- ☐ h. Notification to impacted groups (i.e. bicycle users, pedestrians with disabilities, others…)
- ☒ i. Others As determined by PIO $ 10,000

2) Traveler Information Strategies

- ☐ a. Changeable Message Signs (Fixed) $
- ☒ b. Changeable Message Signs (Portable) $ 80,000
- ☐ c. Ground Mounted Signs $
- ☐ d. Highway Advisory Radio $
- ☐ e. Caltrans Highway Information Network (CHIN)
- ☐ f. Detour maps (i.e. bicycle, vehicle, pedestrian...etc)
- ☐ g. Revised Transit Schedules/maps
- ☐ h. Bicycle community information
- ☐ i. Others _____ $

3) Incident Management

- ☐ a. Construction Zone Enhanced Enforcement Program (COZEEP) $
- ☐ b. Freeway Service Patrol $
- ☐ c. Traffic Management Team
- ☐ d. Helicopter Surveillance $
- ☐ e. Traffic Surveillance Stations (Loop Detector and CCTV) $
- ☐ f. Others _____ $

TMP Data Sheet (cont.)

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [ ] c. Total Facility Closure
- [ ] d. Contra Flow
- [ ] e. Truck Traffic Restrictions $ _____
- [ ] f. Reduced Speed Zone $ _____
- [ ] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $ _____
- [ ] i. Moveable Barrier $ _____
- [ ] j. Maintain Traffic $ _____
- [x] k. Others Flagging $ 21,000

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $ _____
- [ ] b. Park and Ride Lots $ _____
- [ ] c. Rideshare Incentives $ _____
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $ _____
- [ ] g. Ramp Metering (Modify Existing) $ _____
- [ ] h. Others _____ $ _____

6) Alternate Route Strategies

- [ ] a. Add Capacity to Freeway Connector $ _____
- [ ] b. Street Improvement (widening, traffic signal... etc) $ _____
- [ ] c. Traffic Control Officers $ _____
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $ _____

7) Other Strategies

- [ ] a. Application of New Technology $ _____
- [ ] e. Others _____ $ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 111,000

*Please note that any change in project scope, schedule, or cost will require re-submittal of TMP Data Sheet request.

PREPARED BY Marion Chan DATE 7/6/2020

APPROVAL RECOMMENDED BY Chung Ly DATE 7/6/2020

Attachment M
SHOPP Performance Measures

SHOPP Project - Accomplishment - Performance Measures - Benefits

District: 04 Tool ID: 13686 Project ID: 0416000142 EA: 0K810 Co-Rte-PM: SM-082-12.3/15.8 (Primary Location) View/Print PIR (Performance) Report

Bridge | Pavement P | Drainage | Facilities | Safety, Signs & Lighting | Mobility | Roadside | Complete Streets | Sustainability /Climate Change | Advance Mitigation /Mitigation | Major Damage & Betterments | Green-house Gases | Relinquishment

Performance & Accomplishments (PPC)

	ActID	Activity Detail	Performance Objective	Unit of Measurement	Quantity	Pre-Good	Pre-Fair	Pre-Poor	New	Post-Good	Post-Fair	Post-Poor	HQ Program Review - Agree with District?	HQ Comment	Review Date	Performance Change Date After Review	Comment
1	B22	Asphalt Pavement Major Rehab	Pavement Class II	Lane Miles	15.178		15.178			15.178							
2	C11	Energy Dissipation & Other Element {RSP,DI, FES etc.} (201.151)	No Performance Objective in the SHSMP	Each	59.000			59.000		59.000							DI-relocate 34,modify 25
3	F24	ADA - Repair/Upgrade Curb Ramp (201.361)	No Performance Objective in the SHSMP	Each	110.000			110.000		110.000							
4	F25	ADA - Install Accessible Pedestrian Signal (201.361)	No Performance Objective in the SHSMP	Each	80.000			80.000		80.000							
5	F27	ADA - Relocate Pedestrian Push Button Posts (201.361)	No Performance Objective in the SHSMP	Each	80.000			80.000		80.000							
6	F28	ADA - Modify Driveway (201.361)	No Performance Objective in the SHSMP	Linear Feet	3600.000			3600.000		3600.000							in the dir of sidewalk
7	F43	ADA - Deficient Elements	ADA Pedestrian Infrastructure	Deficient Elements	390.000			390.000		390.000							
8	H13	Crosswalks	No Performance Objective in the SHSMP	Linear Feet	3860.000			3860.000		3860.000							the primary driver for this work was ADA
9	H21	Sidewalks	No Performance Objective in the SHSMP	Linear Feet	26000.000			26000.000		26000.000							the primary driver for this work was ADA
10	H32	Is any Location Within the Project Limits Ped/Bike Accessible?	No Performance Objective in the SHSMP	Yes/No	Yes												Yes
11	H56	Complete Streets Fix Existing	Complete Streets Fix Existing	Linear Feet	29860.000			29860.000		29860.000							
12	H57	Complete Streets Build New	Complete Streets Build New	Linear Feet													
13	N04	Defer	No Performance Objective in the SHSMP	-													EIR/EA

(Last Saved - 06/03/21 @ 4:04 PM by Sean Eagen)

Programming Performance Summary (All Locations)

Program Code	Activity Category	Asset Class	Asset	Performance Value	Performance Measure	Unit	Pre-Good	Pre-Fair	Pre-Poor	Pre-Total	Post Good	New	Post Good+New	Post-Fair	Post-Poor	Post-Total
201.120	Pavement	Primary	Pavement	15.2	Lane mile(s)	Lane mile(s)	0.0	15.2	0.0	15.2	15.2	0.000	15.2	0.0	0.0	15.2

Notes:

1. The crosswalk for reporting performance in the "Programming Performance Summary" was developed to assist the districts on performance reporting requirements for CTC and PCRs. For discrepancies or errors, please notify AM Tool admins via e-mail at CT-TAM@dot.ca.gov.
2. The data summarized in the table represents the performance reported or to be reported in CTIPS.
3. Programming only requires the breakdown of Good, Fair and Poor for Primary and Supplementary Asset Classes.
4. Reporting of bridge pre and post conditions may contain errors if the project RTL is before 2024/25.
5. Reporting drainage pre-total and post good may differ whenever projects contain abandoned/removed culverts as the culvert no longer exists at post construction, is deleted from the pre-total value for posting of the post good value, and gets deleted from the statewide CIP inventory database.
6. Reactive Safety projects will temporally use the same performance outputs of Safety Improvement projects. When the reporting requirements for CTC changes, the logic in the AM Tool will change.

SHOPP Project - Accomplishment - Performance Measures - Benefits

District: 04 Tool ID: 13253 Project ID: 0400020619 EA: 1G900 Co-Rte-PM: SM-082-12.9/15.9 (Primary Location) View/Print PIR (Performance) Report

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

Performance & Accomplishments (PPC)

	ActID	Activity Detail	Performance Objective	Unit of Measurement	Quantity	Pre-Good	Pre-Fair	Pre-Poor	New	Post-Good	Post-Fair	Post-Poor	HQ Program Review - Agree with District?	HQ Comment	Review Date	Performance Change Date After Review	Comment
1	F24	ADA - Repair/Upgrade Curb Ramp (201.361)	No Performance Objective in the SHSMP	Each	82.000			82.000		82.000							
2	F43	ADA - Deficient Elements	ADA Pedestrian Infrastructure	Deficient Elements	82.000			82.000		82.000							

(Last Saved - 07/15/20 @ 11:29 AM by Aung Maung)

Programming Performance Summary (All Locations)

Program Code	Activity Category	Asset Class	Asset	Performance Value	Performance Measure	Unit	Pre-Good	Pre-Fair	Pre-Poor	Pre-Total	Post Good	New	Post Good+New	Post-Fair	Post-Poor	Post-Total
201.378	Mobility - ADA	Supplementary	Sidewalks and Park & Ride ADA Infrastructure	82.0	Curb ramp(s)	Each	0.0	0.0	82.0	82.0	82.0	0.000	82.0	0.0	0.0	82.0

Notes:

1. The crosswalk for reporting performance in the "Programming Performance Summary" was developed to assist the districts on performance reporting requirements for CTC and PCRs. For discrepancies or errors, please notify AM Tool admins via e-mail at CT-TAM@dot.ca.gov.
2. The data summarized in the table represents the performance reported or to be reported in CTIPS.
3. Programming only requires the breakdown of Good, Fair and Poor for Primary and Supplementary Asset Classes.
4. Reporting of bridge pre and post conditions may contain errors if the project RTL is before 2024/25.
5. Reporting drainage pre-total and post good may differ whenever projects contain abandoned/removed culverts as the culvert no longer exists at post construction, is deleted from the pre-total value for posting of the post good value, and gets deleted from the statewide CIP inventory database.
6. Reactive Safety projects will temporally use the same performance outputs of Safety Improvement projects. When the reporting requirements for CTC changes, the logic in the AM Tool will change.

Attachment N
Complete Streets Elements Evaluation

Memorandum

To: MARC WONG
Senior Transportation Engineer
Design Peninsula

Date: March 11, 2021

From: ELLIOT GOODRICH
Acting Branch Chief
Pedestrian and Bicycle Branch
Transit & Community Planning
Trans. Planning & Local Assist.
District 4

Subject: **COMPLETE STREETS NEEDS AND PREFERRED FACILITIES FOR EA 0K81U**

Introduction

To meet the Governor's priority and the California Department of Transportation (Caltrans) strategic goals to advance equity and provide accessibility to all users, Caltrans is committed to effectively implement efforts to incorporate complete streets facilities on State highway projects. In addition, the State of California is committed to combat the climate crisis and reduce greenhouse gas emissions by enacting an array of legislation, including AB 32, SB 32, SB 375, SB 391, and SB 743. Most recently, the Governor issued Executive Orders N-19-19 and N-79-20, directing Caltrans to leverage its transportation investments in "innovative strategies designed to shift people from cars to other forms of transportation." The Executive Orders continue the State's commitment to a "fix-it-first" approach to maintain our State's highways and bridges, while also requiring Caltrans to deliver projects that better support transit, walking, biking, and other active modes. This memorandum details needs for people walking, biking, and riding transit within the project area.

Project Description

The Department of Transportation (Caltrans) is proposing to rehabilitate the roadway and sidewalks, improve safety and visibility, remedy drainage issues, and upgrade curb ramps to be ADA (American Disabilities Act) compliant along El Camino Real (SR 82) between Postmiles 12.3 and 15.9 in San Mateo County in the Cities of San Mateo, Burlingame, Hillsborough, and Millbrae.

Complete Streets Needs and Preferred Facilities

To supplement the Complete Streets section in the project report, the following are the identified complete streets needs, consistent with the scope of the project. The needs should be evaluated further in PS&E.

General transit-related comment:

- Coordinate with SamTrans to identify any potential transit improvements, such as relocation of "near-side" bus stops to opposite side of intersection.

General corridor-wide best-practice intersection improvements:

- Strip high visibility crosswalks
- Construct directional curb ramps
- Implement leading pedestrian interval (LPI)

General corridor-wide landscaping elements:

- Landscaping elements including vegetative swales and landscaped areas will be incorporated where feasible throughout the project corridor.

Location-specific complete streets improvements:

Poplar Ave intersection:

- Square up crosswalks and square up W Poplar Ave approach to reduce pedestrian crossing distance and slow right-turning vehicles
- Proposed class II bike lanes on Poplar Ave, per San Mateo Bicycle Master Plan (BMP). Implement bicycle crossing improvements as appropriate (coordinate with City in PS&E).

Bellevue Ave (San Mateo) intersection:

- Proposed bike boulevard on Bellevue Ave, per San Mateo Bicycle Master Plan (BMP). Implement bicycle crossing improvements as appropriate (coordinate with City in PS&E).

Clark Dr intersection:

- Square up intersection approaches, stripe crosswalks, construct curb ramps.

Howard Ave intersection:

- Existing class III on Howard Ave south of El Camino, proposed Class II north of El Camino, per Burlingame BPMP. Implement bicycle crossing improvements as appropriate (coordinate with City in PS&E).
- Intersection Improvement at controlled intersection. Sidewalks view on street view appears to be 3-4feet wide due to tree obstructions
- Burlingame Master Plan Proposes to conduct a traffic analysis to consider implementing no right turn on red.

Burlingame Ave intersection:

- Proposed "spot improvement" from Burlingame (Draft) Bicycle and Pedestrian Master Plan (BPMP): "Straighten the two crosswalks across ECR. Upgrade all crosswalks to high-visibility. Provide a leading pedestrian interval for ECR crossings". "no right turn on red if feasible".

Chapin Ave intersection:

- Existing class III on Chapin Ave south of El Camino, proposed Class II north of El Camino, per Burlingame BPMP. Implement bicycle crossing improvements as appropriate (coordinate with City in PS&E).
- Per Burlingame Master Plan: Conduct a traffic analysis to consider signal timing adjustments including leading pedestrian intervals and no right on red.

Bellevue Ave (Burlingame) intersection:

- In conjunction with sidewalk gap closure (below), stripe crosswalks on all four legs of intersection.
- Per local feedback, this is an difficult intersection to cross due to drivers not stopping for pedestrians to cross.
- The Burlingame Master Plan Proposes to consider installing an RRFB.

Bellevue Ave – Floribunda Ave:

- Sidewalk gap closure: construct sidewalk on east side of roadway so that pedestrians do not need to make additional crossings / out-of-direction travel to traverse corridor.

Floribunda Ave intersection:

- In conjunction with sidewalk gap closure (above), stripe crosswalks on all four legs of intersection.
- Square up south side of intersection to reduce crossing distance and slow turning drivers.
- The District 4 Bike Plan proposes intersection Improvement at controlled intersection

Oak Grove Ave intersection:

- Proposed "spot improvement" from Burlingame BPMP: "Upgrade the three crosswalks to high-visibility crosswalks. Install advance stop pavement markings." "Consider signal timing improvements and other crossing enhancements including leading pedestrian intervals".
- Fix uneven sidewalks.

Fairfield Rd intersection / Willow Ave intersections:

- Per local feedback, parents and students illegally cross street at Willow Ave to access McKinley Elementary school. Stripe mid-block crosswalk and add Pedestrian Hybrid Beacon (PHB) (preferred), or Rectangular Rapid Flashing Beacon (RRFB).
- Evaluate addition of PHB or RRFB at existing uncontrolled crosswalk at Willow Ave.
- Coordinate with locals and conduct outreach to school to identify appropriate combination of crossing improvements at these two locations.

Palm Drive intersection:

- Add PHB or RRFB at existing uncontrolled crosswalk.

Broadway Ave intersection:

- Proposed "spot improvement" from Burlingame BPMP: "Realign all crosswalks to be straight. Upgrade all crosswalks to high-visibility crosswalks. Provide a leading pedestrian interval for the ECR crossings."

Lincoln Ave:

- Stripe missing crosswalk on third leg of intersection.

Adeline Dr:

- Stripe missing crosswalk on third leg of intersection:
- Proposed "spot improvement" from Burlingame BPMP: Upgrade both crosswalks to high-visibility crosswalks. Provide a leading pedestrian interval for the ECR crossing.

Adeline Dr – Mills-Peninsula Medical Center:

- Sidewalk upgrade / gap closure: Construct sidewalk where missing, upgrade sidewalk to ADA standard elsewhere.
- Per Burlingame Master Plan: "Enhance existing crosswalks to high-visibility crosswalks and install advance stop pavement markings. Consider installing a leading pedestrian interval for the ECR crossing and bicycle detection at all approaches".

Rosedale Ave / Ray Dr intersection:

- Proposed "spot improvement" from Burlingame BPMP: "Upgrade all crosswalks to high-visibility crosswalks. Straighten all crosswalks. Provide a leading pedestrian interval for the ECR crossing. Construct/widen the sidewalk/path on the south side of ECR between Ray Drive and Mills Peninsula Medical Center."

Trousdale Ave intersection:

- Stripe missing sidewalk on fourth leg of intersection.
- Proposed "spot improvement" from Burlingame BPMP: "Upgrade all crosswalks to high-visibility crosswalks. Provide a leading pedestrian interval for all crossings. Construct pedestrian refuge islands at the ECR crossings. Consider installing curb extensions."
- Proposed Class II bike lanes on Trousdale Ave. Implement bicycle crossing improvements as appropriate (coordinate with City in PS&E).

Murchison Dr intersection:

- Proposed "spot improvement" from Burlingame BPMP: Upgrade all crosswalks to high visibility crosswalks. Construct median refuge islands for the ECR crossings. Provide a leading pedestrian interval for the ECR crossings. Install advance stop markings at all crossings. From the southwest corner, widen the widen the sidewalk/relocate utilities to increase access to the SamTrans bus stop.
- District 4 Bike Plan proposes intersection improvement at controlled intersection
- The raft City/County Association of Governments of San Mateo County Bicycle and Pedestrian Master Plan (Draft) is recommendsupgrade to the class II buffered bike lane.

Hillside Drive:

- District 4 Bike Plan proposes intersection improvement at controlled intersection

Dufferin Ave:

- Proposed "spot improvement" from Burlingame BPMP: Install a high-visibility crosswalk across Dufferin Avenue. Construct curb extensions across the northeast and southeast corners.
- Sidewalks appears to be in poor condition based off google maps street view imagery. Some cracks in sidewalk, vegetation obstructing sidewalk.

Willow Ave:

- Proposed "spot improvement" from Burlingame BPMP: Consider installing an RRFB.

Ralston Ave:

- Cracked sidewalk, curb ramp improvement needed.

c: Atif Abrar, Design South
Rommel Pardo, Project Management
Sergio Ruiz, Complete Streets Coordinator
Yolanda Rivas, Environmental Analysis

Attachment O
Stormwater Data Report
(Long Form)

Dist-County-Route: 04-SM-82
Post Mile Limits: PM 12.3/15.9
Type of Work: ADA Ramps and 3R
Project ID (EA): 0416000142 (EA 0K810)
Program Identification: 20.10.201.120
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): San Francisco Bay (Region 2)
Total Disturbed Soil Area: 27 Acres PCTA: 27 Acres
Alternative Compliance (acres): 0.0 Acres ATA 2 (50% Rule)? Yes ☐ No ☐
Estimated Const. Start Date: 12/2024 Estimated Const. Completion Date: 12/2027
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other: _____
Is MWELO applicable? Yes ☒ No ☐
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): TBD
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: _____ No ☒

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

C S M. Mora — 03/28/2022

Carlos Mora, Registered Project Engineer — Date

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

For m suleiman — 03/21/22

Rommel Pardo, Project Manager — *Date*

Amrinder Jhajj — 03/28/2022

Amrinder Jhajj, Designated Maintenance Representative — *Date*

Beck Lithander

Beck Lithander, Designated Landscape Architect Representative — *Date*

Brian Rowley — 03/29/2022

[Stamp Required at PS&E only]

Brian Rowley, District/Regional Design SW Coordinator or Designee — *Date*