12-Ora-5 PM 9.3/10.0
12-Ora-74 PM 0.0/0.2
EA 12-0E3101
1200000102

Transportation Management Plan

Highway Interchange Improvement Project on Interstate 5 (I-5) and State Route 74 (SR-74, Ortega Highway) Interchange in the City of San Juan Capistrano, Orange County, CA

Prepared by

Caltrans

TMP/District 12

December 15, 2011

12-Ora-5 PM 9.3/10.0
12-Ora-74 PM 0.0/0.2
EA 12-0E3101
1200000102

REGISTERED CIVIL ENGINEER CERTIFICATION

This Transportation Management Plan (TMP) 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.

MOHAMMAD ALAM , P.E.
TMP Coordinator

12/16/2011
Date

With Concurrence by:

MATTHEW CUGINI, P.E.
Chief, Design Branch "C"
& CADD Support

12-16-2011
Date

Approval Recommended by:

LEE HABER, P.E.
Chief, Operational Systems/TMP

12/16/11
Date

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1. INTRODUCTION

The Transportation Management Plan (TMP) outlines strategies that when implemented minimize project-related traffic delay and accidents in the work zone during construction. TMP activities are accomplished without compromising public and worker safety, and/or the quality of the work being performed.

The hours of work and the number of lanes open to traffic shown in the lane closure charts for this project were developed to maximize the number of lanes available to traffic and to accommodate the maximum number of hours required to perform construction operations while minimizing traffic delay.

2. PROJECT DESCRIPTION

This project is proposing to construct a new interchange and replace the existing San Diego Freeway (I-5) and SR-74 (Ortega Highway) interchange in the City of San Juan Capistrano. The project area is from Post-Mile (PM) 9.3 to PM 10.00 on I-5 and PM 0.0 to PM 0.2 on SR- 74. The scope also includes: widening one off ramp, reconstructing two on ramps, constructing a northbound loop on-ramp, reconfigured northbound off-ramp and reconfiguring the Del Obispo Street intersection.

This project is initiated by Caltrans District 12 and the Orange County Transportation Authority (OCTA). The estimated cost of the project is estimated at about $29 million. The construction is anticipated to begin in December 2012 and to be completed by spring 2015.

3. TMP STRATEGIES

The Department's Deputy Directive 60-R1 (DD-60-R1) requires preparation of a TMP for capital projects that could have significant traffic impacts on the State Highway System. TMP strategies may include public and motorist information, incident and demand management, construction and alternate routes.

This TMP addresses closure requirements needed to complete the project with minimal disruption to the motorists. If the recommended TMP elements are implemented during the construction period, it is expected to result in a traffic impact with a delay not greater than the 30 minutes above a motorist's normal travel time set by the District Traffic Manager (DTM).

All closures and traffic control devices shall conform to Part 6, "Temporary Traffic Control" of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and the latest Caltrans Standard Plans.

The following TMP elements and strategies are recommended for this project:

A. Public Information

- Brochures and Mailers
- Press Releases

B. Motorist Information Strategies

- Portable Changeable Message Signs (PCMS)
- Construction Area Signs

C. Incident Management

- Construction Zone Enhanced Enforcement Program
- Transportation Management Center (TMC) Support

D. Construction Strategies

- Lane Closure Chart
- Regional Detour
- Construction Staging and Traffic Handling Plans

E. Contingency Plans

- Construction Operations Contingency Plans
- Traffic Handling Contingency Plans

3.1. Public Information

The objective of the public information campaign is to disseminate information related to construction activities. The scope of this campaign includes informing the public about the construction project and its impacts on the transportation system, and to provide information on measures the traveling public may use to avoid anticipated traffic delays due to construction.

For this particular project on I-5 at SR-74, in the City of San Juan Capistrano, the residences in the vicinity of: (a) Camino Capistrano, (b) Rancho Viejo Rd, (c) San Juan Creek Rd, (d) Del Obispo Street, (e) Valle Rd, (f) Junipero Serra, (g) La Novia Street, and (h) State Route 74 will be notified at least 30 days in advance about the lane closure and construction activities through mailers, brochures, e-mails and/or any other methods at the discretion of the Public Information Office of Caltrans, District 12.

District truck traffic services will notify and inform the trucking agencies for the construction activities and closure information or restrictions. They will also notify the local users for such actives and alternative routing. The PAC should also consider communication with the local land fill and area businesses & event areas to alert them to the truck restrictions.

3.1.1. Brochures and Mailers

Brochures and mailers are printed material containing project-related information such as advance notice of the project's start date, schedules, pictures/graphics of the project, a description of the need for the project, alternative routes, etc. These may also be disseminated to motorists at key locations including businesses, automobile associations, and/or direct mailings to affected businesses and/or residents in the project area.

3.1.2. Press Releases

This strategy provides timely project-related information to the news media, affected businesses, and other affected or interested parties using print and/or electronic media. News media strategies (e.g., newspaper, TV and radio press releases) are a no cost alternative that has proven effective in notifying travelers of planned roadway work.

Various mechanisms such as fax, e-mail, telephone message, mailings, internet sites, transportation hotlines, social networking websites such as face book and twitter can be used to communicate information relating to start dates, work schedules, significant traffic pattern changes, traffic collisions, transit routes, and incidents within the work zone.

3.2. Motorist Information Strategies

Motorist information is vital to the travelers who are approaching a work zone and still have time to make a decision that could divert them away from possible congestion. Given available information on travel delays or alternative routes prior to a decision point, the motorist can play an active role in completing their trip more smoothly and help to reduce the overall congestion.

Motorist information strategies implemented with this project will provide real time traffic information to motorists approaching the construction zone. This information will guide and assist the motorists in making alternate route selections to avoid the impacted area.

3.2.1. Portable Changeable Message Signs (PCMS)

PCMS placed at key locations will notify motorists of lane closures, alternate routes, and upcoming road closures. The appropriate sign placement is included in the project plans. The District Traffic Manager (DTM) approves modifications to the project plans relating to PCMS during the construction phase. PCMS can be truck or trailer mounted and controlled locally or remotely.

It is important to utilize PCMS at these typical locations during construction operations:

- On the freeway main line, approximately ½ mile in advance of any lane or ramp closure;
- When detours are available, on the freeway main line ½ mile in advance of the off ramp where the detour begins
- PCMS will be set for both before and after closure detours

In general, PCMS are not to be positioned within 1000 feet of a fixed Changeable Message Sign (CMS). Messages for the PCMS are to be developed by Caltrans representatives from Transportation Management Center (TMC) or Construction. During construction activities, all CMS (fixed and portable) are to be checked nightly.

It is recommended that in the stage 1A (SC-1), truck be restricted to the middle lane of the southbound (SB) I-5 off-ramp to eastbound (EB) SR-74. There will be two (2) Portable Changeable Message Signs (PCMS) for this advisory: one at the beginning of the off-ramp and the second one just past the transition from two to three lanes toward the ramp terminus. There will also be a sign plate/overlay on the existing sign structure to regulate and indicate trucks as "SR-74 TRUCKS ↓". Please see details in traffic-handling plan.

Additionally, in stage 1D(SC-4) and stage 2D(SC-10), it is recommended for truck detours from SB I-5 & NB I-5 to SR-74, there will be at least four (4) Portable Changeable Message Signs(PCMS) in advance to indicate the truck detour before Junipero Sierra for SB I-5 and before Camino Capistrano for NB I-5. Please see details in traffic-handling plan.

For SB I-5 detour, three signs with PCMS will indicate following messages:

"SR-74 EXIT NO TRUCKS & TRAILERS",

"TRUCKS & TRAILERS USE J.SERRA",

"TRUCKS & TRAILERS USE CAMINO CAP"

These messages are before Junipero Serra and the 4th sign indicating "SR-74 NO TRUCKS" just before the off-ramp, on mainline I-5. Please see details in traffic-handling plan.

For NB I-5 detour, three signs with PCMS will indicate following messages:

"SR-74 EXIT NO TRUCKS & TRAILERS",

"TRUCKS & TRAILERS USE CAMINO CAP",

"TRUCKS & TRAILERS USE J.SERRA"

These messages are before Camino Capistrano and the 4th sign indicating "SR-74 NO TRUCKS" just before the off-ramp on mainline I-5. Please see details in traffic-handling plan.

In addition, in Stage 1D (SC-21), there will be one more PCMS message to read as "No Truck or Trailer on EB RT-74".

Flashing beacon can be used along with PCMS for better visibility to the motorist.

3.2.2. Construction Area Signs

Roadway guide signs placed at targeted ramps at least two weeks prior to construction will warn motorists of upcoming closures. Signs will augment PCMS by guiding motorists through detours. During construction, the DTM Coordinator may evaluate the need for other alternate routes upon request from the Resident Engineer (RE). Construction Area Signs Plan have been prepared and included as part of this report.

3.3. Incident Management

When traffic incidents occur on the state highway system in or near a work zone, the most effective tool in reducing potential congestion is to remove the elements of the incident from the roadway as quickly as possible. Incident management elements are part of this TMP in order to minimize the impacts of these events.

3.3.1. Construction Zone Enhanced Enforcement Program

The Department contracts with the California Highway Patrol (CHP) to provide enhanced enforcement services through the Construction Zone Enhanced Enforcement Program (COZEEP). The visibility of CHP presence alerts motorists that roadwork is being performed on the highway and that motorist behavior is under surveillance. The Officers are directed to patrol the work zone area or to remain stationary. Priority should be given to these services during nighttime operations and where workers are on foot in the work zone. Workers on foot have an increased exposure to serious injury or death from errant motorists.

3.3.2. Transportation Management Center (TMC) Support

This strategy involves the use of a TMC for coordinating and managing traffic and incident information dissemination activities. The TMC controls all fixed Intelligent Transportation System (ITS) elements and fixed CMS.

The Transportation Management Center (TMC) in District 12 is responsible for monitoring and facilitating communication among construction personnel, neighboring district's TMC, the Traffic Management Team (TMT), the California Highway Patrol (CHP), the DTM Coordinator and the media (e.g. Sig-Alerts). The TMC expedites removal of all incidents and makes decisions concerning the closing and opening of traffic lanes.

The TMTs respond to assist in managing traffic when incidents occur in or near a work zone and when lane closure activities are expected to

result in significant vehicle queuing. The primary purpose of the TMTs is to minimize secondary, end-of-queue collisions. It also directs traffic to alternate routes as traffic conditions dictate.

The DTM and DTM staff will determine the need for TMT to assist with any closures or modified lane closure chart hours.

3.4. Construction Strategies

Construction TMP strategies are measures that are included in the plans and specifications, and performed by the contractor during construction. The objectives of construction TMP strategies are to reduce construction time, minimize traffic disruptions and avoid potential safety problems during construction.

3.4.1. Lane Closure Chart (LCC)

These charts identify the number of lanes that must be open for traffic for each hour of the day to minimize delay during construction operations. These charts restrict work hours so that traffic is not affected during periods of peak travel demand and congestion (e.g., peak hours, holidays, special events). Majority of construction activities will be performed during non-peak periods to minimize work zone impacts on motorists and adjacent businesses, however, long term closures with various duration (mostly 1 to 5 weeks) will be needed for some construction activities and bridge structure. The charts for this project is included as part of this report and will be enforced to minimize traffic impacts.

There will be six (6) LCCs for this project. LCCs are attached with attachment "B" of this report.

3.4.2. Regional Detour

A regional detour is a strategy to alert the public of the important up-coming construction activity by displaying messages on the fixed CMSs and/or portable CMSs within the District or adjacent District during and prior to commencing the closure.

For this project, a regional detour will be implemented in conjunction with Public Awareness Campaign to inform motorists about the closures and to give motorists time to plan for alternate routes. The regional partners such as the City of San Juan Capistrano, Laguna Niguel, Laguna Hills, Irvine, Dana Point, Laguna Woods, Newport Beach, San Clemente, Aliso Viejo, Costa Mesa, Mission Viejo, Lake Forest, Tustin, Laguna Beach, Rancho Santa Margarita. Tustin Foothills, Caltrans District 8 (San Bernardino and Riverside Area),

Caltrans District 7 (LA Area) and Caltrans District 11 (San Diego Area) will be informed and updated during this closure.

3.4.3. Construction Staging and Traffic Handling Plans

Construction staging & construction activities planning are included in the traffic handling/plan sheets. Lane closure charts (LLC 1-6) would govern the staging/sequence of construction unless any unforeseen incidents which would need additional coordination between the Contractors or Sub-contractor, Resident Engineer (RE) and San Juan Capistrano City Engineers.

There are multiple truck and vehicle with trailer restrictions on the turning movements from SB I-5 to SR-74 and NB I-5 to SR74 that change with the construction staging. Additional regulatory signing is recommended on SB and NB I-5 well in advance of the SR-74. These signs need to convey the varying restrictions and be changed at the appropriate staging point. It is recommended that the signs have flashing beacons and the highest grade retro-reflective material or have lighting. The design engineer has the option to prohibit trucks and vehicles with trailers, during the construction period to avoid multiple sign message changes and to minimize possible motorist confusion.

Traffic Handling Plans (THP) contains alignment detail and typical cross-sections to guide traffic through the detour.

To provide safe and efficient construction operations as well as to minimize community impacts during construction, a plan for construction staging will be implemented throughout the construction life.

The staging will have two master staging as Stage 1 and Stage 2.

Under Stage 1, there will be six sub-stages, stage 1A to stage 1F.

Under Stage 2, there will be five sub-stages, stage 2A to stage 2E.

Though all stages are sequenced as following with phase 1A to phase 2E, Contractors may request for modification, addition or elimination of these staging which may need additional coordination, however, at this time, the requested staging plan will need to follow the contract plans.

Sequence of Construction Plan:

The following are typical sequence of construction activities for this type of infrastructure project:

Stage 1:

- The first phase 1A, of construction would focus on placing k-rail and crash cushions, remove existing shoulders of I-5, and construct new travel lanes & shoulders. It will follow with demolition and

removal of existing south half of bridge and construct new bridge abutments, temporary sidewalk on north side of existing bridge and section of northbound (NB) loop on-ramp.

- The next construction phase 1B, would focus on demolishing existing center bridge column and construct new center bridge column & bridge deck; northbound (NB) off-ramp and retaining wall No. 513. It will follow with northbound loop on-ramp and concrete barrier, eastbound (EB) SR-74 sidewalk, retaining wall No.67 and section of EB SR-74 construction.

- In construction phase 1C, remaining portion of NB I-5 off-ramp and portions of NB loop on-ramp will be constructed. The northbound (NB) I-5 off-ramp construction will require the ramp to be closed for number of days which alternate detour routes will be available. In addition, pulverization of a portion of the NB I-5 off-ramp would be done prior to construction. Temporary pavement at intersection of NB off-ramp and SR- 74 and south-half of bridge will be constructed at this stage as well.

  During stage 1C, the NB I-5 off-ramp "G" line to SR-74 "B" line may be fully closed to traffic for a period not to exceed fifteen (15) working days.

- The construction phase 1D, would construct half of the SB I-5 off-ramp and retaining walls No. 10 and No. 83. The construction of SR-74 section including retaining wall No. 80 and parts of culvert extension.

- In construction phase 1E, SB I-5 on-ramp and section of SR-74 at west side of bridge will be constructed. SB I-5 on-ramp will be closed for twenty six (26) working days.

  During Stage 1E, the SB I-5 on-ramp "C" line from SR-74 "B" line may be fully closed to traffic for a period of time not to exceed twenty six (26) working days.

- In construction phase 1F, continuation of constructing SR-74, between the SB on and off-ramps and Del Obispo Street, temporary pavement and final grade at NB I-5 off-ramp to Ortega Highway (SR-74). At this stage, Ortega Highway between SB off and on ramps and Del Obispo Street will need closures to traffic for ten (10) days. The construction along Del Obispo Street will reduce the traffic lanes down to one NB lane and one SB lane. Detour routes will be available during this phase.

  During stage 1F, Ortega Highway between Del Obispo Street and the SB I-5 on and off ramps "D" line, including the SB I-5 on-

ramp "C" line, maybe fully closed to public traffic for a period of time not to exceed ten (10) working days. One left hand turn lane on SB I-5 off-ramp "D" line and at least one right hand turn lane on NB I-5 off-ramp "G" line shall remain open for public use during these closures.

The extended full closure of the NB I-5 off-ramp "G" line, southbound I-5 on-ramp "C" line, and Ortega Highway at the intersection of the SB ramps, shall not be closed concurrently, except the southbound on-ramp "C" line and Ortega Highway which may be closed concurrently per the requirements stated for Stage 1-F above.

Stage 2:

- In Stage 2A, traffic is shifted from the north side of the old bridge to the new bridge on the south side. Next Construction will be bridge demolition of the north half bridge and a new north side of bridge construction. It will then follow with the remaining NB I-5 loop on-ramp section and opening the loop on-ramp to traffic.

- At the stage 2B, Ortega Highway, west of Del Obispo Street will need a full closure for twenty one (21) days. Detours will be available. Del Obispo Street would be reconstructed along with continued construction of new north half of bridge. In addition, remaining half of SB I-5 off-ramp, retaining wall No. 96, NB on-ramp and retaining wall Nos. 533A, 533B, 533C, 914, 954, 930 and a trapezoidal drainage ditch will be constructed.

  During Stage 2B, Ortega Highway "H" line between El Camino Real and Del Obispo Street maybe fully closed to public traffic for a period of time not to exceed twenty one (21) working days.

- Stage 2C, section of EB SR-74 before the NB I-5 on-ramp will be reconstructed.

- Stage 2D and 2E would deal with constructing the remaining section of EB SR-74 from station 18+87 to 21+31.94 under line "B". Also, the cold planning and placing HMA section of the EB SR-74 from station 20+00 to 21+31.94 on line "B" as well.

Closures Restriction

No extended full closures as noted above will be allowed from the day before Thanksgiving to the day after New Year's Day and during the last two weeks in March of any given year, except for the year 2016. Construction is expected to be completed by 2016. If in any event, it continues thereafter, however, no closure is allowed within the last two

weeks of March & first week of April 2016 and this time period shall also be included in the prohibited period.

The total duration of any long term ramp closure initiated between October 15th and April 15th will not be adjusted due to inclement weather.

Maintain Access

All active driveways within the limits of the project shall remain active and open to local business traffic during business hours. When construction personnel and equipment are present around an active driveway, a flagger shall be used to control vehicle and pedestrian traffic.

During non-working periods, active driveways shall be made functionally operational for the full width of the driveway. This requirement shall include the installation, maintenance, and removal of any temporary surfacing required to allow for the safe transit of any vehicle or pedestrians through the area, until active work resumes or is complete.

All costs of the above activities including flagging are fully computed into Traffic Control System and no additional compensation will be allowed.

3.5. Contingency Plans

In order to avoid significant traffic impacts, it is essential to monitor and respond immediately to delay, pick up closures on time, and have traffic handling and contractor (construction operations) contingency plans. For this reason, the contractor should only stage work that can be completed within the hours or window period specified in the Lane Closure Charts (LLC). In addition, the Resident Engineer (RE) and the District Traffic Manager (DTM) and City Engineer should be notified at least 48 hours in advance of all planned freeway or ramp closures.

The RE needs to ensure that lane closures will not be picked up beyond the lane closure window. Exceptions can occur when the activity needs to be completed for the safety of the public and workers. The RE should coordinate with the DTM and City Engineer if the Contractor needs to work outside the lane requirement chart hours. Contractor compliance with lane closure pickup deadlines can be enforced by RE with suspension of the contract work.

3.5.1. Construction Operations Contingency Plan

A construction operations contingency plan needs to be developed by the Contractor to identify operations, equipment, processes, and materials that may fail and cause delayed opening of lane closures. The contingency plan identifies alternative or additional equipment, materials or workers necessary to ensure continuing operations and on-time opening of closures when a failure occurs. If the alternative or additional equipment, materials, or workers are not on site, the contingency plan specifies the method of mobilizing these items and the required time to complete the mobilization. The RE determines when the Contractor will be required to submit a contingency plan.

This project includes construction operations that require a construction operations contingency plan describing the following:

- Critical stage for each operation when the alternative or additional equipment, materials or workers are to be activated.

- Communication equipment (i.e. cellular telephone(s)) and procedures to be followed when communicating with the Engineer's field representative(s) during activation of the contingency plan.

- Intended amount of work to be done during each lane, shoulder, or ramp closure. The amount of work is described in terms of length, width, and unit of measure conforming to the appropriate progress pay items.

- Operation work schedule with a time line set at 20-minute intervals.

- Contractor plans to meet the projected material delivery rates to the jobsite.

- Times for beginning and ending critical work operations for work being conducted in lane, shoulder, or ramp closure.

- A general time-scaled logic diagram displaying the major activities and sequence of planned operations that comply with the requirements of these special provisions and a set of "contingency action plans" for each stage of the operations to prevent late opening of the traffic lanes shall be specified. "Early finish" and "late finish" milestones shall be clearly identified for every major activity. The "contingency actions plans" shall include detailed operations undertaken should a major activity pass the "late finish" milestone.

- Anticipated length of time it will take to completely pick-up the lane, shoulder, or ramp closure(s) rounded to the nearest 5 minutes.

- Anticipated time(s) for beginning pick-up of lane, shoulder, route, or ramp closure(s).

- Timelines for the Contractor and the Resident Engineer to meet at the worksite to review actual progress and forecast the time at which work will be stopped to open the lane, shoulder, ramp or route to public.

The Contractor will develop a Construction Operations Contingency Plan and will submit the plan within one day of the RE's request. The contingency plan should be discussed at the project preconstruction meeting. The Contractor verifies or updates the contingency plan concurrent with submission of the written schedule of planned closures. If a revision is required, the Contractor should not close any lanes until the contingency plan has been reviewed by the RE.

3.5.2. Traffic Handling Contingency Plan

The Traffic Handling Contingency Plan is a method of operation consisting of measures or actions taken to restore or minimize effects on traffic when the congestion or delay resulting from construction activities exceeds original TMP estimates. This situation may result from unforeseen events such as work zone incidents, higher than predicted traffic demand, or late lane closure pickups.

These traffic handling contingency measures may include, but are not limited to, the following:

- Notification to the TMC
- Request of TMT assistance
- Activation of CMS or PCMS
- Activation of the HAR system
- Notification to the CHP
- Notification to the media
- Activation of a detour
- Follow-up with the RE if activation of the contractor's (construction operations) contingency plan is appropriate

Depending on the situation, these measures may be implemented by the District Transportation Manager (DTM), the Resident Engineer (RE), or the Transportation Management Center (TMC).

4.TMP ESTIMATE

Co/Rte	Orange/ I-5 & SR 74	**PM**	I 5 9.3/10.0 & SR 74 0.0/0.2	**EA**	0E3101
Project Limit	I5 & SR 74 INTERCHANGE IN SAN JUAN CAPISTRANO				
Project Description	TO CONSTRUCT A NEW TRAFFIC INTERCHANGE INCLUDING RAMP WIDENING & CONFIGURATION				

	Quantity	Total
1) Public Information		
Brochures and Mailers	LS	**$ 200,000**
Media		
Press Releases		
Others		
2) Motorist Information Strategies		
PCMS		**$ 200,000**
Construction Area Signs		**$ 60,000**
3) Incident Management		
Construction Zone Enhanced Enforcement Program (COZEEP) (duration is 12/2012 to 11/2014)		**$300,000**
Freeway Service Patrol (FSP)	LS	**$10,000**
Traffic Management Team (TMT)	LS	**$ 25,000**
Traffic Control System	LS	**$ 700,000**
Maintain Traffic	LS	**$ 200,000**
Maintain Detour	LS	**$300,000**
Automated Queue Warning System	LS	**$200,000**
4) Alternative Route Strategies		
Traffic Control Officers	LS	**$ 50,000**
City	LS	**$ 100,000**
TOTAL ESTIMATED COST OF TMP ELEMENTS		**$ 2,345,000**

ATTACHMENT A
PROJECT LOCATION MAP

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

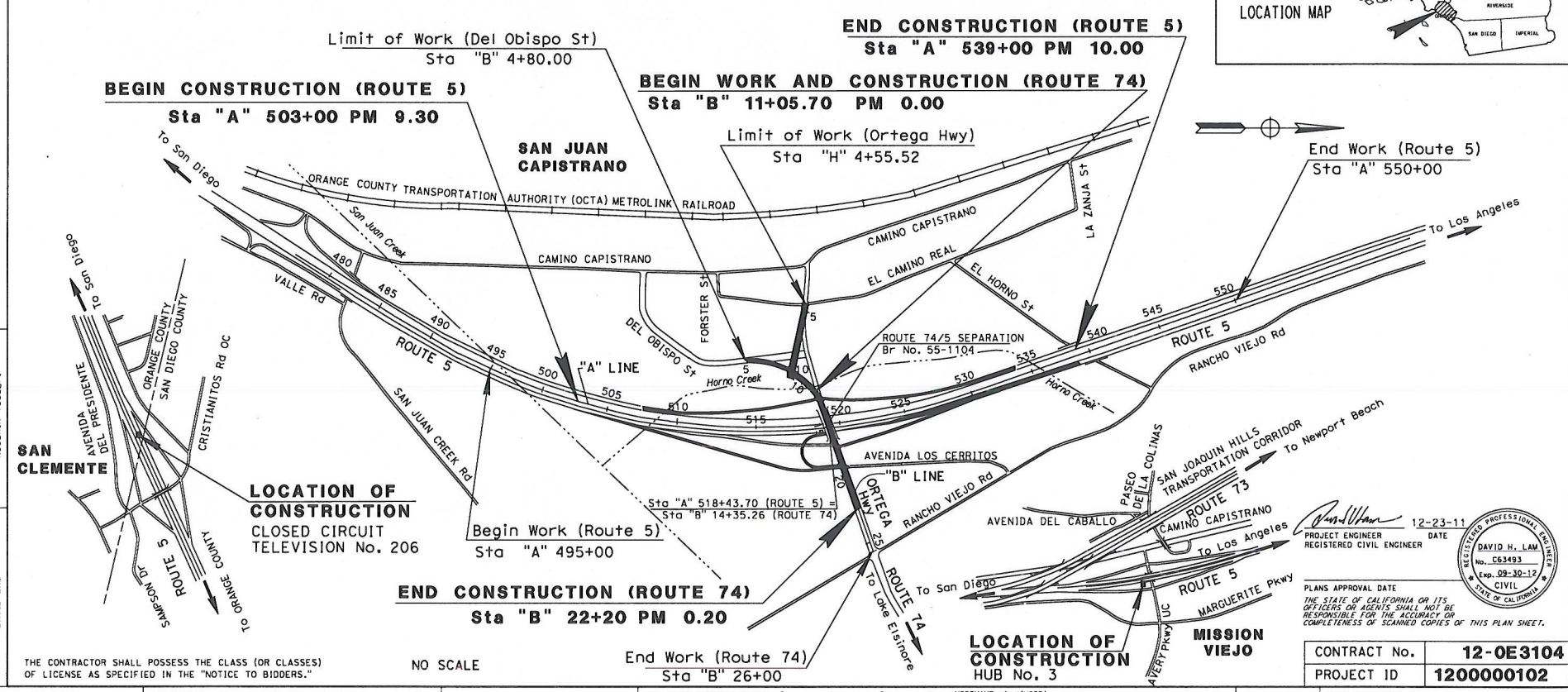
STATE HIGHWAY

IN ORANGE COUNTY
IN SAN JUAN CAPISTRANO

ON ROUTE 5 FROM 0.2 MILE SOUTH OF ROUTE 74/5 SEPARATION TO 0.5 MILE NORTH OF ROUTE 74/5 SEPARATION AND ON ROUTE 74 FROM 0.1 MILE WEST OF ROUTE 74/5 SEPARATION TO 0.1 MILE EAST OF ROUTE 74/5 SEPARATION AND IN SAN CLEMENTE AT ORANGE COUNTY/ SAN DIEGO COUNTY LINE AND IN MISSION VIEJO AT AVERY PARKWAY UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2		



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

NO SCALE

12-23-11
PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — DAVID H. LAM — No. C63493 — Exp. 09-30-12 — 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.	12-0E3104
PROJECT ID	1200000102

PROJECT MANAGER: NOOSHIN YOOSEFI
DESIGN ENGINEER: DAVID LAM

LAST REVISION 12-02-11 — DATE PLOTTED => 12/15/2011 — TIME PLOTTED => 4:20:44 PM

BORDER LAST REVISED 7/2/2010 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102db001.dgn | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

ATTACHMENT B
LANE CLOSURE CHARTS

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for multilane highways. Edit chart title and use as many charts as needed.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 1
Freeway/Expressway Lane Requirements

County: Orange | Route/Direction: 5/ NB & SB | PM: VAR

Closure Limits: NB & SB Route I-5 mainline between on & off ramps @ Route74 (I-5/74 Interchange)

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	2	2	2	2	3	4																S	4	3	
Fridays	2	2	2	2	3	4																S	4	3	
Saturdays	2	1	1	1	1	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	4	3	2	
Sundays	2	1	1	1	1	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	4	3	2	

Legend:

Delete [cut] any legend not used.

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer to be used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

Edit for right or left shoulder closure. Do not edit if both shoulder closures apply.

1	Provide at least one through freeway lane open in direction of travel
2	Provide at least two adjacent through freeway lanes open in direction of travel
3	Provide at least three adjacent through freeway lanes open in direction of travel
4	Provide at least four adjacent through freeway lanes open in direction of travel
~~5~~	~~Provide at least five adjacent through freeway lanes open in direction of travel~~
S	Shoulder closure permitted (right / left)
~~N~~	~~No work permitted~~
	Work permitted within project right of way where shoulder or lane closure is not required.

REMARKS:

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for complete freeway or expressway closure. Edit chart title and use as many charts as needed.

Specify in REMARKS detour route or reference to the applicable detour or traffic handling plans, if appropriate.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 2
Complete Freeway/Expressway Closure Hours

County: Orange	Route/Direction: 5/ NB & SB	PM: VAR

Closure Limits: NB & SB I-5 mainline between on & off ramps @ RT 74 (I-5/RT74 Interchange)

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays																									
Fridays																									
Saturdays	C	C	C	C	C	C																			
Sundays	C	C	C	C	C	C																			

Legend:

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

C	Freeway or expressway may be closed completely.
	No complete freeway or expressway closure is permitted.

REMARKS: This full closures is only for special events such as bridge demolition, false work etc or approved by the Resident Engineer.

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for ramp closure. Edit chart title and use as many charts as needed. Use "Complete Ramp Closure Hours" as chart title for complete ramp closure. Use "Ramp Lane Requirements" as chart title for lane closure on ramp with multiple lanes.

Specify in REMARKS detour route or reference to the applicable detour or traffic handling plans, if appropriate.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 3
Complete Ramp Closure Hours/Ramp Lane Requirements

County: Orange	Route/Direction: Route 5/ NB & SB	PM: Var

Closure Limits:
1. SB Route 5 Off-Ramp to Route 74
2. NB Route 5 Off-Ramp to Route 74

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C																		1	C	
Fridays	C	C	C	C	C																		1	C	
Saturdays	C	C	C	C	C	C	1																1	C	
Sundays	C	C	C	C	C	C	1																1	C	

Legend:

Delete [cut] any legend not used.

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer to be used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

Edit for right or left shoulder closure. Do not edit if both shoulder closures apply.

1	Provide at least one ramp lane, not less than 11feet in width, open in direction of travel
~~2~~	~~Provide at least two adjacent ramp lanes open in direction of travel~~
C	Ramp may be closed completely
~~S~~	~~Shoulder closure permitted~~
~~N~~	~~No work permitted~~
	Work permitted within project right of way where shoulder or lane closure is not required.

REMARKS:

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for ramp closure. Edit chart title and use as many charts as needed. Use "Complete Ramp Closure Hours" as chart title for complete ramp closure. Use "Ramp Lane Requirements" as chart title for lane closure on ramp with multiple lanes.

Specify in REMARKS detour route or reference to the applicable detour or traffic handling plans, if appropriate.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 4
Complete Ramp Closure Hours/Ramp Lane Requirements

County: Orange	Route/Direction: Route 5/ NB & SB	PM: Var

Closure Limits:
1. SB Route 5 On-Ramp from Route 74
2. NB Route 5 On-Ramp from Route 74

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C																			1	1
Fridays	C	C	C	C	C																			1	1
Saturdays	C	C	C	C	C	C	C																	1	1
Sundays	C	C	C	C	C	C	C																	1	1

Legend:

Delete [cut] any legend not used.

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer to be used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

Edit for right or left shoulder closure. Do not edit if both shoulder closures apply.

1	Provide at least one ramp lane, not less than 11feet in width, open in direction of travel
~~2~~	~~Provide at least two adjacent ramp lanes open in direction of travel~~
C	Ramp may be closed completely
~~S~~	~~Shoulder closure permitted~~
~~N~~	~~No work permitted~~
	Work permitted within project right of way where shoulder or lane closure is not required.

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for conventional highways. Edit chart title and use as many charts as needed.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 5
Conventional Highway Lane Requirements

County: Orange	Route/Direction: 74/ WB & EB	PM: VAR

Closure Limits: WB & EB Route 74 between on & off ramps @ I-5/74 Interchange.

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1																				1
Fridays	1	1	1	1	1																				1
Saturdays	1	1	1	1	1																				1
Sundays	1	1	1	1	1																				1

Legend:

Delete [cut] any legend not used.

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer to be used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

Edit for right or left shoulder closure. Do not edit if both shoulder closures apply.

1	Provide at least one through traffic lane open in direction of travel
~~2~~	~~Provide at least two adjacent through traffic lanes open in direction of travel~~
~~3~~	~~Provide at least three adjacent through traffic lanes open in direction of travel~~
~~R~~	~~Provide at least one through traffic lane, not less than 10 feet in width, for use by both directions of travel (Reversing Control)~~
~~S~~	~~Shoulder closure permitted~~
~~N~~	~~No work permitted.~~
	Work permitted within project right of way where shoulder or lane closure is not required.

REMARKS:

USE WITH 2006 STANDARDS.

Add charts to SSP 12-100.

Use for complete closure on conventional highways. Edit chart title and use as many charts as needed.

Specify in REMARKS detour route or reference to the applicable detour or traffic handling plans, if appropriate.

Edits do not require approval by the SSP Owner, but must be verified by the District Traffic Manager.

Chart No. 6
Complete Conventional Highway Closure Hours

County: Orange	Route/Direction: : 74/ WB & EB	PM: VAR

Closure Limits: (a) WB & EB Route 74 between on & off ramps @ I-5/74 Interchange.
(b) NB I-5 loop on-ramp from RT 74.

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays																									
Fridays																									
Saturdays	C	C	C	C	C	C																			
Sundays	C	C	C	C	C	C																			

Legend:

Do NOT use shading or crosshatching. The "Lane Requirement Chart" toolbar is no longer to be used. 1/2-hour increments can be accomplished by splitting the appropriate cell.

C	Conventional highway may be closed completely
	No complete conventional highway closure is permitted

REMARKS: This chart would follow Chart # 2 concurrently for special events such as bridge demolition work, false work etc or approved by Resident Engineer.

ATTACHMENT C
GUIDELINES FOR PORTABLE AND FIXED CMS's

Portable and Permanent Changeable Message Signs Guidelines Summary

INTRODUCTION:
Changeable Message Signs (CMS) perform a critical role on highways by furnishing drivers with **real-time** information that advises them of a problem and in some cases, a suggested course of action. Changeable message signs improve motorist safety and reduce traffic congestion and delay. To be effective, CMS's must provide timely, accurate and reliable information.

Signs shall only display information that:
- Is timely, accurate and reliable
- Is related to current traffic, roadway, or weather conditions
- Addresses unexpected or non-recurrent conditions

POLICY:
It is the policy of Caltrans to display only real-time information that conveys current traffic safety and congestion information.

Improper use of a CMS can adversely affect traffic flow. In areas where both Fixed and Portable signs are used, it is important that no conflicting messages are displayed simultaneously.

Public service messages are not permitted because motorists who continually travel a specific route can become so accustomed to the sign message that real-time traffic messages are ignored.

Messages with commercial logos, or local identifiers which may be construed as advertising are not permitted.

LOCATION:
Portable Changeable Message Signs should be:
- Parked on the shoulder of the roadway. If possible, the PCMS should be parked, as far from the traveled way as possible or behind an existing barrier, provided message isn't obstructed.
- Angled toward the traffic to reduce glare and increase the effective cone of visibility.
- Placed before or at the crest of vertical roadway curves to obtain maximum visibility. Placement within horizontal curves should be avoided.
- Parked on the same side of the roadway, if more than one is needed, and separated by at least 1000 feet.

The message on the sign, however, must be periodically monitored to ensure the sign is functioning and displaying the proper message.

Permanent Changeable Message Signs should be:

- Located upstream from major decision points (ramps and freeway to freeway interchanges that will allow drivers to take an alternate route).
- Located upstream of bottlenecks, high accident areas, and/or major special event facilities (stadiums, convention centers, etc.)
- Located to give regional information concerning weather conditions such as snow, ice, fog, wind or dust.

In most cases, drivers are not anticipating taking a different route until they read the message on the CMS. Drivers in the inside lane must have ample time to read the message and change lanes for exiting.
It is recommended that a CMS be installed in advance of major decision points, typically 1.6 to 3.2 Km in advance of a freeway to freeway interchange.

VISIBILITY

There are two aspects to sign visibility:

- The ease with which a sign can be detected in the environment, or how well it attracts the driver's attention (target value)
- The ease with which the message can be read (legibility). The recognition that a sign is present plays a key role in the driver's reaction to the message

The luminance or brightness of a sign is also an important factor in its visibility. The luminance of a sign is affected by time of day or weather conditions. Signs should also be monitored for malfunctioning disks or burned out lamps.

MESSAGE CONTENT AND EXPOSURE:

Portable Changeable Message Signs:
The Manual on Uniform Traffic Control Devices states that PCMS messages should be readily understood by drivers so they will have adequate time to react. Messages should be designed taking into account the following factors:

- No more than two displays should be used within any message cycle
- Each display should convey a single thought
- Messages should be as brief as possible
- Messages shall not scroll horizontally or vertically

In general, a driver will need at least one second per short word (up to eight characters not counting prepositions), or two seconds per unit of information to read and recall a message. The most important criteria are that the motorist is able to read the message twice at the prevailing operating speed.

The cycle time and duration of the message used on a PCMS is related to the operating speed of the highway, the size of the panel, message content and length, available sight distance, and other conditions which vary with each situation. The effectiveness of a message is determined

by the degree of motorist response. It may be necessary to adjust the message rate several times until maximum effectiveness is obtained.

Permanent Changeable Message Signs:
The following factors should be considered before displaying a message for a particular condition:

- Severity of the condition
- Traffic impacts on the network and local road system
- Proximity of CMS's to the condition
- Action required by drivers
- Number/percent of motorists viewing the sign who are affected by condition
- Value of information being provided

Advisory Sign messages should consist of one or more of the following elements:

- A problem statement (accident, roadwork, etc.)
- An effect statement (delay, heavy traffic, etc.)
- An attention statement which addresses a certain group or audience (commuter, tourist, etc.)
- An action statement (what to do)

TYPICAL MESSAGES FOR CHANGEABLE MESSAGE SIGNS FOR TRAFFIC MANAGEMENT:
These messages are available in the CMS guidelines.

ATTACHMENT D

STAGE CONSTRUCTION & TRAFFIC HANDLING PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAU No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.
3. FOR BRIDGE DEMOLITION SEE STRUCTURE PLANS FOR DETAILS.

TRAFFIC CONTROL:

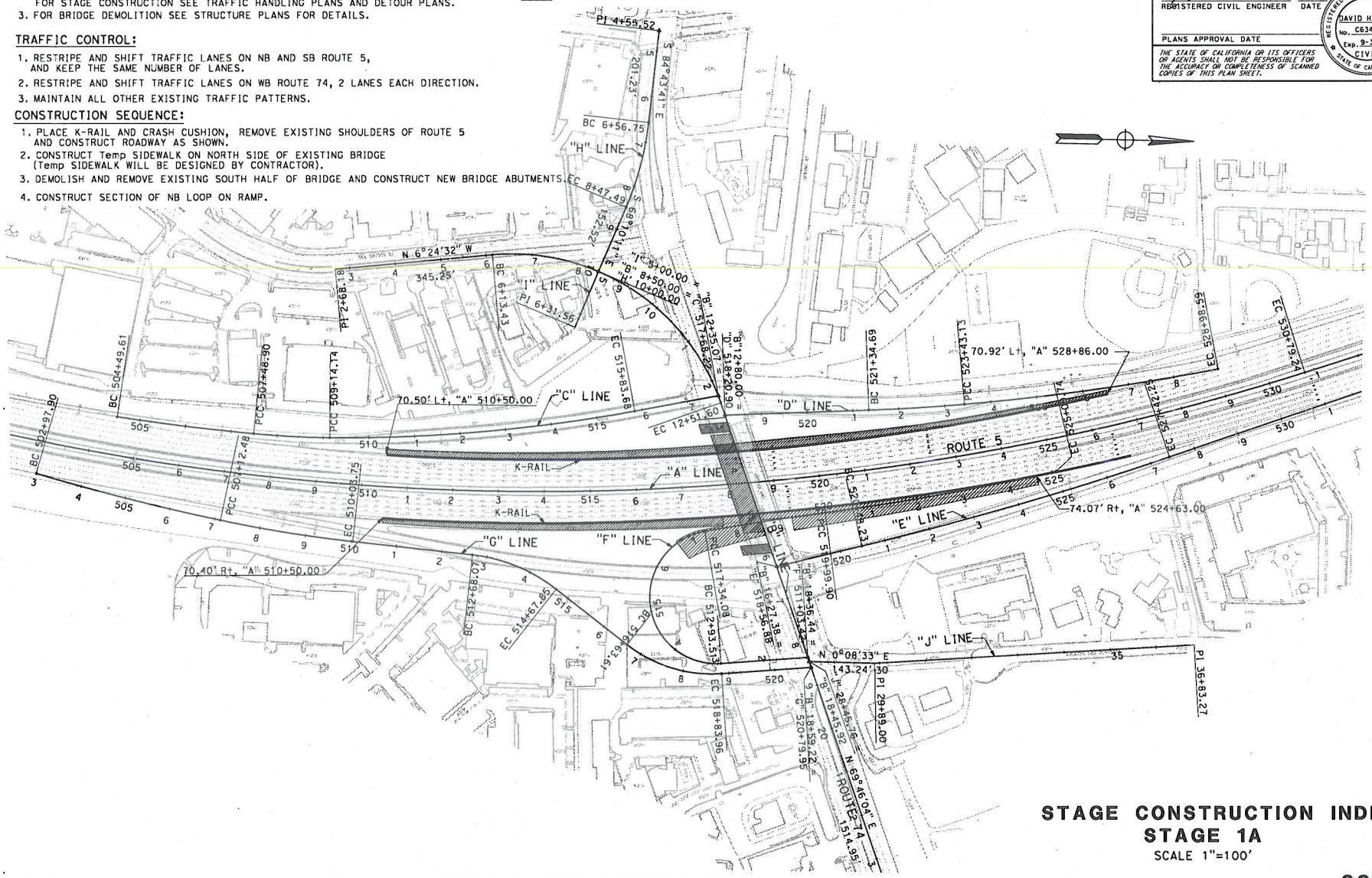
1. RESTRIPE AND SHIFT TRAFFIC LANES ON NB AND SB ROUTE 5, AND KEEP THE SAME NUMBER OF LANES.
2. RESTRIPE AND SHIFT TRAFFIC LANES ON WB ROUTE 74, 2 LANES EACH DIRECTION.
3. MAINTAIN ALL OTHER EXISTING TRAFFIC PATTERNS.

CONSTRUCTION SEQUENCE:

1. PLACE K-RAIL AND CRASH CUSHION, REMOVE EXISTING SHOULDERS OF ROUTE 5 AND CONSTRUCT ROADWAY AS SHOWN.
2. CONSTRUCT Temp SIDEWALK ON NORTH SIDE OF EXISTING BRIDGE (Temp SIDEWALK WILL BE DESIGNED BY CONTRACTOR).
3. DEMOLISH AND REMOVE EXISTING SOUTH HALF OF BRIDGE AND CONSTRUCT NEW BRIDGE ABUTMENTS.
4. CONSTRUCT SECTION OF NB LOOP ON RAMP.

LEGEND:

ROADWAY CONSTRUCTION



STAGE CONSTRUCTION INDEX
STAGE 1A
SCALE 1"=100'

SC-1

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: FRED FAIZI
CALCULATED DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY / DATE REVISED

LAST REVISION / DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) | DGN FILE => J:\maintline\120000102ma001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

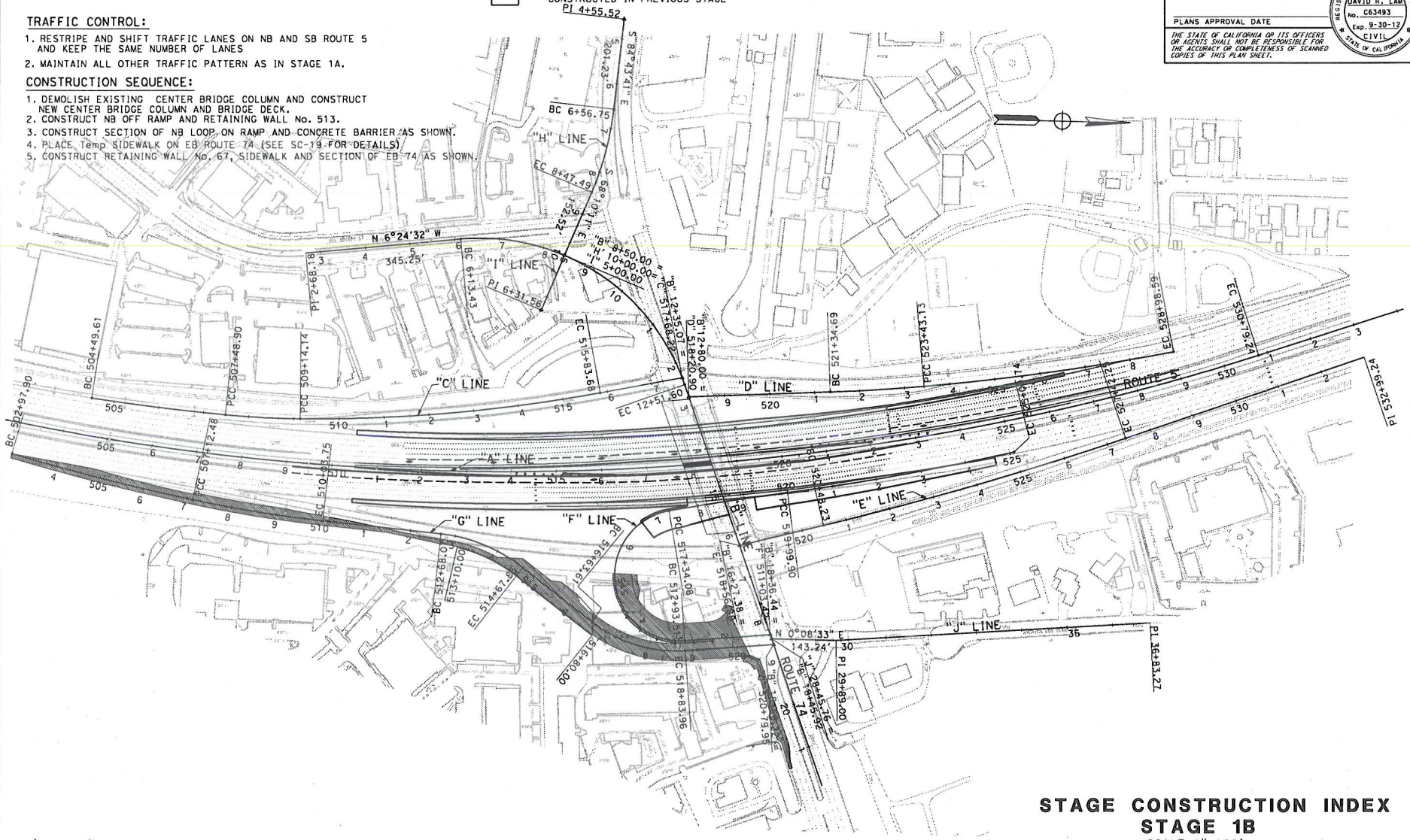
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. RESTRIPE AND SHIFT TRAFFIC LANES ON NB AND SB ROUTE 5 AND KEEP THE SAME NUMBER OF LANES
2. MAINTAIN ALL OTHER TRAFFIC PATTERN AS IN STAGE 1A.

CONSTRUCTION SEQUENCE:

1. DEMOLISH EXISTING CENTER BRIDGE COLUMN AND CONSTRUCT NEW CENTER BRIDGE COLUMN AND BRIDGE DECK.
2. CONSTRUCT NB OFF RAMP AND RETAINING WALL No. 513.
3. CONSTRUCT SECTION OF NB LOOP ON RAMP AND CONCRETE BARRIER AS SHOWN.
4. PLACE Temp SIDEWALK ON EB ROUTE 74 (SEE SC-19 FOR DETAILS)
5. CONSTRUCT RETAINING WALL No. 67, SIDEWALK AND SECTION OF EB 74 AS SHOWN.



STAGE CONSTRUCTION INDEX
STAGE 1B
SCALE 1"=100'

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

SC-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

TRAFFIC CONTROL:

1. FULL CLOSURE OF NB OFF RAMP.
2. MAINTAIN ALL OTHER TRAFFIC PATTERN AS IN STAGE 1B.
3. SIDEWALK AND Temp SIDEWALK REMAIN OPEN DURING CONSTRUCTION.

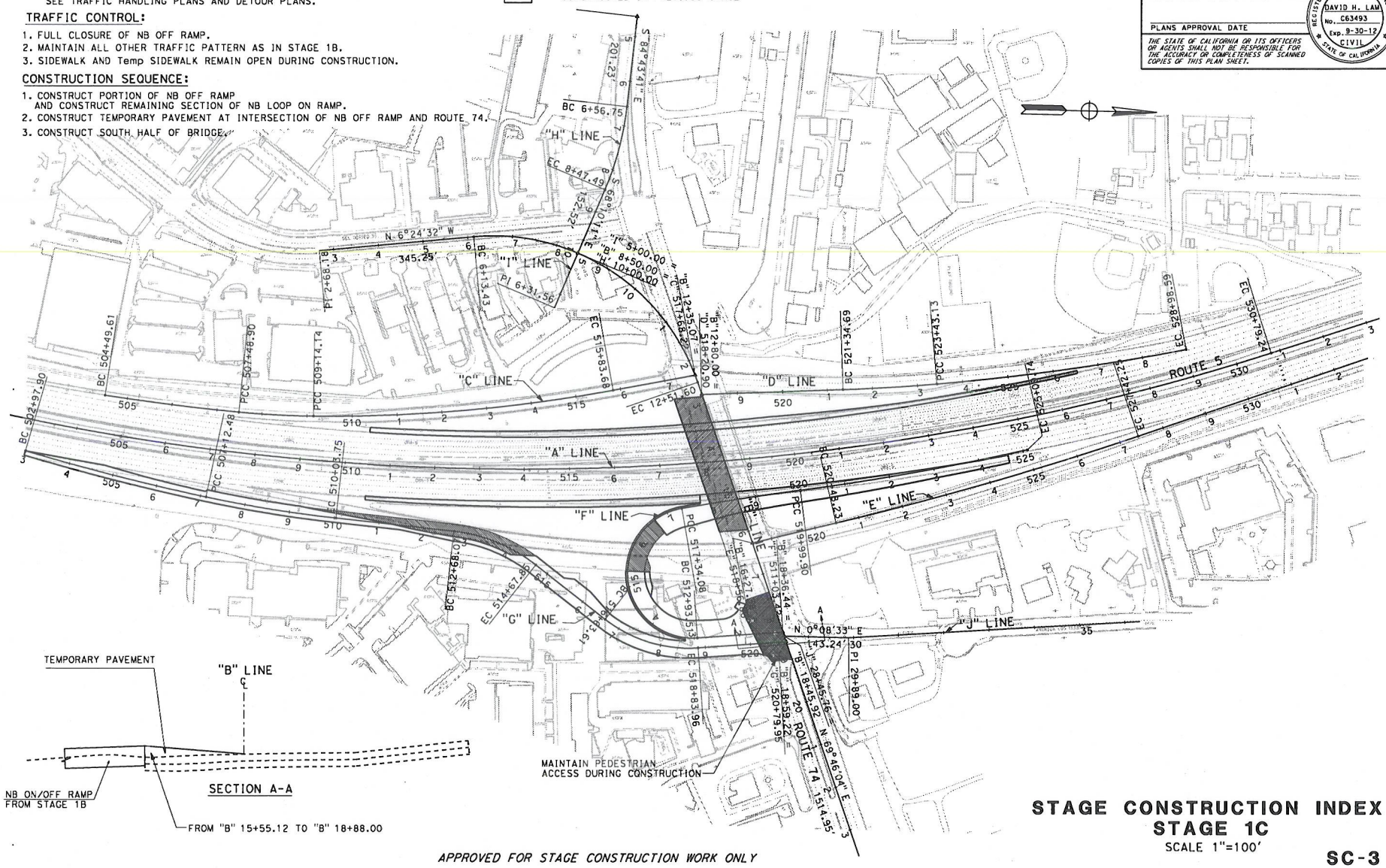
CONSTRUCTION SEQUENCE:

1. CONSTRUCT PORTION OF NB OFF RAMP AND CONSTRUCT REMAINING SECTION OF NB LOOP ON RAMP.
2. CONSTRUCT TEMPORARY PAVEMENT AT INTERSECTION OF NB OFF RAMP AND ROUTE 74.
3. CONSTRUCT SOUTH HALF OF BRIDGE.

LEGEND:

ROADWAY CONSTRUCTION

CONSTRUCTED IN PREVIOUS STAGE



APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STAGE CONSTRUCTION INDEX
STAGE 1C
SCALE 1"=100'

SC-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: FRED FAIZI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

TRAFFIC CONTROL:

1. OPEN NEW NB OFF RAMP TO TRAFFIC.
2. RESTRIPE AND REDUCE SB OFF RAMP TRAFFIC TO ONE LANE ONLY.
3. MAINTAIN ALL OTHER TRAFFIC PATTERN AS IN STAGE 1C.
4. MAINTAIN ACCESS FOR MC DONALD AND DEL TACO RESTAURANTS AT ALL TIME.
5. NO TRUCKS ALLOW DURING CONSTRUCTION AT THIS STAGE DUE TO THE REDUCTION OF TRUCK TURNING RADIUS (SB OFF RAMP TO EB ROUTE 74).

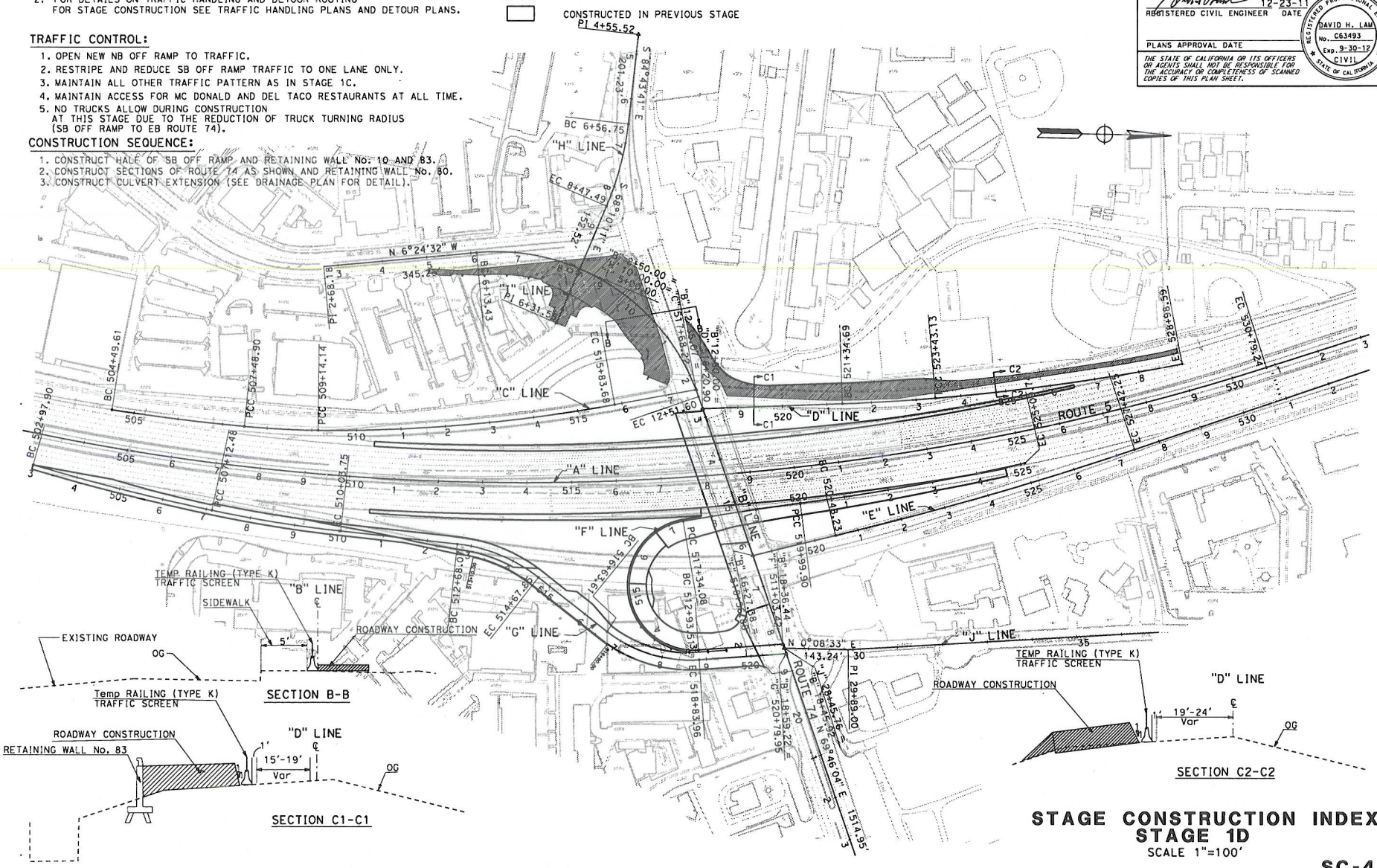
CONSTRUCTION SEQUENCE:

1. CONSTRUCT HALF OF SB OFF RAMP AND RETAINING WALL No. 10 AND 83.
2. CONSTRUCT SECTIONS OF ROUTE 74 AS SHOWN AND RETAINING WALL No. 80.
3. CONSTRUCT CULVERT EXTENSION (SEE DRAINAGE PLAN FOR DETAIL).

LEGEND:

ROADWAY CONSTRUCTION

CONSTRUCTED IN PREVIOUS STAGE



STAGE CONSTRUCTION INDEX
STAGE 1D
SCALE 1"=100'

SC-4

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUCINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

LAST REVISION

DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

TRAFFIC CONTROL:

1. FULL SB ON RAMP CLOSURE.
2. MAINTAIN ALL REMAINING TRAFFIC PATTERNS AS IN STAGE 1D.
3. Temp. CROSS WALK AT "B" 19+00

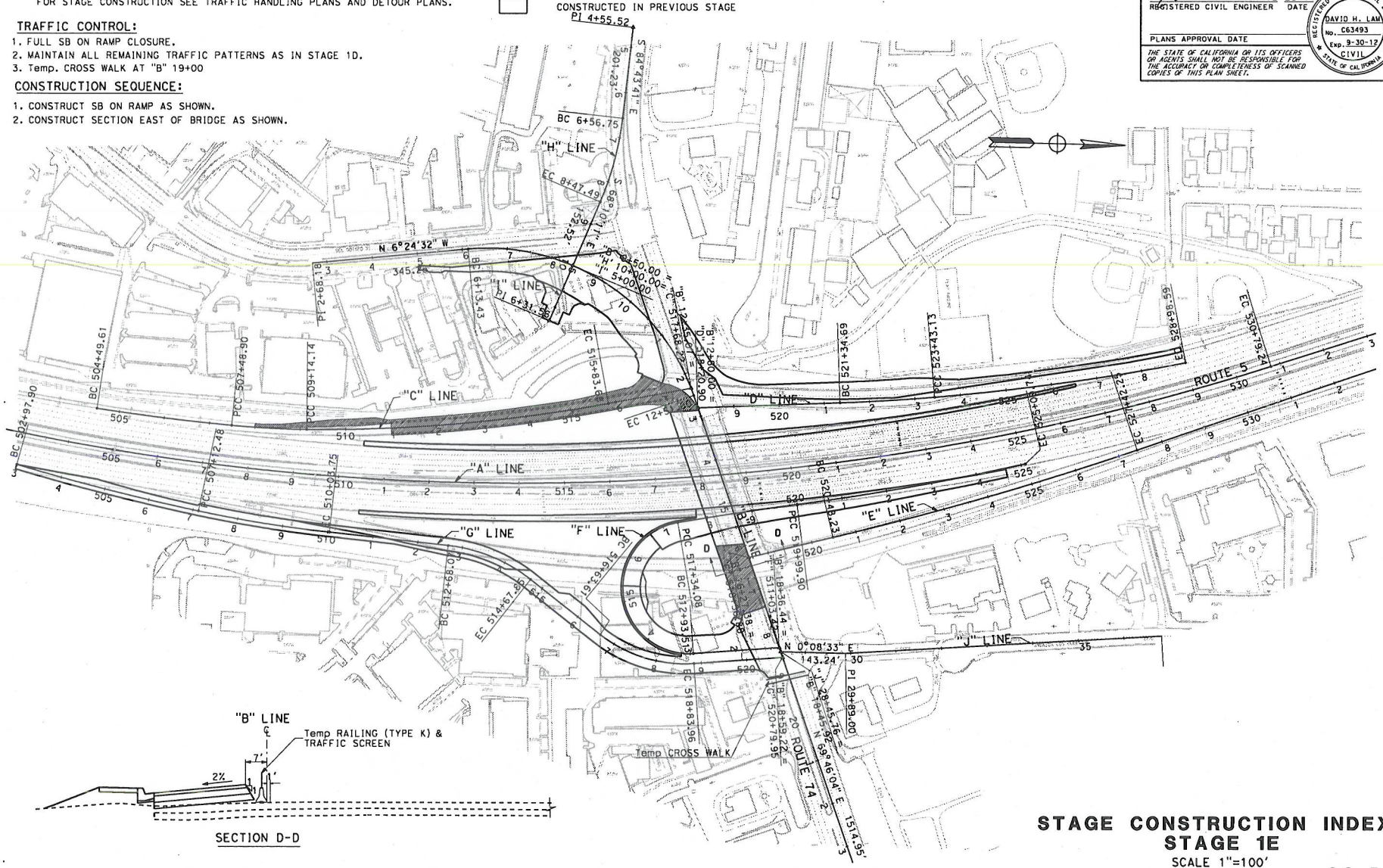
CONSTRUCTION SEQUENCE:

1. CONSTRUCT SB ON RAMP AS SHOWN.
2. CONSTRUCT SECTION EAST OF BRIDGE AS SHOWN.

LEGEND:

ROADWAY CONSTRUCTION

CONSTRUCTED IN PREVIOUS STAGE



STAGE CONSTRUCTION INDEX
STAGE 1E
SCALE 1"=100'

SC-5

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUCINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

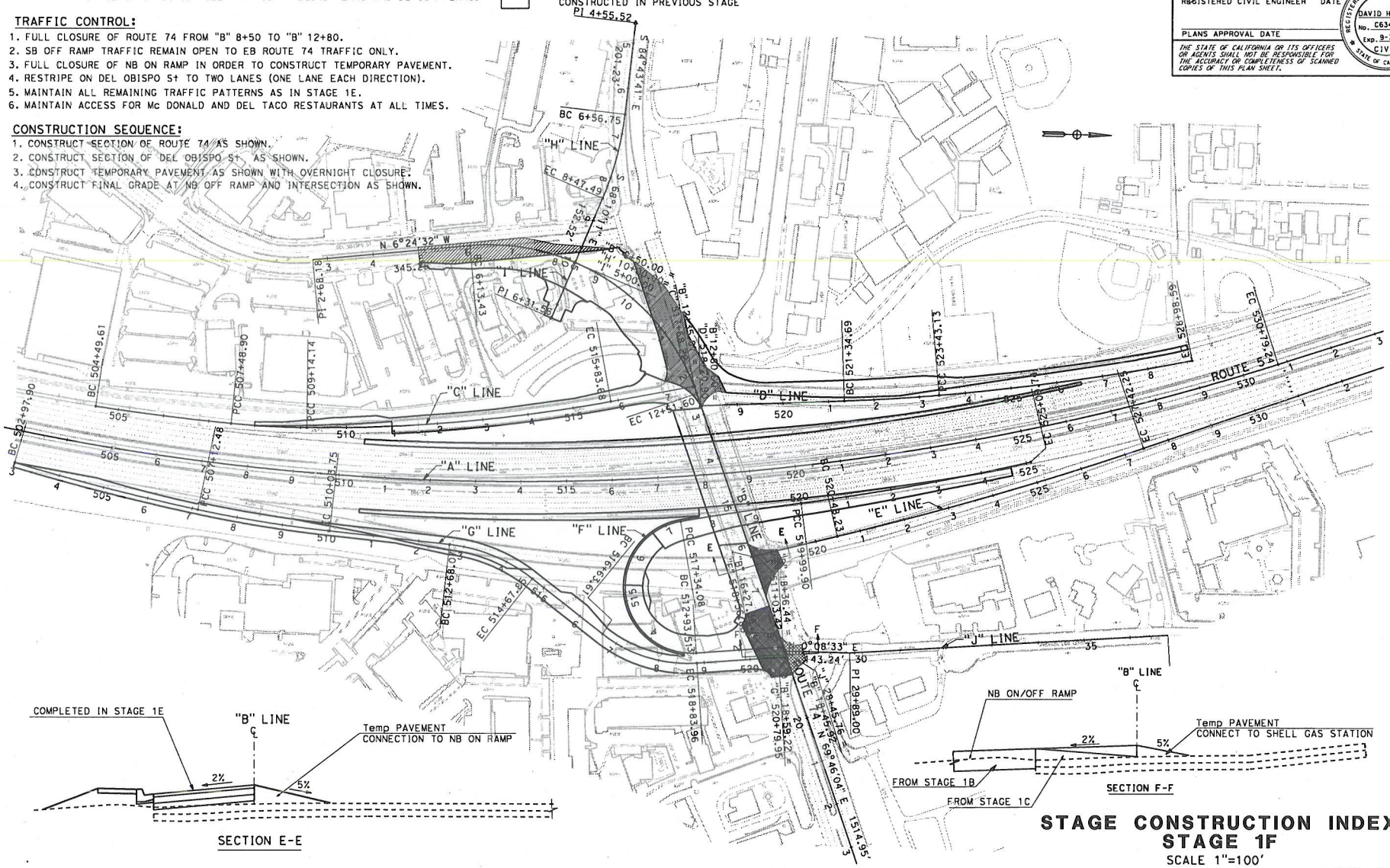
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. FULL CLOSURE OF ROUTE 74 FROM "B" 8+50 TO "B" 12+80.
2. SB OFF RAMP TRAFFIC REMAIN OPEN TO EB ROUTE 74 TRAFFIC ONLY.
3. FULL CLOSURE OF NB ON RAMP IN ORDER TO CONSTRUCT TEMPORARY PAVEMENT.
4. RESTRIPE ON DEL OBISPO St TO TWO LANES (ONE LANE EACH DIRECTION).
5. MAINTAIN ALL REMAINING TRAFFIC PATTERNS AS IN STAGE 1E.
6. MAINTAIN ACCESS FOR Mc DONALD AND DEL TACO RESTAURANTS AT ALL TIMES.

CONSTRUCTION SEQUENCE:

1. CONSTRUCT SECTION OF ROUTE 74 AS SHOWN.
2. CONSTRUCT SECTION OF DEL OBISPO St AS SHOWN.
3. CONSTRUCT TEMPORARY PAVEMENT AS SHOWN WITH OVERNIGHT CLOSURE.
4. CONSTRUCT FINAL GRADE AT NB OFF RAMP AND INTERSECTION AS SHOWN.



STAGE CONSTRUCTION INDEX STAGE 1F

SCALE 1"=100'

SC-6

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUCINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\120000102ma006.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

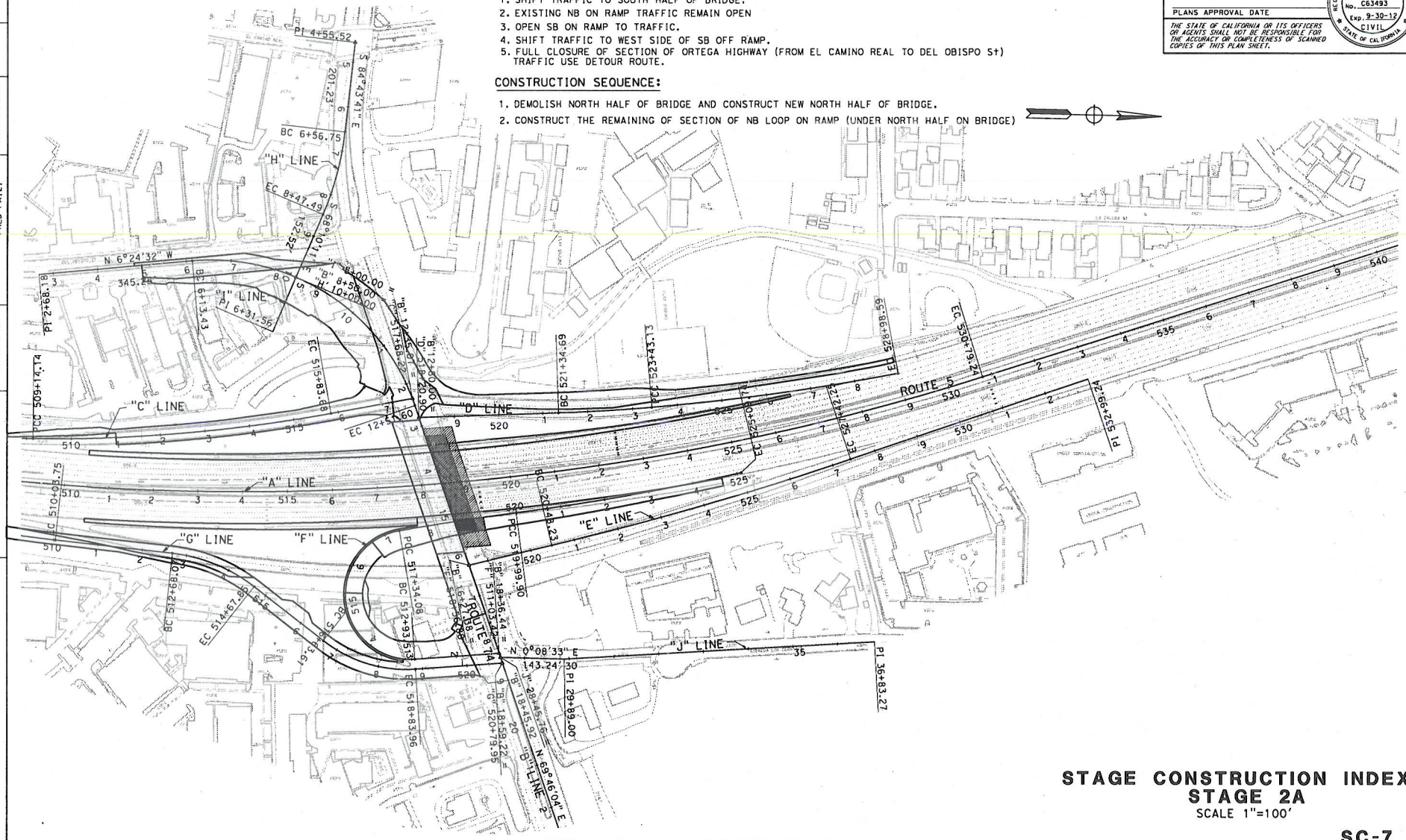
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. SHIFT TRAFFIC TO SOUTH HALF OF BRIDGE.
2. EXISTING NB ON RAMP TRAFFIC REMAIN OPEN
3. OPEN SB ON RAMP TO TRAFFIC.
4. SHIFT TRAFFIC TO WEST SIDE OF SB OFF RAMP.
5. FULL CLOSURE OF SECTION OF ORTEGA HIGHWAY (FROM EL CAMINO REAL TO DEL OBISPO St) TRAFFIC USE DETOUR ROUTE.

CONSTRUCTION SEQUENCE:

1. DEMOLISH NORTH HALF OF BRIDGE AND CONSTRUCT NEW NORTH HALF OF BRIDGE.
2. CONSTRUCT THE REMAINING OF SECTION OF NB LOOP ON RAMP (UNDER NORTH HALF ON BRIDGE)



STAGE CONSTRUCTION INDEX
STAGE 2A
SCALE 1"=100'

SC-7

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

DAVID LAM	REVISED BY
FRED FAIZI	DATE REVISED
CALCULATED-DESIGNED BY	
CHECKED BY	
FUNCTIONAL SUPERVISOR	
MATTHEW CUCINI	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN

LAST REVISION DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000010 2ma007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

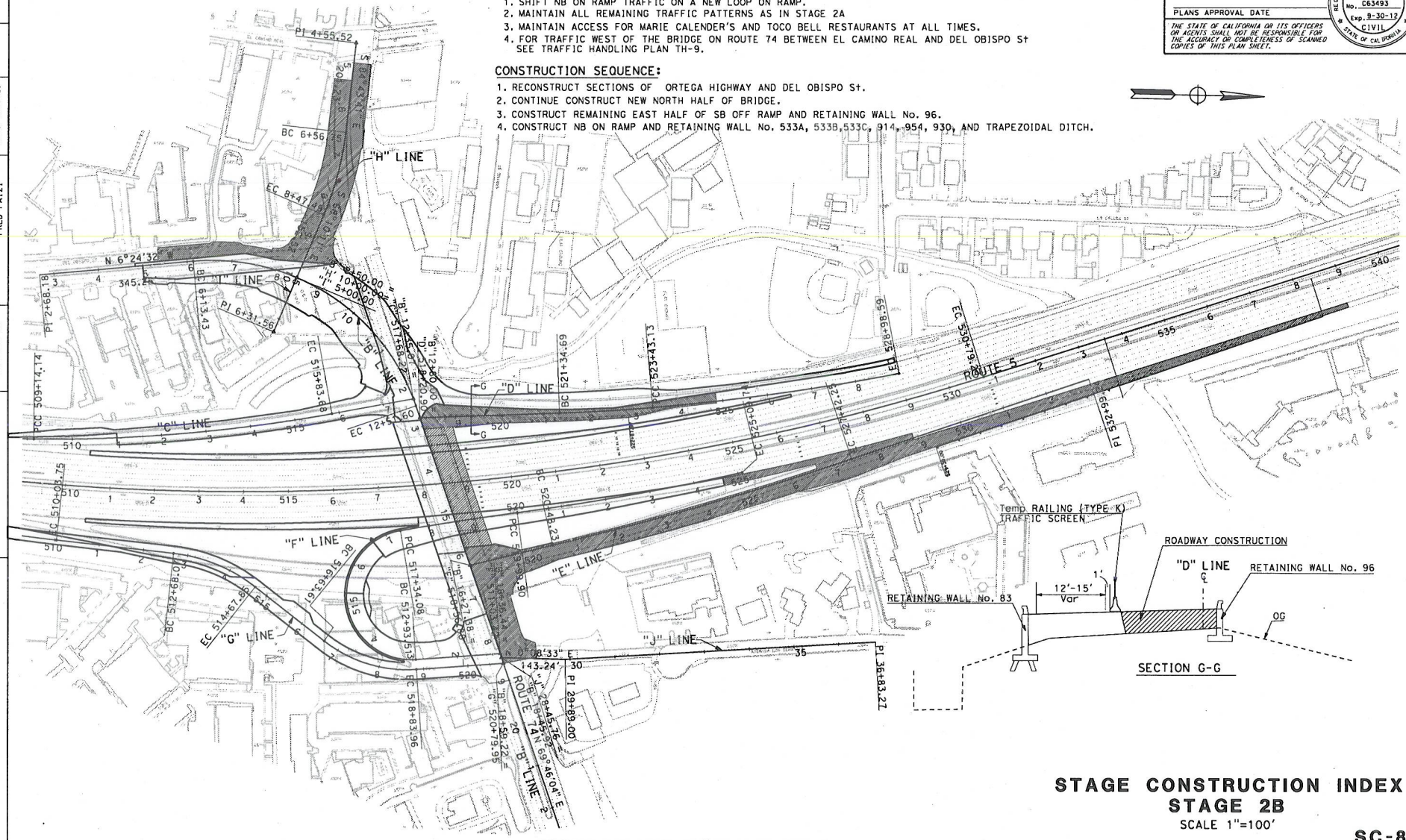
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. SHIFT NB ON RAMP TRAFFIC ON A NEW LOOP ON RAMP.
2. MAINTAIN ALL REMAINING TRAFFIC PATTERNS AS IN STAGE 2A
3. MAINTAIN ACCESS FOR MARIE CALENDER'S AND TOCO BELL RESTAURANTS AT ALL TIMES.
4. FOR TRAFFIC WEST OF THE BRIDGE ON ROUTE 74 BETWEEN EL CAMINO REAL AND DEL OBISPO St SEE TRAFFIC HANDLING PLAN TH-9.

CONSTRUCTION SEQUENCE:

1. RECONSTRUCT SECTIONS OF ORTEGA HIGHWAY AND DEL OBISPO St.
2. CONTINUE CONSTRUCT NEW NORTH HALF OF BRIDGE.
3. CONSTRUCT REMAINING EAST HALF OF SB OFF RAMP AND RETAINING WALL No. 96.
4. CONSTRUCT NB ON RAMP AND RETAINING WALL No. 533A, 533B,533C, 914, 954, 930, AND TRAPEZOIDAL DITCH.



STAGE CONSTRUCTION INDEX
STAGE 2B
SCALE 1"=100'

SC-8

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

FUNCTIONAL SUPERVISOR	MATTHEW CUGINI
CALCULATED-DESIGNED BY	DAVID LAM
CHECKED BY	FRED FAIZI
REVISED BY	
DATE REVISED	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

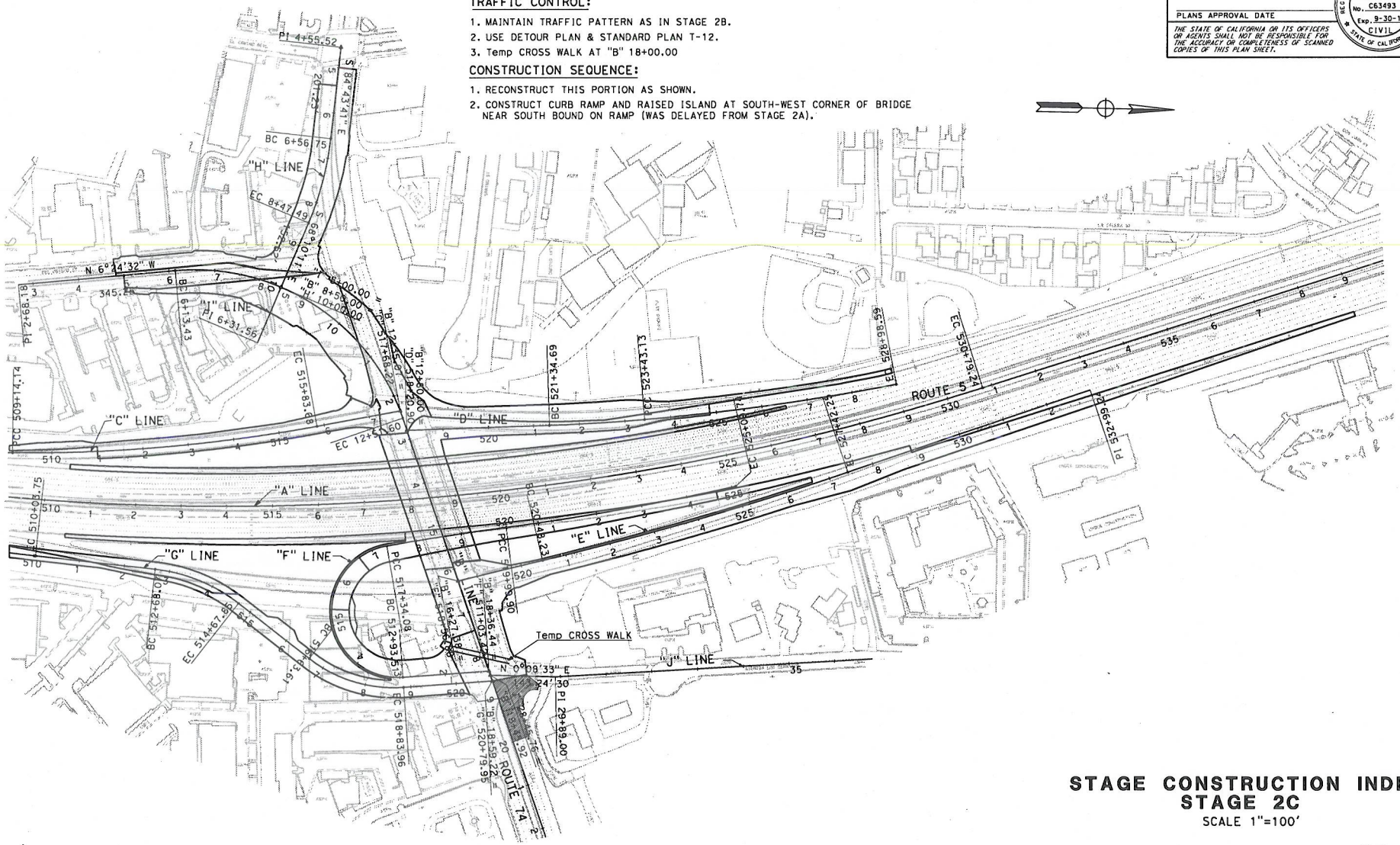
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. MAINTAIN TRAFFIC PATTERN AS IN STAGE 2B.
2. USE DETOUR PLAN & STANDARD PLAN T-12.
3. Temp CROSS WALK AT "B" 18+00.00

CONSTRUCTION SEQUENCE:

1. RECONSTRUCT THIS PORTION AS SHOWN.
2. CONSTRUCT CURB RAMP AND RAISED ISLAND AT SOUTH-WEST CORNER OF BRIDGE NEAR SOUTH BOUND ON RAMP (WAS DELAYED FROM STAGE 2A).



STAGE CONSTRUCTION INDEX
STAGE 2C

SCALE 1"=100'

SC-9

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	
FUNCTIONAL SUPERVISOR	MATTHEW CUGINI
CALCULATED-DESIGNED BY	DAVID LAM
CHECKED BY	FRED FAIZI
REVISED BY	
DATE REVISED	

DESIGN

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma009.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

LAST REVISION | DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

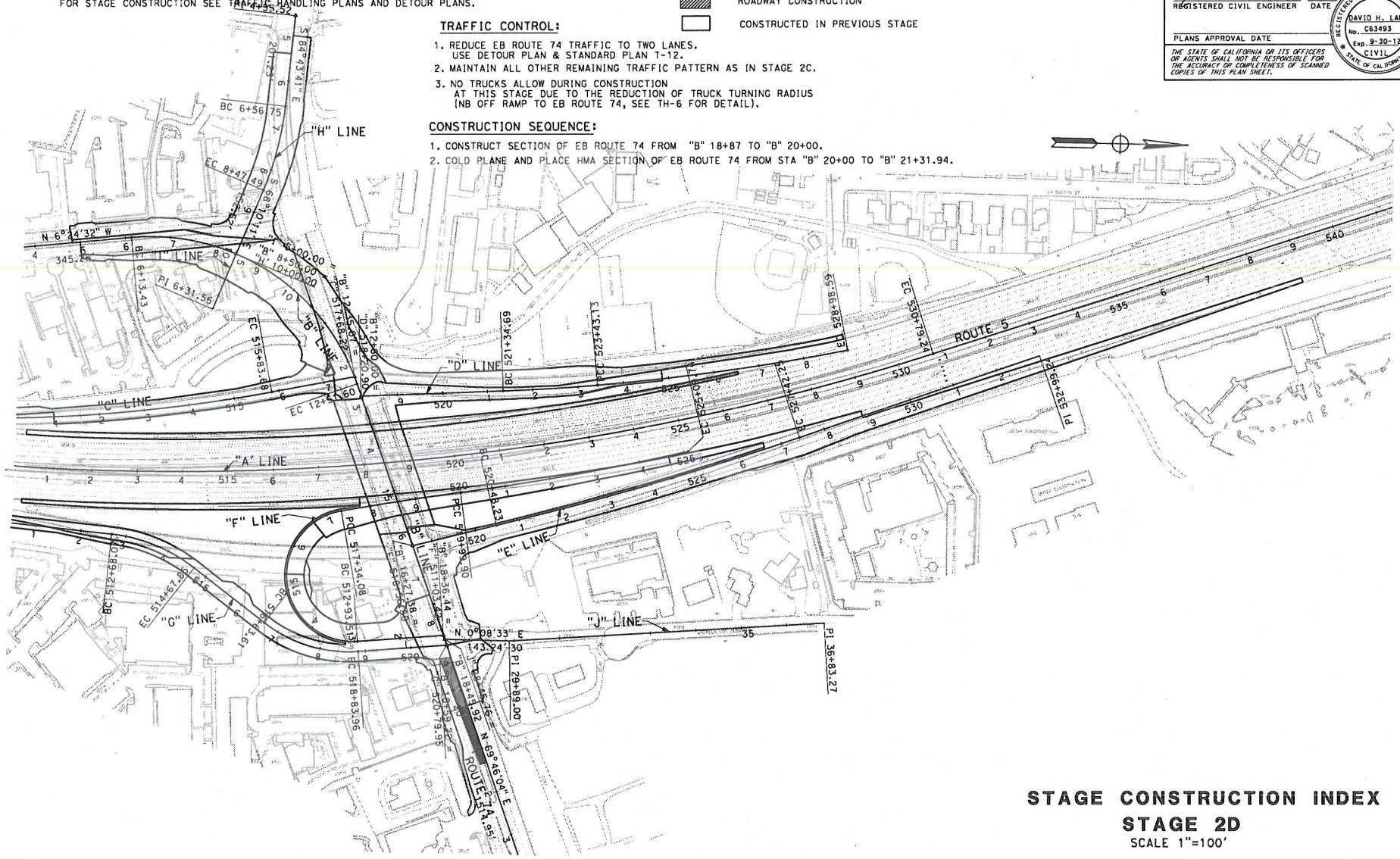
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. REDUCE EB ROUTE 74 TRAFFIC TO TWO LANES. USE DETOUR PLAN & STANDARD PLAN T-12.
2. MAINTAIN ALL OTHER REMAINING TRAFFIC PATTERN AS IN STAGE 2C.
3. NO TRUCKS ALLOW DURING CONSTRUCTION AT THIS STAGE DUE TO THE REDUCTION OF TRUCK TURNING RADIUS (NB OFF RAMP TO EB ROUTE 74, SEE TH-6 FOR DETAIL).

CONSTRUCTION SEQUENCE:

1. CONSTRUCT SECTION OF EB ROUTE 74 FROM "B" 18+87 TO "B" 20+00.
2. COLD PLANE AND PLACE HMA SECTION OF EB ROUTE 74 FROM STA "B" 20+00 TO "B" 21+31.94.



STAGE CONSTRUCTION INDEX
STAGE 2D
SCALE 1"=100'

SC-10

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000010 2mc010.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.

NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE LAYOUT SHEETS.
2. FOR DETAILS ON TRAFFIC HANDLING AND DETOUR ROUTING FOR STAGE CONSTRUCTION SEE TRAFFIC HANDLING PLANS AND DETOUR PLANS.

LEGEND:

ROADWAY CONSTRUCTION

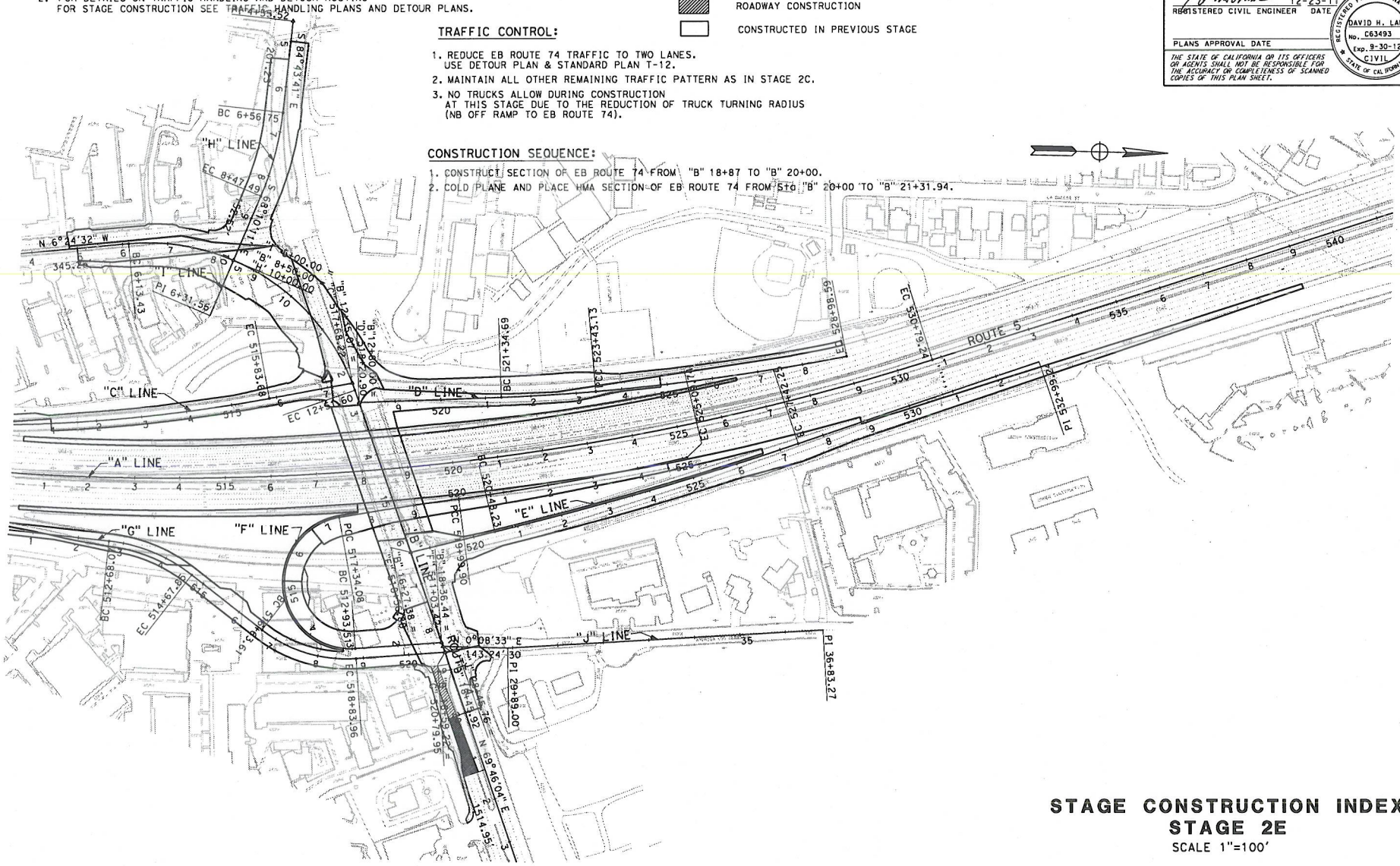
CONSTRUCTED IN PREVIOUS STAGE

TRAFFIC CONTROL:

1. REDUCE EB ROUTE 74 TRAFFIC TO TWO LANES. USE DETOUR PLAN & STANDARD PLAN T-12.
2. MAINTAIN ALL OTHER REMAINING TRAFFIC PATTERN AS IN STAGE 2C.
3. NO TRUCKS ALLOW DURING CONSTRUCTION AT THIS STAGE DUE TO THE REDUCTION OF TRUCK TURNING RADIUS (NB OFF RAMP TO EB ROUTE 74).

CONSTRUCTION SEQUENCE:

1. CONSTRUCT SECTION OF EB ROUTE 74 FROM "B" 18+87 TO "B" 20+00.
2. COLD PLANE AND PLACE HMA SECTION OF EB ROUTE 74 FROM STG "B" 20+00 TO "B" 21+31.94.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

STAGE CONSTRUCTION INDEX
STAGE 2E

SCALE 1"=100'

SC-11

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

BORDER LAST REVISED 7/2/2010

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DGN FILE => J:\mainline\120000102ma011.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

LAST REVISION

DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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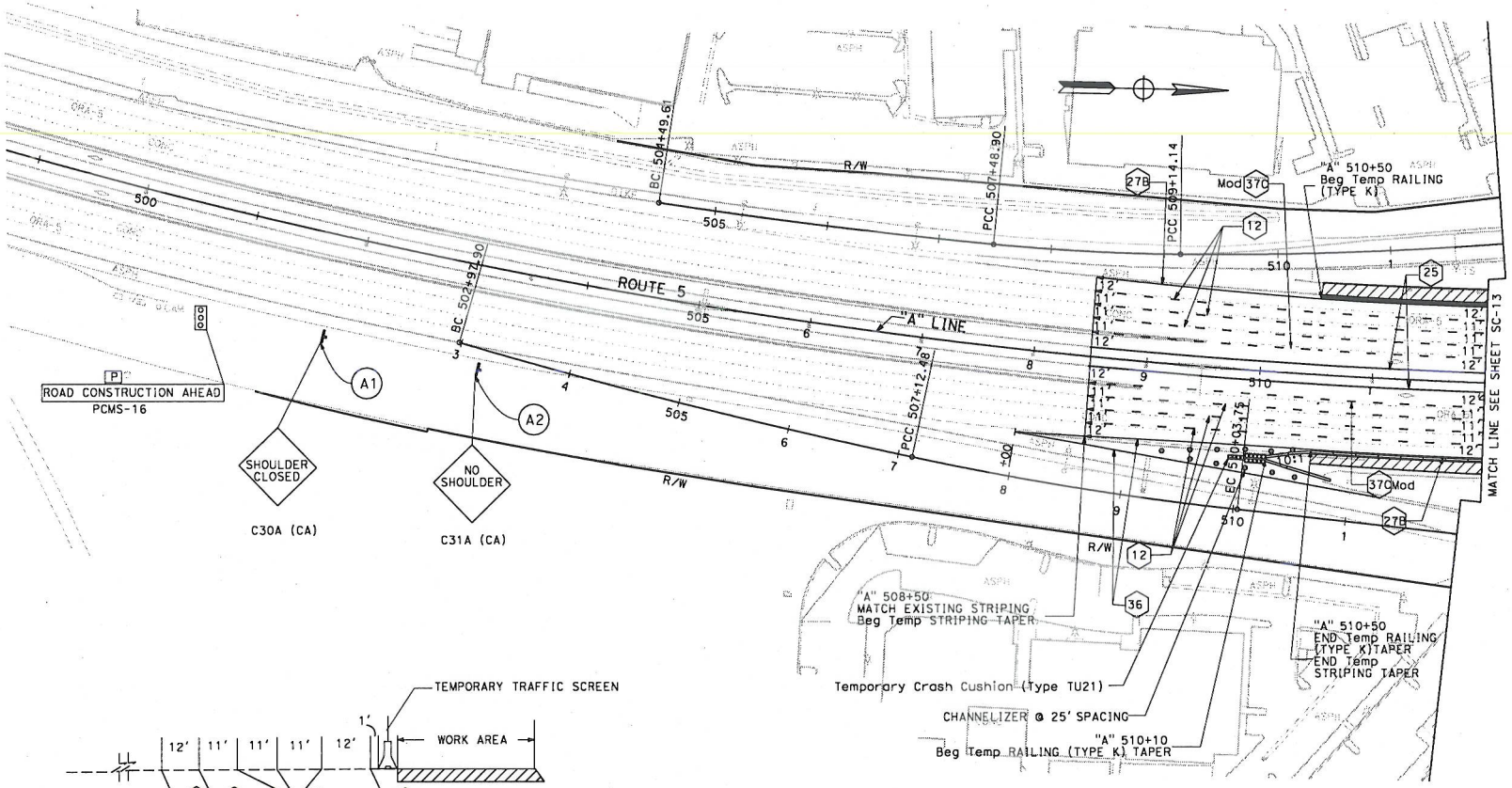
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

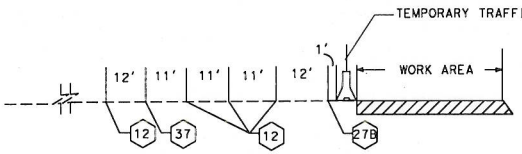
NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. REMOVE CONFLICTING STRIPES AND PAVEMENT MARKING
3. FOR STAGES 2C & 2D, USE DETOUR PLANS & STANDARD PLANS T-12.
4. EXACT LOCATION OF PCMS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

LEGEND:

- (XX) TEMPORARY STRIPING DETAIL
- TEMPORARY CRASH CUSHIONS
- CHANNELIZERS
- TEMPORARY RAILING (TYPE K)
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- CHANGE IN PAVEMENT DELINEATION
- C CAR
- P POOL
- O ONLY





TEMPORARY RAILING (TYPE K) PLACEMENT
NO SCALE

STAGE 1A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-12

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	DAVID LAM
CHECKED BY	FRED FAIZI

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma012.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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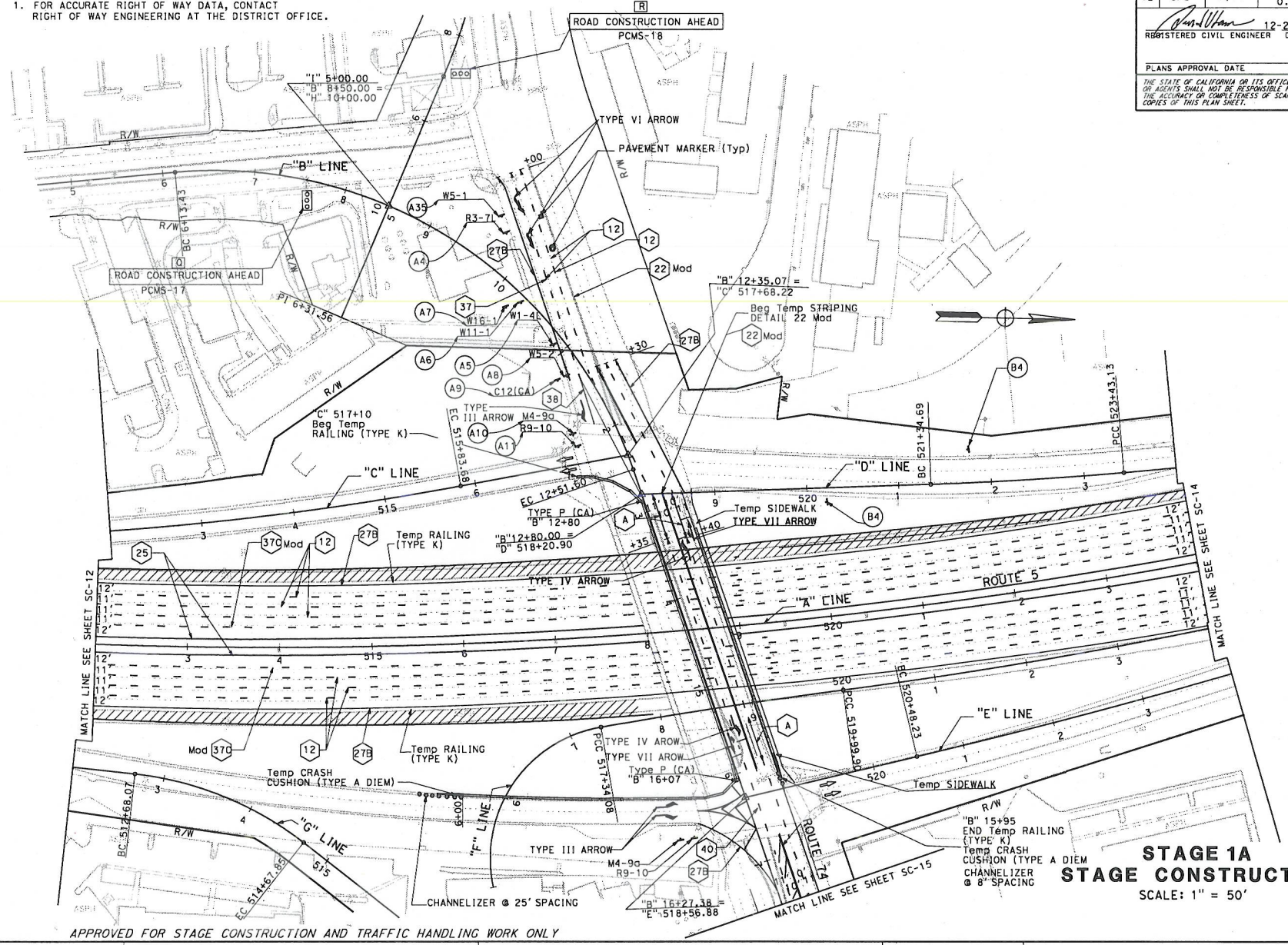
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 1A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-13

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
DESIGN	MATTHEW CUGINI	DAVID LAM	FRED FAIZI		

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma013.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

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NOTE:

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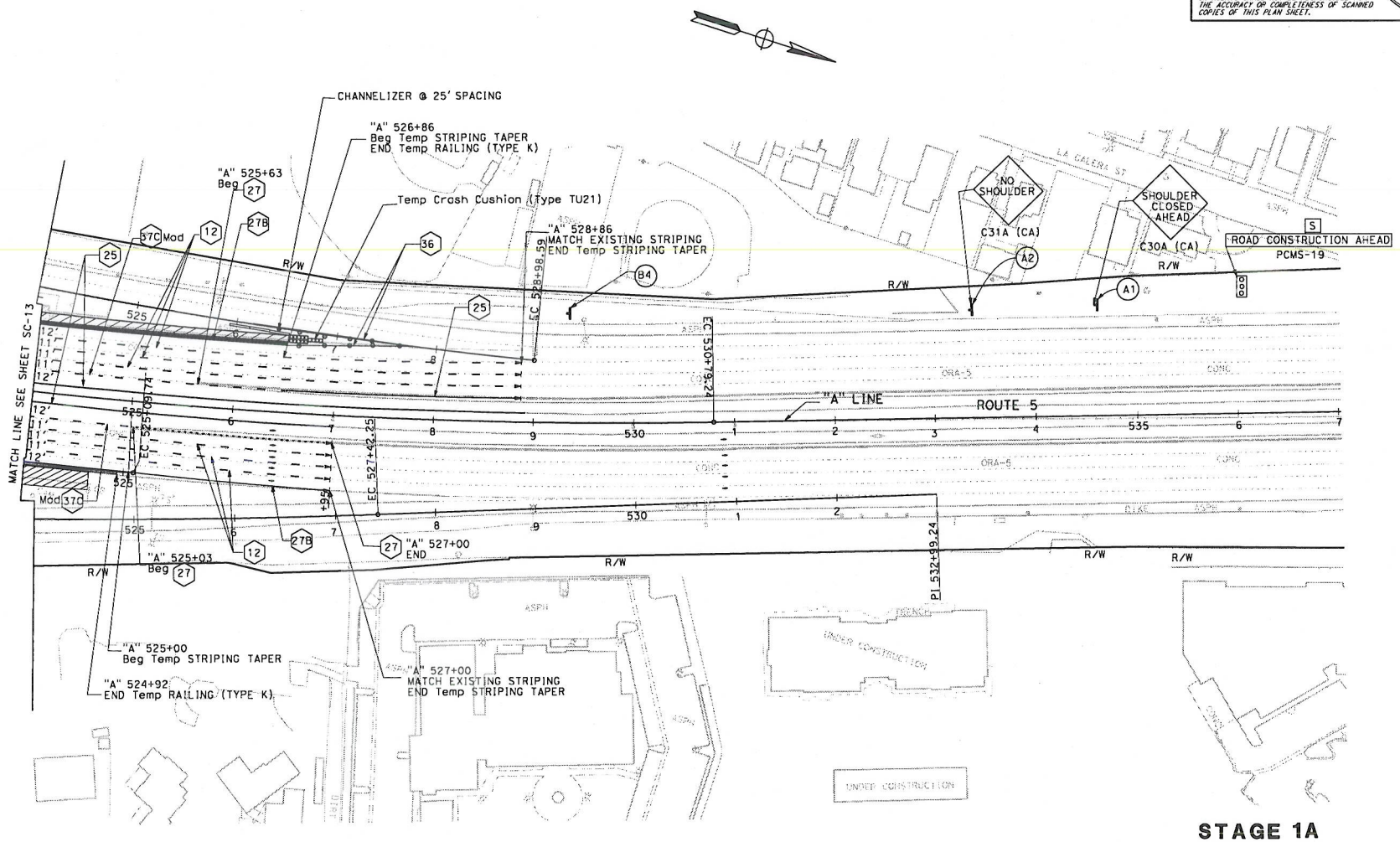

STAGE 1A
STAGE CONSTRUCTION
SCALE: 1" = 50'

SC-14

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 11-14-11
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102ma014.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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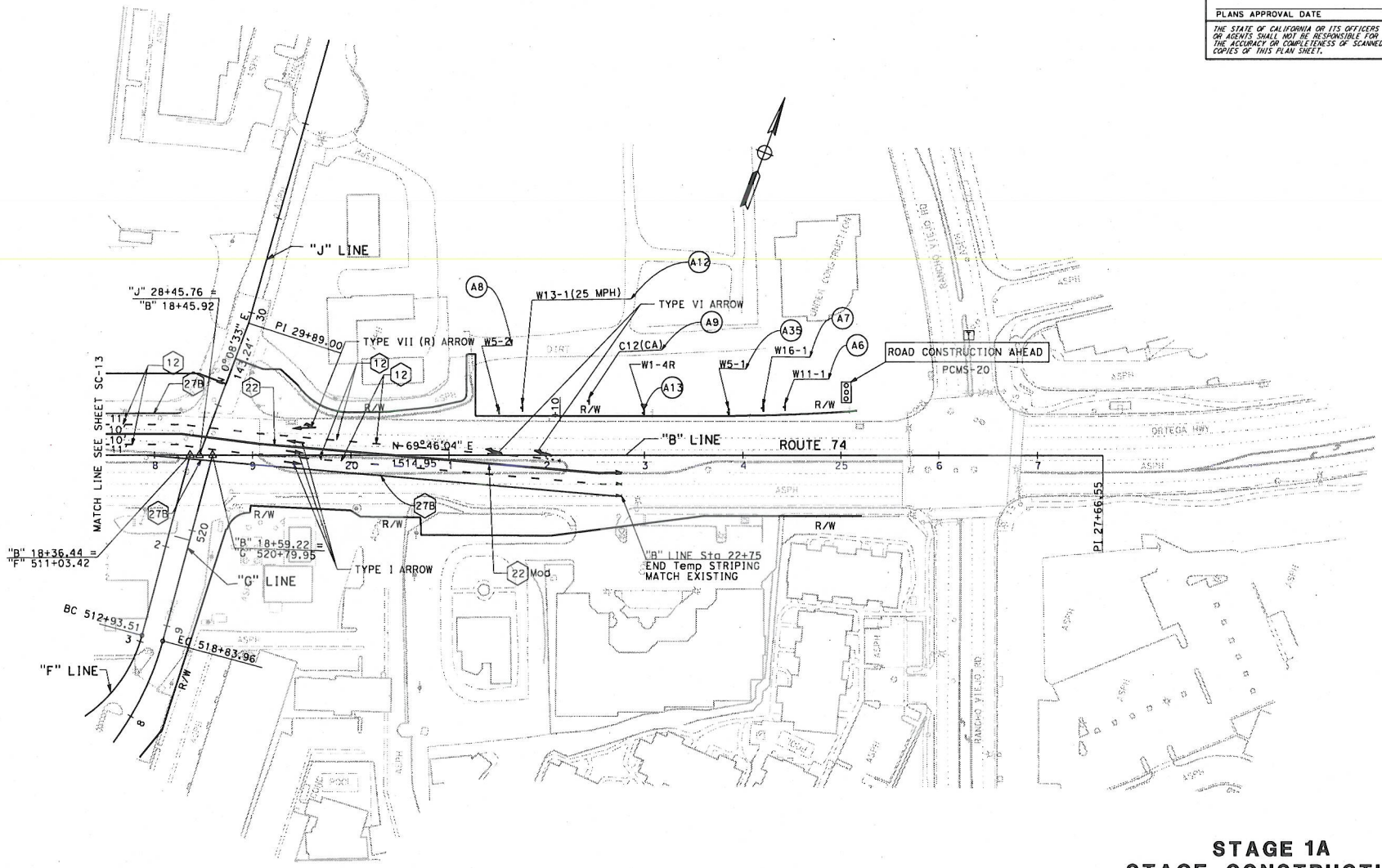
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 1A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-15

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY / DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\1200000102ma015.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

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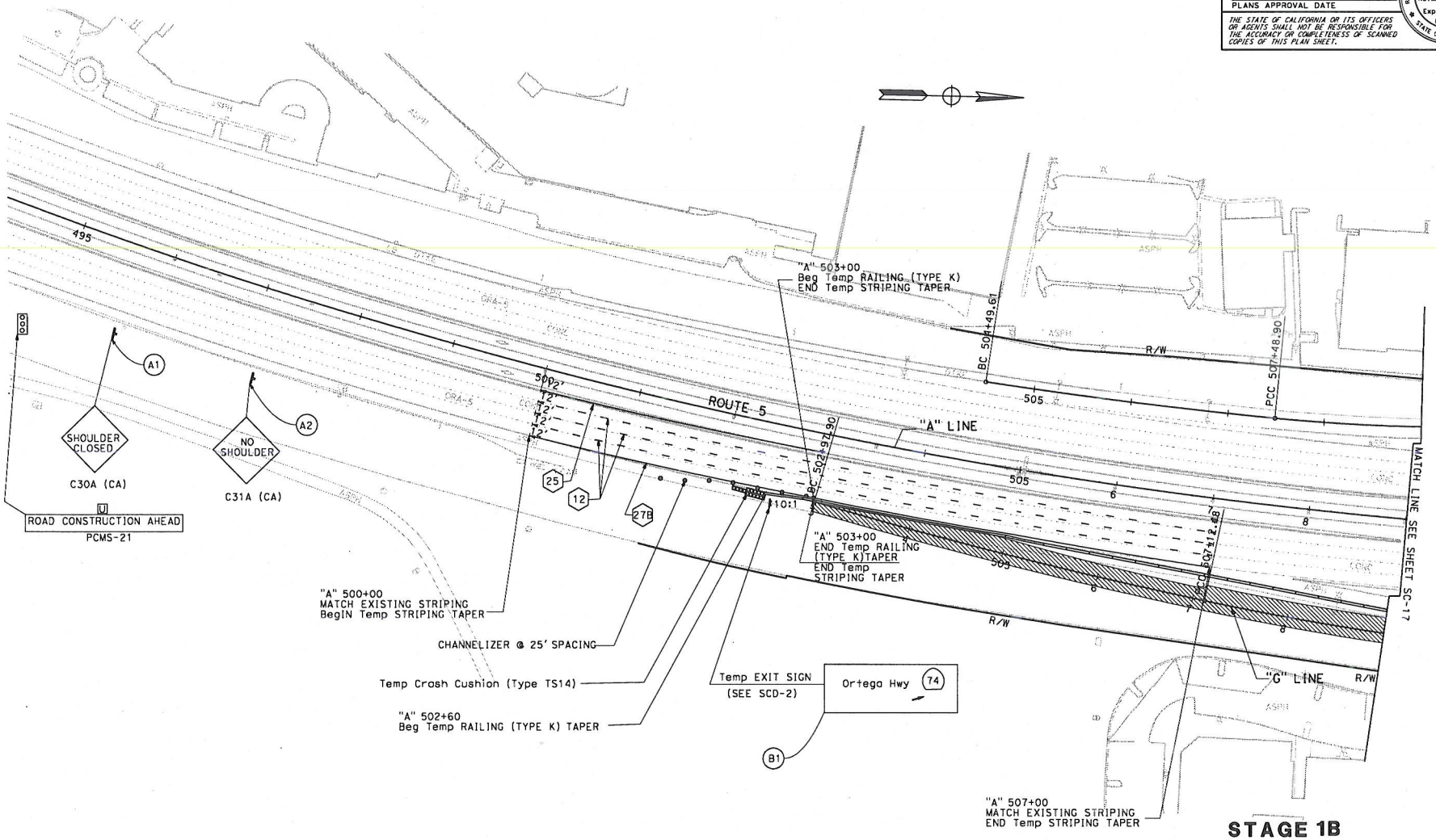

STAGE 1B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-16

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION 11-16-11

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001021ma016.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

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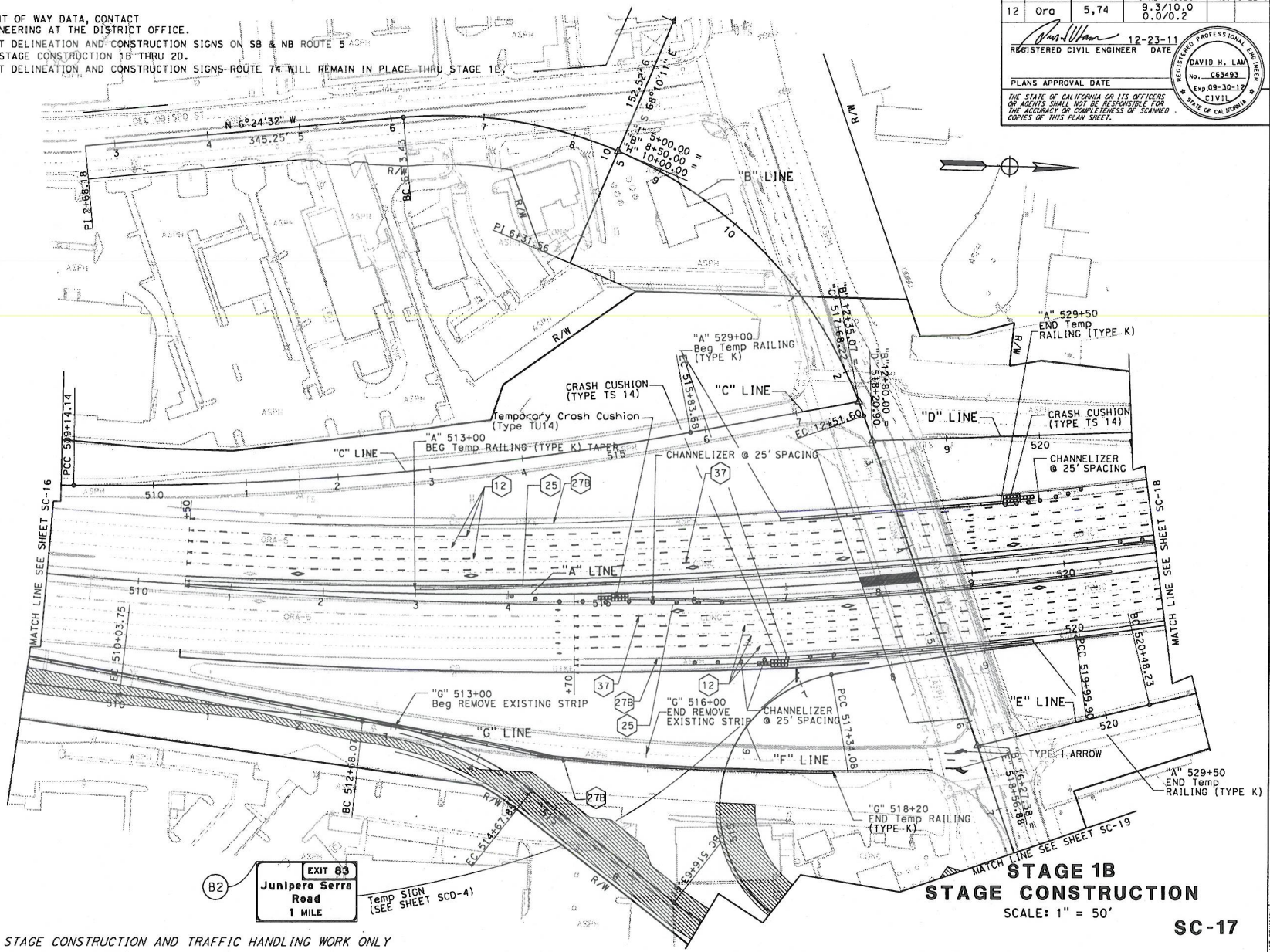
NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. TEMPORARY PAVEMENT DELINEATION AND CONSTRUCTION SIGNS ON SB & NB ROUTE 5 WILL REMAIN FROM STAGE CONSTRUCTION 1B THRU 2D.
3. TEMPORARY PAVEMENT DELINEATION AND CONSTRUCTION SIGNS ROUTE 74 WILL REMAIN IN PLACE THRU STAGE 1E.



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE 1B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: FRED FAIZI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001021ma017.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

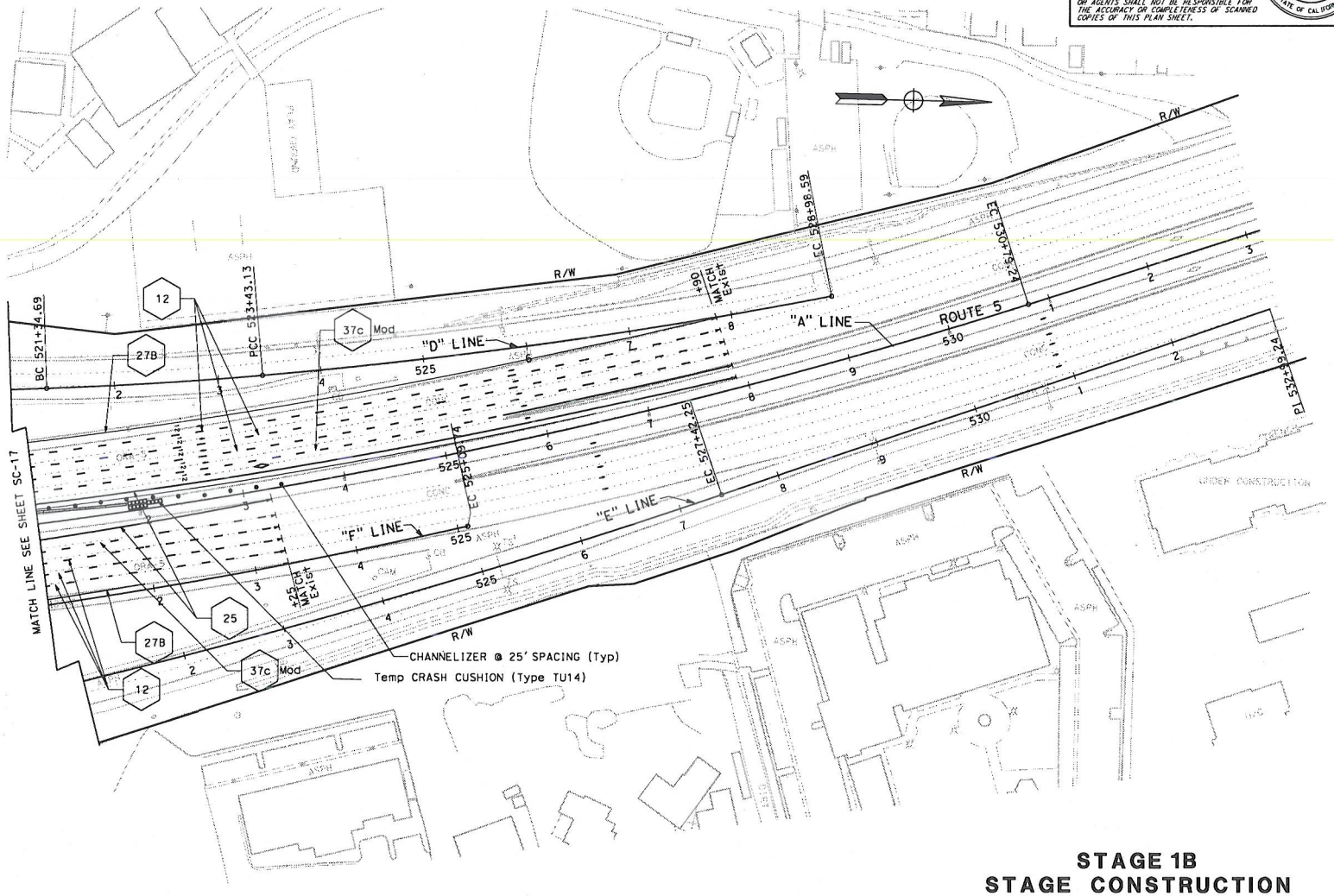
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 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.

NOTE:

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



STAGE 1B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-18

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION 11-14-11

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001 02ma018.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp 09-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

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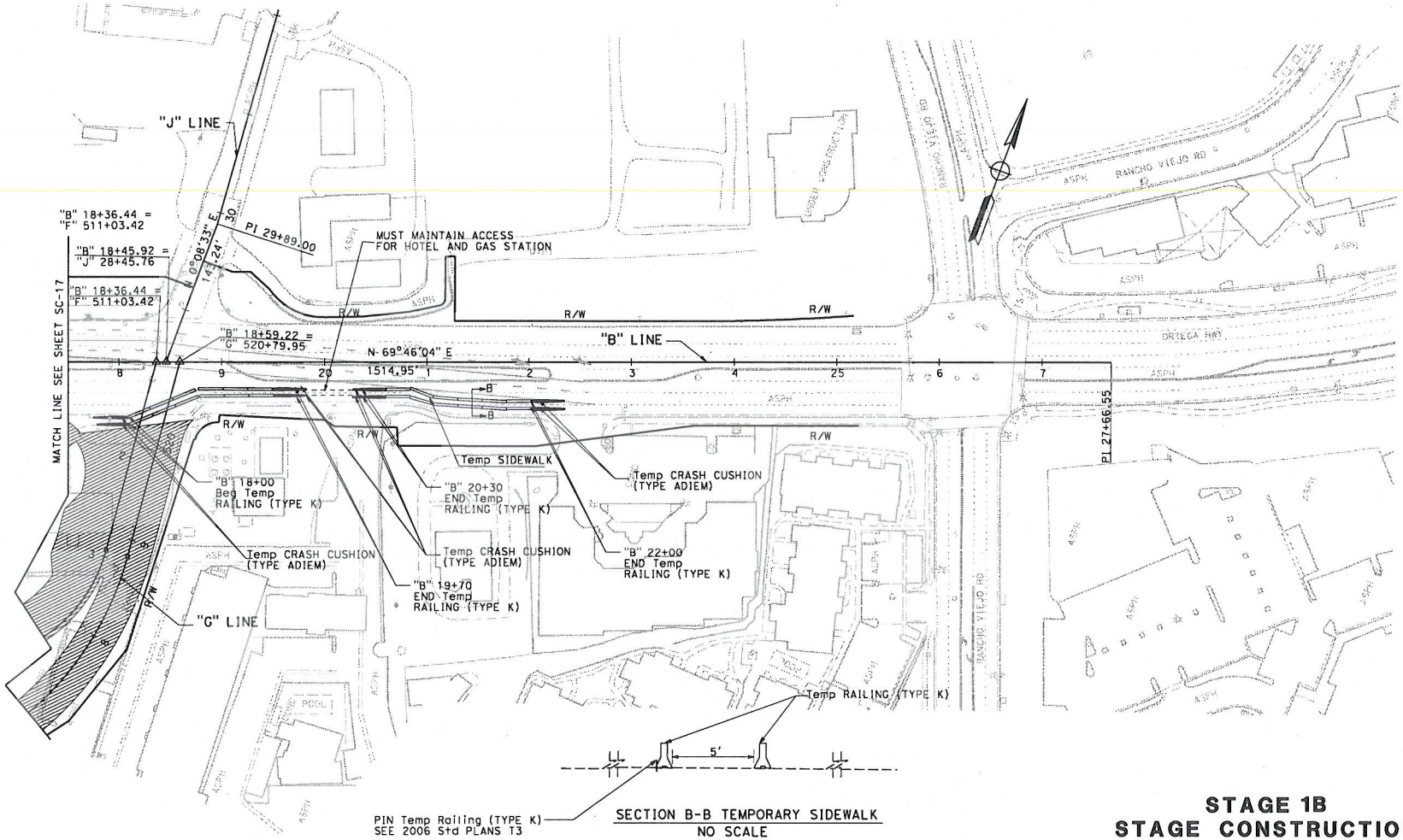

STAGE 1B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-19

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\120000102ma019.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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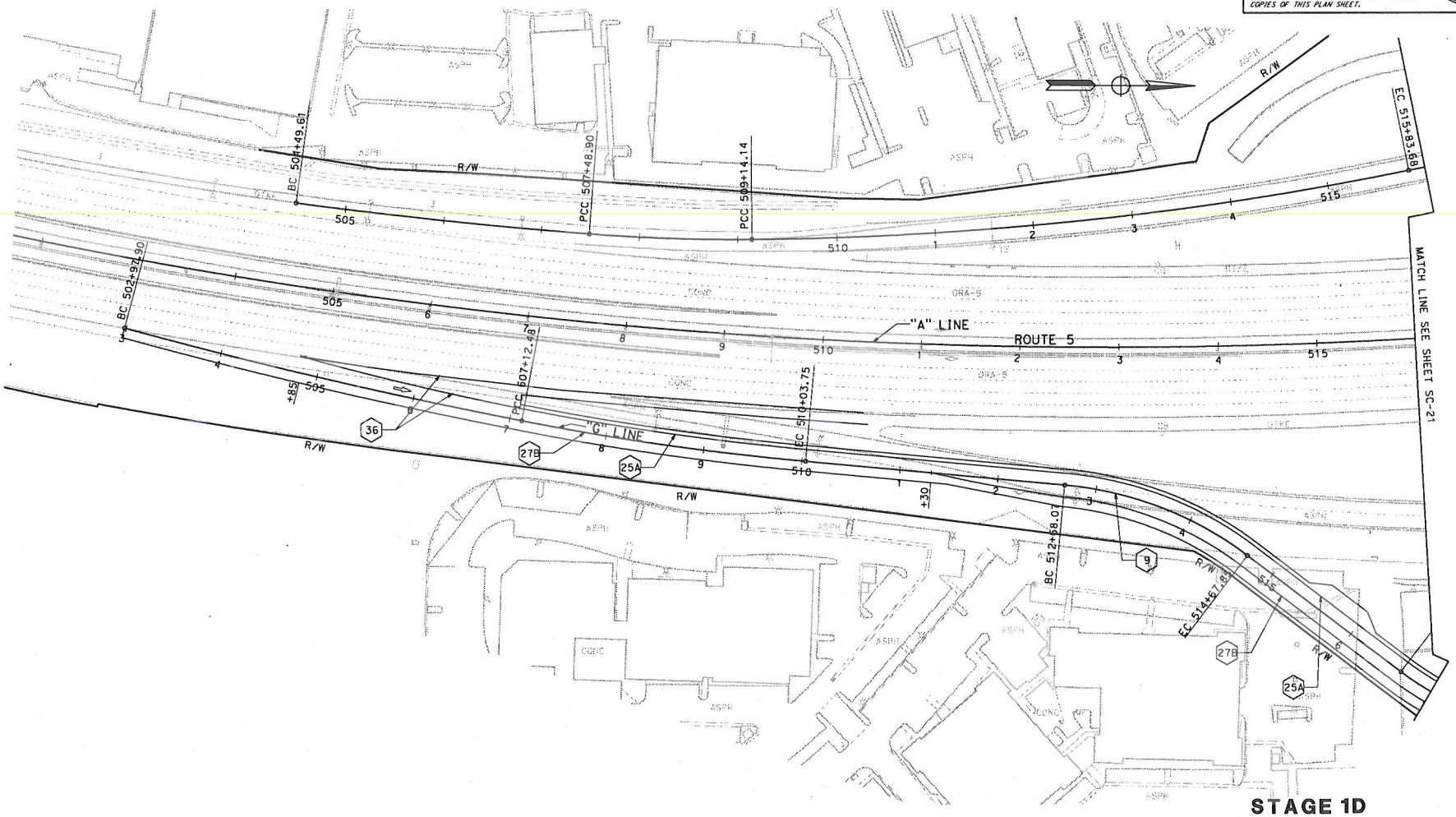
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. NB TRAFFIC STRIPING WILL BE PERMANENT. SEE PAVEMENT DELINEATION PLAN FOR DETAIL



STAGE 1D
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-20

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001 02ma020.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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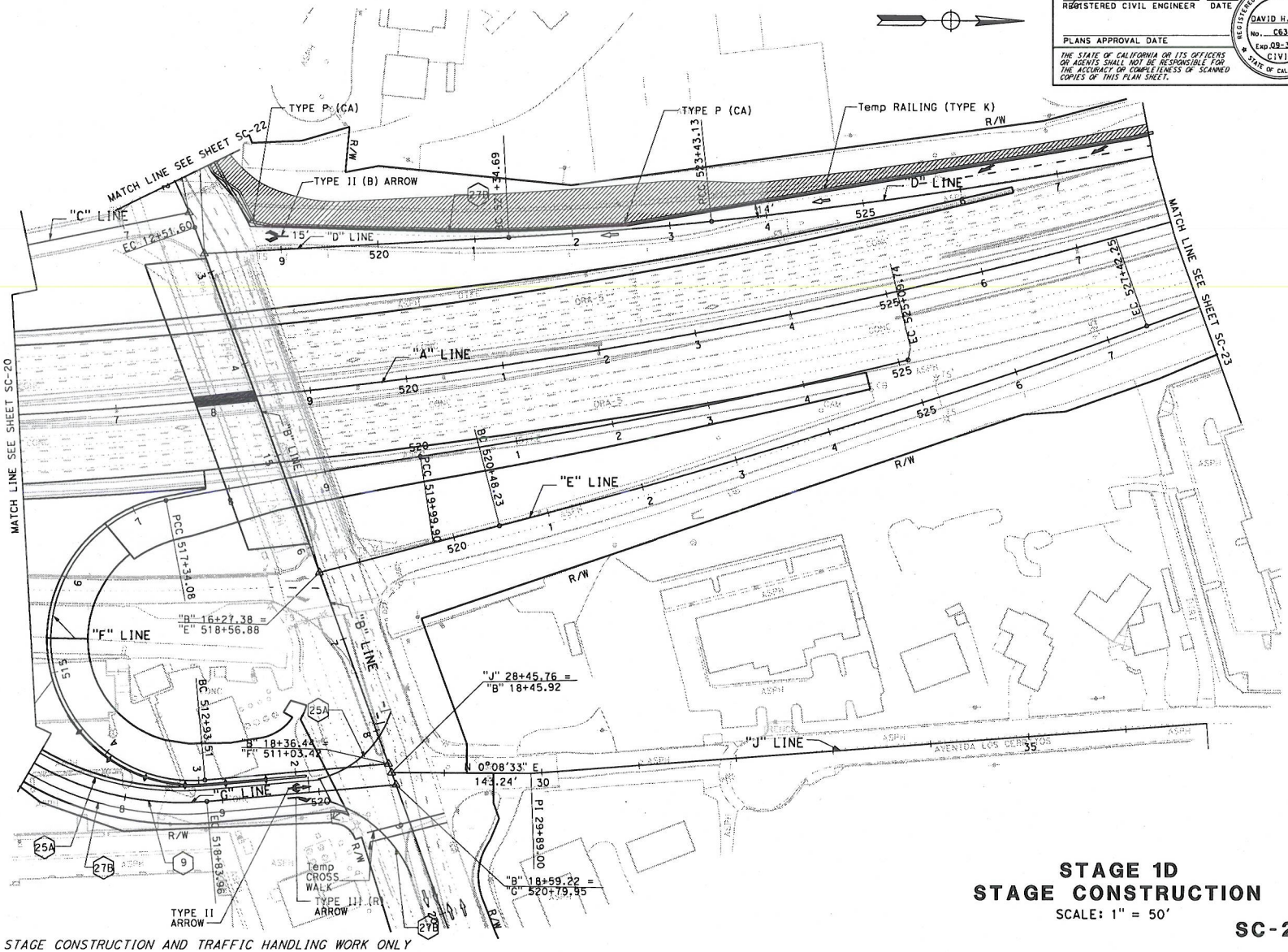
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE 1D
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001021ma021.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp 09-30-12 CIVIL STATE OF CALIFORNIA

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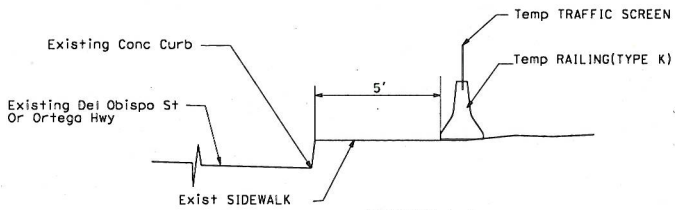

SECTION A-A

STAGE 1D
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-22

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma022.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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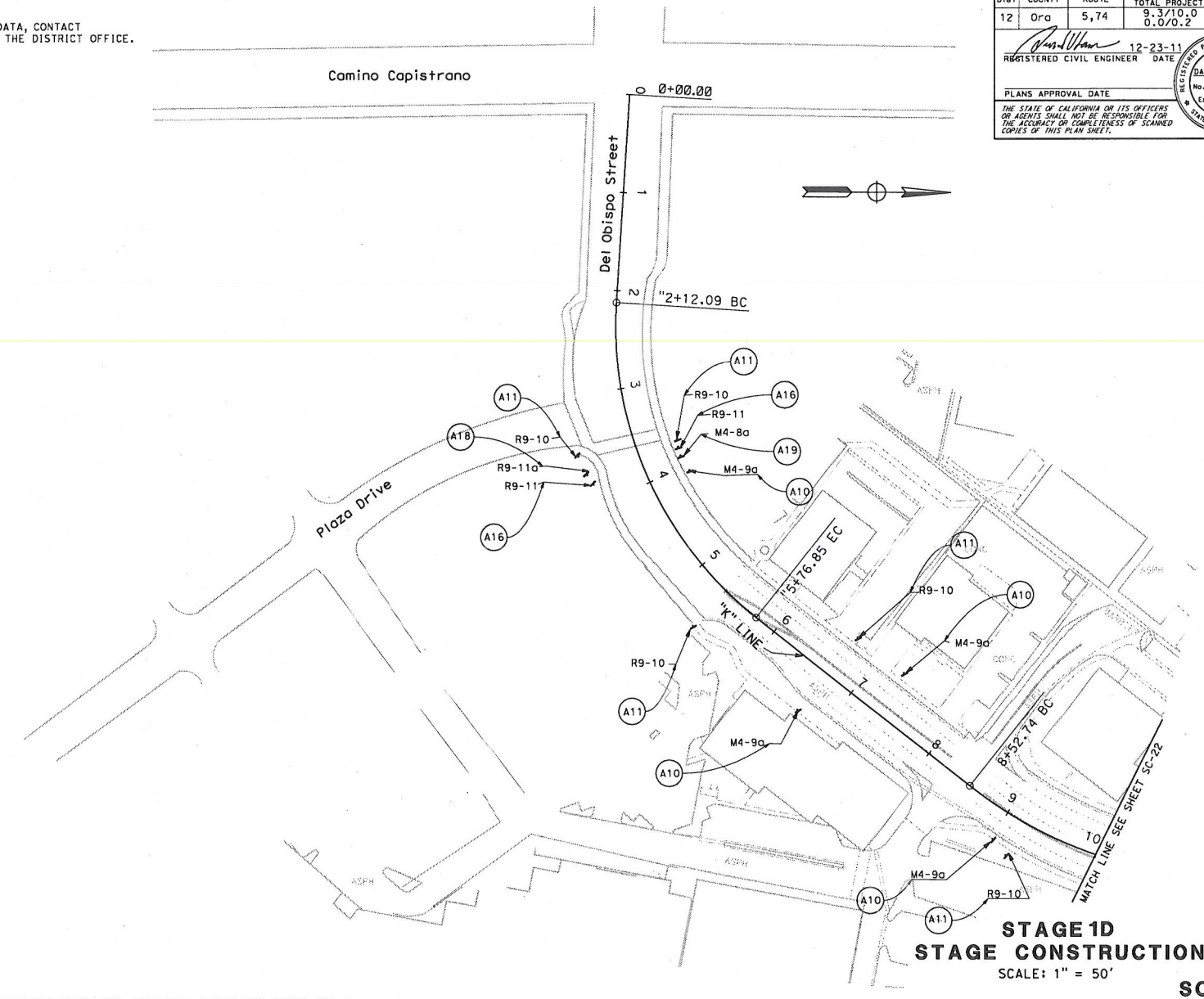
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 1D
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-22A

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

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DGN FILE => ...\mainline\1200000102mc022A.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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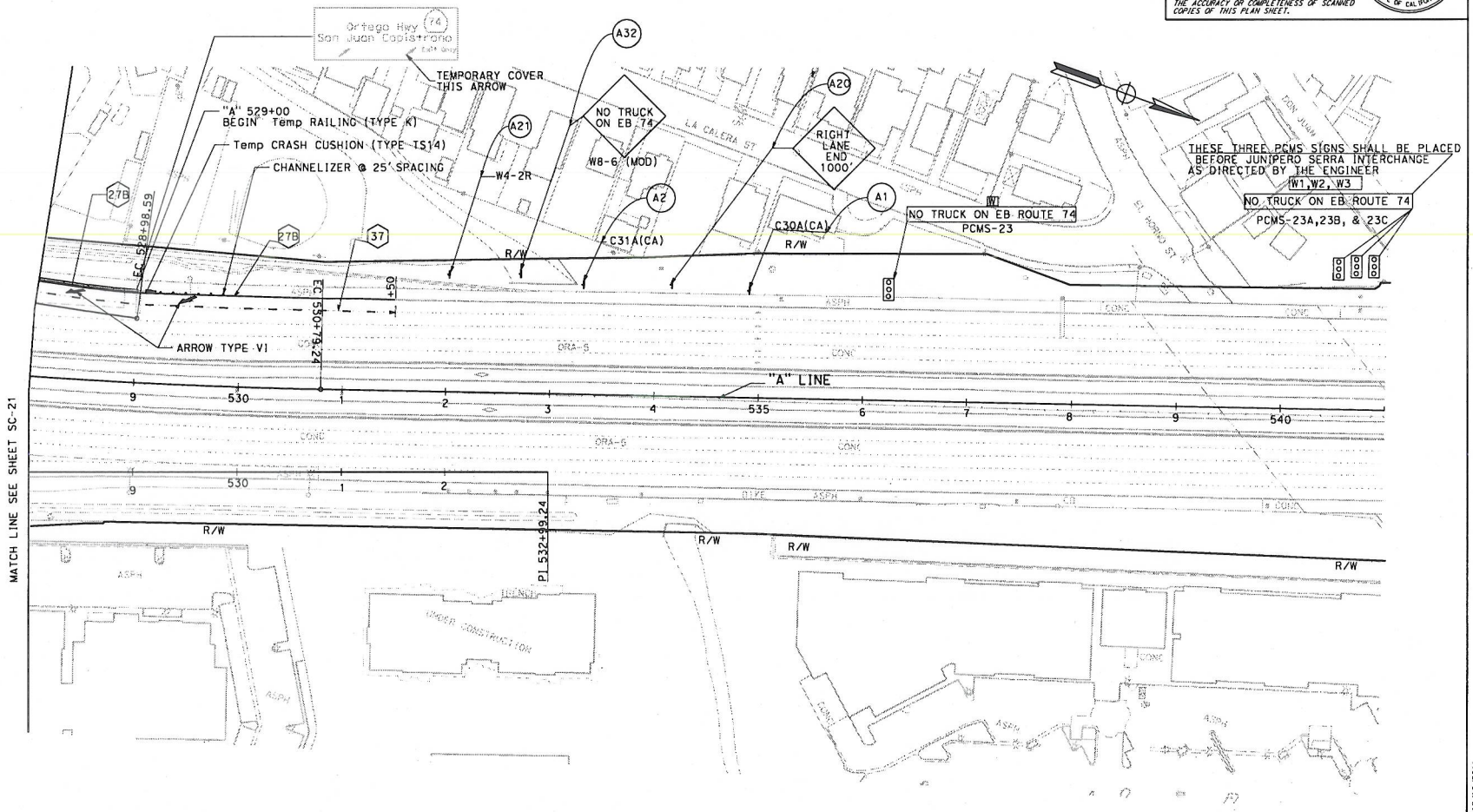
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 1D
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-23

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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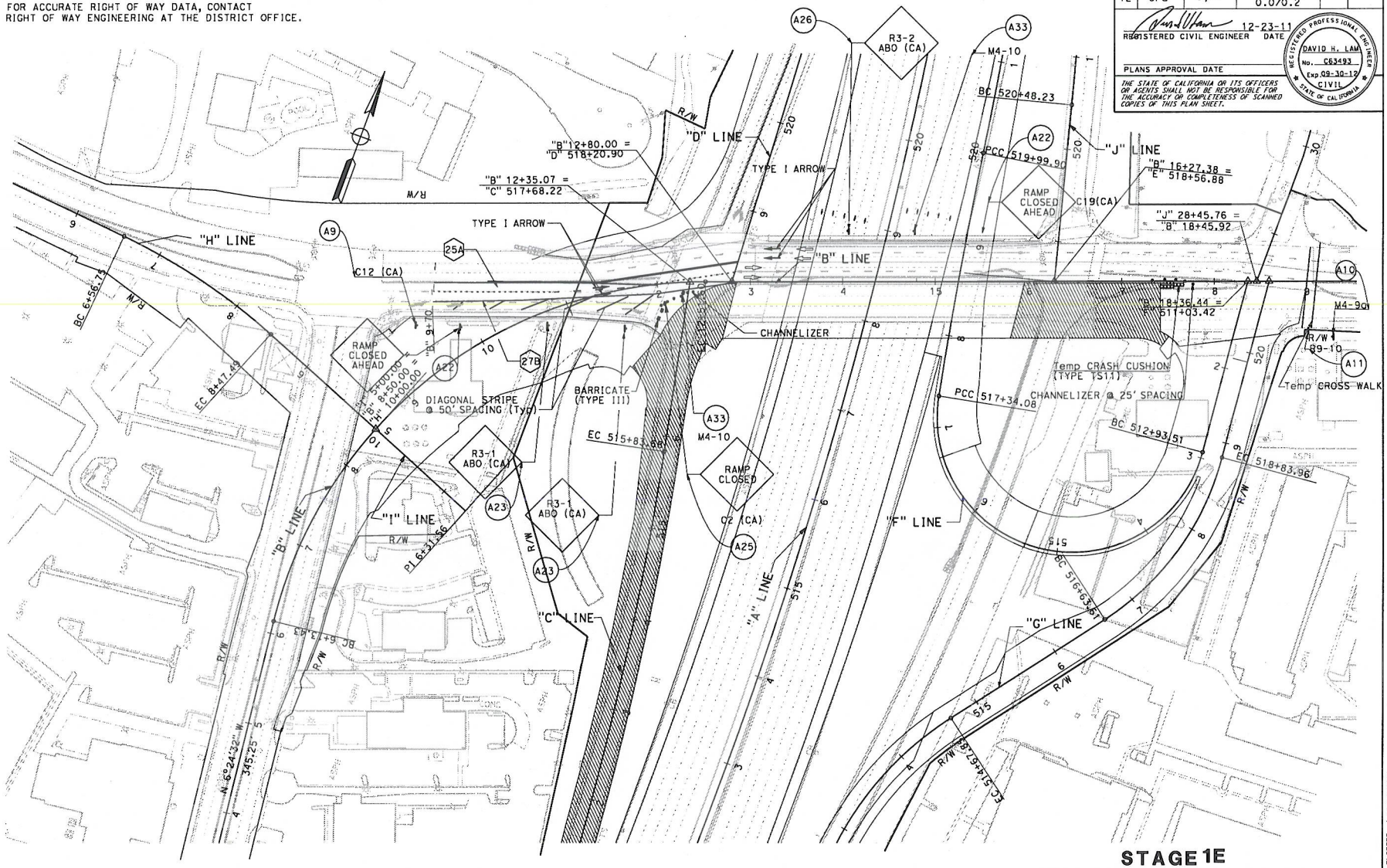
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 1E
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-24

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\1200000102ma024.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

LAST REVISION

DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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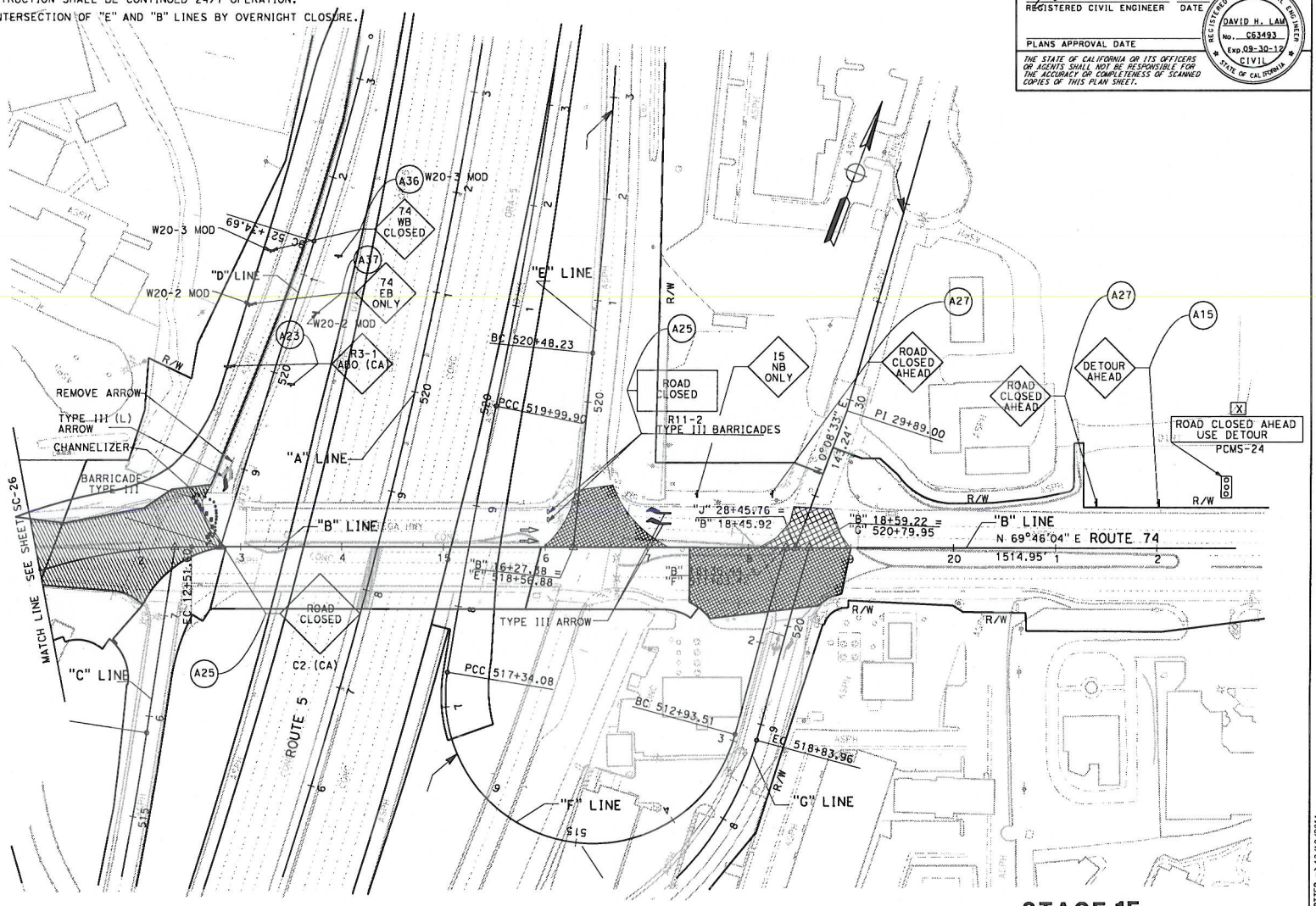
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ORTEGA Hwy INTERSECTON RECONSTRUCTION SHALL BE CONTINUED 24/7 OPERATION.
3. CONSTRUCT Temp PAVEMENT AT INTERSECTION OF "E" AND "B" LINES BY OVERNIGHT CLOSURE.



STAGE 1F
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-25

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	DAVID LAM	REVISED BY	
Caltrans DESIGN	MATTHEW CUGINI	CHECKED BY	FRED FAIZI	DATE REVISED	

LAST REVISION DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102ma025.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM NO. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

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NOTE:

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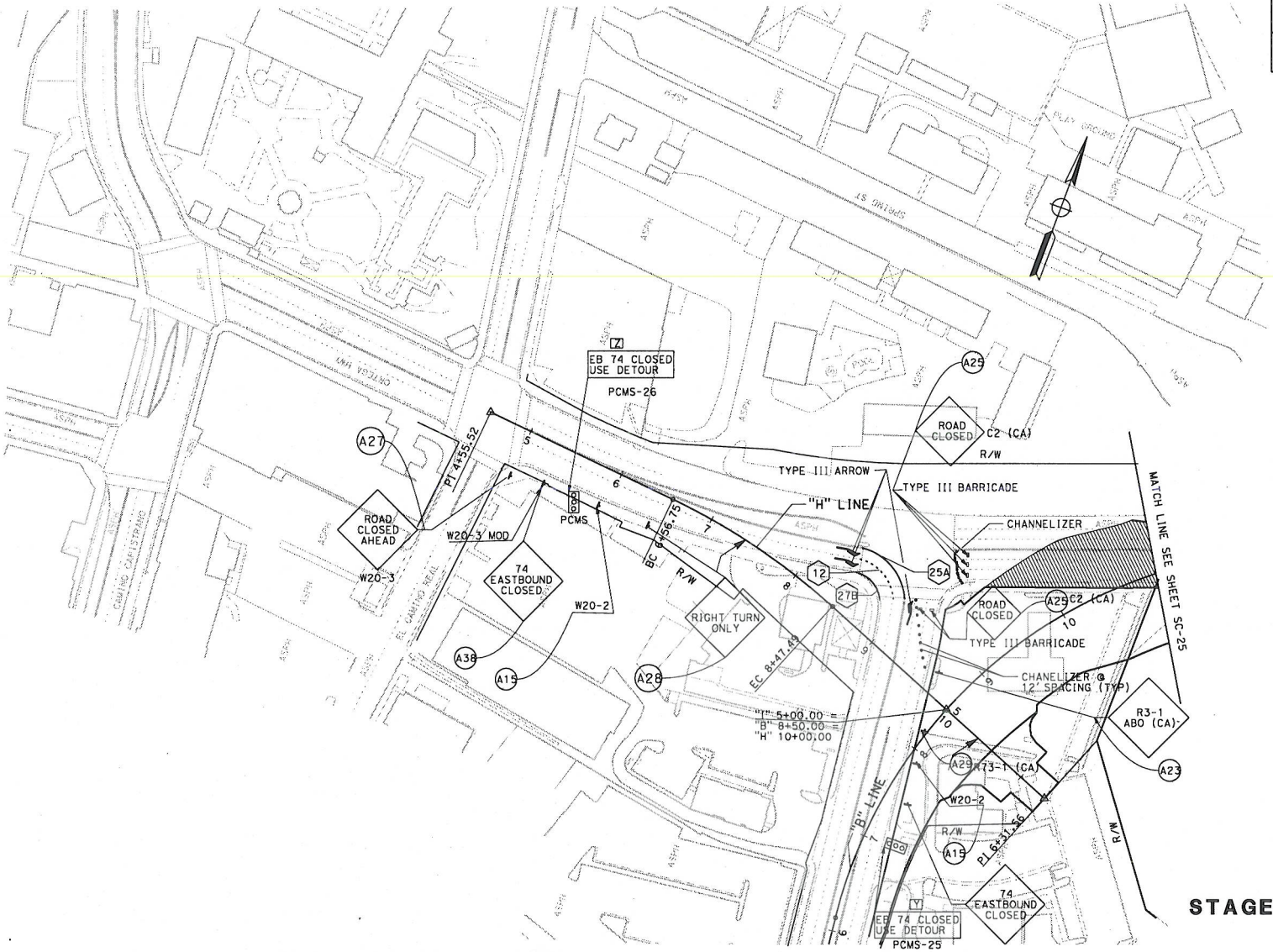

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE 1F
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-26

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	DAVID LAM	REVISED BY	
DESIGN	MATTHEW CUGINI	CHECKED BY	FRED FAIZI	DATE REVISED	

LAST REVISION | DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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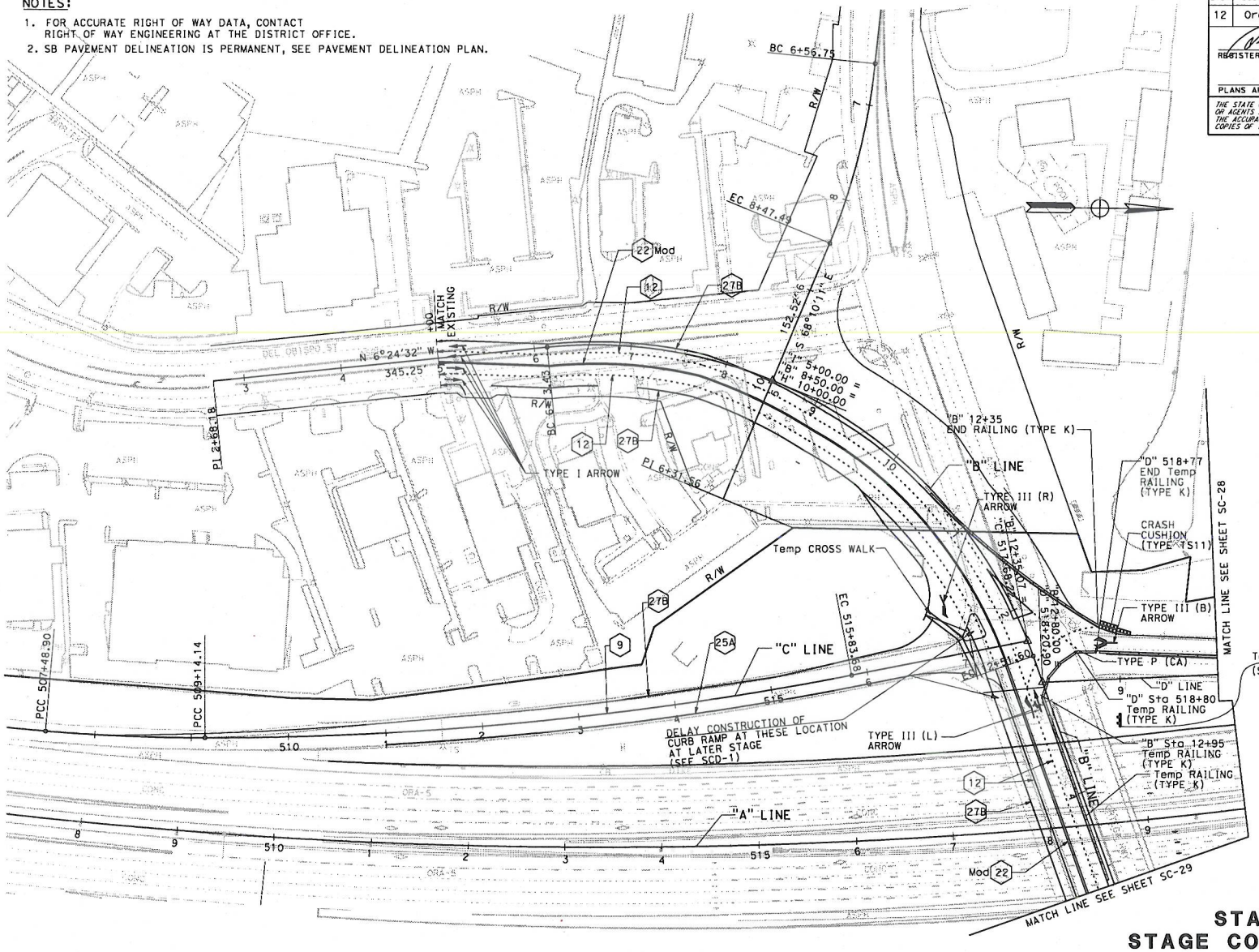
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM NO. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SB PAVEMENT DELINEATION IS PERMANENT, SEE PAVEMENT DELINEATION PLAN.



STAGE 2A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-27

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	DAVID LAM
	FRED FAIZI	CHECKED BY	FRED FAIZI
		REVISED BY	
		DATE REVISED	

Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 12/19/2011 07:07:10

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000102ma027.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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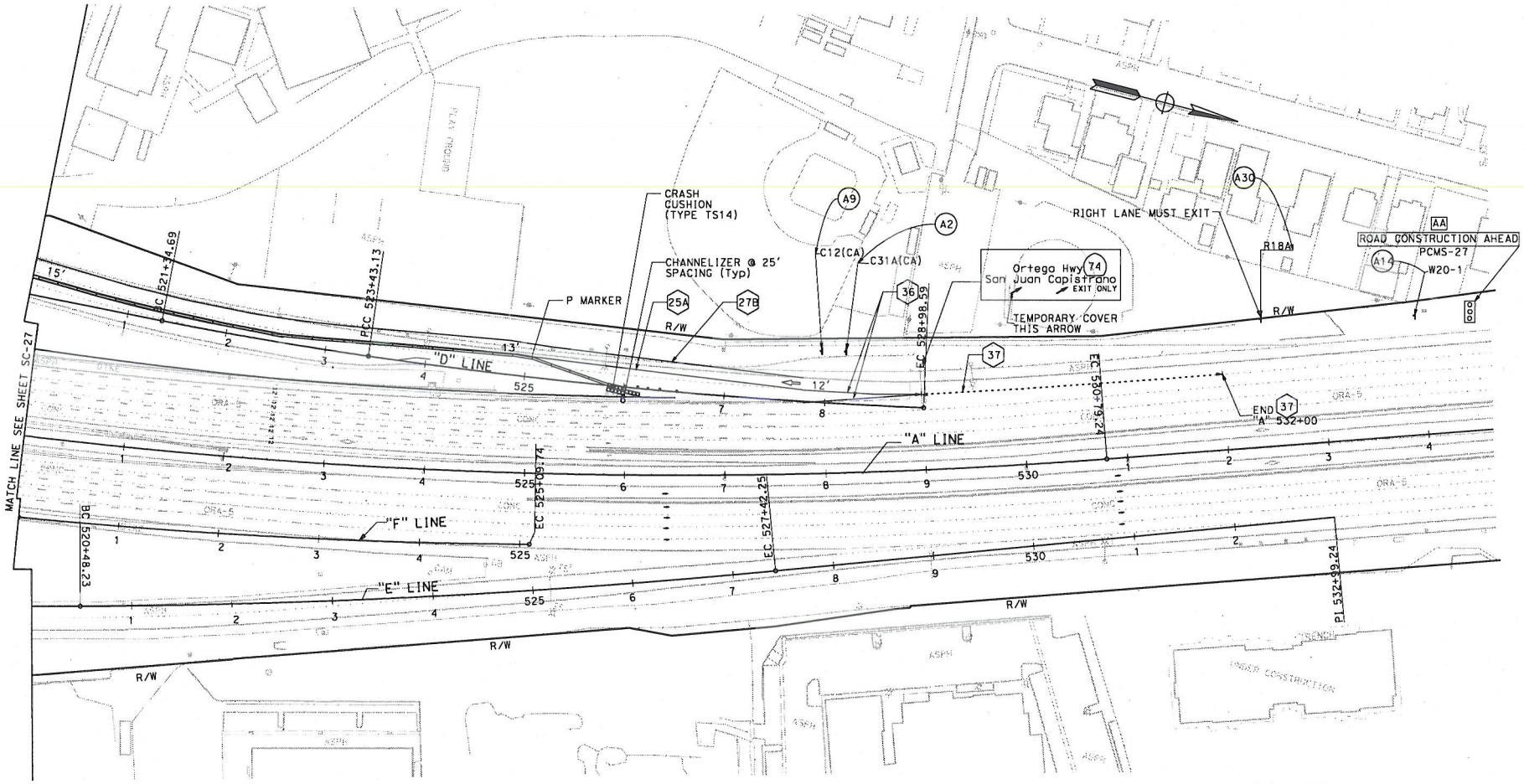
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA



STAGE 2A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-28

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

CALCULATED-DESIGNED BY	DAVID LAM
CHECKED BY	FRED FAIZI
REVISED BY	
DATE REVISED	
FUNCTIONAL SUPERVISOR	MATTHEW CUGINI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN

LAST REVISION 11-14-11 | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) | DGN FILE => J:\mainline\1200000102ma028.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

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NOTE:

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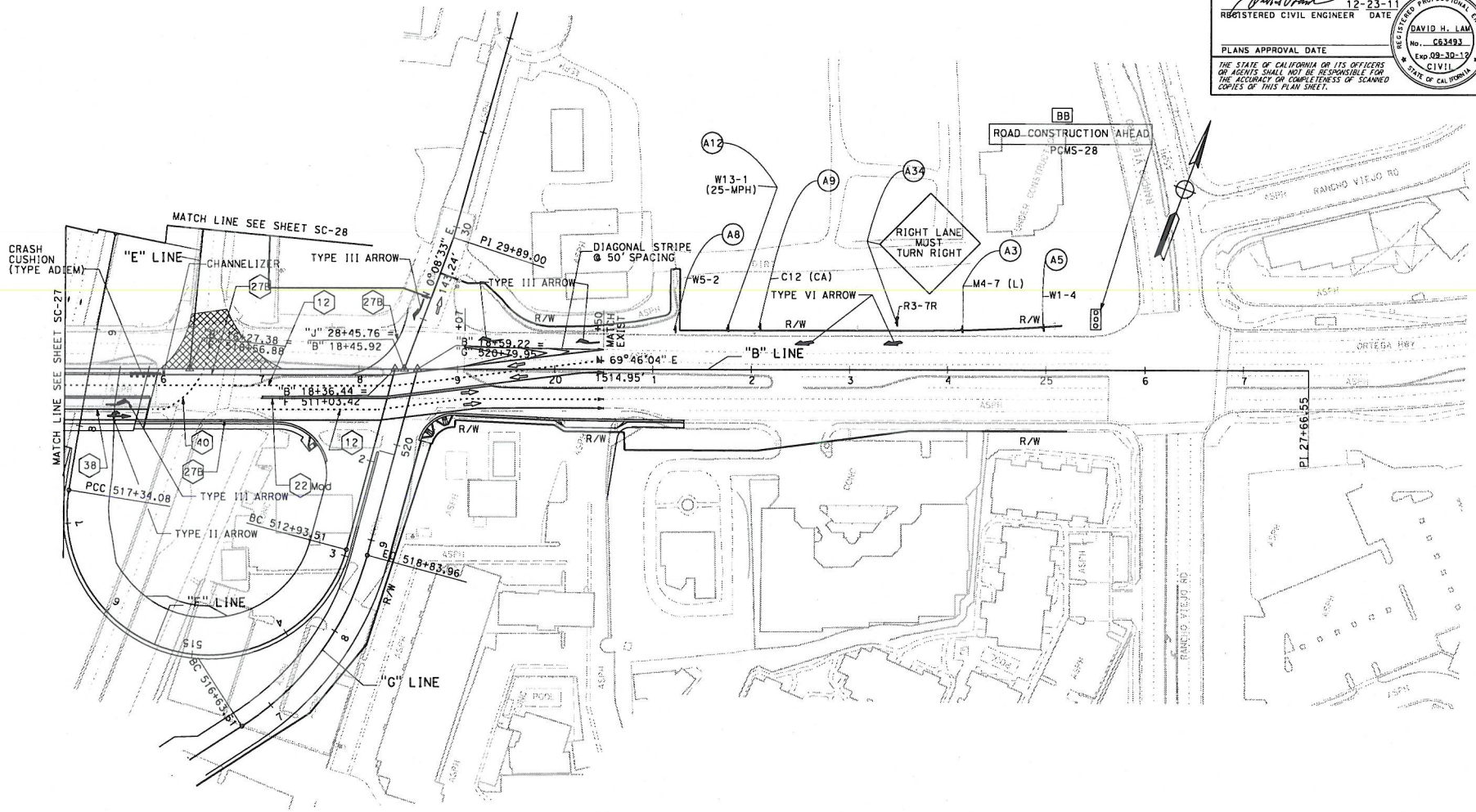

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

STAGE 2A
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-29

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

LAST REVISION 11-1-1-11 DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021ma029.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER DATE 12-23-11

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

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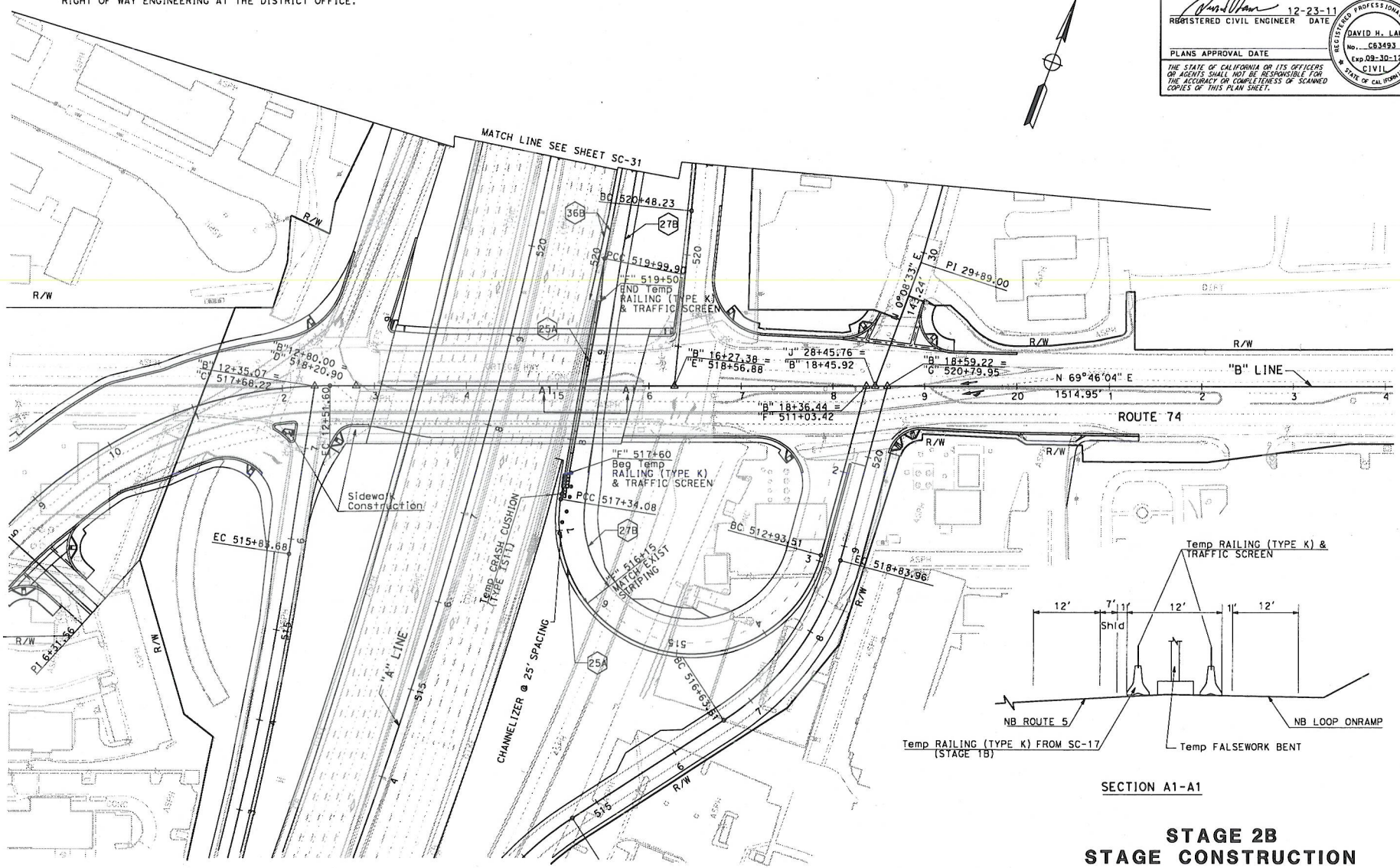

SECTION A1-A1

STAGE 2B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-30

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\120000010 2ma030.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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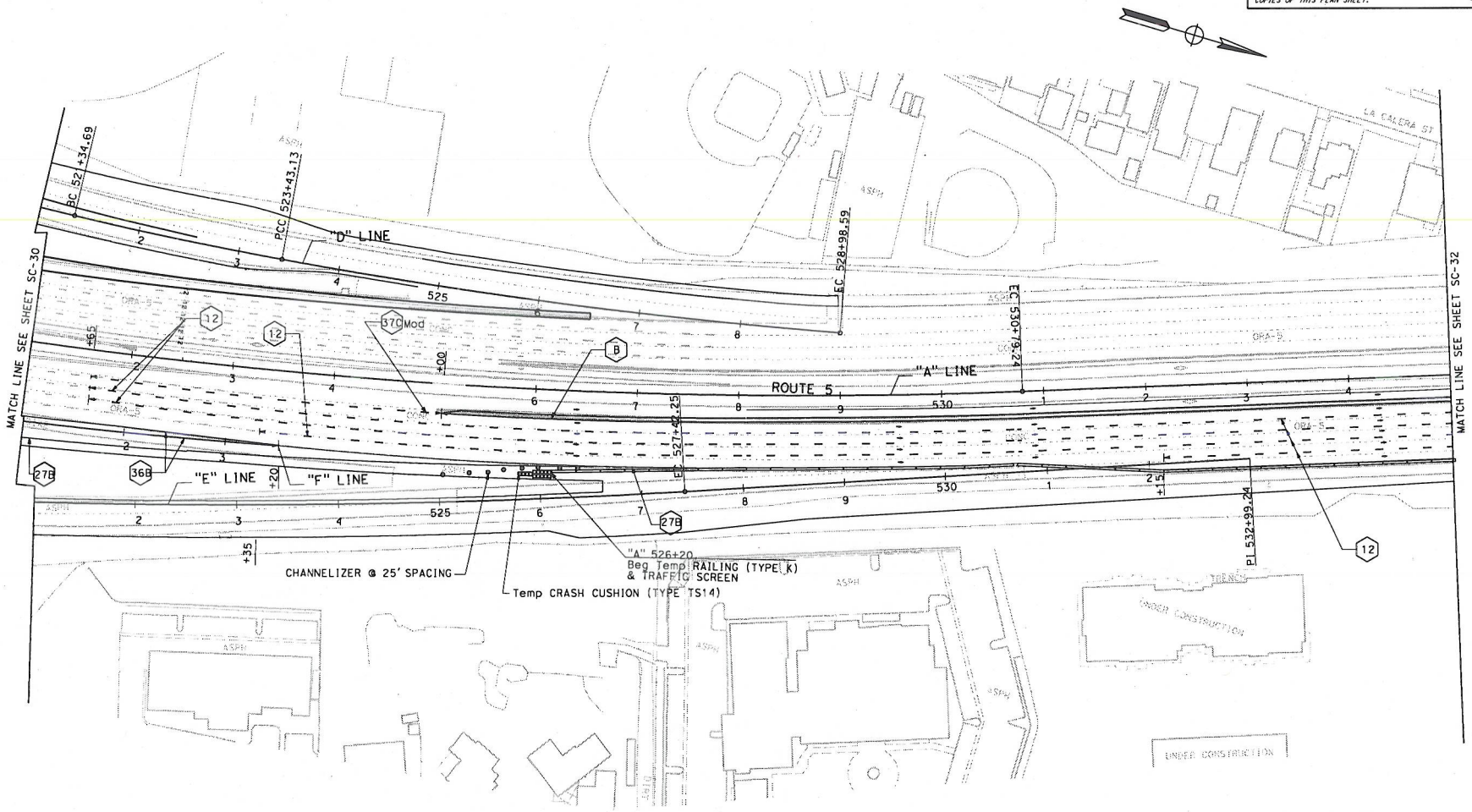
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAW No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 2B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-31

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	DAVID LAW	REVISED BY	
Caltrans	MATTHEW CUGINI	CHECKED BY	FRED FAIZI	DATE REVISED	
DESIGN					

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000102ma031.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

LAST REVISION | DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

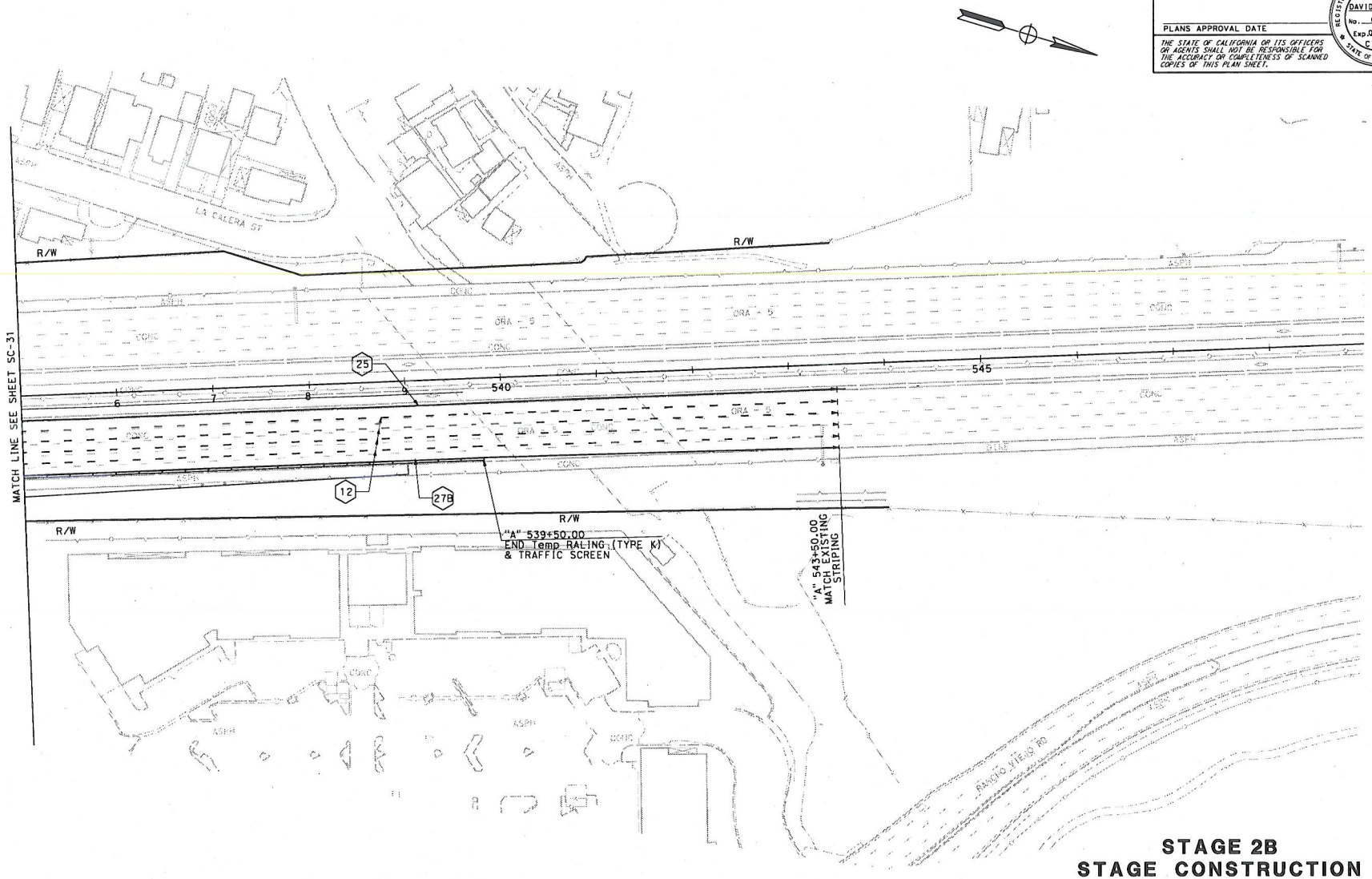
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 2B
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-32

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\1200000102ma032.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

LAST REVISION

DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

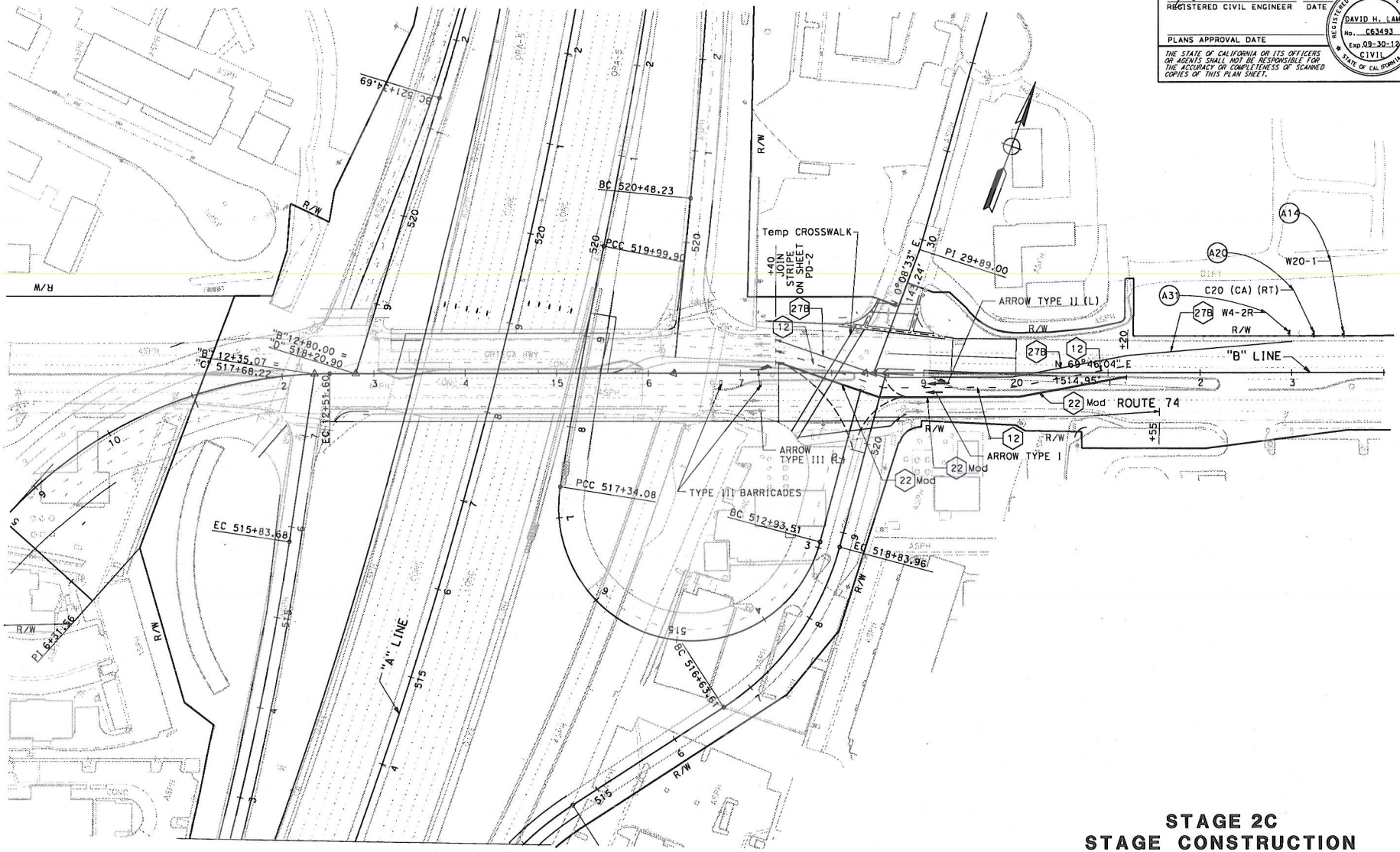
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-13 CIVIL STATE OF CALIFORNIA

NOTE:

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



STAGE 2C
STAGE CONSTRUCTION

SCALE: 1" = 50'

SC-33

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DAVID LAM	CALCULATED-DESIGNED BY	FUNCTIONAL SUPERVISOR
DATE REVISED	FRED FAIZI	CHECKED BY	MATTHEW CUGINI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

LAST REVISION 11-14-11 DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102ma033.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

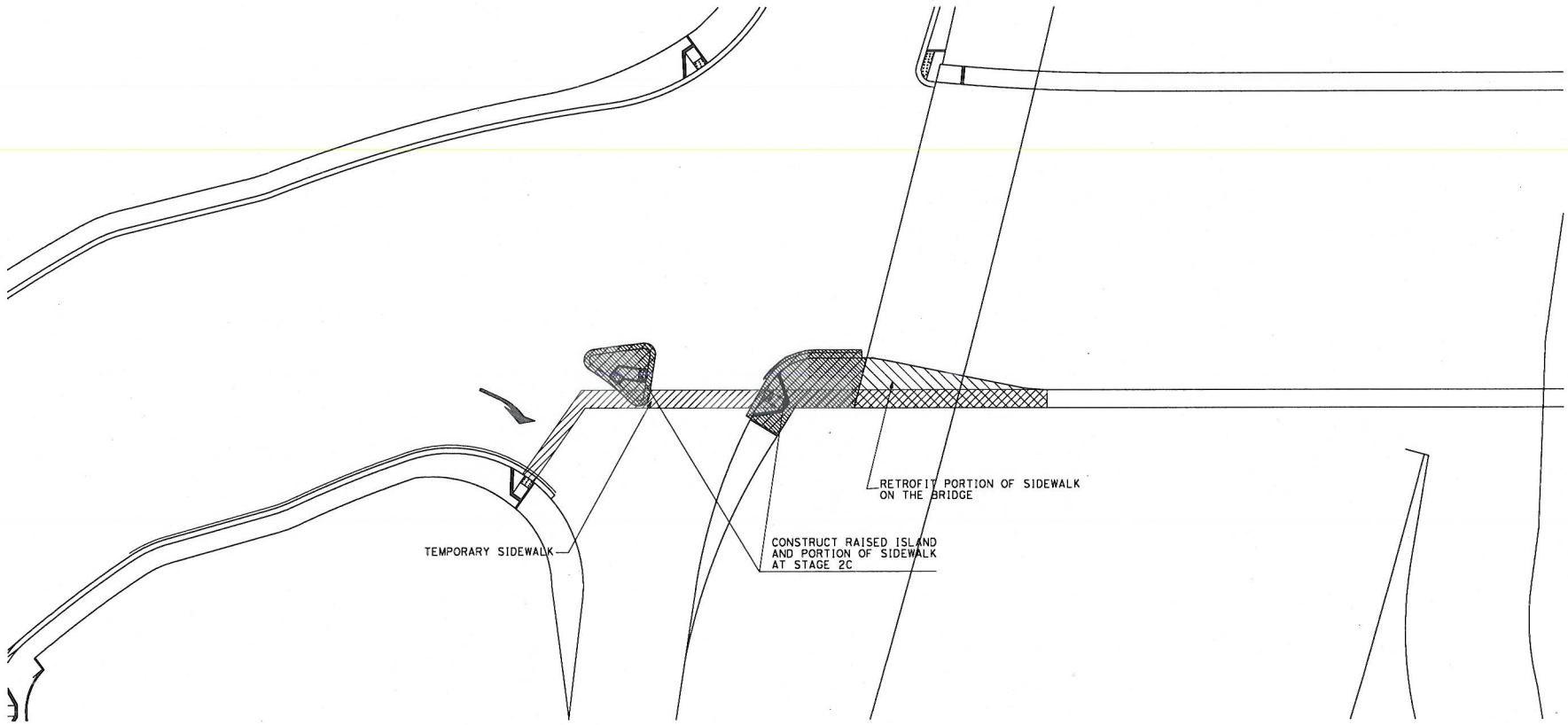
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

CALCULATED-DESIGNED BY	DAVID LAM	REVISED BY
CHECKED BY	FRED FAIZI	DATE REVISED

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN



RAISED ISLAND AND SIDEWALK CONSTRUCTION

STAGE CONSTRUCTION DETAILS

NO SCALE

SCD-1

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001 02mb001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

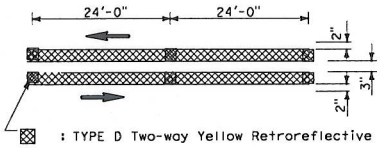
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

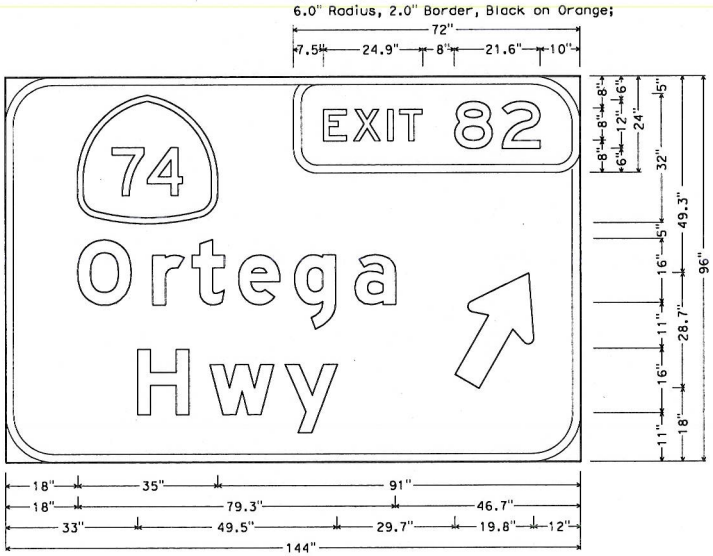
1. SEE STANDARD PLANS FOR PAVEMENT MARKING SYMBOL AND WORD DETAILS.

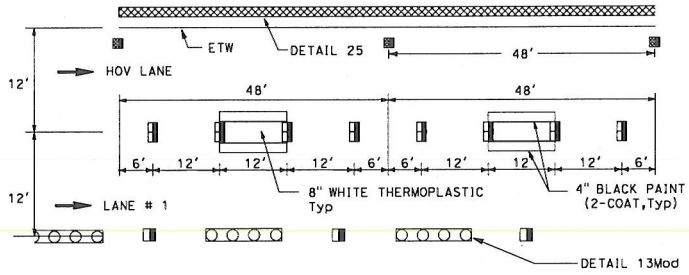
LEGENDS:

- TYPE H ONE-WAY YELLOW RETROREFLECTIVE MARKER
- TYPE G ONE-WAY CLEAR RETROREFLECTIVE MARKER
- TYPE C RED-CLEAR RETROREFLECTIVE MARKER
- TYPE A WHITE NON-REFLECTIVE MARKER
- DIRECTION OF TRAFFIC
- 4" BLACK PAINT TRAFFIC STRIPE (2-COAT)
- 4" YELLOW THERMOPLASTIC TRAFFIC STRIPE
- 4" WHITE THERMOPLASTIC TRAFFIC STRIPE
- 8" WHITE THERMOPLASTIC TRAFFIC STRIPE

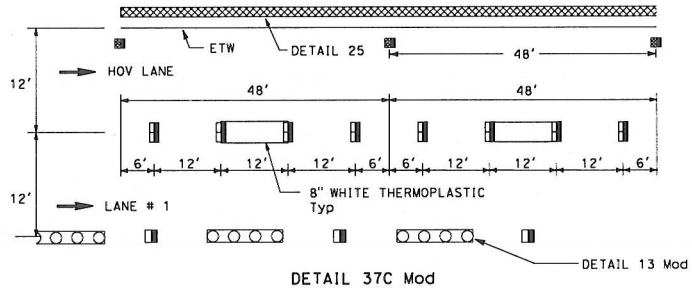


DETAIL 22 Mod

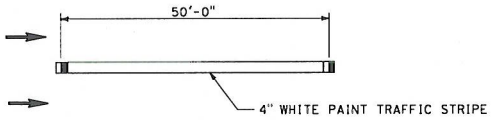




DETAIL 37C Mod
FOR PCC PAVEMENT



DETAIL 37C Mod
FOR AC PAVEMENT



DETAIL A

STAGE CONSTRUCTION DETAILS

NO SCALE

SCD-2

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102mb002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

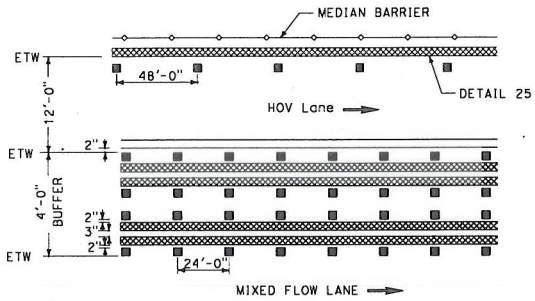
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

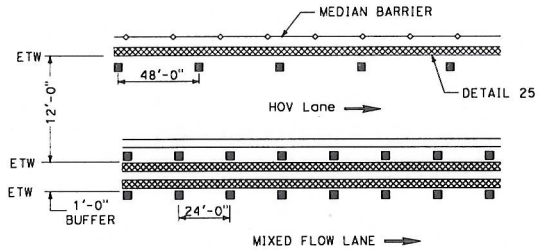
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAW No. C63493 Exp 09-30-12 CIVIL STATE OF CALIFORNIA



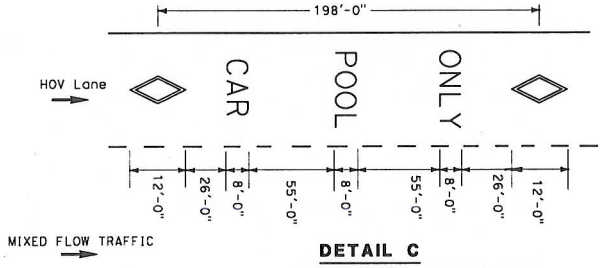
DETAIL B

HOV LANE BUFFER STRIPING DETAIL
BUFFER WIDTH - 4 FEET



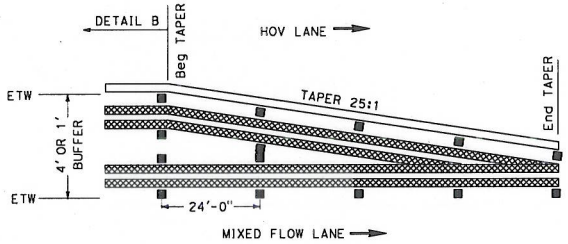
DETAIL B2

HOV LANE BUFFER STRIPING DETAIL
BUFFER WIDTH - 1 FOOT

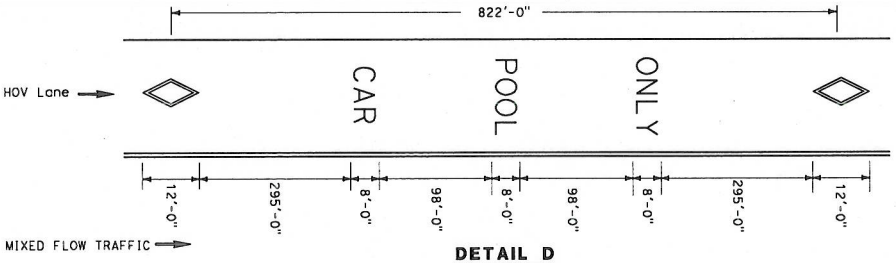


DETAIL C

TYPICAL HOV LANE PAVEMENT MARKING
AT INGRESS/EGRESS



HOV LANE TAPERED STRIPING DETAIL
AT INGRESS/EGRESS LOCATION



DETAIL D

TYPICAL HOV LANE PAVEMENT MARKING

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STAGE CONSTRUCTION DETAILS

NO SCALE

SCD-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010
USERNAME => $(USER)
DGN FILE => J:\mainline\12000001 02mb003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2994
PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

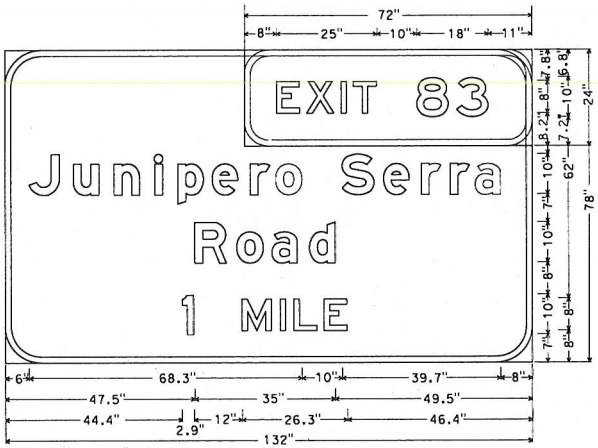
REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

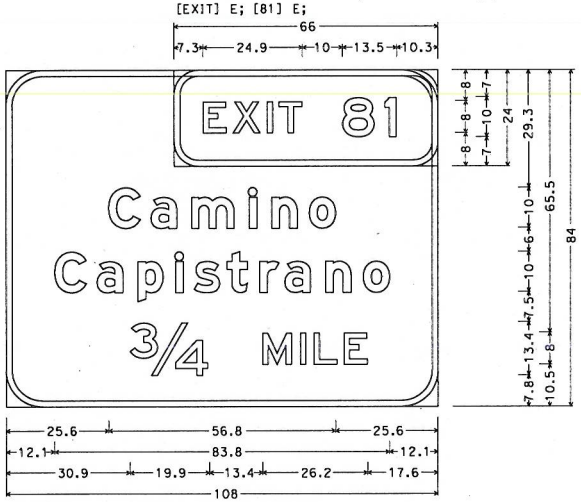
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

6.0" Radius, 1.5" Border, Black on Orange;
[EXIT] E; [83] E;



9.0" Radius, 1.5" Border, Black on Orange;
[Junipero Serra] E Mod; [Road] E Mod; [1] E; [MILE] E;

6.0" Radius, 1.5" Border, Black on Orange;
[EXIT] E; [81] E;



9.0" Radius, 1.5" Border, Black on Orange;
[Camino] E Mod; [Capistrano] E Mod; [3/4 MILE] E;

STAGE CONSTRUCTION DETAILS

NO SCALE

SCD-4

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

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DGN FILE => J:\mainline\12000001 02mb004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

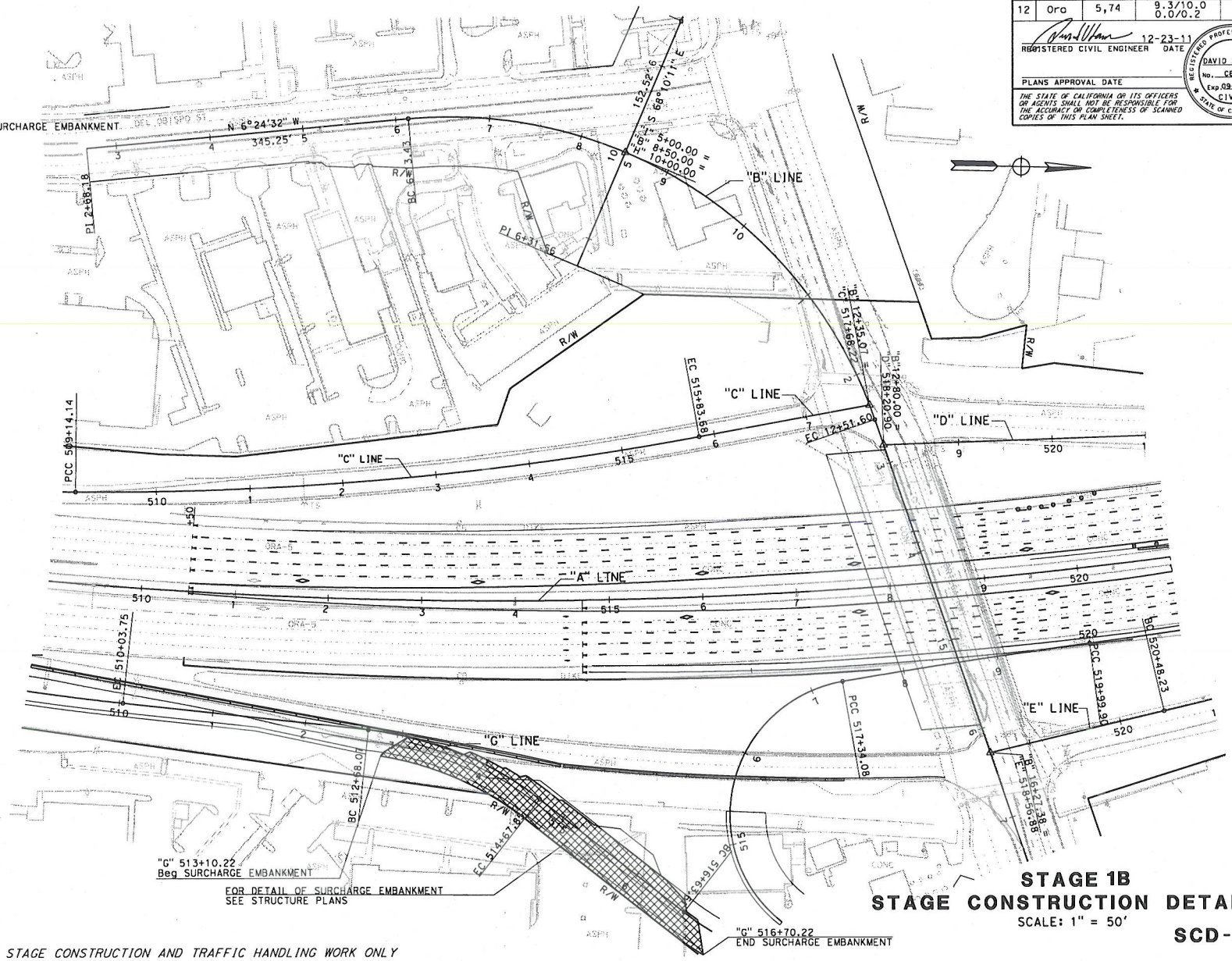
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

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.

NOTES:

LEGEND:

: SURCHARGE EMBANKMENT



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE 1B
STAGE CONSTRUCTION DETAILS

SCALE: 1" = 50'

SCD-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	DAVID LAM
CHECKED BY	FRED FAIZI

FUNCTIONAL SUPERVISOR: FRED FAIZI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

LAST REVISION | DATE PLOTTED => 12/19/2011 | TIME PLOTTED => 12:25:12 PM

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) | DGN FILE => J:\mainline\1200000102mb005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

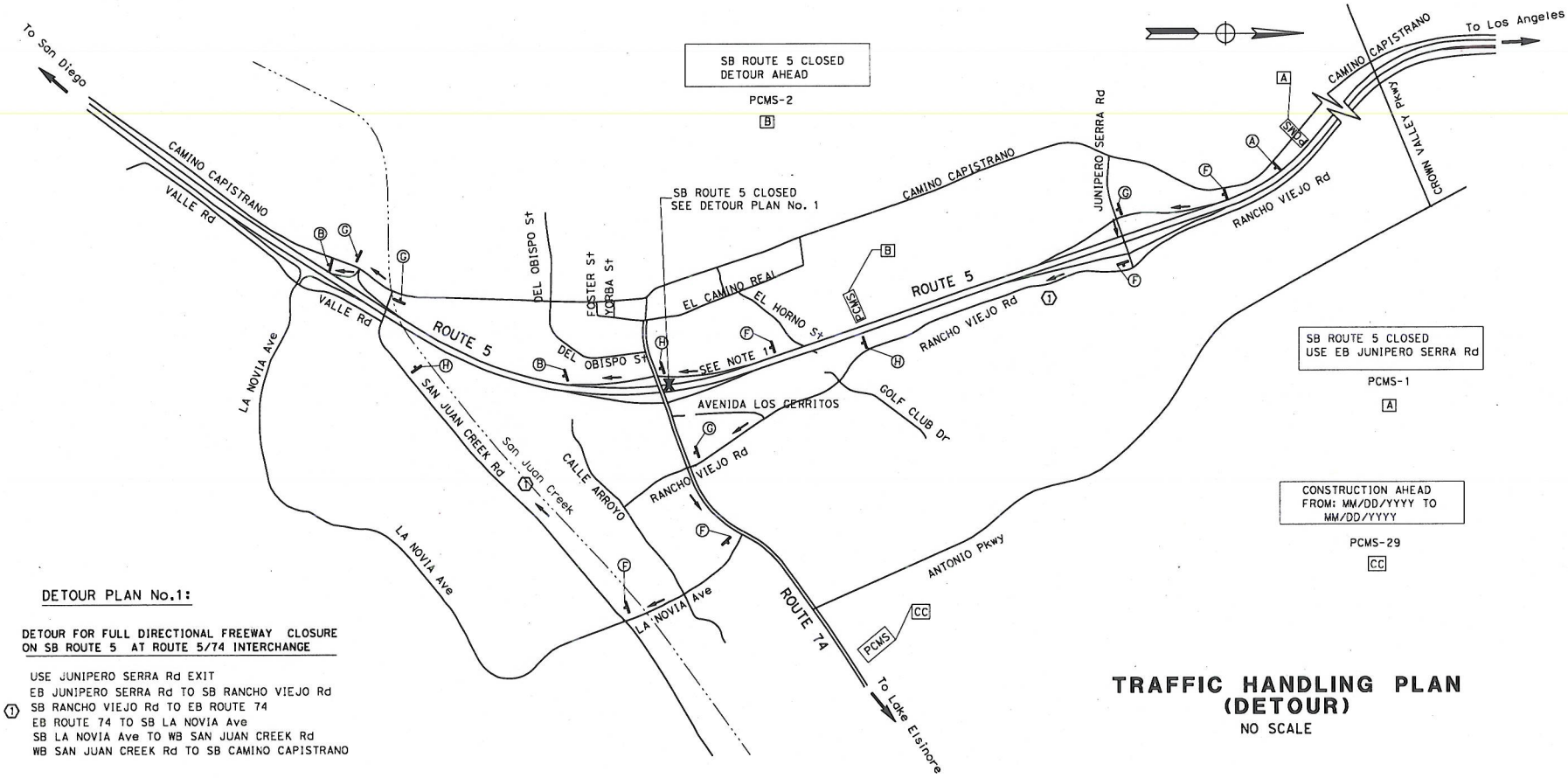
1. RAMPING SHALL BE USED DURING SB ROUTE 5 FULL CLOSURE.

LEGEND:

- (X) CONSTRUCTION DETOUR SIGNS
- (#) DETOUR ROUTE
- → DIRECTION OF DETOURED TRAFFIC
- X CLOSURE LOCATION
- [X] PCMS-#

ABBREVIATIONS:

PCMS PORTABLE CHANGABLE MESSAGE SIGN



DETOUR PLAN No.1:

DETOUR FOR FULL DIRECTIONAL FREEWAY CLOSURE ON SB ROUTE 5 AT ROUTE 5/74 INTERCHANGE

USE JUNIPERO SERRA Rd EXIT
EB JUNIPERO SERRA Rd TO SB RANCHO VIEJO Rd
(1) SB RANCHO VIEJO Rd TO EB ROUTE 74
EB ROUTE 74 TO SB LA NOVIA Ave
SB LA NOVIA Ave TO WB SAN JUAN CREEK Rd
WB SAN JUAN CREEK Rd TO SB CAMINO CAPISTRANO

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 12/19/2011
11-14-11 TIME PLOTTED => 08:00

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

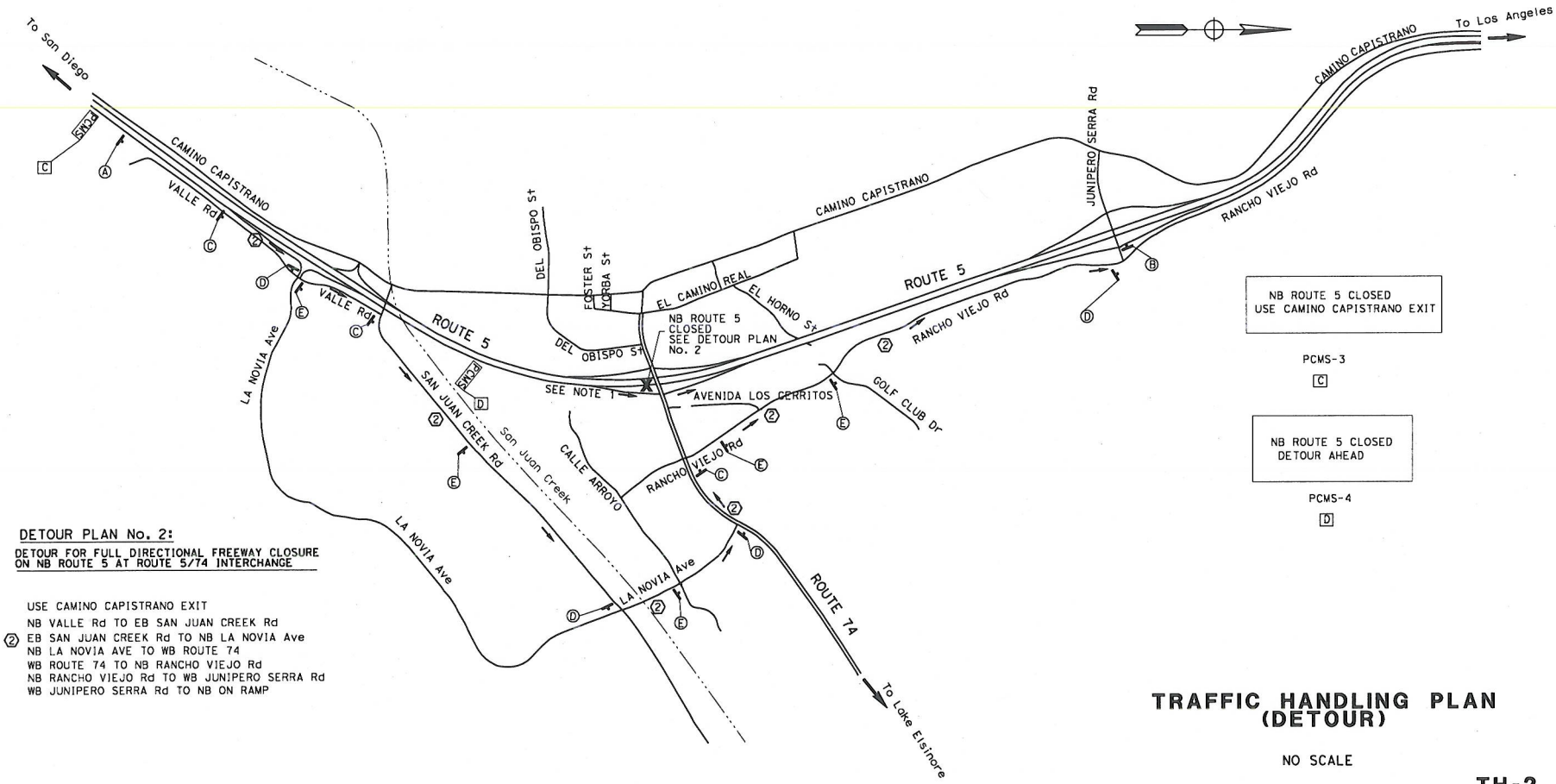
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

RAMPING SHALL BE USED DURING NB ROUTE 5 FULL CLOSURE.



DETOUR PLAN No. 2:

DETOUR FOR FULL DIRECTIONAL FREEWAY CLOSURE ON NB ROUTE 5 AT ROUTE 5/74 INTERCHANGE

USE CAMINO CAPISTRANO EXIT
NB VALLE Rd TO EB SAN JUAN CREEK Rd
(2) EB SAN JUAN CREEK Rd TO NB LA NOVIA Ave
NB LA NOVIA AVE TO WB ROUTE 74
WB ROUTE 74 TO NB RANCHO VIEJO Rd
NB RANCHO VIEJO Rd TO WB JUNIPERO SERRA Rd
WB JUNIPERO SERRA Rd TO NB ON RAMP

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010
USERNAME => $(USER)
DGN FILE => j:\mainline\120000102md002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2994
PROJECT NUMBER & PHASE 12000001021

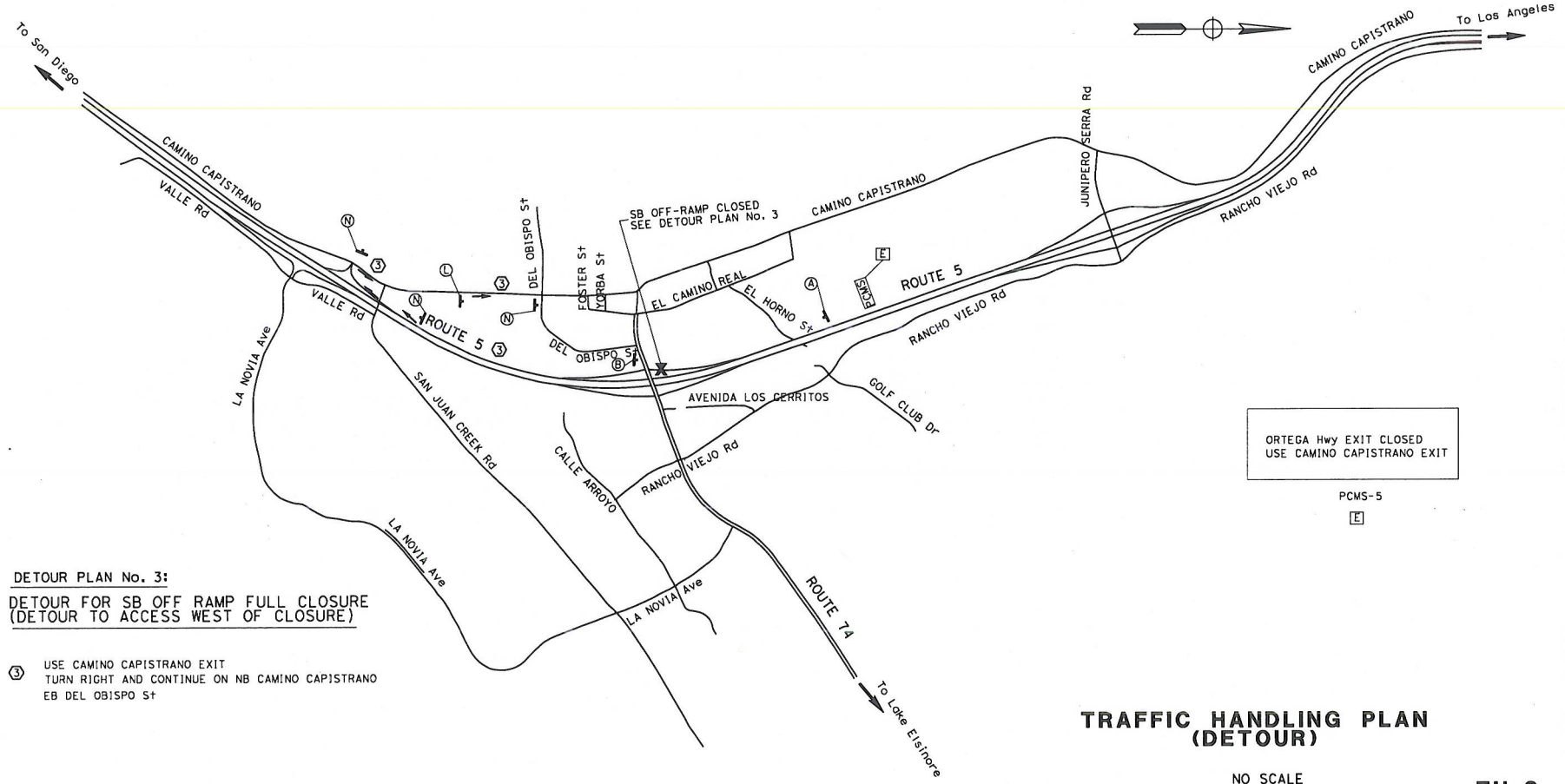
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.



ORTEGA Hwy EXIT CLOSED
USE CAMINO CAPISTRANO EXIT

PCMS-5

E

DETOUR PLAN No. 3:

DETOUR FOR SB OFF RAMP FULL CLOSURE
(DETOUR TO ACCESS WEST OF CLOSURE)

③ USE CAMINO CAPISTRANO EXIT
TURN RIGHT AND CONTINUE ON NB CAMINO CAPISTRANO
EB DEL OBISPO St

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011
TIME PLOTTED => 12:25:54 PM

BORDER LAST REVISED 7/2/2010
USERNAME => $(USER)
DGN FILE => J:\mainline\1200000102md003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2994
PROJECT NUMBER & PHASE 12000001021

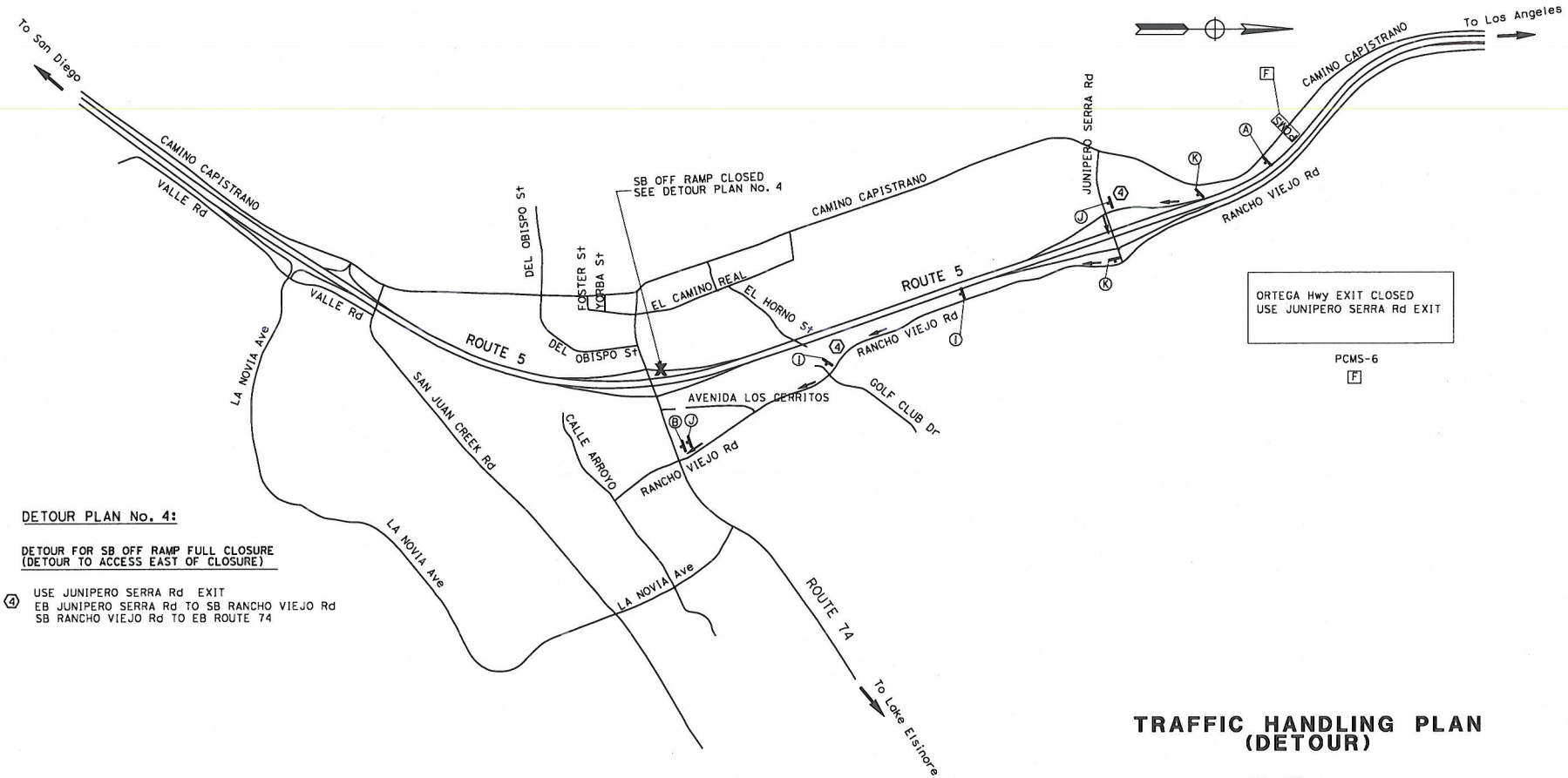
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.



DETOUR PLAN No. 4:

DETOUR FOR SB OFF RAMP FULL CLOSURE
(DETOUR TO ACCESS EAST OF CLOSURE)

(4) USE JUNIPERO SERRA Rd EXIT
EB JUNIPERO SERRA Rd TO SB RANCHO VIEJO Rd
SB RANCHO VIEJO Rd TO EB ROUTE 74

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001 02md004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

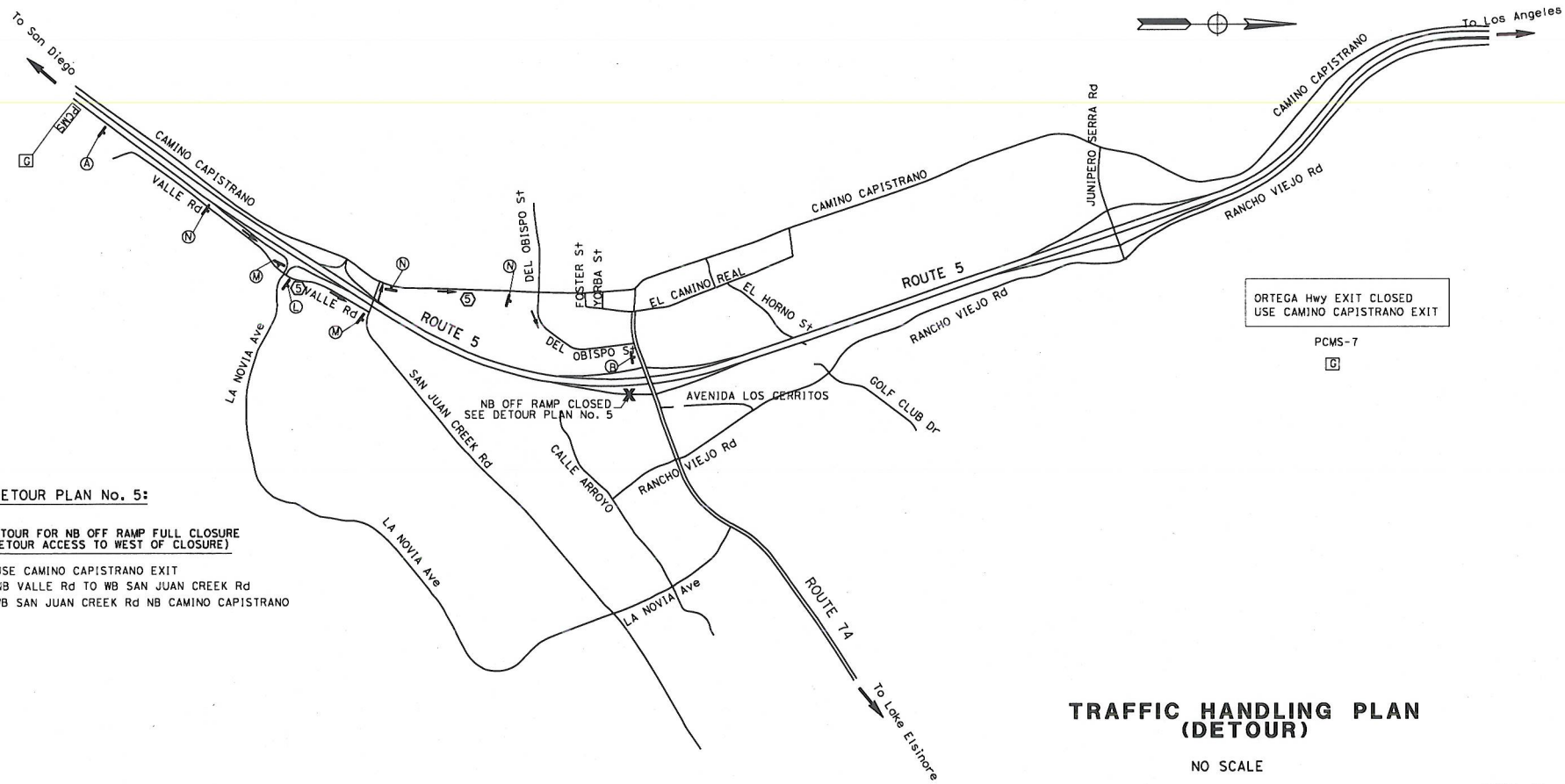
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA



DETOUR PLAN No. 5:

DETOUR FOR NB OFF RAMP FULL CLOSURE
(DETOUR ACCESS TO WEST OF CLOSURE)

(5) USE CAMINO CAPISTRANO EXIT
NB VALLE Rd TO WB SAN JUAN CREEK Rd
WB SAN JUAN CREEK Rd NB CAMINO CAPISTRANO

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TH-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\1200000102md005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

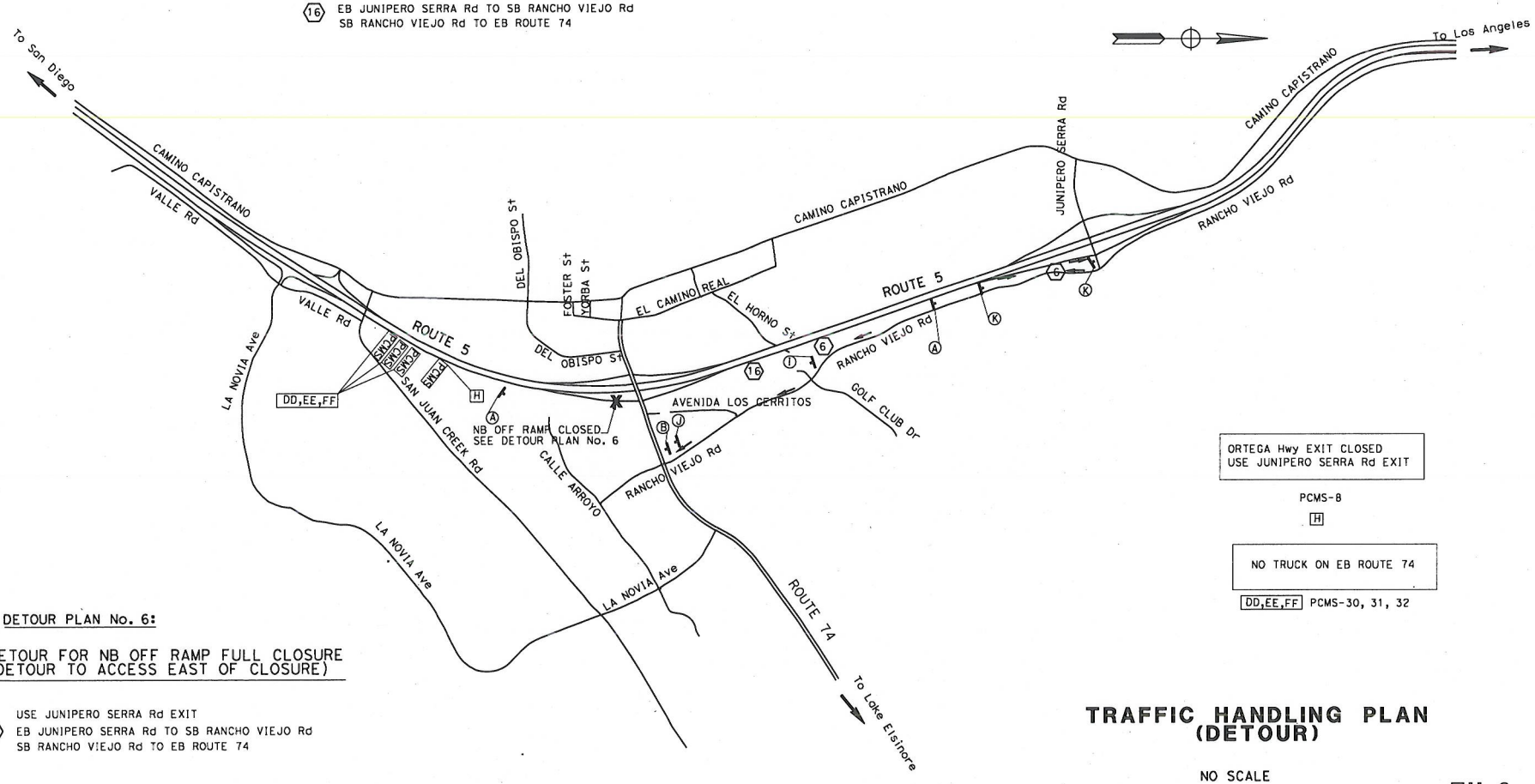
REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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.

DETOUR PLAN No. 16:

DETOUR PLANS FOR STAGE CONSTRUCTION 2D FOR TRUCK NB OFF RAMP TO EB ROUTE 74

(16) TRUCK USE JUNIPERO SERRA Rd EXIT
EB JUNIPERO SERRA Rd TO SB RANCHO VIEJO Rd
SB RANCHO VIEJO Rd TO EB ROUTE 74



DETOUR PLAN No. 6:

DETOUR FOR NB OFF RAMP FULL CLOSURE
(DETOUR TO ACCESS EAST OF CLOSURE)

USE JUNIPERO SERRA Rd EXIT
(6) EB JUNIPERO SERRA Rd TO SB RANCHO VIEJO Rd
SB RANCHO VIEJO Rd TO EB ROUTE 74

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001021md006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

LAST REVISION | DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

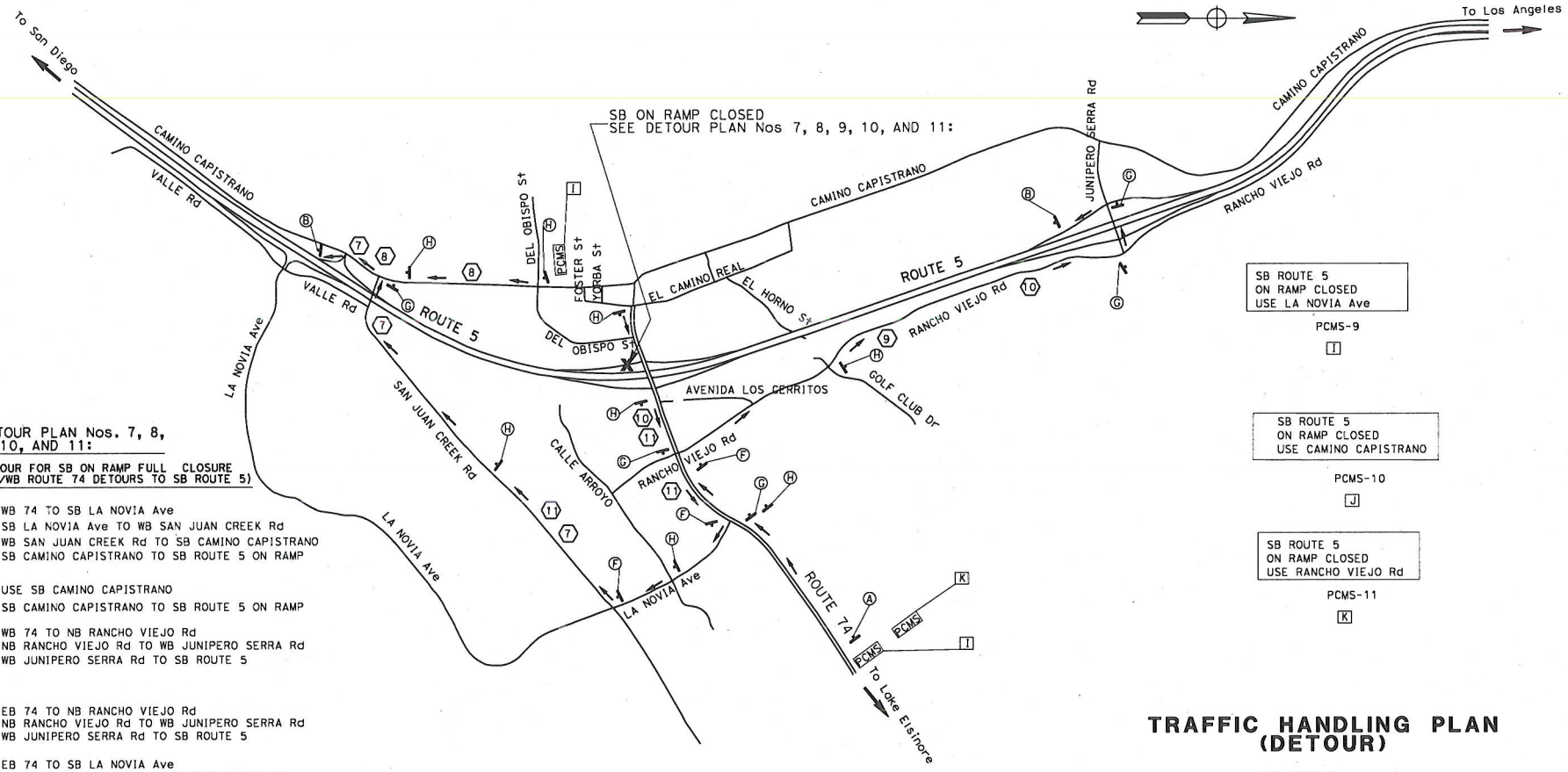
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

1. DETOUR ROUTE No. 9 SHALL BE USED IN LIEU OF DETOUR ROUTE Nos. 7 AND 11 IF RAMP CLOSURE EXCEEDS 7 CONSECUTIVE DAYS.



DETOUR PLAN Nos. 7, 8, 9, 10, AND 11:

DETOUR FOR SB ON RAMP FULL CLOSURE (EB/WB ROUTE 74 DETOURS TO SB ROUTE 5)

(7) WB 74 TO SB LA NOVIA Ave
SB LA NOVIA Ave TO WB SAN JUAN CREEK Rd
WB SAN JUAN CREEK Rd TO SB CAMINO CAPISTRANO
SB CAMINO CAPISTRANO TO SB ROUTE 5 ON RAMP

(8) USE SB CAMINO CAPISTRANO
SB CAMINO CAPISTRANO TO SB ROUTE 5 ON RAMP

(9) WB 74 TO NB RANCHO VIEJO Rd
NB RANCHO VIEJO Rd TO WB JUNIPERO SERRA Rd
WB JUNIPERO SERRA Rd TO SB ROUTE 5

(10) EB 74 TO NB RANCHO VIEJO Rd
NB RANCHO VIEJO Rd TO WB JUNIPERO SERRA Rd
WB JUNIPERO SERRA Rd TO SB ROUTE 5

(11) EB 74 TO SB LA NOVIA Ave
SB LA NOVIA Ave TO WB SAN JUAN CREEK Rd
WB SAN JUAN CREEK Rd TO SB CAMINO CAPISTRANO
SB CAMINO CAPISTRANO TO SB ROUTE 5 ON RAMP

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000102md007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

DATE PLOTTED => 12/19/2011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

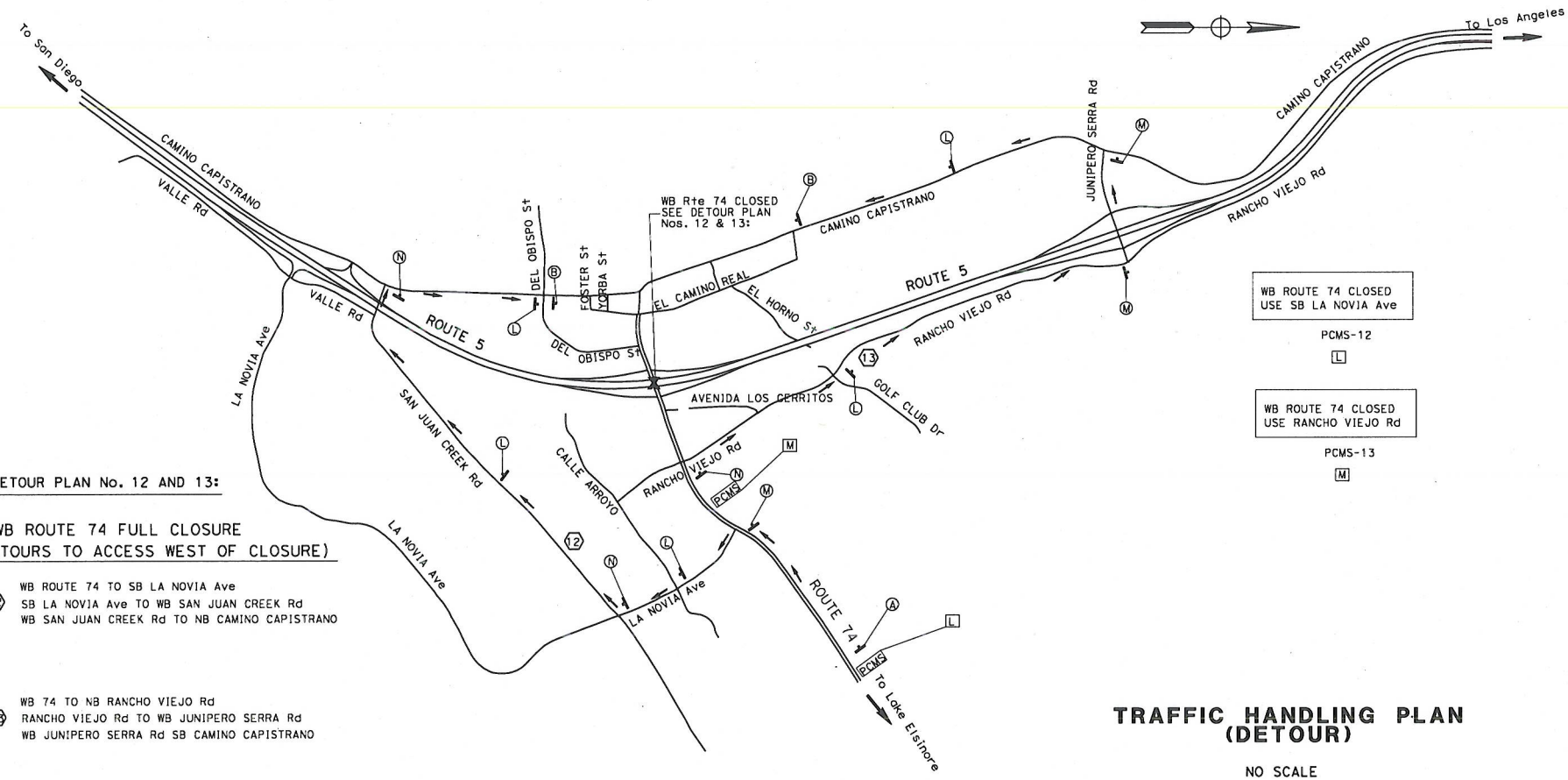
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTE:

1. DETOUR ROUTE No. 12 SHALL NOT BE USED IF WE WB ROUTE 74 CLOSURE EXCEEDS 7 CONSECUTIVE DAYS.



WB ROUTE 74 CLOSED
USE SB LA NOVIA Ave

PCMS-12

L

WB ROUTE 74 CLOSED
USE RANCHO VIEJO Rd

PCMS-13

M

DETOUR PLAN No. 12 AND 13:

WB ROUTE 74 FULL CLOSURE
(DETOURS TO ACCESS WEST OF CLOSURE)

12 WB ROUTE 74 TO SB LA NOVIA Ave
SB LA NOVIA Ave TO WB SAN JUAN CREEK Rd
WB SAN JUAN CREEK Rd TO NB CAMINO CAPISTRANO

13 WB 74 TO NB RANCHO VIEJO Rd
RANCHO VIEJO Rd TO WB JUNIPERO SERRA Rd
WB JUNIPERO SERRA Rd SB CAMINO CAPISTRANO

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\12000001 02md008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

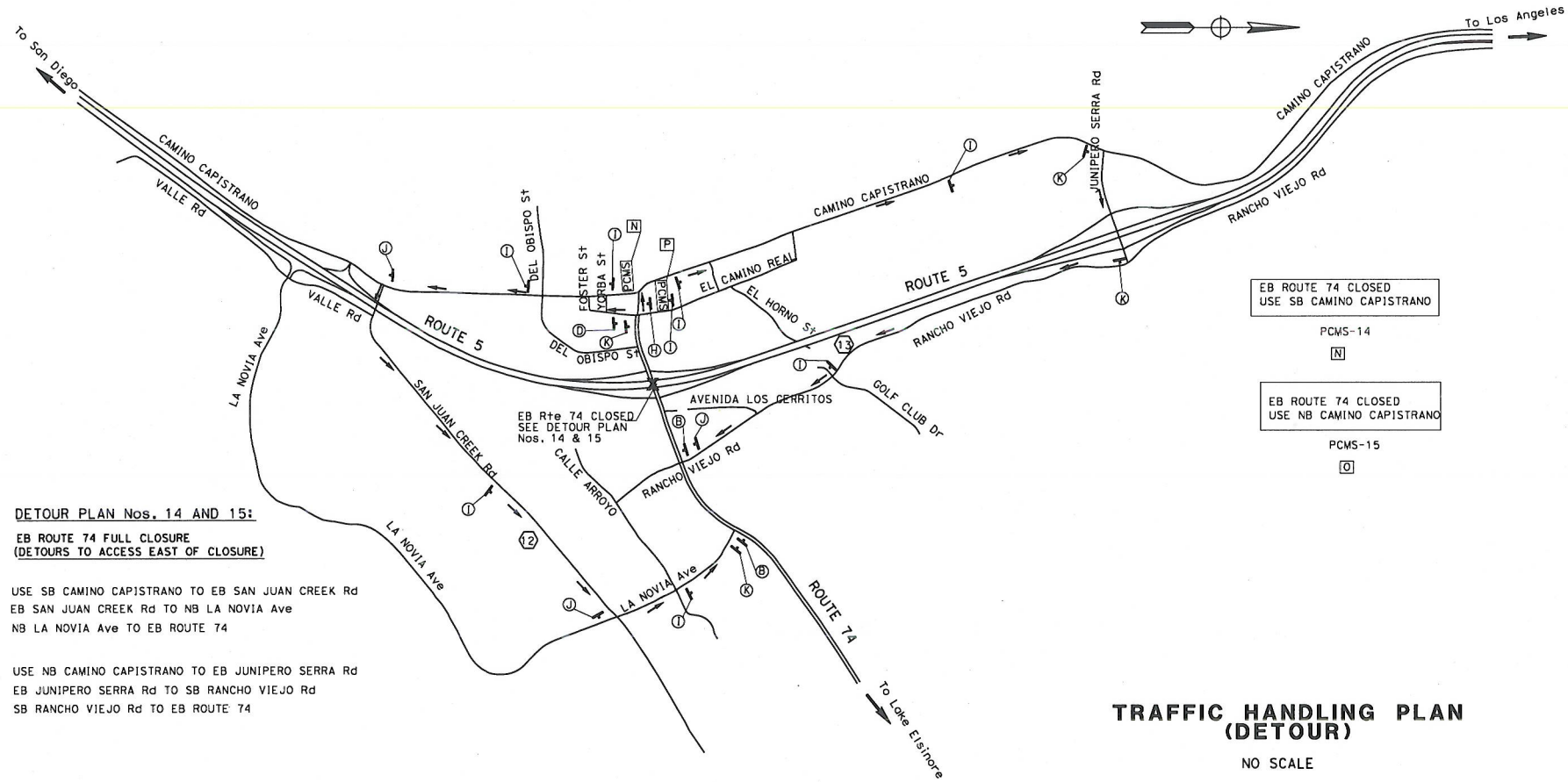
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 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.

NOTE:

1. DETOUR ROUTE No. 14 SHALL NOT BE USED IF THE EB ROUTE 74 CLOSURE EXCEEDS 7 CONSECUTIVE DAYS.



DETOUR PLAN Nos. 14 AND 15:

EB ROUTE 74 FULL CLOSURE
(DETOURS TO ACCESS EAST OF CLOSURE)

(14) USE SB CAMINO CAPISTRANO TO EB SAN JUAN CREEK Rd
EB SAN JUAN CREEK Rd TO NB LA NOVIA Ave
NB LA NOVIA Ave TO EB ROUTE 74

(15) USE NB CAMINO CAPISTRANO TO EB JUNIPERO SERRA Rd
EB JUNIPERO SERRA Rd TO SB RANCHO VIEJO Rd
SB RANCHO VIEJO Rd TO EB ROUTE 74

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TH-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010 | USERNAME => $(USER) DGN FILE => J:\mainline\120000102md009.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2994 | PROJECT NUMBER & PHASE 12000001021

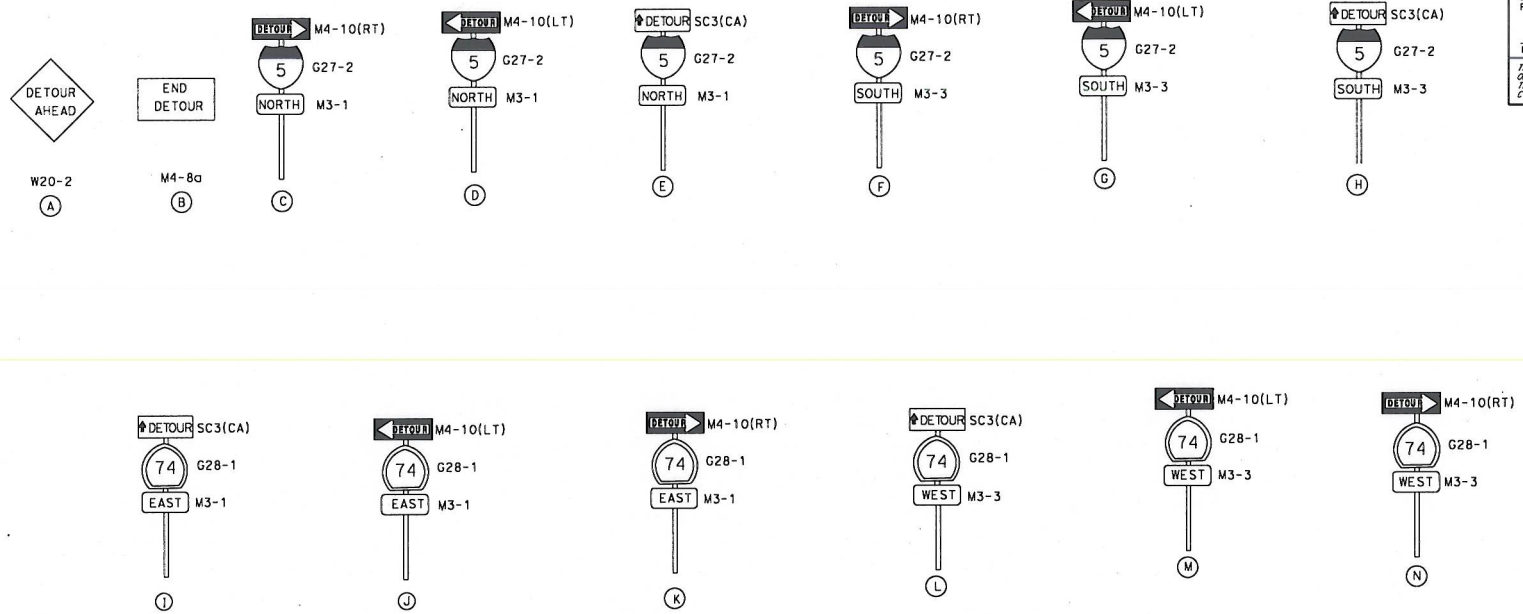
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA



TRAFFIC HANDLING DETAILS

NO SCALE

APPROVED FOR TRAFFIC HANDLING WORK ONLY

THD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 12/19/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)
DGN FILE => J:\mainline\12000001 02me001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No.C61493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN SYMBOL	SIGN CODE	PANEL SIZE (in)	No. OF SIGNS	No. OF POST AND SIZE (in)	SIGN MESSAGE
A	W20-2	48 x 48	9	1 - 6 x 6	
B	M4-8a	20 x 16	13	1 - 6 x 6	
C	M4-10(R+)	48 x 48	5	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
D	M4-10(L+)	48 x 48	6	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
E	SC3(CA)	48 x 48	5	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
F	M4-10(R+)	48 x 48	8	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-3	30 x 15			
G	M4-10(L+)	48 x 48	9	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-3	30 x 15			
H	SC3(CA)	48 x 48	12	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-3	30 x 15			
I	SC3(CA)	48 x 48	11	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-1	30 x 15			
J	M4-10(L+)	48 x 48	6	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-1	30 x 15			
K	M4-10(R+)	48 x 48	8	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-1	30 x 15			
L	SC3(CA)	48 x 48	7	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-3	30 x 15			

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS (Cont)

SIGN SYMBOL	SIGN CODE	PANEL SIZE (IN)	No. OF SIGNS	No. OF POST AND SIZE	SIGN MESSAGE
M	M4-10(L+)	48 x 48	5	1 -6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-3	30 x 15			
N	M4-10(R+)	48 x 48	9	1 -6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-3	30 x 15			

PORTABLE CHANGABLE MESSAGE SIGN

SIGN SYMBOL	SIGN CODE	SHEET No.	SIGN MESSAGE
A	PCMS-1	TH-1	SB ROUTE 5 CLOSED USE EB JUNIPERO SERRA Rd
B	PCMS-2	TH-1	SB ROUTE 5 CLOSED DETOUR AHEAD
C	PCMS-3	TH-2	NB ROUTE 5 CLOSED USE CAMINO CAPISTRANO EXIT
D	PCMS-4	TH-2	NB ROUTE 5 CLOSED DETOUR AHEAD
E	PCMS-5	TH-3	ORTEGA Hwy EXIT CLOSED USE CAMINO CAPISTRANO EXIT
F	PCMS-6	TH-4	ORTEGA Hwy EXIT CLOSED USE JUNIPERO SERRA Rd EXIT
G	PCMS-7	TH-5	ORTEGA Hwy EXIT CLOSED USE CAMINO CAPISTRANO EXIT
H	PCMS-8	TH-6	ORTEGA Hwy EXIT CLOSED USE JUNIPERO SERRA Rd EXIT
I	PCMS-9	TH-7	SB ROUTE 5 ON RAMP CLOSED USE LANOVIA Ave
J	PCMS-10	TH-7	SB ROUTE 5 ON RAMP CLOSED USECAMINO CAPISTRANO
K	PCMS-11	TH-7	SB ROUTE 5 ON RAMP CLOSED USE RANCHO VIEJO Rd
L	PCMS-12	TH-8	WB ROUTE 74 CLOSED USE SB LA NOVIA Ave
M	PCMS-13	TH-8	WB ROUTE 74 CLOSED USE RANCHO VIEJO Rd
N	PCMS-14	TH-9	EB ROUTE 74 CLOSED USE SB CAMINO CAPISTRANO
O	PCMS-15	TH-9	EB ROUTE 74 CLOSED USE NB CAMINO CAPISTRANO
CC	PCMS-29	TH-1	CONSTRUCTION AHEAD FROM: MM/DD/YYYY TO MM/DD/YYYY
DD,EE, FF	PCMS-30, 31 & 32	TH-6	NO TRUCK ON EB ROUTE 74

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING QUANTITIES

NO SCALE

THQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION | DATE PLOTTED => 12/19/2011

ATTACHMENT E
CONSTRUCTION AREA SIGNS PLAN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0 0.0/0.2		

REGISTERED CIVIL ENGINEER 12-23-11 DATE

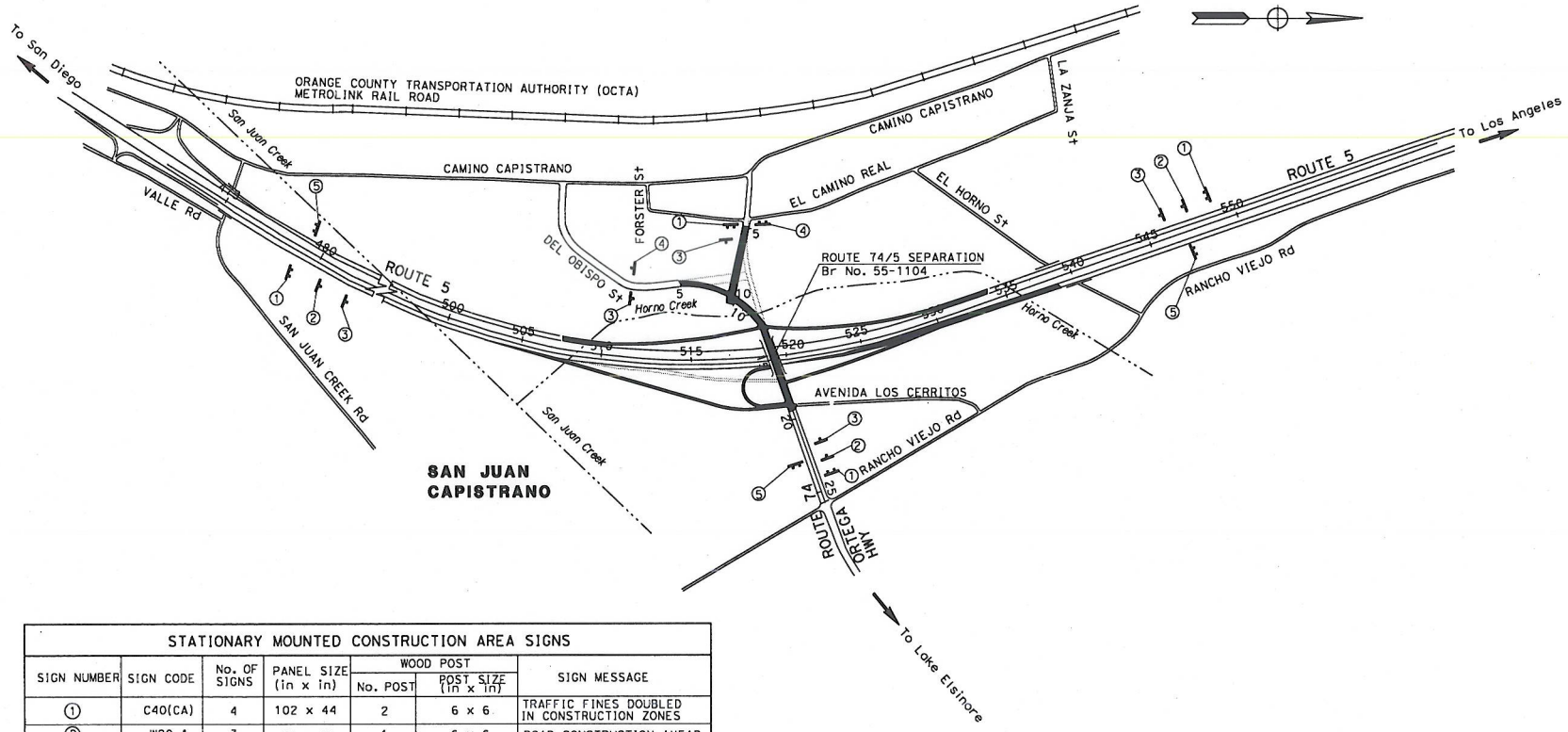
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

NOTES:

1. SIGN LOCATIONS SHOWN ARE APPROXIMATE.
2. EXACT LOCATIONS TO BE DETERMINED BY RESIDENT ENGINEER.



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS						
SIGN NUMBER	SIGN CODE	No. OF SIGNS	PANEL SIZE (in x in)	WOOD POST		SIGN MESSAGE
				No. POST	POST SIZE (in x in)	
①	C40(CA)	4	102 x 44	2	6 x 6	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES
②	W20-1	3	48 x 48	1	6 x 6	ROAD CONSTRUCTION AHEAD
③	W20-1	5	36 x 18	1	4 x 6	ROAD CONSTRUCTION AHEAD
④	G20-2	2	36 x 18	1	4 x 6	END CONSTRUCTION
⑤	G20-2	3	48 x 24	1	4 x 6	END CONSTRUCTION

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI

CALCULATED-DESIGNED BY: DAVID LAM

CHECKED BY: FRED FAIZI

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 12/20/2011

BORDER LAST REVISED 7/2/2010

USERNAME => $(USER)

DGN FILE => J:\mainline\12000001021a001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2994

PROJECT NUMBER & PHASE 12000001021

ATTACHMENT F
TRAFFIC VOLUME ANALYSIS & TABLES

HCS2000: Signalized Intersections Release 4.1d

Analyst: Mohammad alam
Agency: Caltrans
Date: 9/23/2011
Period: September
Project ID: Interchange re-confuguration
E/W St: Ortega Highway (RT 74)

Inter.: RT 74/NB I-5 on-ramp
Area Type: All other areas
Jurisd:
Year : 2011
N/S St: NB I-5 Onramp

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
LGConfig	L	LT			TR	R	L		R			
Volume	724	1412			1019	799	220		740			
Lane Width	12.0	12.0			12.0	12.0	12.0		12.0			
RTOR Vol						0			0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	P				NB	Left	P			
Thru	P	P				Thru				
Right						Right	P			
Peds						Peds				
WB Left					SB	Left				
Thru		P				Thru				
Right		P				Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	25.0	40.0					25.0			
Yellow	3.2	3.6					3.2			
All Red	0.5	0.5					0.5			

Cycle Length: 101.5 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	445	1805	1.81	0.25	410.1	F		
LT	1286	1900	1.22	0.68	122.7	F	220.1	F
Westbound								
TR	749	1900	1.51	0.39	267.8	F	246.1	F
R	636	1615	1.40	0.39	218.5	F		
Northbound								
L	445	1805	0.55	0.25	38.1	D		
							414.5	F
R	398	1615	2.07	0.25	526.3	F		
Southbound								

Intersection Delay = 267.7 (sec/veh) Intersection LOS = F

HCS2000: Signalized Intersections Release 4.1d

Mohammad Alam
Caltrans

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: Mohammad alam
Agency/Co.: Caltrans
Date Performed: 9/23/2011
Analysis Time Period: September
Intersection: RT 74/NB I-5 on-ramp
Area Type: All other areas
Jurisdiction:
Analysis Year: 2011
Project ID: Interchange re-confuguration

East/West Street: Ortega Highway (RT 74)
North/South Street: NB I-5 Onramp

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	724	1412			1019	799	220		740			
% Heavy Veh	0	0			0	0	0		0			
PHF	0.90	0.90			0.90	0.90	0.90		0.90			
PK 15 Vol	201	392			283	222	61		206			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat	1900	1900			1900	1900	1900		1900			
ParkExist												
NumPark												
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
LGConfig	L	LT			TR	R	L		R			
Lane Width	12.0	12.0			12.0	12.0	12.0		12.0			
RTOR Vol						0			0			
Adj Flow	804	1569			1132	888	244		822			
%InSharedLn	0					0						
Prop LTs		0.000			0.000							
Prop RTs		0.000		0.000		1.000			1.000			
Peds Bikes				0			0			0		
Buses	0	0			0	0	0		0			
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0	0.0		0.0			
Arriv. Type	3	3			3	3	3		3			
Unit Ext.	3.0	3.0			3.0	3.0	3.0		3.0			
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0			2.0	2.0	2.0		2.0			
Ext of g	2.0	2.0			2.0	2.0	2.0		2.0			

Ped Min g		3.2	3.2	3.2

PHASE DATA

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P	P			Thru			
Right					Right	P		
Peds					Peds			
WB Left					SB Left			
Thru		P			Thru			
Right		P			Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	40.0			25.0			
Yellow	3.2	3.6			3.2			
All Red	0.5	0.5			0.5			

Cycle Length: 101.5 secs

VOLUME ADJUSTMENT AND SATURATION FLOW WORKSHEET

Volume Adjustment

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume, V	724	1412			1019	799	220		740			
PHF	0.90	0.90			0.90	0.90	0.90		0.90			
Adj flow	804	1569			1132	888	244		822			
No. Lanes	1	1	0	0	1	1	1	0	1	0	0	0
Lane group	L	LT			TR	R	L		R			
Adj flow	804	1569			1132	888	244		822			
Prop LTs		0.000			0.000							
Prop RTs	0.000			0.000		1.000			1.000			

Saturation Flow Rate (see Exhibit 16-7 to determine the adjustment factors)

	Eastbound				Westbound		Northbound			Southbound		
LG	L	LT			TR	R	L		R			
So	1900	1900			1900	1900	1900		1900			
Lanes	1	1	0	0	1	1	1	0	1	0	0	0
fW	1.000	1.000			1.000	1.000	1.000		1.000			
fHV	1.000	1.000			1.000	1.000	1.000		1.000			
fG	1.000	1.000			1.000	1.000	1.000		1.000			
fP	1.000	1.000			1.000	1.000	1.000		1.000			
fBB	1.000	1.000			1.000	1.000	1.000		1.000			
fA	1.00	1.00			1.00	1.00	1.00		1.00			
fLU	1.00	1.00			1.00	1.00	1.00		1.00			
fRT		1.000			1.000	0.850			0.850			
fLT	0.950	1.000			1.000		0.950					
Sec.												
fLpb	1.000	1.000			1.000		1.000					
fRpb		1.000			1.000	1.000			1.000			
S	1805	1900			1900	1615	1805		1615			
Sec.												

CAPACITY AND LOS WORKSHEET

Capacity Analysis and Lane Group Capacity

Appr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)	Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
Eastbound							
Prot							
Perm							
Left	L	804	1805	# 0.45	0.25	445	1.81
Prot							
Perm							
Thru	LT	1569	1900	0.83	0.68	1286	1.22
Right							
Westbound							
Prot							
Perm							
Left							
Prot							
Perm							
Thru	TR	1132	1900	# 0.60	0.39	749	1.51
Right	R	888	1615	0.55	0.39	636	1.40
Northbound							
Prot							
Perm							
Left	L	244	1805	0.14	0.25	445	0.55
Prot							
Perm							
Thru							
Right	R	822	1615	# 0.51	0.25	398	2.07
Southbound							
Prot							
Perm							
Left							
Prot							
Perm							
Thru							
Right							

Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 1.55
Total lost time per cycle, L = 11.50 sec
Critical flow rate to capacity ratio, Xc = (Yc)(C)/(C-L) = 1.75

Control Delay and LOS Determination

Appr/ Lane Grp	Ratios v/c	Ratios g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Incremental Del d2	Res Del d3	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound												
L	1.81	0.25	38.2	1.000	445	0.50	371.9	0.0	410.1	F		
LT	1.22	0.68	16.4	1.000	1286	0.50	106.3	0.0	122.7	F	220.1	F
Westbound												
TR	1.51	0.39	30.7	1.000	749	0.50	237.0	0.0	267.8	F	246.1	F
R	1.40	0.39	30.7	1.000	636	0.50	187.8	0.0	218.5	F		
Northbound												
L	0.55	0.25	33.3	1.000	445	0.50	4.8	0.0	38.1	D		
											414.5	F
R	2.07	0.25	38.2	1.000	398	0.50	488.0	0.0	526.3	F		
Southbound												

Intersection delay = 267.7 (sec/veh) Intersection LOS = F
Errors exist. See bottom of text report.

SUPPLEMENTAL PERMITTED LT WORKSHEET
for exclusive lefts

Input

		EB	WB	NB	SB
Cycle length, C	101.5 sec				
Total actual green time for LT lane group, G (s)					
Effective permitted green time for LT lane group, g(s)					
Opposing effective green time, go (s)					
Number of lanes in LT lane group, N					
Number of lanes in opposing approach, No					
Adjusted LT flow rate, VLT (veh/h)					
Proportion of LT in LT lane group, PLT					
Proportion of LT in opposing flow, PLTo					
Adjusted opposing flow rate, Vo (veh/h)					
Lost time for LT lane group, tL					

Computation

LT volume per cycle, LTC=VLTC/3600				
Opposing lane util. factor, fLUo		1.00	1.00	
Opposing flow, Volc=VoC/[3600(No)fLUo] (veh/ln/cyc)				
gf=G[exp(- a * (LTC ** b))]-tl, gf<=g				
Opposing platoon ratio, Rpo (refer Exhibit 16-11)				
Opposing Queue Ratio, qro=Max[1-Rpo(go/C),0]				
gq, (see Exhibit C16-4,5,6,7,8)				
gu=g-gq if gq>=gf, or = g-gf if gq<gf				
n=Max(gq-gf)/2,0)				
PTHo=1-PLTo				
PL*=PLT[1+(N-1)g/(gf+gu/EL1+4.24)]				
EL1 (refer to Exhibit C16-3)				
EL2=Max((1-Ptho**n)/Plto, 1.0)				
fmin=2(1+PL)/g or fmin=2(1+Pl)/g				
gdiff=max(gq-gf,0)				
fm=[gf/g]+[gu/g]/[1+PL(EL1-1)], (min=fmin;max=1.00)				
flt=fm=[gf/g]+[gu/g]/[1+PL(EL1-1)]+[gdiff/g]/[1+PL(EL2-1)],(fmin<=fm<=1.00)				
or flt=[fm+0.91(N-1)]/N**				
Left-turn adjustment, fLT				

For special case of single-lane approach opposed by multilane approach, see text.
* If Pl>=1 for shared left-turn lanes with N>1, then assume de-facto left-turn lane and redo calculations.
** For permitted left-turns with multiple exclusive left-turn lanes, flt=fm.
For special case of multilane approach opposed by single-lane approach or when gf>gq, see text.

SUPPLEMENTAL PERMITTED LT WORKSHEET
for shared lefts

Input

		EB	WB	NB	SB
Cycle length, C	101.5 sec				
Total actual green time for LT lane group, G (s)					
Effective permitted green time for LT lane group, g(s)					
Opposing effective green time, go (s)					
Number of lanes in LT lane group, N					
Number of lanes in opposing approach, No					

Adjusted LT flow rate, VLT (veh/h)
Proportion of LT in LT lane group, PLT 0.000 0.000
Proportion of LT in opposing flow, PLTo
Adjusted opposing flow rate, Vo (veh/h)
Lost time for LT lane group, tL
Computation
LT volume per cycle, LTC=VLTC/3600
Opposing lane util. factor, fLUo 1.00 1.00
Opposing flow, Volc=VoC/[3600(No)fLUo] (veh/ln/cyc)
gf=G[exp(- a * (LTC ** b))]-tl, gf<=g
Opposing platoon ratio, Rpo (refer Exhibit 16-11)
Opposing Queue Ratio, qro=Max[1-Rpo(go/C),0]
gq, (see Exhibit C16-4,5,6,7,8)
gu=g-gq if gq>=gf, or = g-gf if gq<gf
n=Max(gq-gf)/2,0)
PTHo=1-PLTo
PL*=PLT[1+(N-1)g/(gf+gu/EL1+4.24)]
EL1 (refer to Exhibit C16-3)
EL2=Max((1-Ptho**n)/Plto, 1.0)
fmin=2(1+PL)/g or fmin=2(1+Pl)/g
gdiff=max(gq-gf,0)
fm=[gf/g]+[gu/g]/[1+PL(EL1-1)], (min=fmin;max=1.00)
flt=fm=[gf/g]+[gu/g]/[1+PL(EL1-1)]+[gdiff/g]/[1+PL(EL2-1)],(fmin<=fm<=1.00)
or flt=[fm+0.91(N-1)]/N**
Left-turn adjustment, fLT

For special case of single-lane approach opposed by multilane approach, see text.
* If Pl>=1 for shared left-turn lanes with N>1, then assume de-facto left-turn lane and redo calculations.
** For permitted left-turns with multiple exclusive left-turn lanes, flt=fm.
For special case of multilane approach opposed by single-lane approach or when gf>gq, see text.

SUPPLEMENTAL PEDESTRIAN-BICYCLE EFFECTS WORKSHEET

Permitted Left Turns

	EB	WB	NB	SB
Effective pedestrian green time, gp (s)				
Conflicting pedestrian volume, Vped (p/h)				
Pedestrian flow rate, Vpedg (p/h)				
OCCpedg				
Opposing queue clearing green, gq (s)				
Eff. ped. green consumed by opp. veh. queue, gq/gp				
OCCpedu				
Opposing flow rate, Vo (veh/h)				
OCCr				
Number of cross-street receiving lanes, Nrec				
Number of turning lanes, Nturn				
ApbT				
Proportion of left turns, PLT				
Proportion of left turns using protected phase, PLTA				
Left-turn adjustment, fLpb				
Permitted Right Turns				
Effective pedestrian green time, gp (s)				
Conflicting pedestrian volume, Vped (p/h)				
Conflicting bicycle volume, Vbic (bicycles/h)				
Vpedg				
OCCpedg				
Effective green, g (s)				
Vbicg				
OCCbicg				

OCCr
Number of cross-street receiving lanes, Nrec
Number of turning lanes, Nturn
ApbT
Proportion right-turns, PRT
Proportion right-turns using protected phase, PRTA
Right turn adjustment, fRpb

SUPPLEMENTAL UNIFORM DELAY WORKSHEET

		EBLT	WBLT	NBLT	SBLT
Cycle length, C	101.5 sec				
Adj. LT vol from Vol Adjustment Worksheet, v					
v/c ratio from Capacity Worksheet, X					
Protected phase effective green interval, g (s)					
Opposing queue effective green interval, gq					
Unopposed green interval, gu					
Red time r=(C-g-gq-gu)					
Arrival rate, qa=v/(3600(max[X,1.0]))					
Protected ph. departure rate, Sp=s/3600					
Permitted ph. departure rate, Ss=s(gq+gu)/(gu*3600)					
XPerm					
XProt					
Case					
Queue at beginning of green arrow, Qa					
Queue at beginning of unsaturated green, Qu					
Residual queue, Qr					
Uniform Delay, d1					

DELAY/LOS WORKSHEET WITH INITIAL QUEUE

Appr/ Lane Group	Initial Unmet Demand Q veh	Dur. Unmet Demand t hrs.	Uniform Delay Unadj. ds	Uniform Delay Adj. d1 sec	Initial Queue Param. u	Final Unmet Demand Q veh	Initial Queue Delay d3 sec	Lane Group Delay d sec
Eastbound								
Westbound								
Northbound								
Southbound								

Intersection Delay 267.7 sec/veh Intersection LOS F

BACK OF QUEUE WORKSHEET

Eastbound	Westbound	Northbound	Southbound

LaneGroup	L	LT			TR	R	L		R				
Init Queue	0.0	0.0			0.0	0.0	0.0		0.0				
Flow Rate	804	1569			1132	888	244		822				
So	1900	1900			1900	1900	1900		1900				
No.Lanes	1	1	0	0	1	1	1	0	1	0	0	0	
SL	1805	1900			1900	1615	1805		1615				
LnCapacity	445	1286			749	636	445		398				
Flow Ratio	0.45	0.83			0.60	0.55	0.14		0.51				
v/c Ratio	1.81	1.22			1.51	1.40	0.55		2.07				
Grn Ratio	0.25	0.68			0.39	0.39	0.25		0.25				
I Factor		1.000			1.000			1.000					
AT or PVG	3	3			3	3	3		3				
Pltn Ratio	1.00	1.00			1.00	1.00	1.00		1.00				
PF2	1.00	1.00			1.00	1.00	1.00		1.00				
Q1	22.7	44.2			31.9	25.0	6.0		23.2				
kB	0.7	1.5			1.0	0.9	0.7		0.7				
Q2	46.4	42.3			50.7	34.4	0.8		54.2				
Q Average	69.1	86.5			82.6	59.5	6.8		77.4				
Q Spacing	25.0	25.0			25.0	25.0	25.0		25.0				
Q Storage	0	0			0	0	0		0				
Q S Ratio													
70th Percentile Output:													
fB%	1.2	1.2			1.2	1.2	1.2		1.2				
BOQ	82.9	104			99.1	71.3	8.4		92.9				
QSRatio													
85th Percentile Output:													
fB%	1.4	1.4			1.4	1.4	1.5		1.4				
BOQ	96.7	121			116	83.2	10.1		108				
QSRatio													
90th Percentile Output:													
fB%	1.5	1.5			1.5	1.5	1.6		1.5				
BOQ	104	130			124	89.2	11.1		116				
QSRatio													
95th Percentile Output:													
fB%	1.6	1.6			1.6	1.6	1.9		1.6				
BOQ	111	138			132	95.1	12.7		124				
QSRatio													
98th Percentile Output:													
fB%	1.7	1.7			1.7	1.7	2.1		1.7				
BOQ	117	147			140	101	14.2		132				
QSRatio													

ERROR MESSAGES

East bound left is shared but does not move with the adjacent movement.

1) Traffic Analysis

County:	ORA	PM:	9.3/10.00	Chart No.:	#1,Mainline
Route:	I 5	EA:	0E3101	Direction:	SB (S-S)

Work Zone:		Detour (# of ln reduction w/ detour)		Normal Capacity:	8,000
Percent Trucks:		5.00%	Percent Cars: 95.0%	% Detour	part.closure
Date:		09/20/11		Lanes Under Normal Operation:	4

Time Period (hour)	Vehicle Demand (vph)	Detour (vph)	Anticipated Vehicle Volumes (vph)	Lanes Open (#)	Roadway Capacity (vph)	Queue Rate (vph)	Queued Vehicles (vph)	Average Queued Vehicles (vph)	Vehicles that Travel Work Zone (vph)	Vehicles that Travel Queue (vph)	Delay (min)	Queue Length (mile/hr)
0-1	1,782	0	1,782	2	3,000	-1,218	0	0	1,782	0	0	0.0
1-2	1,251	0	1,251	1	1,500	-249	0	0	1,251	0	0	0.0
2-3	850	0	850	1	1,500	-650	0	0	850	0	0	0.0
3-4	769	0	769	1	1,500	-731	0	0	769	0	0	0.0
4-5	802	0	802	1	1,500	-698	0	0	802	0	0	0.0
5-6	1,320	0	1,320	2	3,000	-1,680	0	0	1,320	0	0	0.0
6-7	1,995	0	1,995	2	3,000	-1,005	0	0	1,995	0	0	0.0
7-8	2,824	0	2,824	3	4,800	-1,976	0	0	2,824	0	0	0.0
8-9	3,694	0	3,694	4	8,000	-4,306	0	0	0	0	0	0.0
9-10	4,569	0	4,569	4	8,000	-3,431	0	0	0	0	0	0.0
10-11	5,013	0	5,013	4	8,000	-2,987	0	0	0	0	0	0.0
11-12	5,557	0	5,557	4	8,000	-2,443	0	0	0	0	0	0.0
12-13	5,492	0	5,492	4	8,000	-2,508	0	0	0	0	0	0.0
13-14	5,572	0	5,572	4	8,000	-2,428	0	0	0	0	0	0.0
14-15	5,614	0	5,614	4	8,000	-2,386	0	0	0	0	0	0.0
15-16	5,629	0	5,629	4	8,000	-2,371	0	0	0	0	0	0.0
16-17	5,581	0	5,581	4	8,000	-2,419	0	0	0	0	0	0.0
17-18	5,486	0	5,486	4	8,000	-2,514	0	0	0	0	0	0.0
18-19	4,871	0	4,871	4	8,000	-3,129	0	0	0	0	0	0.0
19-20	4,512	0	4,512	4	8,000	-3,488	0	0	0	0	0	0.0
20-21	4,138	0	4,138	4	8,000	-3,862	0	0	0	0	0	0.0
21-22	3,793	0	3,793	4	8,000	-4,207	0	0	0	0	0	0.0
22-23	3,239	0	3,239	3	4,800	-1,561	0	0	3,239	0	0	0.0
23-24	2,439	0	2,439	2	3,000	-561	0	0	2,439	0	0	0.0
TOTALS	86,792	0	86,792						17,271	0		0

By: CLY

1) Traffic Analysis

County:	ORA	PM:	9.3/10.00	Chart No.:	#1,Mainline
Route:	I 5	EA:	0E3101	Direction:	SB (M-F)

Work Zone:		Detour (# of ln reduction w/ detour)		Normal Capacity:	8,000
Percent Trucks:		5.00%	Percent Cars: 95.0%	% Detour	part.closure
Date:		09/20/11		Lanes Under Normal Operation:	4

Time Period (hour)	Vehicle Demand (vph)	Detour (vph)	Anticipated Vehicle Volumes (vph)	Lanes Open (#)	Roadway Capacity (vph)	Queue Rate (vph)	Queued Vehicles (vph)	Average Queued Vehicles (vph)	Vehicles that Travel Work Zone (vph)	Vehicles that Travel Queue (vph)	Delay (min)	Queue Length (mile/hr)
0-1	1,180	0	1,180	2	3,000	-1,820	0	0	1,180	0	0	0.0
1-2	847	0	847	2	3,000	-2,153	0	0	847	0	0	0.0
2-3	672	0	672	2	3,000	-2,328	0	0	672	0	0	0.0
3-4	774	0	774	2	3,000	-2,226	0	0	774	0	0	0.0
4-5	1,240	0	1,240	3	4,800	-3,560	0	0	1,240	0	0	0.0
5-6	2,603	0	2,603	4	8,000	-5,397	0	0	0	0	0	0.0
6-7	4,195	0	4,195	4	8,000	-3,805	0	0	0	0	0	0.0
7-8	5,051	0	5,051	4	8,000	-2,949	0	0	0	0	0	0.0
8-9	4,933	0	4,933	4	8,000	-3,067	0	0	0	0	0	0.0
9-10	4,815	0	4,815	4	8,000	-3,185	0	0	0	0	0	0.0
10-11	5,012	0	5,012	4	8,000	-2,988	0	0	0	0	0	0.0
11-12	5,016	0	5,016	4	8,000	-2,984	0	0	0	0	0	0.0
12-13	5,051	0	5,051	4	8,000	-2,949	0	0	0	0	0	0.0
13-14	5,234	0	5,234	4	8,000	-2,766	0	0	0	0	0	0.0
14-15	5,582	0	5,582	4	8,000	-2,418	0	0	0	0	0	0.0
15-16	6,179	0	6,179	4	8,000	-1,821	0	0	0	0	0	0.0
16-17	6,380	0	6,380	4	8,000	-1,620	0	0	0	0	0	0.0
17-18	6,851	0	6,851	4	8,000	-1,149	0	0	0	0	0	0.0
18-19	6,016	0	6,016	4	8,000	-1,984	0	0	0	0	0	0.0
19-20	4,802	0	4,802	4	8,000	-3,198	0	0	0	0	0	0.0
20-21	4,087	0	4,087	4	8,000	-3,913	0	0	0	0	0	0.0
21-22	3,669	0	3,669	4	8,000	-4,331	0	0	0	0	0	0.0
22-23	2,742	0	2,742	4	8,000	-5,258	0	0	0	0	0	0.0
23-24	1,811	0	1,811	3	4,800	-2,989	0	0	1,811	0	0	0.0
TOTALS	94,742	0	94,742						6,524	0		0

By: CLY

1) Traffic Analysis

County:	ORA	PM:	9.3/10.00	Chart No.:	#1,Mainline
Route:	I 5	EA:	0E3101	Direction:	NB (S-S)

Work Zone:		Detour (# of ln reduction w/ detour)		Normal Capacity:	8,000
Percent Trucks:		5.00%	Percent Cars: 95.0%	% Detour	part.closure
Date:		09/20/11		Lanes Under Normal Operation:	4

Time Period (hour)	Vehicle Demand (vph)	Detour (vph)	Anticipated Vehicle Volumes (vph)	Lanes Open (#)	Roadway Capacity (vph)	Queue Rate (vph)	Queued Vehicles (vph)	Average Queued Vehicles (vph)	Vehicles that Travel Work Zone (vph)	Vehicles that Travel Queue (vph)	Delay (min)	Queue Length (mile/hr)
0-1	1,216	0	1,216	2	3,000	-1,784	0	0	1,216	0	0	0.0
1-2	734	0	734	1	1,500	-766	0	0	734	0	0	0.0
2-3	542	0	542	1	1,500	-958	0	0	542	0	0	0.0
3-4	397	0	397	1	1,500	-1,103	0	0	397	0	0	0.0
4-5	492	0	492	1	1,500	-1,008	0	0	492	0	0	0.0
5-6	933	0	933	2	3,000	-2,067	0	0	933	0	0	0.0
6-7	1,638	0	1,638	2	3,000	-1,362	0	0	1,638	0	0	0.0
7-8	2,767	0	2,767	3	4,800	-2,033	0	0	2,767	0	0	0.0
8-9	4,051	0	4,051	4	8,000	-3,949	0	0	0	0	0	0.0
9-10	4,719	0	4,719	4	8,000	-3,281	0	0	0	0	0	0.0
10-11	5,467	0	5,467	4	8,000	-2,533	0	0	0	0	0	0.0
11-12	5,825	0	5,825	4	8,000	-2,175	0	0	0	0	0	0.0
12-13	5,960	0	5,960	4	8,000	-2,040	0	0	0	0	0	0.0
13-14	5,744	0	5,744	4	8,000	-2,256	0	0	0	0	0	0.0
14-15	5,665	0	5,665	4	8,000	-2,335	0	0	0	0	0	0.0
15-16	5,359	0	5,359	4	8,000	-2,641	0	0	0	0	0	0.0
16-17	5,809	0	5,809	4	8,000	-2,191	0	0	0	0	0	0.0
17-18	5,429	0	5,429	4	8,000	-2,571	0	0	0	0	0	0.0
18-19	5,074	0	5,074	4	8,000	-2,926	0	0	0	0	0	0.0
19-20	4,361	0	4,361	4	8,000	-3,639	0	0	0	0	0	0.0
20-21	3,757	0	3,757	4	8,000	-4,243	0	0	0	0	0	0.0
21-22	3,496	0	3,496	4	8,000	-4,504	0	0	0	0	0	0.0
22-23	2,680	0	2,680	4	8,000	-5,320	0	0	0	0	0	0.0
23-24	1,803	0	1,803	2	3,000	-1,197	0	0	1,803	0	0	0.0
TOTALS	83,918	0	83,918						10,522	0		0

By: CLY

1) Traffic Analysis

County:	ORA	PM:	9.3/10.00	Chart No.:	#1,Mainline
Route:	I 5	EA:	0E3101	Direction:	NB (M-F)

Work Zone:		Detour (# of ln reduction w/ detour)		Normal Capacity:	8,000
Percent Trucks:		5.00%	Percent Cars: 95.0%	% Detour	part.closure
Date:		09/20/11		Lanes Under Normal Operation:	4

Time Period (hour)	Vehicle Demand (vph)	Detour (vph)	Anticipated Vehicle Volumes (vph)	Lanes Open (#)	Roadway Capacity (vph)	Queue Rate (vph)	Queued Vehicles (vph)	Average Queued Vehicles (vph)	Vehicles that Travel Work Zone (vph)	Vehicles that Travel Queue (vph)	Delay (min)	Queue Length (mile/hr)
0-1	745	0	745	2	3,000	-2,255	0	0	745	0	0	0.0
1-2	480	0	480	2	3,000	-2,520	0	0	480	0	0	0.0
2-3	381	0	381	2	3,000	-2,619	0	0	381	0	0	0.0
3-4	437	0	437	2	3,000	-2,563	0	0	437	0	0	0.0
4-5	960	0	960	3	4,800	-3,840	0	0	960	0	0	0.0
5-6	2,578	0	2,578	4	8,000	-5,422	0	0	0	0	0	0.0
6-7	4,920	0	4,920	4	8,000	-3,080	0	0	0	0	0	0.0
7-8	6,858	0	6,858	4	8,000	-1,142	0	0	0	0	0	0.0
8-9	6,646	0	6,646	4	8,000	-1,354	0	0	0	0	0	0.0
9-10	5,786	0	5,786	4	8,000	-2,214	0	0	0	0	0	0.0
10-11	5,722	0	5,722	4	8,000	-2,278	0	0	0	0	0	0.0
11-12	5,594	0	5,594	4	8,000	-2,406	0	0	0	0	0	0.0
12-13	5,260	0	5,260	4	8,000	-2,740	0	0	0	0	0	0.0
13-14	5,287	0	5,287	4	8,000	-2,713	0	0	0	0	0	0.0
14-15	5,505	0	5,505	4	8,000	-2,495	0	0	0	0	0	0.0
15-16	5,715	0	5,715	4	8,000	-2,285	0	0	0	0	0	0.0
16-17	5,760	0	5,760	4	8,000	-2,240	0	0	0	0	0	0.0
17-18	5,646	0	5,646	4	8,000	-2,354	0	0	0	0	0	0.0
18-19	4,620	0	4,620	4	8,000	-3,380	0	0	0	0	0	0.0
19-20	3,800	0	3,800	4	8,000	-4,200	0	0	0	0	0	0.0
20-21	3,002	0	3,002	4	8,000	-4,998	0	0	0	0	0	0.0
21-22	2,472	0	2,472	4	8,000	-5,528	0	0	0	0	0	0.0
22-23	1,847	0	1,847	4	8,000	-6,153	0	0	0	0	0	0.0
23-24	1,212	0	1,212	3	4,800	-3,588	0	0	1,212	0	0	0.0
TOTALS	91,233	0	91,233						4,215	0		0

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