07

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

NOTICE TO BIDDERS

AND

SPECIAL PROVISIONS

FOR CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY AT VARIOUS LOCATIONS

In District 07 On Route 1, 5, 10, 72, 90, 105, 107, 110, 405, 605, 710

Under

***Bid* book dated January 6, 2025**	***Standard Specifications* dated 2024**
Project plans approved June 28, 2024	***Standard Plans* dated 2024**

Identified by

Contract No. 07-350324

07-LA-1, 5, 10, 72, 90, 105, 107, 110, 405, 605, 710-Var

Project ID 0723000024

Federal-Aid Project
ACNH-X037(239)E

Bids open Wednesday, February 12, 2025
Dated January 6, 2025

****

SPECIAL NOTICES

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- See sections 2 and 3 for contractors' registration requirements.
- The Department advises bidders that potential claim records must be submitted by the contractor using the Department's Internet potential claim system.
- See section 2 for submittal requirements for DBE quotes, DVBE quotes, and Non–Small Business Subcontractor Preference.
- For work plan for local material from (1) a noncommercial source or (2) a source not regulated under California jurisdiction, see section 6-1.03B(2).
- See section 7-1.02K(3) for the requirements for electronic submittal of certified payroll records using LCPtracker Pro.
- The flagging and temporary traffic control requirements have been revised. See sections 7-1.03, 7-1.04, and 12.
- See sections 2-1.11 and 2-1.33B for in-use off-road diesel-fueled vehicle requirements regarding Certificate of Reported Compliance submittals.
- See section 14-11.14 for changes to the management of treated wood waste.
- The schedules for the submittal of DBE forms have been revised. See section 2-1.33 for the submittal schedules.

CONTRACT No. 07-350324

The special provisions contained herein have been prepared by or und the direction of the following Registered/Licensed Persons.

HIGHWAYS

06/28/2024

REGISTERED CIVIL ENGINEER DATE

MAINTAINING TRAFFIC

06/28/2024

REGISTERED CIVIL ENGINEER DATE

ELECTRICAL (ROADWAY)

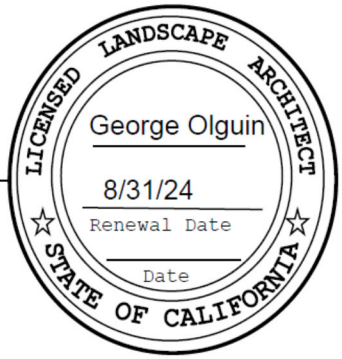
06/28/2024

REGISTERED ELECTRICAL ENGINEER DATE

LANDSCAPE

06/28/2024

LICENSED LANDSCAPE ARCHITECT DATE



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CANCELED STANDARD PLANS LIST

The standard plan sheets listed below are canceled and not applicable to this contract.

Plan No.	Date Canceled	Plan No.	Date Canceled	Plan No.	Date Canceled

NOTICE TO BIDDERS

Bids open Wednesday, February 12, 2025

Dated January 6, 2025

General work description: Replace exsistiing CMS, TCS, and TMDS/VDS, & construct MGS.

The Department will receive sealed bids for CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY AT VARIOUS LOCATIONS.

District-County-Route-Post Mile: 07-LA-1, 5, 10, 72, 90, 105, 107, 110, 405, 605, 710-Var

Contract No. 07-350324

The Contractor must have either a Class A license or the following Class C license which constitutes a majority of the work: C-10.

The DBE Contract goal is 10 percent.

Federal-aid project no.:

ACNH-X037(239)E

Bids must be on a unit price basis.

Complete the work, excluding plant establishment work, within 500 working days.

Complete the work, including plant establishment work, within 750 working days.

Complete the plant establishment work within 250 working days.

The estimated cost of the project is $22,200,000.

The Department will receive bids until 2:00 p.m. on the bid open date via Bid Express website. Bids received after this time will not be accepted. For more information refer to the Electronic Bidding Guide at the Office Engineer's website.

The Department will open and publicly read the bids through webcast/teleconference services immediately after the specified closing time.

For bid results go to:

http://ppmoe.dot.ca.gov/des/oe/contractor-info.html

Select *Electronic Bidding* under the *Bidding* tab.

District office addresses are provided in the *Standard Specifications*.

Present bidders' inquiries to the Department and view the Department's responses at:

http://ppmoe.dot.ca.gov/des/oe/bid-inquiries.php

Questions about alleged patent ambiguity of the plans, specifications, or estimate must be asked before bid opening. After bid opening, the Department does not consider these questions as bid protests.

Submit your bid with bidder's security equal to at least 10 percent of the bid.

Prevailing wages are required on this Contract. The Director of the California Department of Industrial Relations determines the general prevailing wage rates. Obtain the wage rates at the DIR website, http://www.dir.ca.gov, or from the Department's Labor Compliance Office of the district in which the work is located.

The federal minimum wage rates for this Contract as determined by the United States Secretary of Labor are available at https://sam.gov/content/home.

If the minimum wage rates as determined by the United States Secretary of Labor differs from the general prevailing wage rates determined by the Director of the California Department of Industrial Relations for similar classifications of labor, the Contractor and subcontractors must not pay less than the higher wage rate. The Department does not accept lower State wage rates not specifically included in the federal minimum wage determinations. This includes helper, or other classifications based on hours of experience, or any other classification not appearing in the federal wage determinations. Where federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors must not pay less than the federal minimum wage rate that most closely approximates the duties of the employees in question.

The Department has made available Notices of Suspension and Proposed Debarment from the Federal Highway Administration. For a copy of the notices, go to http://www.dot.ca.gov/hq/esc/oe/contractor_info. Additional information is provided in the Excluded Parties List System at https://sam.gov/content/home.

Caltrans and the Construction Industry are committed to making partnering the way we do business. For more information, go to http://www.dot.ca.gov/hq/construc/partnering.html.

Department of Transportation

D07AC/AC

BID ITEM LIST

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
0001	070030	LEAD COMPLIANCE PLAN	LS	LUMP SUM
0002	080060	LEVEL 2 CRITICAL PATH METHOD SCHEDULE	LS	LUMP SUM
0003	090100	TIME-RELATED OVERHEAD (WDAY)	WDAY	500
0004	090205	DISPUTE RESOLUTION BOARD ON-SITE MEETING	EA	10
0005	090210	HOURLY OFF-SITE DISPUTE-RESOLUTION-BOARD-RELATED TASKS	HR	160
0006	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM
0007	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM
0008	120165	CHANNELIZER (SURFACE MOUNTED)	EA	14
0009	120207	PORTABLE RADAR SPEED FEEDBACK SIGN SYSTEM	DAY	15
0010	120320	TEMPORARY BARRIER SYSTEM	LF	480
0011	129108	TEMPORARY CRASH CUSHION TL-3	EA	2
0012	130100	JOB SITE MANAGEMENT	LS	LUMP SUM
0013	130201	WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM
0014	130570	TEMPORARY COVER	SQYD	70
0015	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	3
0016	130640	TEMPORARY FIBER ROLL	LF	600
0017	130900	TEMPORARY CONCRETE WASHOUT	LS	LUMP SUM
0018	141120	TREATED WOOD WASTE	LB	4,510
0019	200002	ROADSIDE CLEARING	LS	LUMP SUM
0020	202006	SOIL AMENDMENT	CY	17

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
0021	202039	SLOW-RELEASE FERTILIZER	LB	140
0022	204008	PLANT (GROUP H)	EA	5,620
0023	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM
0024	205035	WOOD MULCH	CY	160
0025	206400	CHECK AND TEST EXISTING IRRIGATION FACILITIES	LS	LUMP SUM
0026	206402	OPERATE EXISTING IRRIGATION FACILITIES	LS	LUMP SUM
0027	206405	REMOVE IRRIGATION FACILITY	LS	LUMP SUM
0028	206560	CONTROL AND NEUTRAL CONDUCTORS	LS	LUMP SUM
0029	206564	1 1/2" REMOTE CONTROL VALVE	EA	1
0030	208446	RISER SPRINKLER ASSEMBLY (GEAR DRIVEN)	EA	9
0031	208594	(F) - 3/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	160
0032	208595	(F) - 1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	160
0033	208596	(F) - 1 1/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	10
0034	208598	(F) - 2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	10
0035	208683	BALL VALVE	EA	1
0036	550101	(F) - STRUCTURAL STEEL	LB	11,484
0037	810190	GUARD RAILING DELINEATOR	EA	90
0038	820134	OBJECT MARKER (TYPE P)	EA	1
0039	820135	OBJECT MARKER (TYPE R)	EA	1
0040	832005	MIDWEST GUARDRAIL SYSTEM	LF	480

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
0041	832070	VEGETATION CONTROL (MINOR CONCRETE)	SQYD	140
0042	832073	VEGETATION CONTROL MAT (RUBBER OR FIBER)	SQYD	100
0043	839221	DOUBLE MIDWEST GUARDRAIL SYSTEM (WOOD POST)	LF	50
0044	839580	END ANCHOR ASSEMBLY (TYPE SFT-M)	EA	3
0045	015299	ALTERNATIVE IN-LINE TERMINAL TL-3	EA	1
0046	015019	ALTERNATIVE CRASH CUSHION TL-3	EA	1
0047	839752	REMOVE GUARDRAIL	LF	400
0048	839783	REMOVE CRASH CUSHION (SAND FILLED)	EA	14
0049	016754	SYSTEM TESTING AND CONFIGURATION	LS	LUMP SUM
0050	870009	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM
0051	039162	MODIFYING FIBER OPTIC CABLE SYSTEMS	LS	LUMP SUM
0052	872135	MODIFYING TRAFFIC MONITORING STATIONS	LS	LUMP SUM
0053	872137	MODIFYING CHANGEABLE MESSAGE SIGN SYSTEMS	LS	LUMP SUM
0054	014934	MODIFYING TRAFFIC CENSUS STATION SYSTEMS	LS	LUMP SUM
0055	999990	MOBILIZATION	LS	LUMP SUM

SPECIAL PROVISIONS

ORGANIZATION

Special provisions are under headings that correspond with the main-section headings of the *Standard Specifications*. A main-section heading is a heading shown in the table of contents of the *Standard Specifications*.

Each special provision begins with a revision clause that describes or introduces a revision to the *Standard Specifications*.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the *Standard Specifications* for any other reference to a paragraph of the *Standard Specifications*.

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DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
090205	DISPUTE RESOLUTION BOARD ON-SITE MEETING	5
090210	HOURLY OFF-SITE DISPUTE-RESOLUTION-BOARD-RELATED TASKS	5
999990	MOBILIZATION	9
015019	ALTERNATIVE CRASH CUSHION TL-3	83
015299	ALTERNATIVE IN-LINE TERMINAL TL-3	83
016754	SYSTEM TESTING AND CONFIGURATION	87
039162	MODIFYING FIBER OPTIC CABLE SYSTEMS	87
014934	MODIFYING TRAFFIC CENSUS STATION SYSTEMS	87

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2 BIDDING

Add between the 1st and 2nd paragraphs of section 2-1.06B:

The Department makes the following supplemental project information available:

Supplemental Project Information

Means	Description
Included in the *Information Handout*	1. List of the pre-construction operation status check result 2. Environmental Site Investigation

Replace section 2-1.18 with:

2-1.18 SMALL BUSINESS AND NON–SMALL BUSINESS SUBCONTRACTOR PREFERENCES

2-1.18A General

Section 2-1.18 applies to a non-federal-aid contract.

The Department applies small business preferences and non–small business preferences under Govt Code § 14835 et seq. and 2 CA Code of Regs § 1896 et seq.

Any contractor, subcontractor, supplier, or service provider who qualifies as a small business or small business for the purpose of public works is encouraged to apply for certification as an SBE by submitting its application to the Department of General Services, Office of Small Business and DVBE Services.

The Department of General Services determines whether an SBE was certified on the bid opening date. The Department of Transportation confirms an SBE's certification status before applying the small business or non-small business preference.

Contract award is based on the total bid, not the reduced bid.

Pursuant to Govt Code § 14838, SBE participation listed on the Small Business Enterprise – Commitment form used to meet the SBE participation goal requirement should not be listed on the Certified Small Business Listing for the Non-Small Business Preference form. Listing the same SBE participation on both the Small Business Enterprise – Commitment form and on the Certified Small Business Listing for the Non-Small Business Preference form may result in disallowance of the SBE's participation toward the small business or non-small business preference.

2-1.18B Small Business Preference

The Department allows a bidder certified as an SBE by the Department of General Services, Office of Small Business and DVBE Services, a preference if:

1. Bidder submitted a completed Request for Small Business Preference or Non–Small Business Preference form with its bid
2. Low bidder did not request the preference or is not certified as a small business

The Bidder's signature on the Request for Small Business Preference or Non–Small Business Preference form certifies that the Bidder is certified as an SBE at the date and time of bid or has submitted a complete application to the Department of General Services. The complete application and any required substantiating documentation must be received by the Department of General Services by 5:00 p.m. on the bid opening date.

The small business preference is a reduction for bid comparison in the total bid submitted by the small business contractor by the lesser of the following amounts:

1. 5 percent of the verified total bid of the low bidder
2. $50,000

If the Department determines that a certified small business bidder is the low bidder after the application of the small business preference, the Department does not consider a request for non–small business preference.

2-1.18C Non–Small Business Subcontractor Preference

At time of bid, the Department allows a bidder not certified as an SBE by the Department of General Services, Office of Small Business and DVBE Services, the option of requesting the non-small business subcontractor preference. If a bidder elects to pursue that option at the time of bid, the bidder is required to meet the corresponding commitment.

For the non-small business subcontractor preference, submit the following:

1. Completed Request for Small Business Preference or Non–Small Business Preference form with your bid
2. Completed Certified Small Business Listing for the Non–Small Business Preference form which shows you are subcontracting at least 25 percent to certified SBEs

Each listed SBE must be certified as a small business or small business for the purpose of public works by 5:00 p.m. on the bid opening date. The complete application and any required substantiating documentation must be received by the Department of General Services by 5:00 p.m. on the bid opening date.

Failure to submit a completed Certified Small Business Listing for the Non–Small Business Preference form by 4 p.m. on the 4th business day after bid opening will result in a nonresponsive bid.

The non–small business subcontractor preference is a reduction for bid comparison in the total bid submitted by the non–small business contractor requesting the preference by the lesser of the following amounts:

1. 5 percent of the verified total bid of the low bidder
2. $50,000

Replace section 2-1.33B with:

2-1.33B Bid Form Submittal Schedules

2-1.33B(1) General

The *Bid* book includes forms specific to the Contract. The deadlines for the submittal of the forms vary depending on the requirements of each Contract. Determine the requirements of the Contract and submit the forms based on the applicable schedule specified in section 2-1.33B.

Bid forms and information on the form that are due after the time of bid may be submitted at the time of bid.

2-1.33B(2) Federal-Aid Contracts

2-1.33B(2)(a) General

Section 2-1.33B(2) applies to a federal-aid contract.

2-1.33B(2)(b) Contracts with a DBE Goal

2-1.33B(2)(b)(i) General

Section 2-1.33B(2)(b) applies if a DBE goal is shown on the *Notice to Bidders*.

2-1.33B(2)(b)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

Bid Form Submittal Schedule for a Federal-Aid Contract with a DBE Goal

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number
Copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid except for the public works contractor registration number
Copy of the Subcontractor List as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
In-Use Off-Road Diesel-Fueled Vehicle List	10 days after bid opening
Small Business Status	Time of bid
Opt Out of Payment Adjustments for Price Index Fluctuations[a]	Time of bid
DBE Commitment	No later than 4 p.m. on the 5th day after bid opening[b]
DBE Confirmation	No later than 4 p.m. on the 5th day after bid opening[b]
DBE Good Faith Efforts Documentation	No later than 4 p.m. on the 5th day after bid opening[b]

[a]Submit only if you choose the option.
[b]If the last day for submitting the bid form falls on a Saturday or holiday, it may be submitted on the next business day with the same effect as if it had been submitted on the day specified.

2-1.33B(2)(b)(iii) Reserved

2-1.33B(2)(c) Contracts without a DBE Goal

2-1.33B(2)(c)(i) General

Section 2-1.33B(2)(c) applies if a DBE goal is not shown on the *Notice to Bidders*.

2-1.33B(2)(c)(ii) Bid Form Schedule

Submit the bid forms according to the schedule shown in the following table:

Bid Form Submittal Schedule for a Federal-Aid Contract without a DBE Goal

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number
Copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid except for the public works contractor registration number
Copy of the Subcontractor List as submitted at the time of bid with the public works contractor registration numbers	10 days after bid opening
In-Use Off-Road Diesel-Fueled Vehicle List	10 days after bid opening
Small Business Status	Time of bid
Opt Out of Payment Adjustments for Price Index Fluctuations[a]	Time of bid

[a]Submit only if you choose the option.

2-1.33B(2)(c)(iii) Reserved

2-1.33B(2)(d)–2-1.33B(2)(h) Reserved

2-1.33B(3) Non-Federal-Aid Contracts

2-1.33B(3)(a) General

Section 2-1.33B(3) applies to non-federal-aid contracts.

2-1.33B(3)(b) Contracts with a DVBE Goal

2-1.33B(3)(b)(i) General

Section 2-1.33B(3)(b) applies if a DVBE goal is shown on the *Notice to Bidders*.

2-1.33B(3)(b)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

Bid Form Submittal Schedule for a Non-Federal-Aid Contract with a DVBE Goal

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number for a joint-venture contract
For a joint-venture contract, copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid
In-Use Off-Road Diesel-Fueled Vehicle List	10 days after bid opening
Opt Out of Payment Adjustments for Price Index Fluctuations[a]	Time of bid
Certified DVBE Summary	No later than 4 p.m. on the 4th business day after bid opening
California Company Preference	Time of bid
Small Business Enterprise – Commitment	No later than 4 p.m. on the 4th business day after bid opening
Small Business Enterprise – Confirmation	No later than 4 p.m. on the 4th business day after bid opening
Request for Small Business Preference or Non–Small Business Preference[a]	Time of bid
Certified Small Business Listing for the Non–Small Business Preference[a]	No later than 4 p.m. on the 4th business day after bid opening

[a]Submit only if you choose the option or preference.

2-1.33B(3)(b)(iii) Reserved

2-1.33B(3)(c) Contracts without a DVBE Goal

2-1.33B(3)(c)(i) General

Section 2-1.33B(3)(c) applies if a DVBE goal is not shown on the *Notice to Bidders*.

2-1.33B(3)(c)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

Bid Form Submittal Schedule for a Non-Federal-Aid Contract without a DVBE Goal

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number for a joint-venture contract
For a joint-venture contract, copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid
In-Use Off-Road Diesel-Fueled Vehicle List	10 days after bid opening
Opt Out of Payment Adjustments for Price Index Fluctuations[a]	Time of bid
California Company Preference	Time of bid
Certified DVBE Summary[b]	No later than 4 p.m. on the 4th business day after bid opening
Small Business Enterprise – Commitment	No later than 4 p.m. on the 4th business day after bid opening
Small Business Enterprise – Confirmation	No later than 4 p.m. on the 4th business day after bid opening
Request for Small Business Preference or Non–Small Business Preference[a]	Time of bid
Certified Small Business Listing for the Non–Small Business Preference[a]	No later than 4 p.m. on the 4th business day after bid opening

[a]Submit only if you choose the option or preference.
[b]Submit only if you obtain DVBE participation or you are the apparent low bidder, 2nd low bidder, or 3rd low bidder and you choose to receive the specified incentive.

2-1.33B(3)(c)(iii) Reserved

2-1.33B(3)(d)–2-1.33B(3)(h) Reserved

2-1.33B(4)–2-1.33B(9) Reserved

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5 CONTROL OF WORK

Replace section 5-1.13B with:

5-1.13B Disadvantaged Business Enterprises

5-1.13B(1) General

Section 5-1.13B applies to a federal-aid contract.

Use each DBE as listed on the DBE Commitment form unless you receive Department prior authorization for termination under section 5-1.13B(2)(c). Ensure that all subcontracts and agreements with DBEs to supply labor or materials are performed under 49 CFR 26.

Maintain records of subcontracts made with DBE subcontractors and records of materials purchased from DBE suppliers. Include in the records:

1. Name and business address of each DBE subcontractor, DBE vendor, and DBE trucking company, regardless of tier
2. Date of payment and total amount paid to each DBE business

If you are a DBE contractor, include the date of work performed by your own forces and the corresponding value of the work.

Before the 15th day of each month for the previous month's work, submit:

1. Monthly DBE Trucking Verification form
2. Monthly DBE Payment form

If a DBE is decertified before completing its work, the business must notify you in writing of the decertification date within 15 days of decertification. Notify the Engineer and submit the DBE's decertification notice within 2 business days of your receipt. Upon work completion, complete a Disadvantage Business Enterprises (DBE) Certification Status Change form and submit within 10 days of Contract acceptance.

Upon work completion, complete a Final Report – Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors form and submit within 10 days of Contract acceptance. The Department withholds the greater of 10 percent of the DBE commitment or $10,000 until the form is submitted. The Department releases the withhold upon submission of the completed form. If additional payments are made to a DBE after submittal of the completed form, submit an updated form to reflect such payments.

Failure to carry out requirements of 49 CFR 26 is a material breach of the Contract, which may result in the termination of the Contract or other remedy as the Department deems appropriate, such as:

1. Withholding monthly progress payments
2. Assessing sanctions
3. Applying liquidated damages
4. Disqualification from future bidding as nonresponsive

5-1.13B(2) Disadvantaged Business Enterprises

5-1.13B(2)(a) General

Section 5-1.13(B)(2) applies if a DBE goal is shown on the *Notice to Bidders*.

Certification as a DBE identifies if the business has the means to perform its work under assigned North American Industry Classification System codes and work codes applicable to the type of work the DBE will perform on the Contract. Certification does not ensure the DBE will perform a commercially useful function on the Contract.

You are responsible for ensuring each DBE listed on the DBE Commitment form performs:

1. The description and value of the subcontracted work or material supplied as committed
2. A commercially useful function under 49 CFR 26.55 for committed work or materials

For DBE committed work, the Department only pays for work performed or supplied by the listed DBE and if a commercially useful function was performed by the listed DBE.

You are responsible to remediate noncompliant DBE work to meet your DBE commitment. Submit a DBE commitment remediation plan within 5 business days of the Engineer's request.

Pay your DBEs in conformance with section 5-1.13E.

Failure to promptly pay DBEs may result in a withholds corresponding to the value of the DBE's committed work from future progress payments. In addition, unpaid DBE amounts will not count towards your DBE commitment, which may result in equivalent withholds or deductions and a 2 percent penalty on the unpaid amount for every month payment is not made.

5-1.13B(2)(b) Commercially Useful Function

DBEs must perform a commercially useful function under 49 CFR 26.55 when performing work or supplying materials listed on the DBE Commitment form. The DBEs value of work will only count toward the DBE commitment if the DBE performs a commercially useful function under 49 CFR 26.55.

Provide written notification to the Engineer at least 15 days in advance of each DBE's initial performance of work or supplying materials for the Contract. Include the DBE's name, contract work to be performed, and the location, date, and time of where their work will take place.

Within 10 days of a DBE initially performing work or supplying materials on the Contract, submit your initial evaluation and validation of their performance of a commercially useful function using DBE

Commercially Useful Function Evaluation form. Include the following supporting information with your submittal:

1. Subcontract agreement with the DBE
2. Purchase orders
3. Bills of lading
4. Invoices
5. Proof of payment

Monitor your DBEs' performance of commercially useful function with quarterly evaluations and validations throughout their duration of work on the Contract using DBE Commercially Useful Function Evaluation form. Submit your quarterly evaluation and validation DBE Commercially Useful Function Evaluation forms by the 5th of the month for the previous three month's work. Include any additional supplemental supporting information with your submittal. If your DBE's work-start and -end dates for the Contract exceed a three-month period, regardless of time not on the Contract, quarterly evaluations and validations are required.

Notify the Engineer immediately if you believe the DBE may not be performing a commercially useful function.

The Department will verify your DBEs performance of commercially useful functions by reviewing your initial and quarterly DBE Commercially Useful Function Evaluation forms, your submitted supporting information, field observations, and through select Department evaluations. The Department may evaluate DBEs and their commercially useful function performance at any time during the Contract. In such instances, the Department will provide written notice to you and your DBE at least 2 business days prior to the evaluation. You and your DBE must participate in the evaluation. Upon completing the evaluation, the Department will share the evaluation results with you and your DBE. The evaluation results may include items that must be remedied upon your receipt. If the Department determines the DBE is not performing a commercially function you must suspend performance of the noncompliant work.

You and your DBEs must submit any additional commercially useful function related records and documents within 5 business days of Department request such as:

1. Proof of ownership or lease and rental agreements for equipment
2. Tax records
3. Employee rosters
4. Certified payroll records
5. Inventory rosters

Failure to submit required DBE Commercially Useful Function Evaluation forms or requested records and documents will result in withhold of payment for the value of work completed by the DBE.

If you and or the Department determine a listed DBE is not performing a commercially useful function in performance of their DBE committed work, suspend performance of the noncompliant portion of the work. Submit a corrective action plan within 5 days of the noncompliant commercially useful function determination. The plan must identify how you will remediate when feasible or demonstrate commercially useful function compliance for the remaining portion of the DBE's work. Allow 5 days for plan review. The corrective actions must be implemented within 5 days of Engineer's authorization of your plan and prior to resumption of the noncompliant portion of the DBE's committed work.

If corrective actions cannot be accomplished to assure the DBE will perform a commercially useful function on the Contract, you may have good cause to request termination of the DBE under section 5-1.13B(2)(c).

5-1.13B(2)(c) Termination

Termination of a DBE may be allowable for good cause reasons under 49 CFR 26.53(f)(3) with prior written authorization from the Department. You must provide documentation supporting good cause reasoning with your termination request. If the termination request is authorized by the Department, you must then either replace the DBE with another DBE or demonstrate good faith efforts to do so under 5-1.13B(2)(d).

Use the following procedure to request the termination of a DBE or portion of their work:

1. Provide written notice to the DBE of your intent to use other forces or material sources and include one or more of the good cause reasons under 49 CFR 26.53(f)(3). Simultaneously send a copy of this written notice to the Engineer. Your written notice to the DBE must request they provide any response to both you and the Engineer.
2. Provide the DBE with 5 business days to respond to your written notice by either acknowledging their agreement or documenting their reasoning as to why the use of other forces or sources of materials should not occur. If the DBE does not respond within 5 business days, you may move forward with the request process as if the DBE had agreed to your written notice.
3. Submit your DBE termination request by written letter to the Engineer and include:
    3.1. One or more good cause reasons identified under 49 CFR 26.53(f)(3) along with supporting documentation.
    3.2. Your written notice to the DBE regarding the request, including proof of transmission and tracking documentation of your written notice.
    3.3. The DBE's response to your written notice, if received. If a written response was not provided, provide a statement to that effect.

The Department will respond to your complete DBE termination request as follows:

1. Where the DBE has agreed in writing or fails to timely respond to your written notice, the Department will respond within 2 business days from receipt of your request.
2. Where the DBE has disagreed in writing with your written notice, the Department will meet with you and the DBE within 5 business days from receipt of your request. The Department will respond to your request within 5 business days from this meeting.
3. If you fail to provide a complete request for DBE termination the Department will identify deficiencies within 5 business days from receipt of your request.

If the Department authorizes your DBE termination request it will do so in writing.

Work performed by a firm other than the committed DBE or authorized replacement DBE without first obtaining Department authorization for termination will be a violation of these specifications and DBE federal regulations. Such violations will result in payment deductions for the value of the work associated with the noncompliant DBE commitment. In addition, if the committed DBE is also a listed subcontractor, the Department applies an additional penalty up to 10 percent of the value of the subject work as a permanent deduction.

5-1.13B(2)(d) Replacement

After receiving Department written authorization of your DBE termination request, you must obtain separate Department authorization of your replacement plan.

Your replacement plan must identify DBE replacement firms to perform the work or demonstrate that you have made a good faith effort to use DBE replacement firms. DBE replacement firms must:

1. Perform at least the same dollar amount of work as the terminated DBE to the extent needed to meet the DBE commitment
2. Possess certifications for the most specific available North American Industry Classification System codes and work codes applicable to the work the firm will perform on the Contract
3. Perform a commercially useful function under 49 CFR 26.55

Use the following procedure to request authorization of your replacement plan:

1. Submit a request to replace a DBE with other forces or material sources by written letter to the Department which must include:
    1.1. Description of remaining uncommitted item work made available for replacement DBE solicitation and participation.
    1.2. The proposed DBE replacement firm's business information, the work they have agreed to perform, and the following:
        1.2.1. Quote for bid item work and description of work to be performed
        1.2.2. Proposed subcontract agreement and written confirmation of agreement to perform on the Contract

1.2.3. Revised Subcontracting Request form

2. If you have not identified a DBE replacement firm, submit documentation of your good faith efforts to use DBE replacement firms within 7 days of Department's authorization to terminate the DBE. You may request the Department's approval to extend this submittal period to a total of 14 days. The Department considers your documented actions taken to identify a DBE replacement firm in determining whether a good faith effort was made under 49 CFR 26 app A. Submit documentation of actions taken to find a DBE replacement firm, such as:
   2.1. Search results of certified DBEs available to perform the original DBE work identified and or other work you had intended to self-perform, to the extent needed to meet your DBE commitment
   2.2. Solicitations of DBEs for performance of work identified in 2.1
   2.3. Correspondence with interested DBEs that may have included contract details and requirements
   2.4. Negotiation efforts with DBEs that reflect why an agreement was not reached
   2.5. If a DBE's quote was rejected, provide your reasoning for the rejection, such as why the DBE was unqualified for the work, or why the price quote was unreasonable or excessive
   2.6. Copies of each DBE's and non-DBE's price quotes for work identified in 2.1, as the Department may contact the firms to verify solicitation efforts and determine if the DBE quotes are substantially higher
   2.7. Additional documentation that you believe supports your good faith effort

The Department will respond to your complete replacement plan as follows:

1. If a DBE replacement firm has been identified and required documentation has been provided, the Department will respond within 2 business days from receipt of your plan
2. If a DBE replacement firm has not been identified, but good faith effort documents have been provided, the Department will respond within 5 business days from receipt of your plan
3. If you fail to provide a complete replacement plan, the Department will return your request and identify deficiencies within 5 business days from receipt of your plan

If the Department authorizes your replacement plan it will do so in writing.

Submit a revised Subcontracting Request form if your replacement plan is authorized.

DBE committed work performed by a nonauthorized firm, will be a violation of these specifications and DBE federal regulations. Such violations will result in payment deductions for the value of the work associated with the DBE commitment. The Department will take a permanent deduction for the value of the DBE work that was not performed by the authorized DBE. In addition, if the associated work was also to be performed by a listed subcontractor, the Department applies an additional penalty up to 10 percent of the value of the subject work as a permanent deduction.

5-1.13B(3) Use of Joint Checks

You may use a joint check between the Contractor or lower-tier subcontractor and a DBE subcontractor purchasing materials from a material supplier if you obtain prior approval from the Department for your proposed use of joint checks upon submittal of a DBE Joint Check Agreement Request form.

To use a joint check, the following conditions must be met:

1. All parties, including the Contractor, must agree in writing to the use of a joint check
2. Entity issuing the joint check acts solely to guarantee payment
3. DBE must release the check to the material supplier
4. Department must authorize the request before implementation
5. Any party to the agreement must provide requested documentation within 10 days of the Department's request for the documentation
6. Agreement to use a joint check must be short-term, not to exceed 1 year, allowing sufficient time needed to establish or increase a credit line with the material supplier

A request for a joint check agreement may be initiated by any party.

If a joint check is used, the DBE remains responsible for all elements of 49 CFR 26.55(c)(1).

Failure to comply with section 5-1.13B(3) disqualifies DBE participation and results in no credit and no payment to the Contractor for DBE participation.

A joint check may not be used between the Contractor or subcontractor and a DBE regular dealer, bulk material supplier, manufacturer, wholesaler, broker, trucker, packager, manufacturer's representative, or other persons who arrange or expedite transactions.

Replace section 5-1.13D with:

5-1.13D Non-Small Business Preference

5-1.13D(1) General

Section 5-1.13D applies to a non-federal-aid contract when you have obtained a non-small business subcontractor preference under section 2-1.18.

Use each SBE as shown on the Certified Small Business Listing for the Non-Small Business Preference form unless you receive authorization for a substitution under section 5-1.13D(3).

Maintain records of subcontracts and agreements made with each SBE. Include in the records:

1. SBE subcontract or agreement
2. Name and business address of each business
3. Proof of each payment made to an SBE

Upon reasonable notice and during normal business hours, permit access to the SBE premises for the purpose of:

1. Interviewing employees.
2. Inspecting and copying books, records, accounts, and other material that may be relevant to a matter under investigation.

Upon work completion, complete a Final Report – Utilization of Small Business Enterprise form and submit within 10 days of Contract acceptance. The Department withholds the greater of 10 percent of the SBE work amount or $10,000 until the form is submitted. The Department releases the withhold upon submission of the completed form. If additional payments are made to an SBE after submittal of the completed form, submit an updated form to reflect such payments.

5-1.13D(2) Commercially Useful Function

SBEs must perform a commercially useful function under 2 CA Code Regs § 1896.15 when performing tasks listed on the Certified Small Business Listing for the Non-Small Business Preference form and as a Department authorized substitute SBE. The SBE’s value of work will only count toward the non-small business preference if the SBE performs a commercially useful function under 2 CA Code Regs § 1896.15.

Provide written notification to the Engineer at least 15 days in advance of each SBE’s initial performance of work on the Contract. Include the SBE’s name, contract work to be performed, and the location, date, and time of where the SBE’s work will take place.

Monitor each SBE’s performance of a commercially useful function throughout their duration of work on the Contract. Maintain supporting documentation of commercially useful function related records. Provide copies of the following to the Department within 5 business days of a specific SBE request:

1. Subcontract or agreement with the SBE
2. Purchase orders
3. Bills of lading
4. Invoices
5. Proof of payment

You and your SBEs must submit any commercially useful function related records and documents within 5 business days of Department request such as:

1. Proof of ownership or lease and rental agreements for equipment
2. Tax records

3. Employee rosters
4. Certified payroll records
5. Inventory rosters

Notify the Engineer immediately if you believe an SBE may not be performing a commercially useful function.

Failure to submit requested records and documents, or failure of an SBE to perform a commercially useful function, will be a violation of these specifications. Such violations will result in referral to the Department of General Services, and you may be subject to sanctions under Govt Code § 14842 et seq.

5-1.13D(3) Substitutions

Substitution of an SBE may be requested for the reasons listed in Pub Cont Code § 4107. The Department will consider your SBE substitution request under 2 CA Code Regs § 1896.10. The substitute must be another SBE.

The requirement that an SBE be certified by the bid opening date does not apply to SBE substitutions after contract award.

Include in your substitution request:

1. Copy of the written notice issued to the SBE with proof of delivery
2. Copy of the SBE response to the notice
3. Your explanation of the reason for the substitution request
4. Names and certification numbers of the listed SBE and the proposed substitute SBE
5. Description of the work to be performed including dollar amount or percentage of overall contract the proposed substitute SBE will perform
6. If an SBE substitution cannot occur, written justification and the steps that were taken to try to acquire a new SBE and how that non-small business preference portion of the Contract will be fulfilled

Upon receipt of the substitution request, the listed SBE will be notified by the Department of the substitution request. The listed SBE will have 5 business days to respond. Where the listed SBE objects to the substitution, the Department will schedule a hearing.

If the Department authorizes your SBE substitution request, it will do so in writing.

Work performed by a firm other than the listed SBE or authorized substitute will be a violation of these specifications. Such violations will result in notification of the Department of General Services, and you may be subject to sanctions under Govt Code § 14842 et seq.

Replace section 5-1.13E with:

5-1.13E Prompt Payment

Section 5-1.13E applies to all contracts.

Pay your subcontractors within 7 days of receipt of each progress payment under Pub Cont Code §§ 10262 and 10262.5. Pay duly authorized motor carriers of property in dump trucks for transportation charges under Bus & Prof Code § 7108.6. Pay other entities, such as material suppliers, within 30 days of receipt of each progress payment.

Each month, after the 15th and prior to 20th, submit the following payment information through the Department's prompt payment monitoring system at https://caltrans.dbesystem.com:

1. Subcontractor's or entity's business name
2. Description of work performed
   2.1. Bid item numbers or change order numbers
   2.2. Written narrative of work performed
3. Value of work performed
4. Amount paid to subcontractor or entity
5. Withhold amount, if applicable
6. Explanation of withhold reasoning, if applicable

Your subcontractors and other entities may validate payments received using the prompt payment monitoring system.

If a subcontractor's or other entity's work is in dispute, provide a written withhold notification to the subcontractor or entity and the Engineer no later than 7 days after receipt of the corresponding progress payment that includes the following:

1. Value of the disputed work
2. Amount of the withhold being taken
3. Bid item numbers or change order numbers associated with the disputed work
4. Explanation of the deficiencies of the disputed work and how the corresponding value was calculated
5. Corrective actions to be taken for release of withheld amount

The Department may request additional documentation from you to evaluate whether you applied the withhold in good faith. Submit requested documents within 10 days of receipt of request.

The Department may withhold the same amount of your withhold from a future progress pay estimate if the Department determines any of the following has occurred:

1. Withhold was not applied in good faith
2. Requested additional withhold documentation records were not provided
3. Payment information was not submitted through the prompt payment monitoring system
4. Required withhold notification was not provided

The Department may also apply a 2 percent penalty on the withhold amount for every month payment is not made.

Replace section 5-1.15 with:

5-1.15 SAFETY REPRESENTATIVE

5-1.15A General

Allocate a full-time, on-site safety representative to project safety for the duration of this Contract. The safety representative must be available after work hours as needed. The safety representative is not required to be on-site during a plant establishment period or when no work is being performed during project temporary suspensions.

Develop a written site-specific safety program that incorporates known hazards associated with the project.

5-1.15B Submittals

Submit a resume of the safety representative before starting work on the project, including education, heavy construction safety experience, and completed safety training.

Submit a copy of the safety representative's certificates for Cal/OSHA 30-hour construction training course and traffic control supervisor training as an informational submittal. The certificates must include:

1. Names of the Department authorized entity providing certification
2. Name of the individual receiving certification
3. Date when the certification was provided
4. Expiration date

Submit a copy of the site-specific safety program as an informational submittal:

1. At least 15 days before starting work
2. At least 48 hours before starting work whenever a revision is made to the site-specific safety program

5-1.15C Quality Assurance

5-1.15C(1) General

Not Used

5-1.15C(2) Certifications

The safety representative must have completed training and received a certificate of completion for:

1. Cal/OSHA 30-hour construction training course.
2. Traffic control supervisor certification. A list of Department authorized traffic control supervisor training providers is available at:

   https://dot.ca.gov/programs/construction/safety-traffic/safety-training-courses

The safety representative must have one of the following certifications from the Board of Certified Safety Professionals:

1. Certified Safety Professional
2. Construction Health and Safety Technician
3. Occupational Hygiene and Safety Technician

5-1.15C(3) Qualifications

The safety representative must be a competent and qualified person, as defined by Cal/OSHA, and must provide safety oversight on the project. The safety representative must have:

1. At least 5 years of experience in heavy construction safety
2. Knowledge in the area of safety procedure for all types of work being performed on this project
3. Knowledge of Department specifications and plans, Cal/OSHA policy and procedures, and 8 CA Code of Regs safety requirements

The safety representative must have completed safety training and maintain valid certifications for:

1. First aid
2. Cardiopulmonary resuscitation

5-1.15D Construction

The safety representative must be available by:

1. Cellular telephone
2. Two-way radio
3. Mobile internet access

The safety representative must:

1. Develop the site-specific safety program
2. Confirm each worker’s compliance with the Cal/OSHA drug testing requirements
3. Conduct the on-site new project orientation for each worker assigned to the project
4. Review the construction work plans for each subcontractor before starting work
5. Conduct or attend pre-planning sessions for high hazard work such as excavations, demolition, confined space entry, falsework, crane hoisting, high-risk utilities such as, high pressure pipelines with fuel or natural gas, and tunneling or boring
6. Conduct weekly job site safety meetings
7. Review work schedules, including subcontractors' work schedules, to ensure adequacy of job hazard analyses and address all safety concerns and issues
8. Ensure safety data sheets are available on-site for all materials and have a hazard communication program for informing workers of material hazards
9. Verify compliance with hazardous waste requirements under section 14-11, including spill prevention and control measures
10. Conduct daily safety inspection of the job site for hazards and compliance with safety requirements in the specifications and 8 CA Code of Regs
11. Report all incidents to the Engineer immediately, including the investigation of any close calls

When monitoring work zone, take immediate corrective action and notify the Engineer if an imminent danger is identified.

If the Engineer determines the safety representative is not meeting the intended duties and responsibilities, you must replace the safety representative within 30 days of written notice from the Engineer. If you need to replace the safety representative, notify the Engineer and provide replacement safety representative resume and required certifications at least 15 days before the replacement.

Add to the end of section 5-1.20A:

During the progress of the work under this Contract, work under the following contracts may be in progress at or near the job site of this Contract:

Coincident or Adjacent Contracts

Contract no.	County–Route–Post Mile	Location	Type of work
07-2159U4	LA-005-0/1.5	LA MIRADA	WIDEN AND REALIGN FREEWAY
07-215934	LA-005/2.7/4	SANTA FE SPRINGS	WIDEN AND REALIGN FREEWAY
07-4W2404	LA-005-0/88.6	LOS ANGELES COUNTY	REPLACE STRIPING
07-0W6104	LA-005/0/40	LOS ANGELES COUNTY	REPAIR TRAFFIC MONITORING DETECTION STATIONS
07-319304	LA-005-0/19.5	LOS ANGELES COUNTY	INSTALLING WARNING SIGNS
07-217204	LA-001-16/16	TORRANCE	RECONSTRUC INTERSECTION
07-350404	LA-001-0.2/13.4	LOS ANGELES COUNTY	COMMUNICATION SYSTEM UPGRADE
07-337004	LA-001-20.6/21.9	HERMOSA BEACH	ACCESS CURB RAMPS
07-315004	LA-001-20.6/21.9	HERMOSA BEACH	MOBILITY IMPROVEMENT
07-321604	LA-001-0/18	LONG BEACH	COLD PLANE AND OVERLAY AC
07-325804	LA-001-18/33.3	TORRANCE, REDONDO BEACH	COLD PLANE AND OVERLAY AC
07-1Q3604	LA-001-18/30.3	TORRANCE, REDONDO BEACH	INSTALL PERMANENT COUNT STATIONS
07-1W2804	LA-010-0/48.2	LOS ANGELES COUNTY	TREAT BRIDGE DECK
07-260804	LA-010-16.6/30.1	LOS ANGELES COUNTY	STORM WATER MITIGATION
07-296604	LA-010-14/19	SANTA MONICA VIADUCK	STRUCTURE REHABILITATION
07-304204	LA-010-2.1R/11.1R	SANTA MONICA	RELOCATE APPURTENANCES, ADD SLOPE PAVING
07-4X1704	LA-010-2.2/13.3	LOS ANGELES	UPGRADE LANDSCAPE
07-3W2404	LA-010-14.3/17.8	LOS ANGELES	PATCH DECK SPALLS
07-332604	LA-010-12.4R/14.9	LOS ANGELES	REPLACE RAISED ISLAND
07-340504	LA-010-0.2S/47.7	LOS ANGLES COUNTY	ITS REPAIR OF RMS AND VDS
07-3W5704	LA-010-2.2/10.6	LOS ANGELES	REPLACE SIGNS
07-358404	LA-010-4.7R/18.9	SANTA MONICA AND LOS ANGELES	CULVERT REHABILITATION
07-371204	LA-010-0.6S/18.7	LOS ANGELES	UPGRADE BRIDGE RAILING
07-384604	LA-010-0.1/13.3	LOS ANGELES	CLEAN CA SAFETY ENHANCEMENT
07-394504	LA-010-5.5R/15	LOS ANGELES COUNTY	OVERHEAD SIGN STRUCTURE REHABILITATION

07-326304	LA-072-1.8/1.8	LOS ANGELES	INTERSECTION IMPROVEMENT
07-333104	LA-072-0/6.8	LOS ANGELES COUNTY	UPGRADE ADA RAMPS
07-0W0404	LA-090-0.9/3.3T	CULVER CITY	PCC PROFILE GRIND
07-328604	LA-105-14.6R/16.4	LOS ANGELES COUNTY	REMOVE AND INSTALL JOINT ASSEMBLIES
07-314504	LA-105-0.5R/18.1R	LOS ANGELES COUNTY	HOT LANES
07-314514	LA-105-0.5R/18.1R	LOS ANGELES COUNTY	TOLL COLLECTION SYSTEM
07-314524	LA-105-0.5R/18.1R	LOS ANGELES COUNTY	CONSTRUCTION DOUBLE HIGH OCCUPANCY TOLL LANES
07-314534	LA-105-0.5R/8.9R	LOS ANGELES COUNTY	CONSTRUCTION DOUBLE HIGH OCCUPANCY TOLL LANES
07-314544	LA-105-12.9R/18.1	LOS ANGELES COUNTY	CONSTRUCTION DOUBLE HIGH OCCUPANCY TOLL LANES
07-1XE704	LA-107-0/2.1	TORRANCE	REPLACE AC PAVEMENT
07-380404	LA-110-9.6/17.8	LOS ANGELES	PERMANENT STORMWATER TREATMENT BMP
07-386304	LA-110-14/21	LOS ANGELES	CLEAN CA BEAUTIFICATION
07-264804	LA-110-2.6/2.9	LOS ANGELES COUNTY	REPLACE INTERCHANGE
07-329804	LA-110-0/31.9	LOS ANGELES COUNTY	OVERHEAD GUIDE SIGN REHABILITATION
07-319704	LA-110-20/23.6	LOS ANGELES	ROADSIDE SAFETY
07-353904	LA-405-17.6/17.6	HAWTHORN	BRIDGE SEISMIC RESTORATION
07-353104	LA-405-16.4/20.2	TORRANCE	CONSTRUCT TRANSITION LANES
07-375404	LA-405-13.6/29.5	LOS ANGELES	REPLACE/LINE VARIOUS CULVERTS
07-0W7304	LA-405-13/16.6	LAWNDALE	RAMPS, SHOULDERS, GORE-DIGOUTS
07-293604	LA-405/14.3/15.8	TORRANCE	INTERCHANGE IMPROVEMENT
07-336104	LA-605-9.6R/15.7R	SANTA FE SPRINGS	INSTALL STORMWATER TREATMENT BMP
07-4W8604	LA-605-10.2R/20.2	LOS ANGELES COUNTY	SLABS REPAIR
07-356604	LA-605-10.2R/20.2	LOS ANGELES COUNTY	PAVEMENT REHABILITATION
07-298214	LA-605-6.3R/11.4R	LOS ANGELES COUNTY	MAINLINE, RAMP, AND CONNECTOR IMPROVEMENT

07-3W5604	LA-605-4.3R/14.1R	LOS ANGLES COUNTY	METH, DECK, JOINT SEALS AND SPALL REPAIR
07-320304	LA-605/0/10.2	LOS ANGELES COUNTY	PAVEMENT REHABILITATION
07-330504	LA-710-15.1R/21.9	SOUTH GATE, BELL GARDEN	IMPROVE WORKER SAFETY
07-298024	LA-710-12.9/24.9	LOS ANGELES COUNTY	SOUDWALL
07-298034	LA-710-4.9/12.9	LONG BEACH	SOUNDWALL
07-347004	LA-710-9.6/32.1T	LOS ANGELES COUNTY	DRAINAGE SYSTEM RESTORATION
07-34990	LA-710-6/14.1	LONG BEACH, COMPTON	ENHANCE HIGHWAY WORKER SAFETY
07-0W0704	LA-710-6.9/17.3	LOS ANGLES COUNTY	RAMPS, SLABS, GORE-DIGOUTS
07-385804	LA-710-13.8/15.3	COMPTON, PARAMOUNT	CLEAN CA BEAUTIFICATION

Coordinate lane closures and traffic handling with the Engineer and with contractors of coincident or adjacent projects. Potential conflicts may not be limited to the contracts listed above.

Add to the end of section 5-1.20C:

This project does not include work on the railroad property, but a railroad is shown on the general plan sheet within the project limits. Do not trespass on the railroad property at: .

Route 710 - PM 10.32 - Br. No. 53-2731 - COTA UP - Long Beach - LACMTA

Route 105 - PM R2.6/R18.1 - Tracks Center of SR 105 - Inglewood/Hawthorne/Los Angeles/Downey/Norwalk – LACMTA

Add to the end of section 5-1.33:

You must use tier 4 interim or tier 4 final engines for off-road diesel-fueled vehicles subject to 13 CA Code of Regs § 2449 instead of the use of lowered tiered engines. However, the requirement to use tier 4 interim or tier 4 final engines does not apply to vehicles registered to operate on public roads when those vehicles are used solely to deliver materials or supplies to the job site.

For off-road diesel-fueled vehicles subject to 13 CA Code of Regs§ 2449:

1. At least 15 days before use of vehicles submit an inventory list to the Engineer and tier4@dot.ca.gov for authorization. The list must include the following information for each vehicle:
    1.1. Diesel off-road on-line reporting system (DOORS) identification number issued to the vehicle owner by the California Air Resources Board
    1.2. Company or agency name associated with the DOORS identification number
    1.3. California Air Resources Board issued equipment identification number for the vehicle
    1.4. Vehicle product identification number as listed in DOORS
    1.5. Corresponding identifying number required in this section
    1.6. Serial number
    1.7. Vehicle type
    1.8. Vehicle manufacturer, model number and model year
    1.9. Number of engines as indicated in DOORS
    1.10. For each engine:
        1.10.1. Serial number
        1.10.2. Manufacturer name, model, and model year
        1.10.3. Maximum horsepower
        1.10.4. EPA issued engine family name

1.10.5. Engine displacement in liters
1.10.6. California Air Resources Board issue executive order for the engine family from the off-road certification database. For the database go to the California Air Resources Board website: https://www.arb.ca.gov/msprog/offroad/cert/cert.php
1.10.7. Emission standard category for the engine family, such as tier 4 interim or tier 4 final
1.10.8. Photograph of the engine label

2. Submit an updated inventory list at least 5 business days before using a vehicle not on the list or replacing a vehicle on the list for authorization. Allow 5 business days for review.

Flexibility engines certified under the California Air Resources Board's flexibility program provisions are noncompliant engines unless a previously issued executive order for that engine family indicates the emission standard category is tier 4 interim. You may access these executive orders at the California Air Resources Board website: https://www.arb.ca.gov/msprog/offroad/cert/cert.php For example:

> Executive Order U-R-002-0747 was issued on March 16, 2020, for Flexibility Program Engine Family Name "DCEXL15.0AAK," a Cummins Inc. 2020 model engine. Executive Order U-R-002-0592-2 issued on December 30, 2013, for Engine Family DCEXL15.0AAK indicates the "Emission Standard Category" is tier 4 interim. Use of Engine Family "DCEXL 15.0AAK is compliant.

If you operate a vehicle that is noncompliant with these requirements, the Department deducts a $2000 penalty for each noncompliant engine for each day of operation.

^^

6 CONTROL OF MATERIALS

Add to the beginning of section 6-1.02:

The Department furnishes you with:

1. Model 334LS Controller Cabinet

The Department furnishes you with completely wired controller cabinets with auxiliary equipment but without controller unit at 7300 E. Bandini Blvd - Commerce, CA 90040. At least 48 hours before you pick up the materials, inform the Engineer of what you will pick up and when you will pick it up.

Replace section 6-1.03B with:

6-1.03B Submittals

6-1.03B(1) General

Not Used

6-1.03B(2) Work Plan

For local material, such as rock, gravel, earth, structure backfill, pervious backfill, imported borrow, and culvert bedding, obtained from a (1) noncommercial source, or (2) source not regulated under California jurisdiction, submit a local material plan for each material at least 60 days before placing the material. The local material plan must include:

1. Certification signed by you and an engineer who is registered as a civil engineer in the State or a professional geologist licensed as a professional geologist by the State stating:

> I am aware local material from a noncommercial source or a source not regulated under CA jurisdiction must be sampled and analyzed for pH and lead and may require sampling and analysis under section 6-1.03B(3) for other constituents of concern based on the land use history. I am aware that local material sources must not contain ADL at concentrations greater than 80 mg/kg total lead or equal to or greater than 5 mg/L soluble lead as determined by the

Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II. I am aware that a maximum quantity of material may be excavated at the site based on the minimum number of samples taken before excavating at the site under section 6-1.03B(3).

2. Land use history of the local material location and surrounding property
3. Sampling protocol
4. Number of samples per volume of local material
5. QA and QC requirements and procedures
6. Qualifications of sampling personnel
7. Stockpile history
8. Name and address of the analytical laboratory that will perform the chemical analyses
9. Analyses that will be performed for lead and pH
10. Other analyses that will be performed for possible hazardous constituents based on:
    10.1. Source property history
    10.2. Land use adjacent to source property
    10.3. Constituents of concern in the ground water basin where the job site is located

The plan must be sealed and signed by an engineer who is registered as a civil engineer in the State or a professional geologist licensed as a professional geologist by the State.

If the plan requires revisions, the Engineer provides comments. Submit a revised plan within 7 days of receiving comments. Allow 7 days for the review.

6-1.03B(3) Analytical Test Results

At least 15 days before placing local material, submit analytical test results for each local material obtained from a noncommercial source or a source not regulated under CA jurisdiction. The analytical test results must include:

1. Certification signed by an engineer who is registered as a civil engineer in the State or a professional geologist licensed as a professional geologist by the State stating:

    The analytical testing described in the local material plan has been performed. I performed a statistical analysis of the test results using the US EPA's ProUCL software with the applicable 95 percent upper confidence limit. I certify that the material from the local material source is suitable for unrestricted use at the job site, it has a pH above 5.0, does not contain soluble lead in concentrations equal to or greater than 5mg/l as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II, does not contain lead in concentrations above 80 mg/kg total lead, is free from all other contaminants identified in the local material plan, and will comply with the job site's basin plan and water quality objectives of the RWQCB.

2. Chain of custody of samples
3. Analytical results no older than 1 year
4. Statistical analysis of the data using US EPA’s ProUCL software with a 95 percent upper confidence limit
5. Comparison of sample results to hazardous waste concentration thresholds and the RWQCB's basin plan requirements and water quality objectives for the job site location

6-1.03B(4) Sample and Analysis

Sample and analyze local material from a (1) noncommercial source or (2) a source not regulated under CA jurisdiction:

1. Before bringing the local material to the job site
2. As described in the local material plan
3. Under US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

The sample collection must be designed to generate a data set representative of the entire volume of proposed local material.

Before excavating at the (1) noncommercial material source or (2) a source not regulated under CA jurisdiction, collect the minimum number of samples and perform the minimum number of analytical tests for the corresponding maximum volume of local material as shown in the following table:

Minimum Number of Samples and Analytical Tests for Local Material

Maximum volume of imported borrow (cu yd)	Minimum number of samples and analytical tests
< 5,000	8
5,000–10,000	12 for the first 5,000 cu yd plus 1 for each additional 1,000 cu yd or portion thereof
10,000–20,000	17 for the first 10,000 cu yd plus 1 for each additional 2,500 cu yd or portion thereof
20,000-40,000	21 for the first 20,000 cu yd plus 1 for each additional 5,000 cu yd or portion thereof
40,000–80,000	25 for the first 40,000 cu yd plus 1 for each additional 10,000 cu yd or portion thereof
> 80,000	29 for the first 80,000 cu yd plus 1 for each additional 20,000 cu yd or portion thereof

Do not collect composite samples or mix individual samples to form a composite sample.

Analyze the samples using the US EPA's ProUCL software with a 95 percent upper confidence limit. All chemical analysis must be performed by a laboratory certified by the SWRCB's Environmental Laboratory Accreditation Program (ELAP).

The analytical test results must demonstrate that the local material:

1. Is not a hazardous waste
2. Has a pH above 5.0
3. Has an average total lead concentration, based upon the 95 percent upper confidence limit, at or below 80 mg/kg
4. Is free of possible contaminants identified in the local material plan
5. Complies with the RWQCB's basin plan for the job site location
6 Complies with the RWQCB's water quality objectives for the job site location

6-1.03C Local Material Management

Do not place local material until authorized.

If the Engineer determines the appearance, odor, or texture of any delivered local material suggests possible contamination, sample and analyze the material. The sampling and analysis is change order work unless (1) hazardous waste is discovered or (2) the analytical test results indicate the material does not comply with section 6-1.03B(3).

Dispose of noncompliant local material at an appropriately permitted CA Class I, CA Class II or CA Class III facility. You are the generator of noncompliant local materials.

Replace section 6-1.04 with:

6-1.04 BUY AMERICA

6-1.04A General

Buy America requirements do not apply to the following:

1. Tools and construction equipment used in performing the work
2. Temporary work that is not incorporated into the finished project

6-1.04B Crumb Rubber (Pub Res Code § 42703(d))

Furnish crumb rubber with a certificate of compliance. Crumb rubber must be:

1. Produced in the United States
2. Derived from waste tires taken from vehicles owned and operated in the United States

6-1.04C Steel and Iron Materials

Steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials
2. If the total combined cost of the materials produced outside the United States does not exceed the greater of 0.1 percent of the total bid or $2,500, the material may be used if authorized

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured.

All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

6-1.04D Manufactured Products

Iron and steel used in precast concrete manufactured products must meet the requirements of section 6-1.04C regardless of the amount used.

Iron and steel used in other manufactured products must meet the requirements of section 6-1.04C if the weight of steel and iron components constitute 90 percent or more of the total weight of the manufactured product.

6-1.04E Construction Materials

The following construction materials must be produced in the United States under standards in 2 CFR 184.6:

1. Non-ferrous metals
2. Plastic and polymer-based products such as:
   2.1. Polyvinylchloride
   2.2. Composite building materials
3. Glass
4. Fiber optic cable including drop cable
5. Optical fiber
6. Lumber
7. Engineered wood
8. Drywall

All manufacturing processes for these materials as defined in 2 CFR 184.6 must occur in the United States.

Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to compliance with its 2 CFR 184.6 standard.

Minor additions of articles, materials, supplies, or binding agents to these construction materials do not change the categorization of the construction material.

Add to section 6-1:

6-1.08 ENVIRONMENTAL PRODUCT DECLARATIONS FOR HOT MIX ASPHALT AND CONCRETE

Section 6-1.08 includes specifications for environmental product declarations for hot mix asphalt and concrete materials and products.

See section 6-1.06B for definitions.

For projects with bid opening dates after February 1, 2025, with a total bid over $1 million and 175 or more original working days, materials or products specified in the following table require facility-specific, product stage, environmental product declarations as informational submittals:

Material or product	Material specifications
Hot mix asphalt[a]	Section 39-2, "Hot Mix Asphalt" Excludes RHMA, OGFC, and BWC materials.
Concrete[b]	Section 28-2, "Lean Concrete Bases," Section 28-3, "Rapid Strength Concrete Base," Section 28-4, "Lean Concrete Base Rapid Setting," Section 28-5, "Concrete Base," Section 40, "Concrete Pavement," Section 47-5, "Type 6 Retaining Walls," Section 49-3, "Cast-In-Place Concrete Piling," Section 49-4, "Steel Soldier Piling," Section 51, "Concrete Structures," Section 58-2, "Masonry Block," Section 73, "Concrete Curbs and Sidewalks," Section 83, "Railings and Barriers," and Section 99, "Building Construction." Excludes volumetric-proportioned rapid strength concrete and Section 90-4 PC concrete members.

[a]For each hot mix asphalt plant providing 2,250 tons or more on the project by job mix formula.
[b]For each concrete plant providing 250 cubic yards or more on the project by mix design.

The requirements in section 6-1.08 do not apply to seasonal plants operating fewer than 6 months per year.

The requirements in section 6-1.08 do not apply to informal-bid contracts.

For product category rules for hot mix asphalt or concrete, go to the METS website. Use the product category rule in effect on the date of bid opening unless otherwise authorized. An environmental product declaration for hot mix asphalt or concrete is not required for either of the following conditions:

1. Applicable product category rule has expired without replacement as of the bid opening date.
2. Applicable product category rule was issued less than 50 days before the bid opening date.

Immediately notify the Engineer if a program operator has determined their product category rule does not allow for development of a facility-specific environmental product declaration. Include written correspondence from the program operator with your notification to the Engineer. If the Engineer determines the development of a facility-specific environmental product declaration cannot be achieved, an environmental product declaration will not be required for that material or product.

You must register on the Department’s Data Interchange for Materials Engineering (DIME) at least 15 days before submitting environmental product declarations. Follow the registration process at:

https://dime.dot.ca.gov/

Within 30 days of initial placement of each applicable material or product, submit a facility-specific, product stage, environmental product declaration informational submittal to DIME and provide proof of submission in PDF file format to the Engineer. The DIME entry information must include intended use of materials and estimated quantities of materials to be used as represented by the environmental product declaration.

Failure to provide a required environmental product declaration informational submittal will result in a $6,000 performance failure withhold for each missing declaration. The Department returns the withhold within 30 days after receipt of the compliant declaration if submitted prior to Contract acceptance. Withholds become permanent deductions if the declaration is not submitted before Contract acceptance.

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7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Replace the paragraphs of Section 7-1.02C with:

Submit to the Department the following certifications before performing the work:

I am aware of the emissions reduction regulations being mandated by the California Air Resources Board. I will comply with such regulations before commencing the performance of the work and maintain compliance throughout the duration of this Contract.

I am aware of the requirements to use tier 4 interim or tier 4 final engines under section 5-1.33 and I will comply with the requirements. I am aware that the Department deducts a $2,000 penalty for each noncompliant engine for each day of operation.

Contract signing constitutes submittal of these certifications.

Delete the 24th paragraph of section 7-1.04.

^^

8 PROSECUTION AND PROGRESS

Replace the row for *Schedule* in the table in the 2nd paragraph of section 8-1.03 with:

Schedule	Baseline schedule and weekly statement of working days report

Replace section 8-1.04C with:

8-1.04C Delayed Start

Section 8-1.04B does not apply.

Start job site activities within 55 days after receiving notice that the Contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department.

Do not start job site activities until the Department authorizes or accepts your submittal for:

1. CPM baseline schedule
2. WPCP or SWPPP, whichever applies
3. Notification of DRA or DRB nominee and disclosure statement

You may enter the job site only to measure controlling field dimensions and locate utilities.

Do not start other job site activities until all the submittals from the above list are authorized or accepted and the following information is received by the Engineer:

1. Notice of Materials To Be Used form.
2. Written statement from the vendor that the order for the sign panels has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.
3. Written statement from the vendor that the order for electrical material has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.
4. Written statement from the vendor that the order for structural steel has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.

You may start job site activities before the 55th day after Contract approval if you:

1. Obtain specified authorization or acceptance for each submittal before the 55th day
2. Receive authorization to start

Submit a notice 72 hours before starting job site activities. If the project has more than 1 location of work, submit a separate notice for each location.

Replace the 4th and 5th paragraphs of section 8-1.05 with:

The Engineer issues a weekly statement of working days report by the end of the following week. If you disagree with a weekly statement of working days report, submit an RFI within 5 business days of receipt of the report.

The weekly statement of working days report shows:

1. Working days and non–working days during the reporting week
2. Time adjustments
3. Calculations of work completion dates, including working days remaining
4. Controlling activities

Delete the 6th paragraph of section 8-1.05.

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9 PAYMENT

Replace the 1st paragraph of section 9-1.11D with:

For progress payments, the total work completed for the TRO bid item is the number of working days shown for the pay period on the weekly statement of working days report.

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DIVISION II GENERAL CONSTRUCTION

12 TEMPORARY TRAFFIC CONTROL

Add to section 12-3.11B(5)(b):

Provide **Ten C50B(CA)** construction project funding identification signs.

Legend for the type of project must be one line and read as follows:

Highway Improvement

Legend for the year of completion on project funding sign must read as follows:

YEAR OF COMPLETION **2027**

Replace section 12-3.20 with:

12-3.20 TEMPORARY BARRIER SYSTEMS

12-3.20A General

12-3.20A(1) Summary

Section 12-3.20 includes specifications for placing, maintaining, repairing, and removing temporary barrier systems.

Temporary barrier system Type K temporary railing is not allowed. Value engineering change proposals for the use of Type K temporary railing are not allowed.

Temporary barrier system consists of:

1. New or undamaged used interconnected barrier segments

2. Segment connection hardware
3. Stakes and anchor bolts

12-3.20A(2) Definitions

approach zone: The area immediately upstream of the work area and buffer space.

clear area width: Minimum width throughout the length of the barrier system that must be maintained clear of obstructions, objects, and work resources during non-working hours. The width is measured perpendicular from the non-traffic side toe.

departure zone: The area past the work area and the trailing end of the construction area.

set back distance: Space measured between the closest toe of temporary barrier and the edge of traveled way for each direction of traffic.

height differential: May be an excavation, a downward slope greater than 4:1, or a difference in elevation. The height differential is measured down from the top of pavement.

12-3.20A(3) Submittals

Submit as informational submittal for each type of temporary barrier system:

1. Certificate of compliance.
2. Manufacturer's installation instructions except for temporary concrete barriers with loop and pin and temporary concrete barriers with cross bolt.
3. Manufacturer's concrete QC test results and daily production log of precast concrete activities, through the Data Interchange for Materials Engineering (DIME) website. For QC test results, use project identifier 88887 in the DIME sample record. QC test results must include the concrete mix design number, barrier stamped ID, and must be submitted within 3 business days of QC test completion.

Submit test reports for cross bolts that certify compliance with the applicable ASTM requirements. The test reports must be from a laboratory that is accredited to International Standards Organization/International Electrotechnical Commission 17025 by the American Association for Laboratory Accreditation (A2LA) or the ANSI-ASQ National Accreditation Board.

Submit a signed manufacturer's replacement evaluation report within 10 days of damage to a temporary steel barrier system.

12-3.20A(4) Quality Assurance

12-3.20A(4)(a) General

Temporary barrier systems must comply with MASH Test Level 3.

Except for temporary concrete barriers with loop and pin and temporary concrete barriers with cross bolt, temporary barrier systems must:

1. Be on the Authorized Materials List for highway safety features
2. Comply with the manufacturer's drawings shown on the Department’s Division of Safety Programs website and the manufacturer's installation instructions

If a discrepancy exists, governing ranking in descending order is:

1. These specifications
2. Manufacturer's drawings
3. Manufacturer's installation instructions

QC sampling, testing, and inspection personnel must have an ACI Concrete Field-Testing Technician, Grade 1 certification.

Temporary concrete barrier segments must:

1. Comply with the requirements for tier 3 precast concrete in section 90-4
2. Be fabricated at a plant on the Authorized Facility Audit List

Concrete must be sampled and tested as shown in the following table.

Concrete QC Tests

Quality characteristic	Test method	Minimum testing frequency
Compressive strength	ASTM C172/C172M, ASTM C31/C31M, and ASTM C39/C39M	Once per 300 cu yd of concrete cast, or every day of casting, whichever is more frequent
Slump	ASTM C143/C143M	
Temperature at time of mixing	ASTM C1064/C1064M	
Density	ASTM C138	Once per 600 cu yd of concrete cast or every 7 days of batching, whichever is more frequent
Air content	ASTM C231/C231M or ASTM C173/C173M	If concrete is air entrained, once for each set of cylinders, and when conditions warrant

A daily production log of precast concrete activities must be maintained under section 90-4.01C(4).

12-3.20A(4)(b) Quality Control

Replace damaged temporary concrete barrier segments with exposed reinforcing steel or concrete spalls 1-1/2 inches in depth and 4 inches in width or greater. Repair minor damage under section 51-1.03F(2), for temporary concrete barriers with loop and pin and temporary concrete barriers with cross bolt.

Replace damaged temporary steel barrier segments with permanent bends, tearing, or buckling as described in the signed manufacturer's replacement evaluation report.

Realign temporary barrier system within 2 days of impact or displacement when displaced more than 3 inches except when the temporary barrier system is displaced into a traveled lane realign immediately.

12-3.20B Materials

12-3.20B(1) General

Temporary barrier segment must:

1. Be a minimum 31-1/2 inches in height
2. Have at least two lifting holes
3. Be designed to be used with temporary traffic screen when required

Temporary barrier segment may have your name or logo on each barrier segment. The name or logo must be no more than 4 inches in height and must be located no more than 12 inches above the bottom of the barrier segment.

12-3.20B(2) Temporary Concrete Barriers

12-3.20B(2)(a) General

Temporary concrete barrier segment must:

1. Be precast concrete with a minimum 5,000-psi compressive strength.
2 Have reinforcement steel that complies with section 52.
3. Have a finished surface that complies with section 51-1.03F(2).
4. Include the manufacturer's name, lot number, and month and year of manufacture stamped on the top of each barrier segment. The stamped information must be:
   4.1. No more than 6 inches in height.
   4.2. From 3/16 to 1/4 inch in depth.
   4.3. Centered on the top width of the barrier segment.
5. Use one of the following segment connections:
   5.1. Loop and pin
   5.2. "J" hook
   5.3. Cross bolt
6. Comply with the tolerances shown in the following table:

Precast Barrier Tolerances

Dimension	Tolerance(±)
Length (in)	1
Insert placement (in)	1/2
Horizontal alignment (in)	1/8 per 10 feet of length
Deviation of ends (in):	
Horizontal skew	1/4
Vertical batter	1/8 per foot of depth

Reinforcement steel must:

1. Comply with ASTM A615 or ASTM A706, Grade 60
2. Be galvanized under section 52-3, when required

Combinations of reinforcing steel and welded wire reinforcement are allowed. Welded wire reinforcement must comply with ASTM A1064.

Stake must:

1. Comply with ASTM A36/A36M-14 or ASTM A529-14, Grade 50
2. Be 1-1/2 inches in diameter and 36 inches long, except "J" Hook must be 48 inches long
3. Have a plate 1/2-by-3-1/2-by-3-1/2-inch welded 2 inches down from the upper end using a 3/8-inch fillet weld under AWS D1.1 or D1.4

Anchor bolt must:

1. Be a bolt or threaded rod 1-1/8 inches in diameter
2. Comply with ASTM A307
3. Include a 1/2-by-3-1/2-by-3-1/2-inch plate washer:
   3.1. With a 1-3/8-inch diameter hole in the center
   3.2. Complying with ASTM A36/A36M
   3.3. Galvanized post fabrication under section 75-1.02B

Threaded rod must include a nut complying with ASTM A563.

Anchor steel plate must:

1. Be 1/2 inch thick
2. Comply with ASTM A572, Grade 50
3. Be galvanized post fabrication under section 75-1.02B

Chemical adhesive must be on the Authorized Materials List for chemical adhesives and must be for a threaded rod at least 1 inch in diameter.

12-3.20B(2)(b) Temporary Concrete Barriers with Cross Bolt

Cross bolt hardware includes:

1. Cross bolt
2. Nut complying with ASTM A563
3. Hardened washer complying with ASTM F436, Type 1
4. Plate washer complying with ASTM A36/A36M and galvanized post fabrication under section 75-1.02B

Cross bolt must:

1. Be a 7/8-inch bolt or threaded rod and comply with one of the following:
   1.1. HS threaded rod ASTM A193, Grade B7
   1.2. HS threaded rod ASTM A449, Type 1
   1.3. HS nonheaded anchor bolt ASTM F1554, Grade 105, Class 2A

2. Have a permanent grade symbol and manufacturer's identifier

12-3.20B(2)(c) Temporary Concrete Barriers with Loop and Pin

12-3.20B(2)(c)(i) General

Not Used

12-3.20B(2)(c)(ii) Temporary Barrier Systems CAL F-23

Connecting loop must:

1. Be a steel bar 3/4 inch in diameter
2. Comply with ASTM A36/A36M, cold roll
3. Be galvanized after fabrication

Connecting pin must:

1. Comply with ASTM A449
2. Be forged, no welds
3. Be 1-inch in diameter and a minimum 30-1/4-inch long
4. Be galvanized under ASTM F2329 and A153

12-3.20B(2)(d) Temporary Concrete Barriers with "J" Hook

"J" hook must:

1. Comply with ASTM A36/A36M
2. Be 3/8-inch-thick steel plate
3. Be a minimum 18 inches in height

Anchor hardware must include:

1. Anchor bolt insert 1 inch in diameter and 6 inches long
2. Hex head bolt 1 inch in diameter with a minimum length of 11 inches plus thickness of asphalt overlay
3. 3/8-by-3-by-3-inch plate washer
4. Retainer ring

12-3.20B(3) Temporary Steel Barriers

Temporary steel barrier segment must:

1. Be galvanized steel.
2. Have a joint connection.
3. Include permanent identification information with no more than 6 inches in height and 12 inches in length and centered on the top width of the segment. The identification information must include:
   3.1. Manufacturer's name
   3.2. Serial number
   3.3. Lot number
   3.4. Month and year of manufacture

Temporary steel barrier 19-foot segment must be filled to a depth of 11-13/16 inches with concrete ballast.

12-3.20C Construction

12-3.20C(1) General

Install the minimum length of application for temporary barrier systems, including:

1. Approach zone
2. Work area
3. Departure zone

Clean temporary barrier segments at time of installation and at least every 6 months thereafter.

Install temporary barrier systems based on the requirements shown in the following table:

Minimum Clear Area Width

Barriers	Configuration	Height differentials 3 feet or less (ft)	Height differentials greater than 3 feet up to 8 feet (ft)	Edge of deck or height differentials greater than 8 feet (ft)	Fixed objects, falsework members, or temporary supports[a] (ft)
10-foot & 30-foot temporary concrete barrier with cross bolt	Freestanding	1	2	5	5
	3 stakes or anchor bolts per segment traffic side	1	1	2	3
20-foot temporary concrete barrier with cross bolt	Freestanding	1	2	5	5
	4 stakes or anchor bolts per segment traffic side	1	1	2	3
12-foot temporary concrete barrier CAL F-23	Freestanding	4	5	8	8
	3 stakes or anchor bolts per segment traffic side	1	1	2	3
20-foot temporary concrete barrier CAL F-23	Freestanding	4	5	8	8
	4 stakes or anchor bolts per segment traffic side	1	1	2	3
12.5-foot temporary concrete barriers with "J" hook	Freestanding	3	4	8	7
	3 stakes per segment traffic side	1	1	2	3
	2 anchor bolts per segment traffic side	1	1	2	3
20-foot temporary concrete barriers with "J" hook	Freestanding	3	4	8	7
	4 stakes per segment traffic side	1	1	2	3
	3 anchor bolts per segment traffic side	1	1	2	3
50-foot temporary steel barriers	Staked or anchored at both ends only	6	7	9	10
	Staked or anchored every 250 feet	5	6	8	9
	Staked or anchored every 33 feet	1	1	3	4
19-foot temporary steel barriers	Freestanding	4	5	7	8
12-foot-9-inch temporary steel barriers	Staked every 30 feet	1	2	4	5

[a]The minimum clear area width to a falsework or temporary support footing can be 2 feet less than the clear area width shown. Measure clear area width to the footing edge closest to traffic.

Place temporary barrier systems on concrete or asphalt concrete pavement.

When required, stake temporary barrier systems placed on asphalt concrete pavement.

When required, anchor temporary barrier systems placed on concrete pavement. For bridge decks, confirm the anchor will not penetrate closer than 1-1/2 inches from the bottom of the deck before placement. When temporary barrier is not shown, request the Engineer to verify the bridge deck thickness.

For installations on concrete pavement, drill holes and bond anchor bolts, threaded rods, or dowels under section 51-1.03E(5). Do not drill the top of supporting beams or girders, bridge expansion joints, or drains.

Install stakes and anchor bolts so the heads do not project above the top of the temporary barrier pocket profile.

Offset the approach zone of temporary barrier systems a minimum of 15 feet from the edge of an open traffic lane and stake or anchor barrier ends as shown. Taper the temporary barrier approach zone toward the edge of the open traffic lane at the rate shown in the following table:

Temporary Barrier System Taper Rate

Posted speed (mph)	Rate[a]
0 to 45	10:1
46 to 60	15:1
61 to 65	20:1

[a]Rate is longitudinally to transversely with respect to the edge of the traveled way

When a 15-foot minimum tapered offset cannot be achieved, offset temporary barrier systems the maximum distance available, place the first segment at the approach end parallel to the road, and install an authorized temporary crash cushion system at each barrier approach end. Ensure the temporary barrier approach zone length is a minimum:

1. 60 feet on facilities with a posted speed of 45 mph or less
2. 100 feet on facilities with a posted speed greater than 45 mph

Place a minimum 60 feet temporary barrier departure zone length.

Install a reflector on the top or face of barrier segments placed within 10 feet of a traffic lane. Space reflectors at approximately 20-foot intervals. Apply adhesive for mounting the reflector under the reflector manufacturer's instructions.

Install a Type P marker panel complying with section 82 at:

1. Each end of a temporary barrier system placed adjacent to a two-lane, two-way highway
2. The end facing traffic for a temporary barrier system installed adjacent to a one-way roadbed
3. The end of the skew nearest the traveled way when a temporary barrier system is placed on a skew

Maintain a minimum height of 31-1/2 inches above pavement for temporary barrier systems. For paving activities adjacent to temporary barriers, do not pave within 2 feet of the barrier segments unless authorized. For paving under the temporary barrier, remove and reset the barrier.

Remove temporary barrier systems when no longer required for the work. Remove stakes and anchor bolts so that minimal damage is done to pavement.

After removing the temporary barrier systems:

1. Restore the area to its previous condition or construct it to its planned condition if temporary excavation or embankment was used to accommodate the temporary barrier.

2. Remove all threaded rods or dowels to a depth of at least 1 inch below the top of concrete pavement. Fill the resulting holes with mortar under section 51-1 except cure the mortar by the water method or by the curing compound method using curing compound no. 6.
3. Repair damaged asphalt pavement by providing a clean, smooth edge around the damaged area. Repair any heaving caused by stake removal to provide a uniform surface. Remove loose debris and use compressed air to clean out the stake hole. Comply with manufacturer's requirements except fill the stake hole with grout to existing pavement elevation under section 51-1.

If the Engineer orders a lateral move of a temporary barrier system and repositioning is not shown, the lateral move is change order work except for work area access, clear area width compliance, or because of your means and methods to perform the work.

12-3.20C(2) Temporary Concrete Barriers

12-3.20C(2)(a) General

Before placing temporary barrier systems on the job site and after each described relocation, paint the exposed surfaces of the segments with white paint complying with specifications for acrylic emulsion paint for exterior masonry.

Place and maintain the abutting ends of segments in alignment without substantial offset from each other.

For freestanding temporary barrier systems, you may extend the taper by 60 feet beyond the required 15-foot tapered offset instead of anchoring the barrier ends.

Install stakes or anchors as shown and maintain a minimum 1-foot set back distance on both sides of barrier, when temporary barrier systems are placed with traffic on both sides.

12-3.20C(2)(b) Temporary Concrete Barriers with Cross Bolt

Intermix segments of different lengths within a temporary barrier system when necessary.

For temporary barrier systems placed on a curved layout, maintain the minimum curve radius shown in the following table:

Minimum Curve Radius

Segment length (ft)	Curve radius (ft)
10	125
20	265
30	400

12-3.20C(2)(c) Temporary Concrete Barriers with Loop and Pin

12-3.20C(2)(c)(i) General

Not Used

12-3.20C(2)(c)(ii) Temporary Concrete Barriers CAL F-23

Intermix segments of different lengths within a temporary barrier system when necessary.

For temporary barrier systems placed on a curved layout, maintain the minimum curve radius shown in the following table:

Minimum Curve Radius

Segment length (ft)	Curve radius (ft)
12	100
20	165

12-3.20C(2)(d) Temporary Concrete Barriers with "J" Hook

When temporary barrier systems are placed with traffic on both sides, install on each side:

1. 2 anchors or stakes for 12.5-foot segments

2. 3 anchors or stakes for 20-foot segments

12-3.20C(3) Temporary Steel Barriers

12-3.20C(3)(a) General

Install temporary barrier systems under manufacturer's instructions.

12-3.20C(3)(b) 50-Foot Temporary Steel Barriers

Use 50-foot temporary steel barriers with or without rubber pads.

Install a minimum 250 feet of 50-foot temporary steel barrier.

Maintain a minimum radius of 800 feet for segments placed on a curved layout. For tighter curves down to a 250-foot radius, contact the manufacturer before installation and provide manufacturer's written recommendation for the installation.

Stake or anchor segments every 33 feet and maintain a minimum 2-foot set back distance on both sides of barrier, when temporary barrier systems are placed with traffic on both sides.

12-3.20C(3)(c) 19-Foot Temporary Steel Barriers

Install a minimum 323 feet of 19-foot temporary steel barrier.

Maintain a minimum radius of 262 feet for segments placed on a curved layout.

Maintain a minimum 5-foot set back distance on both sides of barrier, when temporary barrier systems are placed with traffic on both sides.

12-3.20C(3)(d) 12-Foot-9-Inch Temporary Steel Barriers

Install a minimum 260 feet of 12-foot-9-inch temporary steel barrier.

Maintain a minimum radius of 755 feet for segments placed on a curved layout.

Stake or anchor segments and maintain a minimum 2-foot set back distance on both sides of barrier, when temporary barrier systems are placed with traffic on both sides.

12-3.20D Payment

The payment quantity for temporary barrier systems is the length measured along the top of the barrier segments.

Replace section 12-3.22 with:

12-3.22 TEMPORARY CRASH CUSHIONS

12-3.22A General

12-3.22A(1) Summary

Section 12-3.22 includes specifications for installing, repairing, replacing, maintaining, and removing temporary crash cushions.

12-3.22A(2) Definitions

Not Used

12-3.22A(3) Submittals

At least 10 days before installation, submit as informational submittal for each temporary crash cushion model:

1. Certificate of compliance
2. Two copies of the following:
   2.1. Manufacturer’s installation and maintenance manual
   2.2 Department approved manufacturer’s drawings from the Department’s Division of Safety Programs website
3. Record of training provided by manufacturer for each person installing the temporary crash cushion

12-3.22A(4) Quality Assurance

12-3.22A(4)(a) General

Not Used

12-3.22A(4)(b) Quality Control

Temporary crash cushion must be installed under the manufacturer's instructions by personnel trained by the manufacturer.

Keep a copy of the manufacturer’s drawings, and installation and maintenance manual for each temporary crash cushion model at the job site during installation.

12-3.22B Materials

12-3.22B(1) General

Temporary crash cushion must:

1. Be on the Authorized Materials List for highway safety features
2. Comply with MASH:
   2.1. Test Level 3 (TL-3) for a posted speed limit 45 mph or greater
   2.2. Test Level 2 (TL-2) for a posted speed limit less than 45 mph

Water-filled temporary crash cushion must:

1. Include all components required for attachment to temporary barrier or protected obstacle
2. Comply with the manufacturer's drawings shown on the Department’s Division of Safety Programs website

Each sand-filled temporary crash cushion module must be:

1. Colored standard yellow with a black lid
2. Free from structural flaws and objectionable surface defects

Sand for filling module must:

1. Be commercial quality, washed concrete sand
2. Contain no more than 5 percent water under California Test 226
3. Be clean when placed in the module

12-3.22B(2) Temporary Crash Cushions TL-3

Temporary crash cushion TL-3 must:

1. Comply with MASH TL-3
2. Be one of the following:
   2.1. Water-filled temporary crash cushion gating, non-redirective system
   2.2. Sand-filled temporary crash cushion module array

12-3.22B(3) Temporary Crash Cushions TL-2

Temporary crash cushion TL-2 must:

1. Comply with MASH TL-2
2. Be one of the following:
   2.1. Water-filled temporary crash cushion gating, non-redirective system
   2.2. Sand-filled temporary crash cushion module array

12-3.22C Construction

12-3.22C(1) General

When activities expose traffic to fixed obstacles, protect traffic from the obstacles with temporary crash cushions.

You may use NCHRP Report 350 compliant temporary crash cushions before December 31, 2026.

Install temporary crash cushions under the manufacturer's instructions before:

1. Starting activities requiring the crash cushions.
2. Opening to traffic lanes adjacent to the protected obstacles.

Temporary crash cushions must not impede the flow of traffic or encroach on the traveled way.

Attach a Type R or Type P marker panel to the front of temporary crash cushions if the closest point to the traveled way is within 12 feet of the traveled way. Fasten marker panels firmly to crash cushions with commercial quality hardware or by other authorized methods.

Maintain temporary crash cushions in place at each location, including when work is not in progress. Keep the area behind the temporary crash cushions clear of obstructions.

Repair damaged temporary crash cushions immediately. Remove and replace temporary crash cushions damaged beyond repair. Repair and replacement of temporary crash cushions damaged by traffic is change order work.

12-3.22C(2) Water-Filled Temporary Crash Cushions

Place temporary crash cushions and a minimum 20 feet of temporary barrier at a parallel 2-foot offset from edge of traveled way.

Install temporary crash cushions adjacent to a:

1. Barrier at an offset distance 1 to 2 feet or 7 feet or greater from the barrier
2. Dike or curb at an offset distance 0 to 4 feet or 7-1/2 feet or greater from the dike or curb

12-3.22C(3) Sand-Filled Temporary Crash Cushions

Do not use sand-filled temporary crash cushions for permanent installations.

Use the same type of sand-filled modules for each array. Fill each sand-filled module with sand under the manufacturer's instructions.

Securely fasten the top edge of a seal to the wall of the sand-filled module with a continuous strip of heavy-duty tape, when a seal is required.

You may place sand-filled temporary crash cushion modules on movable pallets or frames complying with the dimensions shown. The pallets or frames must provide a full-bearing base beneath the modules. Do not move the modules and supporting pallets or frames by sliding or skidding along the pavement or bridge deck.

Attach a Type R marker panel such that the top of the panel is 1 inch below the module lid. Attach a Type P marker panel such that the bottom of the panel rests upon the roadway surface or pallet surface when used.

You may remove sand-filled modules during the work shift for access to the work area if the exposed fixed obstacle is 15 feet or more from the nearest lane carrying traffic. Reset the modules before the end of the work shift.

A lateral move of a temporary crash cushion module is change order work if ordered and the repositioning is not shown.

Remove sand-filled temporary crash cushion modules, including sand, pallets or frames, and marker panels, at Contract acceptance.

12-3.22D Payment

The payment quantity does not include:

1. Temporary crash cushions placed for public safety
2. Modules placed in excess of the number described

Add between the 9th and 10th paragraphs of section 12-3.32C:

Start displaying the message on the sign 5 minutes before closing the lane or shoulder or when directed by the Engineer.

Add to section 12-4.02A(2):

special days: Martin Luther King Jr and Columbus Day

Add between the 1st and 2nd paragraphs of section 12-4.02A(3)(c):

Submit a contingency plan for loop detector replacement activity.

Replace the 3rd paragraph of section 12-4.02C(1) with:

Do not close on-ramps or off-ramps servicing 2 consecutive local street interchanges in the same direction of travel. The Engineer may authorize a closure if:

1. You submit a request
2. Traffic will be better served
3. Work will be expedited

Add between the 3rd and 4th paragraphs of section 12-4.02C(1):

You may close a ramp if the adjacent freeway lane is allowed to be closed as shown on the mainline charts and the connector charts.. If a ramp is closed, detour traffic to the next available ramp downstream of the closed ramp in the direction of travel.

Add between the 4th and 5th paragraphs of section 12-4.02C(1):

Concurrent stationary closures must be more than 5 miles apart. Closure spacing is the distance between the last cone of the upstream closure and the temporary sign (W20-1) of the downstream closure. The number of lanes open in the upstream closures must be less than or equal to the number of lanes open in the downstream closures. For multiple closures in each direction of travel, pick up the downstream closures first.

Add to the end of section 12-4.02C(1):

Keep the full width of the ramp traveled way open for use by traffic on designated holidays and special days.

For each 10-minute interval or fraction thereof past the time specified to open the closure, the amount for liquidated damages per interval shown in the table below is deducted. Liquidated damages are limited to 5 percent of the total bid per occurrence. Liquidated damages are not assessed if the Engineer orders the closure to remain in place beyond the scheduled pickup time.

Type of facility	Route	Direction or segment	Period	Liquidated damages/interval
Mainline	5	NB	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,500/10 minutes $2,000/10 minutes
Mainline	5	SB	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,500/10 minutes $2,000/10 minutes
Mainline	10	EB	1st half hour 2nd half hour 2nd hour and beyond	$2000/10 minutes $3000/10 minutes $4000/10 minutes
Mainline	10	WB	1st half hour 2nd half hour 2nd hour and beyond	$3000/10 minutes $5100/10 minutes $6800/10 minutes
Mainline	105	EB	1st half hour 2nd half hour 2nd hour and beyond	$2,100/10 minutes $3,100/10 minutes $4,100/10 minutes
Mainline	105	WB	1st half hour 2nd half hour 2nd hour and beyond	$2,300/10 minutes $3,800/10 minutes $5,000/10 minutes
Mainline	110	NB	1st half hour 2nd half hour 2nd hour and beyond	$2,000/10 minutes $3,000/10 minutes $4,000/10 minutes
Mainline	110	SB	1st half hour 2nd half hour 2nd hour and beyond	$1,800/10 minutes $2,600/10 minutes $3,500/10 minutes
Mainline	405	NB	1st half hour 2nd half hour 2nd hour and beyond	$2,600/10 minutes $4,000/10 minutes $6,000/10 minutes
Mainline	405	SB	1st half hour 2nd half hour 2nd hour and beyond	$2,600/10 minutes $3,900/10 minutes $5,200/10 minutes
Mainline	605	NB	1st half hour 2nd half hour 2nd hour and beyond	$3,000/10 minutes $4,500/10 minutes $6,000/10 minutes
Mainline	605	SB	1st half hour 2nd half hour 2nd hour and beyond	$3,300/10 minutes $4,900/10 minutes $6,500/10 minutes
Mainline	710	NB	1st half hour 2nd half hour 2nd hour and beyond	$2,600/10 minutes $3,900/10 minutes $5,200/10 minutes
Mainline	710	SB	1st half hour 2nd half hour 2nd hour and beyond	$2,100/10 minutes $3,200/10 minutes $4,300/10 minutes
Connector	5	SB 5 to SB 110	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,500/10 minutes
Connector	5	NB 5 to NB 605	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,000/10 minutes
Connector	5	SB 5 to Route 605	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,300/10 minutes
Connector	5	NB 5 to NB 710	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,300/10 minutes

Connector	5	SB 5 to SB 710	1st half hour 2nd half hour 2nd hour and beyond	$3,000/10 minutes $4,800/10 minutes $6,500/10 minutes
Connector	10	EB 10 to SB 110	1st half hour 2nd half hour 2nd hour and beyond	$2,300/10 minutes $3,500/10 minutes $4,600/10 minutes
Connector	10	WB 10 to SB 110	1st half hour 2nd half hour 2nd hour and beyond	$2,300/10 minutes $3,500/10 minutes $4,600/10 minutes
Connector	101	SB 101 to SB 5	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,300/10 minutes
Connector	110	NB 110 to NB 101	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,500/10 minutes
Connector	105	EB 105 to NB 605	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,000/10 minutes $1,200/10 minutes
Connector	105	EB 105 to SB 605	1st half hour 2nd half hour 2nd hour and beyond	$1,400/10 minutes $2,100/10 minutes $2,800/10 minutes
Connector	605	NB 605 to WB 105	1st half hour 2nd half hour 2nd hour and beyond	$1,200/10 minutes $1,700/10 minutes $2,300/10 minutes
Connector	605	NB 605 to Route 5	1st half hour 2nd half hour 2nd hour and beyond	$2,700/10 minutes $4,100/10 minutes $5,400/10 minutes
Connector	605	NB 605 to NB 5	1st half hour 2nd half hour 2nd hour and beyond	$1,000/10 minutes $1,400/10 minutes $1,800/10 minutes
Connector	605	SB 605 to Route 5	1st half hour 2nd half hour 2nd hour and beyond	$1,100/10 minutes $1,600/10 minutes $2,100/10 minutes

Add to the end of section 12-4.02C(3)(a):

If work vehicles or equipment is parked on the shoulder within 6 feet of a traffic lane of a freeway, close the shoulder area as shown.

Personal vehicles of your employees must not be parked within the highway.

If work vehicles or equipment is parked on the shoulder within 6 feet of a traffic lane on Routes 1, 72 and 107, close the shoulder area with fluorescent-orange traffic cones or portable delineators. Place the cones or delineators on a taper in advance of the parked vehicles or equipment and along the edge of the traveled way at 25-foot intervals to a point not less than 25 feet past the last vehicle or piece of equipment. Use at least 9 cones or delineators for the taper. Place advance warning signs as specified in section 12-4.02C(8).

Replace section 12-4.02C(3)(b) with:

12-4.02C(3)(b) Complete Freeway or Expressway Closure Requirements

When you are installing loop detectors at locations along the mainlines, close freeway lanes as shown on the traffic handling details plan titled "Traffic Control System for "Flip-Flop" Operations." In addition, perform the loop detector replacement for both mainline freeway and the adjacent ramp at the same time.

Replace section 12-4.02C(3)(c) with:

12-4.02C(3)(c) HOV, Express, and Bus Lane Closure Requirements

You may close HOV lanes any time the adjacent freeway lane is allowed to be closed as shown on chart nos. 105-G1 – 105-G23, 405-G1 – 405-G6, and 605-G1 – 605-G6.

You may close HOV or Express Lanes on Route 110 whenever the adjacent freeway lane is allowed to be closed as shown on chart nos. 110-G1 – 110-G24 between the hours of 2200 and 0500, Mondays through Fridays. Contact the following agencies at least 7 days before closing an HOV or Express Lane:

Agency	Telephone no.	Email
Metropolitan Transportation Authority (Metro)	(213) 922-4632	eventsdesk@metro.net
Gardena Municipal Bus Line	(310) 324-1475	
Torrance City Transit	(310) 618-6266	
Express Lanes Operation Center	(424) 295-0089	ExpressLanesClosures 110@metro.net. ExpressLanesClosures 10@metro.net

Send an announcement with the details of the planned closure to the appropriate email address as shown. Include the following information at a minimum:

1. The date(s) of the closure.
2. The start and end times of the closure.
3. Facilities that will be impacted by the closure such as corridor limits, flow direction, Express Lanes entrances/exits, transit stations, and direct access ramps.
4. A brief description of the type of work being performed.
5. Contact email and phone number of the organizer of the closure.
6. Contact email and phone number of the lead traffic control engineer who will be supervising the closure in the field.

Notify the appropriate Agency by phone and by email as shown for any change in closure schedule such as cancellation, early or late opening of closure, or rescheduling of closure. Provide reason for the change in closure schedule and information on the new closure schedule.

Call the Express Lanes Operations Center 15 minutes before the start of each closure.

Call the Express Lanes Operations Center 15 minutes before the end of each closure.

Replace section 12-4.02C(3)(d) with:

12-4.02C(3)(d) City Street Closure Requirements

Do not perform work on city streets that interferes with traffic from 0600 to 0900 or from 1530 to 1900 hours.

No lane closures are allowed on City of Torrance (aRouterial or collector) streets from 0600 to 0900 or from 1530 to 1900 hours and on City of Redondo Beach (aRouterial or collector) streets from 0600 to 0900 or from 1500 to 1900 hours.

Keep the full width of the city traveled way open for use by traffic on designated holidays.

Provide at least 5 days written notice to each affected property before closing or partially closing any driveway or pedestrian access.

Post "Temporary No Parking" signs at least 48 hours in advance of the first date of work and the required enforcement. If work is to begin on either a Monday or Tuesday, post the signs on a Friday. Each sign must include text indicating begin and end dates and the hours in effect. Show "Tow-Away" and "No Parking" on each post. Mount the signs on either 1 by 2 inches by 3 feet high wood stakes, Type II barricades, or 39-inch high delineators. Space signs at approximately 100 feet intervals on the effected side(s) of the street. Do not post signs on trees, traffic signal poles, utility poles, street lights, or any other street furniture. Professionally made signs are to be made of moisture-resistant, heavy duty cardboard or other approved material. Maintain and keep the signs free of graffiti. Remove any sign that becomes illegible and replace within 24 hours. Restrict parking only for the minimum time necessary to complete on-going work. Remove and repost "Temporary No Parking" signs when work will be delayed for more than 5 consecutive days, or if the work must go beyond the end date shown on the signs, or otherwise

directed by the Engineer. Maintain signs through the day of work and remove on or within 1 calendar day of the completion of work.

For locations requiring city street lane closures, temporary "No Parking" signs must be posted by the Los Angeles Department of Transportation (LADOT). Contact LADOT at (213) 485-2298 at least 4 business days prior to start of work for installation of signs.

Do not close ramps on Route 5 in the vicinity of City of Commerce during the holiday season (the Monday prior to Thanksgiving week to the Friday following New Year's Day) during the following hours: Mondays through Saturdays, 0600 to 2200, and Sundays, 0700 to 2100.

Replace section 12-4.02C(3)(e) with:

12-4.02C(3)(e) Closure Restrictions for Special Events and Venues

Do not work from 1800 on Halloween to 0600 the following day.

No work is allowed within the highway from June 1, 2028 to September 1, 2028 along the Games Route Network shown in the following table:

Olympic and Paralympic Games Route Network

Affected routes	Route limits
1	Lakewood Blvd to Route 47
1	Venice Blvd to Route 27
10	Route 1 to Route 10/405 Interchange
10	Route 10/101 Interchange to San Bernardino County Line
105	Route 105/405 Interchange to Route 105/110 Interchange
110	Route 1 to Route 101
405	Orange County Line to Victory Blvd

No lane closures are allowed from June 1, 2028 to September 1, 2028. Plan all work to comply with this requirement.

From 3 hours before to 2 hours after special events or events at the venues shown in the table titled "Special Events and Venues," do not perform work that encroaches onto the freeway or connector traveled way or ramps.
At the LA28 venues shown in the table titled "Special Events and Venues," do not perform work from June 1, 2028 to September 1, 2028 that encroaches onto the freeway or connector traveled way.
The special events and venues that could impact closures are shown in the following table:

Special Events and Venues

Special event or venue	Affected routes	Route limits
California Speedway	EB 10	Route 605 to Mills Ave (San Bernardino County line)
California State University, Los Angeles, graduation ceremonies	10	Route 5 to Rosemead Blvd
	710	Route 60 to Valley Blvd

California State University, Pomona, graduation ceremonies	10	Route 605 to Mills Ave (San Bernardino County line)
Cinco De Mayo parades or festivals in downtown Los Angeles	5	Route 5/10/60/101 interchange to Broadway
	110	Route 10/110 interchange to Route 101/110 interchange
Crypto.com Arena/Los Angeles Convention Center	10	Route 5/10/60/101 interchange to Crenshaw Blvd
	110	Route 105 to Route 101
Crypto.com Arena/Los Angeles Convention Center/Microsoft Theater/LA28	10	Route 5/10/60/101 interchange to Crenshaw Blvd
	110	Route 105/110 interchange to Route 5/110 interchange
Dignity Health Sports Park/LA28	110	Route 1 to Route 105/110 interchange
	405	Route 405/710 interchange to Route 105/405 interchange
	710	Route 1 to Route 105/710 interchange
Dodger Stadium	5	Route 10 to Route 134
	110	Route 10 to Route 5
Grand Park & LA City Hall/LA28	5	Route 5/10/60/101 interchange to Broadway
	110	Route 10/110 interchange to Route 101/110 interchange
Frank G. Bonelli Park/LA28	10	Azusa Ave to Central Ave
Griffith Park Light Show	5	Route 2 to Route 134
Long Beach Grand Prix	405	Route 605 to Route 110
	710	Route 91 to Route 47
Long Beach Arena/Long Beach Waterfront/Belmont Veterans Memorial Pier/LA28	1	Orange County Line to Route 110
	405	Route 405/605 interchange to Route 110/405 interchange
	710	Route 91/710 interchange to Route 47/710 interchange
Los Angeles Coliseum/BMO Stadium	10	Crenshaw Blvd to Route 5/10/60/101 interchange
	110	Route 105 to Route 101
Los Angeles Coliseum/BMO Stadium/University of Southern California/LA28	10	Crenshaw Blvd to Route 5/10/60/101 interchange
	110	Route 105/110 interchange to Route 5/110 interchange
Los Angeles County Fair	10	Route 605 to Mills Ave (San Bernardino County line)
Los Angeles Marathon	5	Route 10 to Route 134
	NB 110	Route 10 to Route 5
	NB 405	Route 90/405 interchange to Santa Monica Blvd
	SB 405	Sunset Blvd to Santa Monica Blvd
Los Angeles Music Center	110	Route 10 to Route 5
Rose Bowl events	110	Route 101 to Glenarm St
	710	Del Mar Blvd to Route 210
Rose Bowl events/LA28	110	Route 101/110 interchange to Glenarm St
	710	Del Mar Blvd to Route 210/710 interchange

Sepulveda Basin Recreation Area/LA28	405	Route 10/101 interchange to Route 101/118 interchange
SoFi Stadium/Kia Forum	105	Route 1 to Route 105/110 interchange
	110	Route 105/110 interchange to Slauson Ave
	405	El Segundo Blvd to Route 90/405 interchange
SoFi Stadium/Kia Forum/LA28	105	Route 1 to Route 105/110 interchange
	110	Route 91/110 interchange to Route 10/110 interchange
	405	Route 110/405 interchange to Route 10/405 interchange
South Gate Holiday Christmas Parade	710	Imperial Hwy to Route 5
Point Mugu Air Show	1	Las Posas Rd to Rose Ave
University of California, Los Angeles/Riviera Country Club/Santa Monica Beach/LA28	1	Route 90 to Route 27
	10	Route 1 to Venice Blvd
	90	Route 1 to Route 90/405 interchange
	405	Route 90/405 interchange to Route 101/405 interchange
Ventura Strawberry Festival	1	Las Posas Rd to Rose Ave

Replace section 12-4.02C(3)(f) with:

12-4.02C(3)(f) Closure Restrictions for Designated Holidays and Special Days

Closure restrictions for designated holidays and special days are shown in the following table:

Freeway or Connector Lane Closure Restrictions for Designated Holidays and Special Days											
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun	Mon
x	**H** xx	xx	xx								
x	xx	**H** xx	xx								
	x	xx	xx	**H** xx	xxx						
	x			**SD** xx							
	x	xx	xx	xx	**H** xx						
					x	**H** xx					
						x	**H** xx	xx	xx	xx	
	x	xx	xx	xx	xx	xx	**TH** xx	xx	xx	xx	

Legend:	
	Refer to mainline charts (G-charts) and connector charts (I-charts). .
x	The full width of the traveled way must be open for use by traffic by 0500.
xx	The full width of the traveled way must be open for use by traffic.
xxx	The full width of the traveled way must be open for use by traffic until 0500.
H	Designated holiday
TH	Thanksgiving Day
SD	Special day

Replace section 12-4.02C(3)(g) with:

12-4.02C(3)(g) Freeway or Expressway Lane Requirement Charts

Freeway lane closures must comply with the requirements shown in the following chart:

Chart No. 005-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: ARoutesia Blvd UC to San Gabriel River

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	2
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3
Sat	2	2	2	1	1	2	3	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S
Sun	2	2	2	1	1	1	2	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4 (future condition).

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: San Gabriel River to Washington Blvd On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	2
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	3
Sat	2	2	1	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	3
Sun	2	2	1	1	1	1	2	2	3	S	N	N	N	N	N	N	N	N	N	S	S	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 005-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Washington Blvd On-ramp to NB Route 710 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	3	2
Fri	2	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	3
Sat	2	2	1	1	2	2	3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	3
Sun	2	2	1	1	1	1	2	2	3	S	S	S	S	S	S	S	S	S	S	S	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 005-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 710 On-connector to Indiana/Calzona St On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	2	3	S	N	N	N	S	S	S	S	S	S	N	N	N	N	4	4	4	3	2	
Fri	2	1	1	2	3	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	4	4	4	3	
Sat	2	2	2	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	4	
Sun	3	2	2	1	1	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	4	4	4	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes 5.

Chart No. 005-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Indiana/Calzona St On-ramp to NB Route 101 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	2	3	S	N	N	N	S	S	S	S	S	S	N	N	N	N	4	4	4	4	3	
Fri	2	2	2	2	3	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	4	4	
Sat	3	3	2	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	3	
Sun	3	2	2	1	1	2	3	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	3	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.

Chart No. 005-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 101 Off-connector to Soto St Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Fri	1	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sat	S	S	1	1	1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sun	S	S	1	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

Legend:

C — Freeway may be closed completely.

1 — Provide at least 1 through freeway lane open in the direction of travel.

S — Shoulder closure is allowed.

REMARKS: The number of through traffic lanes is 4 and 2.
When the freeway is closed; detour traffic to NB Route 101 and exit to Fourth St off-ramp, east on Fourth St, to the Route 5 on-ramps. Place a PCMS inside the closure with the message: "NORTH 5 / EXIT / CLOSED - USE / N101 TO / 4TH ST". Place an SP-7 sign at the SB Route 5 on-ramp with Route 10 shield and appropriate route markers for WB Route 10 traffic. Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Chart No. 005-G7
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Soto St Off-ramp to Whittier Blvd OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C
Fri	C	C	C	C	1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C
Sat	S	1	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sun	S	C	C	C	C	C	C	1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C

Legend:

C — Freeway may be closed completely.

1 — Provide at least 1 through freeway lane open in the direction of travel.

S — Shoulder closure is allowed.

REMARKS: The number of through traffic lanes is 2.
Detour traffic to exit at Soto St off-ramp; north on Soto St, west on 4th St to the NB Route 5 on-ramp. Place a PCMS inside the closure with the message: "NORTH 5 / CLOSED / AT SOTO – USE / SOTO TO / 4TH ST". Post at least 9 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Chart No. 005-G8
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Whittier Blvd OC to EB Route 10 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	3	N	N	N	4	4	S	S	S	S	N	N	N	N	S	S	4	4	2
Fri	2	1	1	1	2	3	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	4	4	3
Sat	2	2	2	2	2	2	3	4	4	S	S	S	S	S	S	S	S	S	S	S	S	4	4	4	4
Sun	3	2	2	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	S	4	4	4	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4 or 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 005-G9
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: EB Route 10 Off-connector to WB Route 10 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	3	3	2	2
Fri	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	3	3	3	2
Sat	2	1	1	1	1	2	2	3	3	3	3	3	N	N	N	N	N	N	N	N	N	3	3	3	3
Sun	2	1	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	3	3	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 005-G10
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: WB Route 10 On-connector to Main St Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	S	S	S	S	S	S	N	N	N	N	S	4	3	3	2	
Fri	2	1	1	1	2	3	N	N	N	S	S	S	S	S	S	N	N	N	N	S	4	4	3	3	
Sat	2	2	1	1	1	2	3	4	4	4	S	S	S	S	S	S	S	S	S	S	4	4	4	3	
Sun	2	2	1	1	1	1	2	2	3	4	4	S	S	S	S	S	S	S	S	S	4	4	4	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G11
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Main St Off-ramp to NB Route 110 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	2
Fri	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sat	2	2	1	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sun	2	2	1	1	1	1	2	2	3	S	S	S	N	N	N	N	N	N	N	S	S	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G12
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 110 On-connector to Route 2 On-connectors

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	4	3
Fri	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	4	3
Sat	2	2	1	1	1	2	3	4	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4
Sun	3	2	2	1	1	1	2	3	3	4	S	N	N	N	N	N	N	N	N	N	N	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4 and 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 005-G13
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/NB	

Closure limits: Route 2 On-connectors to Los Felix Blvd On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	3	2
Fri	1	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	3
Sat	2	2	1	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	3
Sun	2	2	1	1	1	1	2	2	3	S	S	N	N	N	N	N	N	N	N	N	S	S	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G14
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Western Ave Off-ramp (WB) to EB Route 134 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	S	S	S	S	3	3	2	2	1
Fri	1	1	1	1	2	3	N	N	N	S	S	S	S	S	S	S	S	S	S	S	3	3	2	2
Sat	2	1	1	1	1	2	3	3	S	S	S	S	S	S	S	S	S	S	S	S	3	3	3	2
Sun	1	1	1	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	S	3	3	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G15
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: EB Route 134 On-connector to Los Feliz Blvd Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	N	N	N	N	N	S	4	3	3	2
Fri	1	1	1	1	2	S	N	N	N	S	S	S	S	S	N	N	N	N	N	S	4	4	3	2
Sat	2	2	1	1	1	2	2	3	4	4	4	S	S	S	S	S	S	S	S	4	4	4	3	3
Sun	2	2	1	1	1	1	2	2	3	4	4	4	4	4	4	4	4	4	4	4	4	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.
When closing the SB Colorado St on-ramp, detour traffic to NB Route 5, place a PCMS inside the closure with the message: "SOUTH 5 / RAMP / CLOSED – USE N5 / EAST 134 / ZOO DR".
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 005-G16
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Los Feliz Blvd Off-ramp to Route 2 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	N	N	N	N	N	4	4	3	3	2	
Fri	1	1	1	1	2	S	N	N	N	S	S	S	S	S	N	N	N	N	N	S	4	4	3	3	
Sat	2	2	1	1	1	2	2	3	4	4	S	S	S	S	S	S	S	S	S	S	4	4	3	3	
Sun	2	1	1	1	1	1	2	2	3	3	4	4	S	S	S	S	S	S	S	4	4	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 5 and 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G17
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Route 2 On-connector to NB Route 110 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	3
Sat	2	2	1	1	1	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3
Sun	2	2	1	1	1	1	2	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 005-G18
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: NB Route 110 Off-connector to EB Route 10 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	3	2
Fri	1	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	3
Sat	2	1	1	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	3
Sun	2	1	1	1	1	1	2	2	3	S	S	N	N	N	N	N	N	S	S	S	S	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 005-G19
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: EB Route 10 Off-connector to WB Route 10 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	2	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	2
Fri	2	2	2	2	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S
Sat	3	2	2	2	2	2	3	S	S	S	N	N	N	N	N	N	N	S	S	S	S	S	S	S	3
Sun	2	2	2	1	1	1	2	3	3	S	S	N	N	N	N	N	N	S	S	S	S	S	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 005-G20
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: WB Route 10 On-connector to Whittier Blvd OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	4	4	4	3	2	
Fri	1	1	1	1	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	4	4	4	4	3	
Sat	2	2	1	1	1	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	4	4	3	
Sun	2	2	1	1	1	1	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	4	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5 and 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G21
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Whittier Blvd OC to Euclid Ave UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Freeway may be closed completely.

1 Provide at least 1 through freeway lane open in the direction of travel.

N No work is allowed.

REMARKS: The number of through traffic lanes is 2.
During full closure, detour traffic to WB Route 10 and exit at Santa Fe Ave off-ramp, east on 8th St, south on Santa Fe Ave, west on PoRouter St to EB Route 10. Place a PCMS inside the closure with the message: "SOUTH 5 / EXIT / CLOSED - DETOUR / SANTA FE / TO E10". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 005-G22
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Euclid Ave UC to Indiana/Calzona On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	4	4	3
Fri	2	2	2	2	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	4	4
Sat	3	2	2	2	2	2	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	4	4	4
Sun	3	2	2	2	1	1	2	3	3	4	S	S	S	S	S	S	S	S	S	S	S	S	S	4	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.

Chart No. 005-G23
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Indiana/Calzona On-ramp to Ditman Ave On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	3	2	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	4
Fri	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	4
Sat	3	3	3	2	2	3	4	S	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S
Sun	4	3	3	2	2	2	3	3	4	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3

Legend:

2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.

Chart No. 005-G24
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Ditman Ave On-ramp to SB Route 710 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4	3
Fri	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	4
Sat	3	3	3	2	2	3	3	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	4
Sun	3	3	3	2	2	2	2	3	4	4	S	S	N	N	N	N	N	N	N	N	S	S	S	4	3

Legend:

2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5 and 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 005-G25
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 710 Off-connector to SB Route 710 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	2
Fri	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S
Sat	2	2	2	1	1	2	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S
Sun	2	2	2	1	1	1	2	2	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	2

Legend:

1	Provide at least 1 adjacent through freeway lanes open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.

Chart No. 005-G26
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 710 On-connector to Washington Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	2
Fri	2	1	1	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	3
Sat	2	2	1	1	2	3	S	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	3
Sun	2	2	1	1	1	2	2	3	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	2	2

Legend:

1	Provide at least 1 adjacent through freeway lanes open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 005-G27
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Washington Blvd UC to Route 605 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	2
Fri	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sat	3	2	2	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	S
Sun	3	2	2	1	1	1	2	2	3	S	S	S	N	N	N	N	N	N	N	N	S	S	S	3	2

Legend:

1	Provide at least 1 adjacent through freeway lanes open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed as shown on chart no. I62.

Chart No. 005-G28
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 5/SB	

Closure limits: Route 605 Off-connector to ARoutesia Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	S	N	N	N	S	S	S	S	N	N	N	N	N	N	N	S	3	3	2	
Fri	2	1	1	1	2	S	N	N	N	S	S	S	N	N	N	N	N	N	N	N	N	N	S	3	
Sat	2	2	2	2	2	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	N	S	3	
Sun	3	2	2	1	1	1	2	2	3	S	S	S	N	N	N	N	N	N	N	N	N	S	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4 (future condition).

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 010-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: Cloverfield Blvd on-ramp to Route 405 UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Fri	2	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	2	2	1	1	1	1	1	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	1	1	1	1	1	2	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 010-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: Overland Ave on-ramp to La Cienega Blvd

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Fri	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	3	2	2	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	2	2	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.

Chart No. 010-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: La Cienega Blvd UC to Arlington Ave OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Fri	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Sat	3	2	2	1	1	1	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Sun	3	2	2	1	1	1	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	4	4	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: Arlington Ave OC to Hoover St UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	3	2	2	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	2	2	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 010-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: Hoover St UC to Figueroa St

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2
Fri	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	2	2	2	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	1	1	1	1	1	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2, 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/EB	

Closure limits: San Pedro St on-ramp to Olympic Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4
Sat	3	2	2	2	2	2	3	3	4	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	4	3	3	2	2	2	2	3	4	4	N	N	N	N	N	N	N	N	N	N	4	4	4	4	3

Legend:

2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G7
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/WB	

Closure limits: Hoover St UC to Arlington Ave OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	3	N	N	N	N	S	S	S	S	S	N	N	N	N	N	N	4	4	4	3	
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	4	3	
Sat	2	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	
Sun	3	2	2	2	2	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	4	4	3	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G8
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/WB	

Closure limits: Arlington Ave OC to La Cienega Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	3	2
Fri	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	3
Sat	2	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Sun	3	2	2	2	2	2	3	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G9
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/WB	

Closure limits: La Cienega Blvd UC to Overland Ave on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	2	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 010-G10
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 10/WB	

Closure limits: Route 405 UC to Cloverfield Blvd off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	2	2
Fri	1	1	1	1	1	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	2	2
Sat	2	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	3	3
Sun	2	1	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	1

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 090-G1
Expressway Lane Requirements and Hours of Work

County: LA	Route/Direction: 90/EB	

Closure limits: Mindanao Way to Culver Blvd off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	N	2	2	2	N	N	N	N	N	N	2	2	2	2	1
Fri	1	1	1	1	1	2	N	N	N	2	2	2	N	N	N	N	N	N	N	2	2	2	2	1
Sat	1	1	1	1	1	1	1	1	2	2	2	2	2	N	N	N	N	N	N	2	2	2	2	2
Sun	1	1	1	1	1	1	1	1	1	2	2	2	2	N	N	N	N	N	2	2	2	2	2	1

Legend:

1	Provide at least 1 through expressway lane open in the direction of travel.
2	Provide at least 2 adjacent through expressway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2.
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Chart No. 090-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 90/EB	

Closure limits: Culver Blvd off-ramp to Slauson Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	S	S	S	3	2	2	2	3	3	S	S	S	S	3	2	2	2	1	
Fri	1	1	1	1	1	1	S	S	S	3	3	3	3	3	3	S	S	S	S	3	2	2	2	2	
Sat	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	
Sun	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	2	2	2	2	2	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right/left).

REMARKS: The number of through traffic lanes is 2, 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 090-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 90/WB	

Closure limits: Slauson Ave to Culver Blvd on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	S	S	S	3	3	3	2	2	2	S	S	S	S	2	2	2	2	1	
Fri	1	1	1	1	1	1	S	S	S	3	3	3	2	2	2	S	S	S	S	2	2	2	2	1	
Sat	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	2	1	
Sun	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	2	2	1	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right/left).

REMARKS: The number of through traffic lanes is 2, 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane or connector is allowed to be closed.

Chart No. 090-G4
Expressway Lane Requirements and Hours of Work

County: LA	Route/Direction: 90/WB	

Closure limits: Culver Blvd on-ramp Mindanao Way

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	N	2	2	2	2	2	N	N	N	N	2	2	2	2	1	
Fri	1	1	1	1	1	1	N	N	N	N	2	2	2	2	2	N	N	N	N	2	2	2	2	1	
Sat	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	

Legend:

1	Provide at least 1 through expressway lane open in the direction of travel.
2	Provide at least 2 adjacent through expressway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2 or 3.

Chart No. 105-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: California St to Route 405 Off-connectors

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	S	S	S	2	2	2	S	S	S	S	S	S	S	S	2	2	2	1	
Fri	1	1	1	1	2	S	S	S	S	2	2	2	S	S	S	S	S	S	S	S	2	2	2	2	
Sat	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2 or 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 405 Off-connector to Route 405 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	S	S	S	2	2	2	S	S	S	S	S	S	S	S	2	2	2	2	
Fri	1	1	1	1	2	S	S	S	S	2	2	2	S	S	S	S	S	S	S	S	2	2	2	2	
Sat	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 405 On-connector to Hawthorne Blvd On-Ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	3	N	N	N	S	S	3	3	S	S	N	N	N	N	S	3	3	2	2	
Fri	2	1	1	1	1	3	N	N	N	S	S	3	3	S	S	N	N	N	N	S	3	3	3	2	
Sat	2	2	1	1	1	1	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	
Sun	2	2	1	1	1	1	1	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	2	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Hawthorne Blvd On-Ramp to NB Crenshaw Blvd On-Ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	S	N	N	N	S	S	3	3	N	N	N	N	N	N	S	S	S	2
Fri	2	1	1	1	1	2	S	N	N	N	S	S	3	3	N	N	N	N	N	N	S	S	S	S
Sat	2	2	1	1	1	2	2	3	3	3	3	3	S	S	S	S	S	S	S	S	3	3	3	2
Sun	2	2	1	1	1	1	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of NB Crenshaw Blvd On-Ramp to Route 110 Off-connectors

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	2	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	3
Fri	2	2	1	1	2	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	S
Sat	2	2	2	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sun	2	2	2	1	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 110 Off-connector to Route 110 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Fri	2	1	1	1	1	2	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	S
Sat	2	2	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sun	2	2	1	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G7
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 110 On-connector to Central Ave Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	S	3	3	S	S	S	N	N	N	N	S	S	3	3	2	
Fri	2	1	1	1	1	2	N	N	N	S	3	3	S	S	S	N	N	N	N	S	S	3	3	3	
Sat	2	2	2	1	1	2	2	3	3	3	S	S	S	S	S	S	S	S	S	S	S	3	3	3	3
Sun	2	2	2	1	1	1	2	2	3	3	3	S	S	S	S	S	S	S	S	3	3	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G8
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Central Ave Off-ramp to Route 710 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Fri	2	1	1	1	1	2	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	2	1	1	1	1	1	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	1	1	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G9
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 710 Off-connector to Route 710 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	S	2	2	S	S	S	N	N	N	N	S	2	2	2	2	
Fri	1	1	1	1	1	2	N	N	N	S	2	2	S	S	S	N	N	N	N	S	S	2	2	2	
Sat	2	1	1	1	1	1	2	2	2	S	S	S	S	S	S	S	S	S	S	S	2	2	2	2	
Sun	2	1	1	1	1	1	1	2	2	2	S	S	S	S	S	S	S	S	S	S	2	2	2	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G10
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 710 On-connector to Route 605 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	2	2
Fri	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	2	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	1	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G11
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/EB	

Closure limits: East of Route 605 off-connectors to Studebaker Rd

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	1	1	1	1	1	1	N	N	N	N	1	1	1	1	1
Fri	1	1	1	1	1	1	N	N	N	1	1	1	1	1	1	N	N	N	N	1	1	1	1	1
Sat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G12
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: Route 605 On-connector to Lakewood Blvd Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	2	3	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	2	
Fri	1	1	1	2	3	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	3	
Sat	2	1	1	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	3	3	
Sun	2	2	1	1	1	1	2	2	3	3	3	S	S	S	S	S	S	S	3	3	3	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G13
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: Route 605 On-connector to Lakewood Blvd Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	2
Fri	1	1	1	1	2	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	3
Sat	2	1	1	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	3	3
Sun	2	2	1	1	1	1	2	2	3	3	3	S	S	S	S	S	S	S	3	3	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G14
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Lakewood Blvd Off-ramp to Route 710 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	2	2
Fri	1	1	1	1	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	2	1	1	1	1	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	2	1	1	1	1	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
For overhead sign panel replacement at location 42, only HOV lane is allowed to be open on Saturday from 0100 to 0500 and on Sunday from 0200 to 0600. Place a 1st PCMS between the 1st and 2nd flashing arrow signs and a 2nd PCMS on the right shoulder of Bellflower Blvd on-ramp gore with the message: "ALL / TRAFFIC - USE / CARPOOL / LANE". Place a 3rd PCMS on the right shoulder of WB Route 105 at the gore area of Route 605 on-connectors with the message: "SINGLE / LANE / ONLY - AT / DOWNENY / AVE".
Close Lakewood Blvd on-ramp.

Chart No. 105-G15
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Route 710 Off-connector to Route 710 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	2	2
Fri	1	1	1	1	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	2	1	1	1	1	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	2	1	1	1	1	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G16
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Route 710 On-connector to Long Beach Blvd Off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	N	N	N	N	N	N	N	S	S	3	3	2	
Fri	1	1	1	1	2	S	N	N	N	S	S	S	N	N	N	N	N	N	N	S	S	3	3	2	
Sat	2	1	1	1	1	2	2	3	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	2	
Sun	2	2	1	1	1	1	2	2	3	3	3	S	S	S	S	S	S	S	S	3	3	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G17
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Long Beach Blvd Off-ramp to Central Ave On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	2	2
Fri	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	2	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	2	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G18
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Central Ave On-ramp to Route 110 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	2	
Fri	1	1	1	1	2	S	N	N	N	S	S	3	3	S	S	N	N	N	N	S	S	3	3	3	
Sat	2	1	1	1	2	2	3	3	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	3	
Sun	2	2	1	1	1	2	2	2	3	3	3	S	S	S	S	S	S	S	S	S	3	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G19
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Route 110 Off-connectors to SB Route 110 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	2	2
Fri	1	1	1	1	2	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	S	2
Sat	1	1	1	1	1	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	2
Sun	2	1	1	1	1	1	2	2	2	S	S	S	S	S	S	S	S	S	S	S	S	S	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G20
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of SB Route 110 On-connector to Route 405 Off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	2	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	3	3	2	
Fri	1	1	1	2	S	N	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	3	3	3	
Sat	1	1	1	1	2	2	3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	3	3	3	3
Sun	2	2	1	1	1	2	2	2	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 105-G21
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Route 405 Off-connector to Route 405 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	S	S	S	2	2	2	2	2	2	S	S	S	S	2	2	2	2	1	
Fri	1	1	1	1	2	S	S	S	S	2	2	2	2	2	2	S	S	S	S	2	2	2	2	2	
Sat	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).

REMARKS: The number of through traffic lanes is 3.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G22
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of Route 405 On-connector to NB Sepulveda Blvd Off-Ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	S	S	2	2	3	S	N	N	N	N	3	3	2	2	1	
Fri	1	1	1	1	2	3	N	N	N	S	S	2	2	3	S	N	N	N	N	3	3	2	2	2	
Sat	1	1	1	1	1	2	3	3	3	3	3	2	2	2	3	3	3	3	3	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2, 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 105-G23
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 105/WB	

Closure limits: West of NB Sepulveda Blvd Off-Ramp to California St

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	S	N	N	N	1	1	1	1	1	1	S	S	S	S	1	1	1	1	1	
Fri	1	1	1	1	1	S	N	N	N	1	1	1	1	1	1	S	S	S	S	1	1	1	1	1	
Sat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 2.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 110-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Gaffey St on-ramp to John S Gibson Blvd on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	2	2	2	2	2	2	N	N	N	N	2	1	1	1	1	
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	2	2	2	2	1	
Sat	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.

Chart No. 110-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: John S Gibson Blvd on-ramp to PCH on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	N	2	2	2	2	N	N	N	N	N	2	2	2	1	1	
Fri	1	1	1	1	1	2	N	N	N	N	2	2	2	2	N	N	N	N	N	2	2	2	2	1	
Sat	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	1	
Sun	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: PCH Hwy on-ramp to Torrance Blvd on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	2	2
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	2
Sat	2	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	2
Sun	2	1	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	3	2	2	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.

Chart No. 110-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Torrance Blvd on-ramp to SB 405 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: SB 405 on-connector to WB 91 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	4	3	2
Fri	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	4	3
Sat	2	2	1	1	1	2	3	4	4	N	N	N	N	N	N	N	N	N	N	N	N	4	4	4	3
Sun	2	2	1	1	1	1	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	4	3	3	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: WB 91 on-connector to EB 105 off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	2
Fri	2	2	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	2	2	2	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sun	2	2	2	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G7
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: EB 105 off-connector to WB 105 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	2	2	2
Fri	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	3	2
Sat	2	1	1	1	1	2	2	3	3	3	N	N	N	N	N	N	N	N	N	N	3	3	3	3	2
Sun	2	1	1	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	3	3	2	2	1

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed..

Chart No. 110-G8
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: WB 105 on-connector to Slauson Ave on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	3	3	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G9
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Slauson Ave on-ramp to Martin Luther King Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sun	3	2	2	1	1	2	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G10
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Martin Luther King Blvd UC to 28th St OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	3
Fri	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	3
Sat	2	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4
Sun	3	2	2	2	2	2	3	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	4

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G11
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: 28th St OC to Route 10 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2
Fri	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	2	2	1	1	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G12
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Route 10 on-connector to Route 101 off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	3	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4, 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G13
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/North	

Closure limits: Route 101 off-connector to College St OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	2	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G14
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: College St OC to 3rd St on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2
Fri	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Sat	2	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Sun	2	2	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G15
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110.South	

Closure limits: 3rd St on-ramp to Route 10 off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	3	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	3	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G16
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Route 10 off-connector to Route 10 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.

Chart No. 110-G17
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Route 10 on-connector to Martin Luther King Blvd off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Fri	3	2	2	2	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4
Sat	3	3	3	2	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	4	3	3	2	2	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	3

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G18
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Martin Luther King Blvd off-ramp to Gage Ave on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	3	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	3	3	3	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	3	3	2	2	2	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G19
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Gage Ave on-ramp to Route 105 off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	3	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	3	3	2	2	2	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G20
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Route 105 off-connector to Rosecrans Ave on-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4	3
Fri	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	3
Sat	3	2	2	2	2	3	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	4
Sun	3	2	2	2	2	2	2	3	3	4	N	N	N	N	N	N	N	N	N	N	4	4	4	4	3

Legend:

2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 4, 5.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G21
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Rosecrans Ave on-ramp to Route 405 off-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Sat	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	2	2	2	1	1	2	2	3	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding Express Lane is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector or ramp is allowed to be closed.

Chart No. 110-G22
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: Route 405 off-connector to S 405 on-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Fri	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	2	2	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
Sun	2	2	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent connector is allowed to be closed.

Chart No. 110-G23
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: S 405 on-connector to CPH off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	2
Fri	1	1	1	1	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	2
Sat	2	1	1	1	1	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	3	3	3	3	2
Sun	2	1	1	1	1	1	2	2	2	3	N	N	N	N	N	N	N	N	3	3	3	3	2	2	2

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 110-G24
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 110/South	

Closure limits: PCH off-ramp to Gaffey Ave off-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	2	2	2	2	2	2	N	N	N	N	2	2	2	1	1	
Fri	1	1	1	1	1	2	N	N	N	N	2	2	2	2	2	N	N	N	N	2	2	2	2	1	
Sat	1	1	1	1	1	1	2	2	2	2	2	2	2	N	N	N	N	2	2	2	2	2	2	1	
Sun	1	1	1	1	1	1	1	1	2	2	2	2	2	N	N	N	N	2	2	2	2	2	1	1	

Legend:

1	Provide at least 1 through Freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through Freeway lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4.
You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent ramp is allowed to be closed.

Chart No. 405-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/NB	

Closure limits: North of NB Route 110 On-connector to Rosecrans Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	2
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sat	2	1	1	1	1	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sun	2	1	1	1	1	2	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 405-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/NB	

Closure limits: Culver Blvd UC to WB Route 10 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	5	5	5	4	3
Fri	2	1	1	1	2	4	N	N	N	S	S	S	S	S	S	N	N	N	N	5	5	5	4	4
Sat	3	2	1	1	1	2	3	5	S	S	S	S	S	S	S	5	5	5	5	5	5	5	5	4
Sun	3	2	1	1	1	2	2	3	4	5	S	S	S	S	S	S	S	S	S	5	5	5	4	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
5	Provide at least 5 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4, 5 or 6.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 405-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/NB	

Closure limits: North of WB Route 10 On-connector to Wilshire Blvd UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	4	3	
Fri	2	1	1	1	1	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	4	
Sat	3	2	2	1	1	2	3	4	S	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4	
Sun	3	2	2	1	1	1	2	3	4	4	S	N	N	N	N	N	N	N	N	N	S	S	4	3	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
5	Provide at least 5 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3, 5 or 6.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 405-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/SB	

Closure limits: Wilshire Blvd UC to EB Route 10 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	4	3
Fri	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4
Sat	3	2	2	1	1	2	3	4	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4
Sun	3	2	2	1	1	2	2	3	4	4	S	S	N	N	N	N	N	N	N	N	N	S	S	4	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4 or 5.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 405-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/SB	

Closure limits: South of EB Route 10 On-connector to Culver Blvd

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	3
Fri	2	2	1	1	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	4
Sat	3	2	2	2	2	2	4	S	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	4
Sun	3	3	2	2	2	2	3	4	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	4	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4 or 5.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 405-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 405/SB	

Closure limits: Rosecrans Ave to SB Route 110 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	3	N	N	N	S	S	S	N	N	N	N	N	N	N	N	S	4	4	3	
Fri	2	1	1	1	1	3	N	N	N	S	S	N	N	N	N	N	N	N	N	N	S	S	4	4	3
Sat	2	2	1	1	1	1	2	3	4	S	N	N	N	N	N	N	N	N	S	S	4	4	4	3	
Sun	2	2	1	1	1	1	2	2	3	4	S	S	N	N	N	N	N	S	S	4	4	4	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 3, 4 or 5.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 605-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/NB	

Closure limits: Wardlow Rd OC to Del Amo Blvd On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	3	N	N	N	S	S	S	S	S	N	N	N	N	N	S	3	3	3	2	
Fri	1	1	1	1	1	3	S	N	N	S	S	S	S	N	N	N	N	N	N	N	S	3	3	2	
Sat	2	1	1	1	1	1	2	3	3	S	S	N	N	N	N	N	N	N	N	S	S	2	3	3	
Sun	2	2	1	1	1	1	1	2	2	3	S	S	S	S	S	S	S	S	S	3	3	3	2	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 605-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/NB	

Closure limits: North of Del Amo Blvd On-ramp to SB Route 5 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3
Fri	2	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S
Sat	3	2	2	2	2	2	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S
Sun	3	2	2	1	1	1	1	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 605-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/NB	

Closure limits: North of SB Route 5 to Slauson Ave UC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	2
Fri	2	2	2	2	2	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3
Sat	3	2	2	2	2	2	3	3	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S
Sun	3	2	2	1	1	1	2	3	3	S	S	S	N	N	N	N	N	N	N	N	N	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 605-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/SB	

Closure limits: Slauson Ave UC to NB Route 5 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3	3	2
Fri	1	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3	2
Sat	2	2	2	2	2	2	3	S	S	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	3
Sun	2	2	2	2	2	2	2	3	3	S	N	N	N	N	N	N	N	N	N	N	S	S	S	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 605-G5
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/SB	

Closure limits: South of NB Route 5 On-connector to WB Del Amo Blvd On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	2	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	3
Fri	2	2	1	1	1	2	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S
Sat	3	2	2	1	1	1	2	3	S	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S
Sun	3	2	2	1	1	1	1	2	3	3	S	N	N	N	N	N	N	N	N	N	N	S	S	S	3

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 605-G6
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 605/SB	

Closure limits: South of WB Del Amo Blvd On-ramp to Wardlow Rd OC

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	3	N	N	N	S	S	S	S	S	N	N	N	N	N	S	S	3	2	2
Fri	1	1	1	1	1	3	N	N	N	S	S	S	S	N	N	N	N	N	N	S	S	3	3	2
Sat	2	1	1	1	1	2	3	3	S	S	S	N	N	N	N	N	N	N	S	S	S	3	3	3
Sun	2	1	1	1	1	1	2	2	3	3	S	S	S	S	S	S	S	S	S	S	S	3	3	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes excluding HOV lanes is 4.

Chart No. 710-G1
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 710/NB	

Closure limits: Route 405 Separation to Route 105 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	S	S	S	S	S	S	N	N	N	N	4	4	4	3	2	
Fri	2	2	1	1	2	S	N	N	N	S	S	S	S	S	N	N	N	N	N	4	4	4	4	3	
Sat	2	2	2	2	2	2	3	S	S	4	4	4	4	5	5	5	4	4	4	4	4	4	3	2	
Sun	2	2	1	1	1	1	1	2	2	3	4	4	4	4	4	4	4	4	4	4	4	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
5	Provide at least 5 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4, 5 or 6.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 710-G2
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 710/NB	

Closure limits: North of Route 105 On-connector to Route 5 Separation

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	4	N	N	N	4	4	4	4	N	N	N	N	N	N	4	3	3	3	2	
Fri	1	1	1	1	2	4	N	N	N	4	4	4	4	N	N	N	N	N	N	4	4	3	3	2	
Sat	2	1	1	1	1	2	3	3	4	4	4	4	4	4	4	S	S	S	S	4	4	4	3	3	
Sun	2	2	1	1	1	1	2	2	2	3	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4 or 5.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. 710-G3
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 710/SB	

Closure limits: Route 5 Separation to Route 105 On-connector

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	3	3	2	
Fri	2	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	S	3	2	
Sat	2	2	2	1	1	2	3	3	S	S	S	N	N	N	N	N	N	N	N	S	S	S	3	3	
Sun	2	2	2	1	1	1	2	2	2	3	3	S	S	S	S	S	S	S	S	S	3	3	3	2	

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3 or 4.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.

Chart No. 710-G4
Freeway Lane Requirements and Hours of Work

County: LA	Route/Direction: 710/SB	

Closure limits: South of Route 105 On-connector to Route 405 Separation

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	4	N	N	N	S	S	S	N	N	N	N	N	N	N	4	3	3	2	2	
Fri	1	1	1	1	2	4	N	N	N	S	S	N	N	N	N	N	N	N	N	N	4	3	3	2	
Sat	2	1	1	1	1	2	3	3	4	4	4	4	S	S	S	S	S	S	S	4	4	3	3	3	
Sun	2	2	1	1	1	1	2	2	2	3	3	4	4	4	4	4	4	4	4	4	4	3	3	2	2

Legend:

1	Provide at least 1 through freeway lane open in the direction of travel.
2	Provide at least 2 adjacent through freeway lanes open in the direction of travel.
3	Provide at least 3 adjacent through freeway lanes open in the direction of travel.
4	Provide at least 4 adjacent through freeway lanes open in the direction of travel.
S	Shoulder closure is allowed (right / left).
N	No work is allowed.

REMARKS: The number of through traffic lanes is 3, 4 or 5.

You may close traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," at the same time the adjacent through traffic lane is allowed to be closed.
The full width of traveled way must be open for use by traffic when construction activities are not actively in progress.

Replace section 12-4.02C(3)(i) with:

12-4.02C(3)(i) Complete Connector Closure Hour Charts and Connector Lane Requirement Charts

Comply with the requirements for the connector lane closure and complete connector closure shown in the following charts:

Chart No. I1
Complete Connector Closure Hours

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 5 to NB Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto NB Route 101 and exit at Fourth St off-ramp; east on Fourth St to the on-ramp to NB Route 5. Place a PCMS inside the connector closure between the 1st and 2nd flashing arrow board signs with the message: "NORTH 5 / EXIT / CLOSED – USE / N101 TO / 4TH ST". Place a 2nd PCMS on NB Route 5 at Atlantic Blvd (North) off-ramp gore with the message: "NORTH 5 / CLOSD AT / JCT 5/101 – DETOUR / N 710 / TO W60". Place a 3rd PCMS on the right shoulder of NB Route 710 just south of Atlantic Blvd (North) off-ramp with the message: "NORTH 5 / CLOSD AT / JCT 5/101 – CONTINUE / TO / WEST 60". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I2
Complete Connector Closure Hours

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 5 to WB Route 10

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

When the connector is completely closed, detour traffic onto NB Route 101 to SB Route 110 to WB Route 10. Place a portable changeable message sign on the right shoulder of NB Route 5 in advance of the connector with the message: "WEST 10 / EXIT / CLOSED - DETOUR / N 101 TO / S 110".

Alternative Detour 27:

When the connector is completely closed, detour traffic onto NB Route 5 and exit at 4th St off-ramp; west on 4th St to the on-ramp to SB Route 5. Place a PCMS on the right shoulder of NB Route 5 in advance of the connector with the message: "WEST 10 / EXIT / CLOSED - DETOUR / NORTH 5 / TO 4 ST". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I3
Complete Connector Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 5 to SB Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Provide a slip-ramp for the SB Route 5 to EB Route 60 off-connector.
Detour traffic onto EB Route 60 to SB Route 710 to SB Route 5. Place a PCMS inside the connector closure with the message: "SOUTH 5 / EXIT / CLOSED – USE / EAST 60 / TO S710".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I4
Complete Connector Closure Hours

County: LA	Route/Direction: 101/SB	

Closure limits: SB Route 101 to SB Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	S	S	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	S	S	S	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto EB Route 60 to SB Route 710 to SB Route 5. Place a PCMS inside the connector closure with the message: "SOUTH 5 / EXIT / CLOSED – DETOUR / EAST 60 / TO S710". Place a 2nd PCMS on the right shoulder of EB Route 60 by Gage Ave on-ramp with the message: "SOUTH 5 / DETOUR / USE S710".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I5
Complete Connector Closure Hours

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 5 to NB Route 101

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

When the connector is completely closed, detour traffic onto WB Route 10 to NB Route 110 to NB Route 101. Place a PCMS inside the connector closure with the message: "N 101 / EXIT / CLOSED - USE / WEST 10 / TO N 110".

Alternative Detour 2:

When the connector is completely closed, detour traffic onto NB Route 5 and exit at Soto St off-ramp; north on Soto St; west on Whittier Blvd to the on-ramp to NB Route 101. Place a PCMS on the right shoulder of NB Route 5 inside the connector closure with the message: "N 101 / EXIT / CLOSED - DETOUR / N5 TO / SOTO ST". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I6
Complete Connector Closure Hours

County: LA	Route/Direction: 110/SB	

Closure limits: SB Route 110 to Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to exit at Ave. 26 off-ramp; south on Ave 26; south Daly Street; west on Broadway to the on-ramps to Route 5. Place a PCMS inside the connector closure with the message: "ROUTE 5 / EXITS / CLOSED - DETOUR / USE / AVE 26". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I7
Complete Connector Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 5 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

Detour traffic to continue on southbound Route 5 and exit at Broadway off-ramp; east on Pasadena Ave; north on Ave 26; west on Figueroa St to the on-ramp to southbound Route 110. Place a portable changeable message sign on the right shoulder of southbound Route 5 at the Route 2 on-connector gore with the message: "S110 / EXIT / CLOSED – USE N110 / EXIT / BROADWAY". Post at least 16 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Alternative Detour 2:

Detour traffic to exit at Figueroa St off-ramp; east on Riverside Dr; north on Figueroa St to the on-ramp to southbound Route 110. Place a portable changeable message sign on the right shoulder of southbound Route 5 at the Route 2 on-ramp gore with the message: "S110 / EXIT / CLOSED – USE / S110 TO / FIGUEROA". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Close Riverside Dr on-ramp to southbound Route 5 and detour traffic as shown on Chart No. J2.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I8
Complete Connector Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 5 to EB Route 134

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

When the connector is completely closed, detour traffic to continue on SB Route 5 and exit at Colorado St off-ramp; east to Edenhurst Ave off-ramp; east on Colorado Blvd; north on Edenhurst Ave to the on-ramp to NB Route 5 to Route 134. Place a PCMS inside the connector closure with the message: "EAST 134 / EXIT / CLOSED - DETOUR / USE / COLORADO". Post at least 6special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 2:

When the connector is completely closed, detour traffic to exit at Western Ave (east); east on Western Ave; south on San Fernando Rd; east on Doran St to the on-ramp to EB Route 134. Place a PCMS on the right shoulder of SB Route 5 freeway at Alameda St on-ramp gore with the message: "EAST 134 / EXIT / CLOSED - DETOUR / USE / WESTERN". Post at least 18 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I9
Complete Connector Closure Hours

County: LA	Route/Direction: 134/WB	

Closure limits: WB Route 134 to NB Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C — Connector may be closed completely.

N — No work is allowed.

REMARKS:

Alternative Detour 1:

Detour traffic to exit at San Fernando Rd off-ramp; west on Fairmont Ave; north on San Fernando Rd; west on Western Ave to the on-ramp to NB Route 5. Place a PCMS on the right shoulder of WB Route 134 at Pacific Ave off-ramp gore with the message: "NORTH 5 / EXIT / CLOSED - DETOUR / SAN / FERNANDO". Post at least 19 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 2:

Detour traffic to exit at San Fernando Rd off-ramp; west on Fairmont Ave; north on San Fernando Rd; west on Orange Grove Ave to the on-ramp to NB Route 5. Place a PCMS on the right shoulder of WB Route 134 at Pacific Ave off-ramp gore with the message: "NORTH 5 / EXIT / CLOSED - DETOUR / SAN / FERNANDO". Post at least 24 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I10
Complete Connector Closure Hours

County: LA	Route/Direction: 10/EB	

Closure limits: EB Route 10 to NB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to continue on EB Route 10 and exit at Maple Ave off-ramp; north on Maple Ave to the on-ramp to WB Route 10. Place a PCMS sign inside the closure with the message: "N110 / EXIT / CLOSED - DETOUR / USE / MAPLE". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic onto SB Route 110 and exit at Exposition Blvd off-ramp; south on Flower St; east on 37th St; north on Hope St to the on-ramp to NB Route 110. Place a PCMS on the right shoulder of EB Route 10 by Vermont Ave UC with the message: "N110 / EXIT / CLOSED - USE S110 / TO EX- / POSITION". Post at least 14 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 3:
Detour traffic to continue on EB Route 10 and exit at Maple Ave off-ramp; south on Maple Ave; west on Washington Blvd; north on Georgia St to the on-ramp to NB Route 110. Place a PCMS inside the closure with the message: "N110 / EXIT / CLOSED - DETOUR / USE / MAPLE". Post at least 18 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I11
Complete Connector Closure Hours

County: LA	Route/Direction: 10/EB	

Closure limits: EB Route 10 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	N	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	N	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to continue on EB Route 10 and exit at Grand Ave off-ramp; east on 18th St; north on Olive St; west on 17th St to the on-ramp to WB Route 10. Place a PCMS inside the closure with the message: "S110 / EXIT / CLOSED - DETOUR / USE / GRAND AV". Post at least 14 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to NB Route 110 and exit at 9th St off-ramp; north on Figueroa St; west on 8th St to the on-ramp to SB Route 110. Place a PCMS on the right shoulder of EB Route 10 by Vermont Ave. UC with the message: "S110 / EXIT / CLOSED - DETOUR / N110 TO / 9 ST". Post at least 14 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I12
Complete Connector Closure Hours

County: LA	Route/Direction: 10/WB	

Closure limits: WB Route 10 to NB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	C	C	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto SB Route 110 and exit at Adams Blvd off-ramp; east on 23rd St; north on Figueroa St; west on Washington Blvd; north on Georgia St to the on-ramp to NB Route 110. Place a PCMS inside the connector closure with the message: "N 110 / EXIT / CLOSED – DETOUR / S110 TO / ADAMS". Post at least 11 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I13
Complete Connector Closure Hours

County: LA	Route/Direction: 10/WB	

Closure limits: WB Route 10 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on WB Route 10 and exit at Hoover St off-ramp; east on 20th St; south on Hoover St; east on Adams Blvd; south on Flower St; east on 37th St to the on-ramp to SB Route 110. Place a PCMS inside the connector closure with the message: "S 110 / EXIT / CLOSED – DETOUR / USE / HOOVER". Post at least 22 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Close Grand Ave on-ramp and detour traffic to continue on WB Route 10 and exit at Hoover St off-ramp.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I14
Complete Connector Closure Hours

County: LA	Route/Direction: 110/NB	

Closure limits: NB Route 110 to NB Route 101

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Provide a slip-ramp to SB Route 101 and detour traffic to exit at Broadway off-ramp; continue east on Aliso St; north on Los Angeles St to the on-ramp to NB Route 101. Place a PCMS on the right shoulder of NB Route 110 inside the connector closure with the message: "N 101 / EXIT / CLOSED – DETOUR / S101 TO / BROADWAY". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Close 3rd St on-ramp.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I15
Complete Connector Closure Hours

County: LA	Route/Direction: 110/NB	

Closure limits: NB Route 110 to SB Route 101

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	C	C	C	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	C	C	C	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic onto NB Route 101 and exit at Glendale Blvd off-ramp; west on Bellevue Ave; south on Glendale Blvd; west on Palo Alto St to the on-ramp to SB Route 101. Place a PCMS inside the connector closure with the message: "S 101 / EXIT / CLOSED – DETOUR / N101 TO / GLENDALE". Post at least 9 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I16
Connector Lane Requirements and Hours of Work

	Route/Direction: 101/SB	

Closure limits: NB Route 101 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1
Fri	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1
Sat	1	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1
Sun	1	1	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1

Legend:

1	Provide at least 1 connector lane open in the direction of travel.
N	No work is allowed.

REMARKS:
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I17
Complete Connector Closure Hours

County: LA	Route/Direction: 101/SB	

Closure limits: SB Route 101 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	N	N	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	N	N	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to exit at Temple St off-ramp; south on Hope St; south on Flower St; west on 3rd St to the on-ramp to SB Route 110. Place a PCMS on SB Route 101 inside the connector closure with the message: "S 110 / EXIT / CLOSED - DETOUR / USE / TEMPLE". Place a second PCMS on the right shoulder of SB Route 101, approximately 400 feet in advance of Alvarado St off-ramp with the message: "S 110 / EXIT / CLOSED - DETOUR / USE / TEMPLE".
Post at least 9 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Chart No. I18
Complete Connector Closure Hours

County: LA	Route/Direction: 405/SB	

Closure limits: SB Route 405 to NB Route 710

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
Mon-Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C	Connector may be closed completely
N	No work is allowed.

REMARKS:
Detour traffic to exit at Pacific Ave off-ramp; south on Pacific Ave; west on Wardlow Rd to the on-ramp to NB Route 710. Place a PCMS inside the connector closure with the message: "N710 / EXIT / CLOSED – DETOUR / USE / PACIFIC". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I19
Complete Connector Closure Hours

County: LA	Route/Direction: 405/NB	

Closure limits: NB Route 405 to NB Route 710

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
Mon-Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely

N No work is allowed.

REMARKS:
Detour traffic to continue on NB Route 405 and exit at Santa Fe Ave off-ramp; west on Warnock Way; south on Santa Fe Ave; west on Wardlow Rd to the on-ramp to SB Route 405 to NB Route 710. Place a PCMS on the right shoulder of NB Route 405 just south of Wardlow Rd UC with the message: "N710 / EXIT / CLOSED – DETOUR / USE / SANTA FE". Post at least 11 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I20
Complete Connector Closure Hours

County: LA	Route/Direction: 10/EB	

Closure limits: EB Route 10 to NB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on EB Route 10 and exit at National Blvd/Overland Ave off-ramp; west on National Blvd; north on Overland Ave to the on-ramp to WB Route 10 to NB 405. Place a PCMS inside the closure with the message: "N405 / EXIT / CLOSED - DETOUR / USE / NATIONAL". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I21
Complete Connector Closure Hours

County: LA	Route/Direction: 10/EB	

Closure limits: EB Route 10 to SB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto NB Route 405 and exit at Santa Monica Blvd off-ramp; west on Santa Monica Blvd to the on-ramp to SB Route 405. Place a PCMS at the Bundy Dr on-ramp gore with the message: "S405 / EXIT / CLOSED - DETOUR / N405 TO / S MONICA". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I22
Complete Connector Closure Hours

County: LA	Route/Direction: 405/NB	

Closure limits: NB Route 405 to WB Route 10

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto EB Route 10 and exit at National Blvd/Overland Ave off-ramp; west on National Blvd; north on Overland Ave to the on-ramp to WB Route 10. Place a PCMS inside the connector closure with the message: "WEST 10 / EXIT / CLOSED - DETOUR / E10 TO / OVERLAND". Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I23
Complete Connector Closure Hours

County: LA	Route/Direction: 405/SB	

Closure limits: SB Route 405 to WB Route 10

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto EB Route 10 and exit at National Blvd/Overland Ave off-ramp; north on Overland Ave to the on-ramp to WB Route 10. Place a PCMS inside the connector closure with the message: "WEST 10 / EXIT / CLOSED - DETOUR / E10 TO / NATIONAL". Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure. The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I24
Complete Connector Closure Hours

County: LA	Route/Direction: 90/EB	

Closure limits: EB Route 90 to NB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	C	C	C	C	N	N	N	N	N	C	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	C	C	C	C	N	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to continue east to exit at Slauson Ave Off-ramp; west to Jefferson Blvd; west to the on-ramp to NB Route 405. Place a PCMS on the right shoulder of EB Route 90 at Centinela Ave off-ramp gore with the message: "N405 / EXIT / CLOSED - DETOUR / USE / SLAUSON". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to continue onto SB Route 405 to exit at Howard Hughes Pkwy off-ramp; east to the on-ramp to NB Route 405. Place a PCMS inside the connector closure with the message: "N405 / EXIT / CLOSED - DETOUR / S405 TO / H HUGHES". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I25
Complete Connector Closure Hours

County: LA	Route/Direction: 90/EB	

Closure limits: EB Route 90 to SB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	N	N	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	N	N	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

Detour traffic to continue east to exit at Slauson Ave Off-ramp; west to Jefferson Blvd; west to the on-ramp to SB Route 405. Place a PCMS on the right shoulder of EB Route 90 at Centinela Ave off-ramp gore with the message: "S405 / EXIT / CLOSED - DETOUR / USE / SLAUSON". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 2:

Detour traffic to continue onto NB Route 405 to exit at Culver Blvd off-ramp; west to Sawtelle Blvd; south to the on-ramp to SB Route 405. Place a PCMS inside the connector with the message: "S405 / EXIT / CLOSED - DETOUR / N405 TO / CULVER". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I26
Complete Connector Closure Hours

County: LA	Route/Direction: 405/NB	

Closure limits: NB Route 405 to Route WB 90

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS: Detour traffic to exit at Slauson Ave off-ramp; north on Sepulveda Blvd; east on Slauson Ave to the on-ramp to WB Route 90. Place a PCMS on the right shoulder of NB Route 405 at La Tijera Blvd on-ramp gore with the message: "WEST 90 / EXIT / CLOSED - DETOUR / USE / SLAUSON". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I27
Complete Connector Closure Hours

County: LA	Route/Direction: 405/SB	

Closure limits: SB Route 405 to Route 90

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS: Detour traffic to exit at Washington Blvd/Culver Blvd off-ramp; south on Sawtelle Blvd to Culver Blvd; west to Centinela Ave; south to the on-ramp to EB Route 90. Place a PCMS on the right shoulder of SB Route 405 between Palm Blvd OC and Venice Blvd off-ramp with the message: "ROUTE 90 / EXITS / CLOSED - DETOUR / USE / CULVER". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I28
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to NB Route 605

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Detour Alternative 1:

Detour traffic to exit at Firestone Blvd off-ramp; east on Firestone Blvd; north on Studebaker Rd to the NB Route 605 on-ramp. Place a PCMS on the median gore between EB Route 105 and the connector to NB Route 605 with the message: "N605 / EXIT / CLOSED - DETOUR / USE / FIRESTNE". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour Alternative 2:

Detour traffic to exit at Bellflower Blvd off-ramp; north on Bellflower Blvd; east on Imperial Hwy; north on Studebaker Rd; west on Firestone Blvd to the on-ramp to NB Route 605. Place a PCMS on the median shoulder by Lakewood Blvd OC with the message: "N605 & / 105 FWY / CLOSED - DETOUR / USE / BELLFLWR". Post at least 17 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour Alternative 3:

Detour traffic to exit at Bellflower Blvd off-ramp; north on Bellflower Blvd; continue north on Lakewood Blvd to the on-ramp to SB Route 5 to NB Route 605. Place a PCMS on the median shoulder by Lakewood Blvd OC with the message: "N605 & / 105 FWY / CLOSED - DETOUR / USE / BELLFLWR". Post at least 20 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I29
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to SB Route 605

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Detour Alternative 1:

Detour traffic onto NB Route 605 and exit at Firestone Blvd off-ramp; west to the on-ramp to SB Route 605. Place a PCMS on the right shoulder of EB Route 105 inside the connector closure with the message: "S605 / EXIT / CLOSED - DETOUR / N605 TO / FIRSTONE". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour Alternative 2:

Detour traffic to exit at Bellflower Blvd off-ramp; south to Rosecrans Ave; west to the on-ramp to SB Route 605. Place a PCMS on the right shoulder of EB Route 105 at Lakewood Blvd off-ramp gore with the message: "S605 / EXIT / CLOSED - DETOUR / USE / BELLFLWR". Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I30
Complete Connector Closure Hours

County: LA	Route/Direction: 605/NB	

Closure limits: NB Route 605 to WB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Detour Alternative 1:

Detour traffic to continue on NB Route 605 and exit at Imperial Hwy off-ramp; south on Hoxie Ave to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of NB Route 605 at Alondra Bl on-ramp gore with the message: "WEST 105 / EXIT / CLOSED - DETOUR / USE / IMPERIAL". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour Alternative 2:

Provide a slip-ramp and detour traffic to exit at Rosecrans Ave off-ramp; east to Studebaker Rd; north to the on-ramp to WB Route 105. Place a PCMS inside the connector closure with the message: "WEST 105 / EXIT / CLOSED - DETOUR / USE / ROSECRNS". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I31
Complete Connector Closure Hours

County: LA	Route/Direction: 605/SB	

Closure limits: SB Route 605 to WB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Detour Alternative 1:

Provide a slip off-ramp and detour traffic to exit at the Imperial Hwy off-ramp; west on Imperial Hwy; south on Bellflower Bl to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of SB Route 605 at Florence Ave on-ramp gore with the message: "WEST 105 / EXIT / CLOSED - DETOUR / USE / IMPERIAL". Post at least 15 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour Alternative 2:

Detour traffic to continue south on Route 605 freeway to exit at the Rosecrans Ave off-ramp; west on Rosecrans Ave; north on Bellflower Blvd to the on-ramp to WB Route 105. Place a PCMS inside the connector closure with the message: "WEST 105 / EXIT / CLOSED - DETOUR / USE / ROSECRNS". Post at least 16 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I32
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	S	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on EB Route 105 and exit at Garfield Ave off-ramp; south on Garfield Ave; west on Rosecrans Ave to the on-ramps to Route 710. Place a PCMS on the right shoulder of EB Route 105 upstream of the Wilmington Ave off-ramp with the message: "ROUTE 710 / EXITS / CLOSED - DETOUR / USE / GARFIELD". Post at least 10 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I33
Complete Connector Closure Hours

County: LA	Route/Direction: 710/NB	

Closure limits: NB Route 710 to Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on NB Route 710 and exit at Imperial Hwy (West) off-ramp; west on Imperial Hwy to the on-ramp to SB Route 710. Place a PCMS on the right shoulder of NB Route 710 in advance of Rosecrans Ave off-ramp with the message: "ROUTE 105 / EXITS / CLOSED – DETOUR / USE / IMPERIAL". Post at least 3 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I34
Complete Connector Closure Hours

County: LA	Route/Direction: 710/NB	

Closure limits: NB Route 710 to WB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	C	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to continue on NB Route 710 and exit at WB Imperial Hwy off-ramp; west on Imperial Hwy to the on-ramp to SB Route 710. Place a PCMS on the right shoulder of NB Route 710 in advance of the Rosecrans Ave off-ramp with the message: "WEST 105 / EXIT / CLOSED – DETOUR / USE / IMPERIAL". Post at least 3 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to exit at Rosecrans Ave off-ramp; east on Rosecrans Ave; north on Garfield Ave to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of NB Route 710 in advance of the Rosecrans Ave off-ramp with the message: "WEST 105 / EXIT / CLOSED – DETOUR / USE / ROSECRNS". Post at least 16 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 3:
Detour traffic onto EB Route 105 and exit at Garfield Ave off-ramp; north on Garfield Ave to the on-ramp to WB Route 105. Place a PCMS inside the connector closure with the message: "WEST 105 / EXIT / CLOSED – DETOUR / USE / GARFIELD". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I35
Complete Connector Closure Hours

County: LA	Route/Direction: 710/SB	

Closure limits: SB Route 710 to WB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	
Sat	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic onto EB Route 105 and exit at Garfield Ave off-ramp; north on Garfield Ave to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of SB Route 710 at the Imperial Hwy on-ramp with the message: "WEST 105 / EXIT / CLOSED – DETOUR / E105 TO / GARFIELD". Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to continue on SB Route 710 and exit at Rosecrans Ave off-ramp; east on Rosecrans Ave; north on Garfield Ave to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of SB Route 710 at the Imperial Hwy on-ramp with the message: "WEST 105 / EXIT / CLOSED – DETOUR / USE / ROSECRNS". Post at least 13 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I36
Complete Connector Closure Hours

County: LA	Route/Direction: 5/NB	

Closure limits: NB Route 5 to NB Route 605

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour Alternative 1:
Detour traffic to continue on NB Route 5 and exit at Lakewood Blvd/Rosemead Blvd off-ramp; south to the on-ramp to SB Route 5. Place a PCMS on the right shoulder of NB Route 5 at Florence Ave off-ramp gore with the message: "N605 / EXIT / CLOSED - DETOUR / USE / ROSEMEAD". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
Detour Alternative 2:
Detour traffic to SB Route 605 and exit at Firestone Blvd off-ramp; east to the on-ramp to NB Route 605. Place a PCMS inside the connector closure with the message: "N605 / EXIT / CLOSED - USE / S605 TO/ FIRESTNE". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I37
Complete Connector Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 5 to NB Route 605

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour Alternative 1:
Detour traffic to exit at Florence Ave off-ramp; east on Florence Ave; south on Studebaker Rd to the on-ramp to NB Route 605. Place a PCMS on the right shoulder of NB Route 5 in advance of the connector with the message: "N605 / EXIT / CLOSED - DETOUR / USE / FLORENCE". Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
Detour Alternative 2:
Detour traffic onto SB Route 605 and exit at Firestone Blvd off-ramp; east to the on-ramp to NB Route 605. Place a PCMS inside the connector closure with the message: "N605 / EXIT / CLOSED - USE / S605 TO/ FIRESTNE". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I38
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to NB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic onto SB Route 405 and exit at El Segundo Blvd off-ramp; east to the on-ramp to NB Route 405. Place a PCMS on the right shoulder of EB Route 105 by Douglas St on-ramp gore with the message: "N405 / EXIT / CLOSED - USE S405 / TO EL / SEGUNDO". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure. The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I39
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to SB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sat	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic onto NB Route 405 and exit at Manchester Blvd/La Cienega Blvd off-ramp; west on Manchester Blvd; south on La Cienega Blvd to the on-ramp to SB Route 405. Place a PCMS on the right shoulder of EB Route 105 by Douglas St on-ramp gore with the message: "S405 / EXIT / CLOSED - USE N405 / TO MAN- / CHESTER". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I40
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on EB Route 105 and exit at Prairie Ave off-ramp; south on Prairie Ave; west on Imperial Hwy to the on-ramp to WB Route 105. Place a PCMS on the right shoulder of EB Route 105 upstream of the Imperial Hwy off-ramp with the message: "ROUTE 405 / EXITS / CLOSED – DETOUR / USE/ PRAIRIE". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I41
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to NB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to continue on WB Route 105 and exit at La Cienega Blvd/Aviation Blvd off-ramp; east on Imperial Hwy to the on-ramp to NB Route 405. Place a PCMS on the right shoulder of WB Route 105 under the Prairie Ave OC with the message: "N405 / EXIT / CLOSED – DETOUR / USE LA / CIENEGA". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic onto SB Route 405 and exit at El Segundo Blvd off-ramp; east on El Segundo Blvd to the on-ramp to NB Route 405. Place a PCMS inside the connector closure with the message: "N405 / EXIT / CLOSED – USE S405 / TO EL / SEGUNDO". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I42
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to SB Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Sat	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on WB Route 105 and exit at La Cienega Blvd/Aviation Blvd off-ramp; east on Imperial Hwy; south on La Cienega Blvd to the on-ramp to SB Route 405. Place a PCMS on the right shoulder of WB Route 105 under Prairie Ave OC with the message: "S405 / EXIT / CLOSED - DETOUR / USE LA / CIENEGA". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I43
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to Route 405

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue west on WB Route 105 and exit at La Cienega Blvd/Aviation Blvd off-ramp; east on Imperial Hwy to the on-ramp to NB Route 405. For SB Route 405 traffic, post a special portable freeway detour sign, SP-6, along the right shoulder of EB Imperial Hwy in advance of the right turn lanes to La Cienega Blvd and remove the sign at the end of each closure. Place a PCMS on the right shoulder of WB Route 105 upstream of the Crenshaw Blvd off-ramp with the message: "ROUTE 405 / EXITS / CLOSED – DETOUR / USE LA / CIENEGA". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I44
Complete Connector Closure Hours

County: LA	Route/Direction: 405/NB	

Closure limits: NB Route 405 to EB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C — Connector may be closed completely.

N — No work is allowed.

REMARKS:

Alternative Detour 1:

Detour traffic onto WB Route 105 and exit at Nash St off-ramp; south on Nash St; east on Atwood Way to the on-ramp to EB Route 105. Place a PCMS inside the connector closure with the message: "EAST 105 / EXIT / CLOSED - DETOUR / W105 TO / NASH ST". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 2:

Detour traffic to exit at Imperial Hwy off-ramp; west on Imperial Hwy to the on-ramp to EB Route 105. Place a PCMS on the right shoulder of NB Route 405 at the on-ramp gore of WB Rosecrans Ave with the message: "EAST 105 / EXIT / CLOSED – DETOUR / USE / IMPERIAL". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I45
Complete Connector Closure Hours

County: LA	Route/Direction: 405/NB	

Closure limits: NB Route 405 to WB Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	N	N	N	N	N	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	N	N	N	N	N	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C	

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:

Alternative Detour 1:

Detour traffic to exit at Imperial Hwy off-ramp and west on Imperial Hwy. Place a PCMS on the right shoulder of NB Route 405 at the WB Rosecrans Ave on-ramp gore with the message: "WEST 105 / EXIT / CLOSED - DETOUR / USE / IMPERIAL". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 2:

Detour traffic to exit at El Segundo Blvd off-ramp; west on El Segundo Blvd; north on La Cienega Blvd; and west on Imperial Hwy. Place a PCMS on the right shoulder of NB Route 405 at the WB Rosecrans Ave on-ramp gore with the message: "WEST 105 / EXIT / CLOSED – DETOUR / USE EL / SEGUNDO". Post at least 10 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

Alternative Detour 3:

Detour traffic onto EB Route 105 and exit at Prairie Ave off-ramp; south on Prairie Ave; and west on Imperial Hwy. Place a PCMS inside the connector closure with the message: "WEST 105 / EXIT / CLOSED – DETOUR / E 105 TO / PRAIRIE". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I46
Complete Connector Closure Hours

County: LA	Route/Direction: 405/SB	

Closure limits: SB Route 405 to Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on SB Route 405 and exit at El Segundo Blvd off-ramp; north on La Cienega Blvd; and west on Imperial Hwy. Place a PCMS on the right shoulder of SB Route 405 in advance of the connector near Century Blvd UC with the message: "ROUTE 105 / EXITS / CLOSED - DETOUR / USE EL / SEGUNDO". Post at least 10 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I47
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 (HOV) to NB Route 110 Express Lane

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic onto the mix flow lanes. Place a PCMS on the right shoulder of EB Route 105 in advance of the closure with the message: "N 110 / EXPRESS / LANE - EXIT / CLOSED / AHEAD". Place a 2nd PCMS on the left shoulder upstream of HOV egress before the connector with the message: "N 110 / EXPRS LN / CLOSED – USE / MIX FLOW / LANE".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I48
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	N	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	N	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

C — Connector may be closed completely.

N — No work is allowed.

REMARKS:
Detour traffic to continue on EB Route 105 and exit at Central Ave off-ramp; north to the on-ramp to WB Route 105. Place a PCMS inside the connector closure with the message: "ROUTE 110 / EXITS / CLOSED – DETOUR / USE / CENTRAL". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I49
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to NB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to exit at Central Ave off-ramp; north on Central Ave; west on Imperial Hwy to the on-ramp to NB Route 110. Place a PCMS on the right shoulder of WB Route 105 in advance of Central Ave off-ramp by Wilmington Ave on-ramp gore with the message: "N110 / EXIT / CLOSED – DETOUR / USE / CENTRAL". Post at least 10 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to continue on WB Route 105 and exit at Vermont Ave off-ramp; north on Vermont Ave; east on Imperial Hwy to the on-ramp to NB Route 110. Place a PCMS on the right shoulder of WB Route 105 by Stanford Ave UC with the message: "N110 / EXIT / CLOSED - DETOUR / USE / VERMONT". Post at least 9 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
In addition to the two detours, place an additional PCMS on the right shoulder of WB Route 105 by State St UC with the message: "N110 / EXIT / CLOSED – DETOUR / USE / CENTRAL".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I50
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 (HOV) to NB Route 110 Express Lane

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic into the mix flow lanes. Place a PCMS on the right shoulder of WB Route 105 in advance of the closure with the message: "N 110 / EXPRESS / LANE – EXIT / CLOSED / AHEAD". Place a 2nd PCMS on the left shoulder upstream of HOV egress before the connector with the message: "N 110 / EXPRS LN / CLOSED – USE / MIX FLOW / LANE".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I51
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to SB Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on WB Route 105 and exit at Vermont Ave off-ramp; south on Vermont Ave; east on El Segundo Blvd to the on-ramp to SB Route 110. Place a PCMS on the right shoulder of WB Route 105 by Stanford Ave UC with the message: "S110 / EXIT / CLOSED – DETOUR / USE / VERMONT". Post at least 9 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I52
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to Route 110

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on WB Route 105 and exit at Vermont Ave off-ramp; north on Vermont Ave; east on Imperial Hwy to the on-ramp to SB Route 110. For NB Route 110 traffic, detour traffic to continue east on Imperial Hwy; north on Olive St to the on-ramp to NB Route 110. Place a PCMS along the right shoulder of WB Route 105 upstream of the Wilmington Ave off-ramp with the message: "ROUTE 110 / EXITS / CLOSED – DETOUR / USE / VERMONT". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I53
Complete Connector Closure Hours

County: LA	Route/Direction: 110/SB	

Closure limits: SB Route 110 Express Lane to WB Route 105 (HOV) Lane

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to mix flow lanes. Place a PCMS on the left shoulder of SB Route 110 in advance of Express Lane egress upstream of connector with the message: "W105 HOV / EXIT / CLOSED – USE / MIX FLOW / LANE". Place a 2nd PCMS in advance of the closure with the message: "W105 / HOV / LANE - EXIT / CLOSED / AHEAD".
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I54
Complete Connector Closure Hours

County: LA	Route/Direction: 110/SB	

Closure limits: SB Route 110 Express Lane to EB Route 105 (HOV) Lane

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Fri	C	C	C	C	C	C	N	N	N	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C
Sat	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to mix flow lanes. Place a PCMS on the left shoulder of SB Route 110 in advance of Express Lane egress upstream of connector with the message: "E105 HOV / EXIT / CLOSED – USE / MIX FLOW / LANE". Place a 2nd PCMS in advance of the closure with the message: "E105 / HOV / LANE - EXIT / CLOSED / AHEAD".
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I55
Complete Connector Closure Hours

County: LA	Route/Direction: 105/EB	

Closure limits: EB Route 105 to NB Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to exit to Garfield Ave, north on Garfield Ave, west on Imperial Hwy to the on-ramp to NB Route 710. Place a PCMS on the EB Route 105 right shoulder pullout area in advance of Long Beach Blvd off-ramp with the message: "N710 / EXIT / CLOSED – DETOUR / USE / GARFIELD". Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closureThe full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I56
Complete Connector Closure Hours

County: LA	Route/Direction: 105/WB	

Closure limits: WB Route 105 to Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Detour traffic to continue on WB Route 105 and exit at Long Beach Blvd off-ramp; north on Long Beach Blvd; east on Imperial Hwy to the on-ramps to Route 710. Place a PCMS on the right shoulder of WB Route 105 upstream of the Lakewood Blvd off-ramp with the message: "ROUTE 710 / EXITS / CLOSED – DETOUR / USE LONG / BEACH BL". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I57
Complete Connector Closure Hours

County: LA	Route/Direction: 710/SB	

Closure limits: SB Route 710 to Route 105

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on SB Route 710 and exit at Rosecrans Ave off-ramp; east on Rosecrans Ave; north on Garfield Ave to the on-ramps to Route 105. Place a PCMS on the right shoulder of SB Route 710 just south of Imperial Hwy on-ramp with the message: "ROUTE 105 / EXITS / CLOSED – DETOUR / USE / ROSECRNS". Post at least 12 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I58
Complete Connector Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: SB Route 5 to SB Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on SB Route 5 and exit at Atlantic Blvd/Eastern Ave off-ramp; south on Eastern Ave; west on Washington Blvd to the on-ramp to SB Route 710. Place a PCMS inside the connector closure with the message: "S 710 / EXIT / CLOSED – DETOUR / USE / ATLANTIC". Post at least 11 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I59
Complete Connector Closure Hours

County: LA	Route/Direction: 710/NB	

Closure limits: NB Route 710 to NB Route 5

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to continue on NB Route 710 to west Route 60. Place a PCMS inside the connector closure with the message: "NORTH 5 / EXIT / CLOSED – CONTINUE / NORTH TO / WEST 60".The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I60
Complete Connector Closure Hours

County: LA	Route/Direction: 91/EB	

Closure limits: EB Route 91 to Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C

Legend:

C	Connector may be closed completely.
N	No work is allowed.

REMARKS:
Detour traffic to exit at Long Beach Blvd off-ramp; south to the on-ramp to Route 710. Place a PCMS on the right shoulder of EB Route 91 at Santa Fe Ave off-ramp gore with the message: "ROUTE 710 / EXITS / CLOSED - USE / LONG / BEACH BL". Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. I61
Complete Connector Closure Hours

County: LA	Route/Direction: 91/WB	

Closure limits: WB Route 91 to NB Route 710

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C
Fri	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sat	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C
Sun	C	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	C

Legend:

C Connector may be closed completely.

N No work is allowed.

REMARKS:
Alternative Detour 1:
Detour traffic to exit at Atlantic Ave off-ramp; north on Atlantic Ave; east on Alondra Blvd to the on-ramp to NB Route 710. Place a PCMS on the right shoulder of WB Route 91 in advance of Atlantic Ave off-ramp by Call Box #127 with the message: "N 710 / EXIT / CLOSED - DETOUR / USE / ATLANTIC". Post at least 14 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.
Alternative Detour 2:
Detour traffic to continue on WB Route 91 and exit at Long Beach Blvd off-ramp; south on Long Beach Blvd to the on-ramp to EB Route 91. Place a PCMS on the right shoulder of WB Route 91 in advance of Route 710 connector by Call Box #129 with the message: "N 710 / EXIT / CLOSED - USE / LONG / BEACH BL". Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove the signs at the end of each closure.The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Replace section 12-4.02C(3)(j) with:

12-4.02C(3)(j) Complete Ramp Closure Hour Charts and Ramp Lane Requirement Charts

Comply with the requirements and hours for the complete ramp closure shown in the following chart:

Chart No. J1
Complete Ramp Closure Hours

County: LA	Route/Direction: 405/SB	
Closure limits: Western Ave Off-ramp		

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	C	N	N	N	N	C	C	C	C	N	N	N	N	N	C	C	C	C	C	
Fri	C	C	C	C	C	C	N	N	N	N	C	C	C	C	N	N	N	N	N	C	C	C	C	C	
Sat	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	C	C	C	C	C	
Sun	C	C	C	C	C	C	C	C	C	C	N	N	N	N	N	C	C	C	C	C	C	C	C	C	

Legend:

C Ramp may be closed completely.

N No work is allowed.

REMARKS:

Chart No. J2
Complete Ramp Closure Hours

County: LA	Route/Direction: 5/SB	

Closure limits: Riverside Dr On-ramp

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Fri	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sat	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sun	C	C	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C

Legend:

C Ramp may be closed completely.

N No work is allowed.

REMARKS:

Detour northbound Riverside Dr traffic to continue north on Riverside Dr; south on Stadium Way to the on-ramp to southbound Route 5. For southbound Route 110, follow the SB 5 to SB 110 connector detour as shown on Chart No. I7. Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Detour southbound Riverside Dr traffic to continue south on Riverside Dr; east on Figueroa St to the on-ramp to southbound Route 110; For southbound Route 5, continue east on Figueroa St; south on Ave 26 to the on-ramp to southbound Route. Post a special portable freeway detour sign, SP-7, on the right shoulder of eastbound Figueroa St in advance of the on-ramp to southbound Route 110 to direct traffic to southbound Route 5. Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Replace section 12-4.02C(3)(k) with:

12-4.02C(3)(k) Conventional Highway Lane Requirement Charts

Comply with the requirements for the conventional highway lane closures shown in the following charts:

Chart No. K1
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB & SB	

Closure limits: San Gabriel River to Route 22 (7th St)

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	N	1	1	1	1	
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	N	1	1	1	1	
Sat	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2 or 3.
One through traffic lane may be open in NB Route 1 between 2nd St and Loynes Dr and SB Route 1 between 2nd St and San Gabriel River on Sundays from 0900 to 2000. Place a PCMS on the striped median island of NB Route 1 approximately 1,500 feet in advance of 2nd St with the message: "SINGLE / LANE / AHEAD – 2ND ST / TO / LOYNES". Place a 2nd PCMS on the striped median island of SB Route 1 approximately 800 feet in advance of 2nd St with the message: "SINGLE / LANE / AHEAD – 2ND ST / TO / 1ST ST".
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K2
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB & SB	

Closure limits: Route 22 (7th St) to Traffic Circle

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	1	1	1	1	1	
Fri	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	1	1	1	1	1	
Sat	1	1	1	1	1	1	1	1	1	1	1	1	N	N	N	N	N	1	1	1	1	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K3
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB & SB	

Closure limits: Traffic Circle to Maine Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	N	N	N	1	1	
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	N	N	N	N	1	
Sat	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 3.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K4
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB & SB	

Closure limits: Maine Ave to Vermont Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	1	1	1	1	1	
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	N	N	N	N	1	1	1	1	1	
Sat	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	
Sun	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2 or 3.
One through traffic lane may be open in each direction of Route 1 between Route 710 and Route 103 on Sundays from 0900 to 1800. Place a PCMS on the striped median shoulder of NB Route 1 approximately 1,000 feet in advance of Maine Ave with the message: "SINGLE / LANE / AHEAD – ROUTE 710 / TO / ALAMEDA". Place a 2nd PCMS on the right shoulder of SB Route 1 approximately 800 feet in advance of Route 47 with the message: "SINGLE / LANE / AHEAD – ALAMEDA / TO / ROUTE 710".
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K5
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB & SB	

Closure limits: Vermont Ave to Walnut St

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	2	1	1	
Fri	1	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	2	2	1	
Sat	1	1	1	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	2	2	2	2	2	2	
Sun	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 3.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K6
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB	

Closure limits: North of Imperial Hwy to Lincoln Blvd/Sepulveda Blvd Split

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	2	N	N	N	3	3	3	3	3	3	3	N	N	N	N	3	3	3	2	1
Fri	1	1	1	1	1	2	N	N	N	3	3	3	3	3	3	3	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	3	3	3	3	3	3	3	3	3	3	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
3	Provide at least 3 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2, 3 or 4.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K7
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB	

Closure limits: North of Lincoln Blvd/Sepulveda Blvd Split to Route 90

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	2	2	1	1	1
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	2	2	2	2	2	2	2	2	2	2	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2, 3 or 4.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K8
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB	

Closure limits: North of Route 90 to McClure Tunnel

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	2	2	2	1	1
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	2	2	2	2	2	2	2	2	2	2	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2 or 3.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K9
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/NB	

Closure limits: McClure Tunnel to Topanga Canyon Rd

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	1
Fri	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	1
Sat	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	1
Sun	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1	1	1

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2 or 3.
Prior to work; place a PCMS in advance of the construction zone, inside the shoulder area, at least 7 days in advance of any lane closure and remove when lane closures are no longer required with the following 3-flash message:
1. ROADWORK/AHEAD/X AM - X PM
2. XX-XX/TO/XX-XX (Month/Date)
3. EXPECT/DELAY
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K10
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/SB	

Closure limits: Topanga Canyon Rd to McClure Tunnel

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	1
Fri	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	2
Sat	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	2
Sun	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	2	1

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2 or 3.
Prior to work; place a PCMS in advance of the construction zone, inside the shoulder area, at least 7 days in advance of any lane closure and remove when lane closures are no longer required with the following 3-flash message:
1. ROADWORK/AHEAD/X AM - X PM
2. XX-XX/TO/XX-XX (Month/Date)
3. EXPECT/DELAY
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K11
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/SB	

Closure limits: McClure Tunnel to Route 90

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	2	2	2	1	1
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	N	N	N	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2 or 3.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K12
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 1/SB	

Closure limits: South of Route 90 to Lincoln Blvd/Sepulveda Blvd Merge

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	2	2	2	1	1
Fri	1	1	1	1	1	1	N	N	N	2	2	2	2	2	2	2	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	2	2	2	2	2	2	2	2	2	2	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2, 3 or 4.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K13
Conventional Highway Lane Requirements and Hours of Work

County: LA | Route/Direction: 1/SB

Closure limits: South of Lincoln Blvd/Sepulveda Blvd Merge to Imperial Hwy

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	3	3	3	3	3	3	3	N	N	N	N	3	3	3	2	2
Fri	1	1	1	1	1	1	N	N	N	3	3	3	3	3	3	3	N	N	N	N	N	N	N	N	N
Sat	N	N	N	N	N	N	N	N	3	3	3	3	3	3	3	3	3	3	N	N	N	N	N	N	N
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
3	Provide at least 3 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in the direction of travel is 2, 3 or 4.
You must contact the Los Angeles Police Department for a Noise Variance Request for night work.

Chart No. K14
Conventional Highway Lane Requirements and Hours of Work

County: LA | Route/Direction: 72/EB

Closure limits: Painter Ave to Santa Gertrudes Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	S	S	S	S	S	S	N	N	N	N	S	1	1	1	1
Fri	1	1	1	1	1	1	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	1	1	1
Sat	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	1	1	1
Sun	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	1	1	1	1

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
S	Shoulder closure is allowed. (right)
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2.
Does not include intersection at Painter Ave.
Does not include intersection at Santa Gertrudes Ave.
One through traffic lane may be open from 0900 to 1500 Mondays through Thursdays. Place a PCMS on the right shoulder of EB Route 72 approximately 2,000 feet in advance of the closure with the message: “ROAD / WORK / AHEAD - RIGHT (or) LEFT / LANE / CLOSED”.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K15
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 72/WB	

Closure limits: Santa Gertrudes Ave to Painter Ave

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	1	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	1	1	1
Fri	1	1	1	1	1	1	N	N	N	S	S	S	S	S	S	N	N	N	N	S	S	1	1	1
Sat	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	1	1	1
Sun	1	1	1	1	1	1	N	N	N	N	N	N	N	N	N	N	N	S	S	1	1	1	1	1

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
S	Shoulder closure is allowed. (right)
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 2.
Does not include intersection at Painter Ave
Does not include intersection at Santa Gertrudes Ave.
One through traffic lane may be open from 0900 to 1500 Mondays through Thursdays. Place a PCMS on the right shoulder of WB Route 72 approximately 2,000 feet in advance of the closure with the message: “ROAD / WORK / AHEAD - RIGHT (or) LEFT / LANE / CLOSED”.
The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Chart No. K16
Conventional Highway Lane Requirements and Hours of Work

County: LA	Route/Direction: 107/NB & SB	

Closure limits: 236th St to Redondo Beach Blvd

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon–Thu	1	1	1	1	1	3	N	N	N	2	2	2	2	2	2	3	N	N	N	N	3	3	1	1	1
Fri	1	1	1	1	1	3	N	N	N	2	2	2	2	2	2	3	N	N	N	N	3	3	1	1	1
Sat	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	2	2	2	2	1	1	1	
Sun	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Legend:

1	Provide at least 1 through traffic lane open in the direction of travel.
2	Provide at least 2 adjacent through traffic lanes open in the direction of travel.
3	Provide at least 3 adjacent through traffic lanes open in the direction of travel.
N	No work is allowed.

REMARKS: The number of through traffic lanes in each direction of travel is 3 or 4.
All work activities in City of Torrance within the limits specified below must be completed during daylight hours (from 0900 to 1530) only:

- From 300 feet south of 227th St to 300 feet north of 225th St
- From Del Amo Blvd to 400 feet north of Cadison St
- From El Nido UP (just north of 190th St) to 186th St
- From 180th St to 300 feet north of 176th St

All work activities in City of Redondo Beach within the limits specified above must be completed from 0900 to 1500 Monday through Friday and/or 0900 to 1600 Saturday. No work is allowed on Sunday or holidays without written permission.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

Replace item 2 in the list in the 2nd paragraph of section 12-4.02C(4) with:

2. Installation, maintenance, or removal of Category 1 and Category 2 traffic control devices and when using impact attenuator vehicles

Add between the 2nd and 3rd paragraphs of section 12-4.02C(4):

If you use an impact attenuator vehicle as a shadow vehicle, you are not required to close the adjacent traffic lane for installing loop detectors.

Replace 3rd paragraph of section 12-4.02C(4) with:

For time periods at the beginning or end of work when the lane requirement charts do not allow the closure of the adjacent traffic lane, the following construction activities are allowed without a buffer lane:

1. Parking, positioning, loading, unloading vehicles, or storing equipment or materials necessary for the work being performed.
2. Placing, removing or maintaining paving marking or pavement markers.

3. Operations not performed by workers on foot such as planing, sweeping, applying a tack coat, or operating a crane.
4. Operations where workers on foot are protected, at each work location, within the same closure by an impact attenuator vehicle in the lane adjacent to live traffic.

Replace the 1st paragraph of section 12-4.02C(7)(a) with:

Control traffic using stationary closures, except you may use a moving closure during traffic striping and pavement marker placement using a bituminous adhesive. Do not use a moving lane closure when grinding for recessed striping and recessed markers.

Add to the end of section 12-4.02C(7)(b):

Provide a stationary impact attenuator vehicle where the posted speed limit is 55 mph or greater and workers are expected to be on foot within a closed lane adjacent to a lane open to traffic for loop detectors installation.

Place the stationary impact attenuator vehicle between the longitudinal buffer space and the work area without intruding into the buffer space. Position the front of the stationary impact attenuator vehicle at a distance upstream of the work area as shown in the following table:

Impact Attenuator Vehicle Placement

Posted speed limit (mph)	Distance (ft)
55	100
>55	150

Place the transmission in park and set the parking brake or follow the impact attenuator manufacturer's instructions.

For a traffic control system with multiple work areas, place a stationary impact attenuator vehicle at each work area with a separation distance of at least 500 feet from the adjacent work area.

Stationary Impact Attenuator Vehicle is paid for as traffic control system.

For multilane freeway lane closures, do not place the 2L tangent section shown along lane lines between the lane closure tapers.

If traffic control is performed for a stationary closure where median shoulders are less than 8 feet, the closure must comply with the plan sheet titled "Traffic Control System for Median Shoulders Less Than 8 Feet" or "Traffic Control System for High Occupancy Vehicle Lanes with Median Shoulders Less Than 8 Feet."

Add to the end of section 12-4.02C(8)(a):

Replace the paragraphs of section 12-4.02C(8)(b) with:

If a ramp or connector closure is allowed, post a special advance notice publicity sign, SP-1, at an authorized location at least 7 days before the ramp or connector closure.

For each on-ramp closed and a ramp lane requirement chart is not included, post at least 14 special portable freeway detour signs, SP-2, as shown along the detour route and remove them at the end of each closure.

If 2 or more consecutive on-ramps are allowed or specified to be closed, install special portable signs, SP-4, as shown for the entrance ramp closures. The Department does not pay for furnishing, installing, maintaining, or removing SP-4 signs.

If an off-ramp is allowed to be closed, install an SP-3 or SP-5 sign for the exit ramp closure. Place the sign on the right shoulder of the freeway upstream of the preceding off-ramp.

Replace section 12-4.02C(12) with:

12-4.02C(12) Construction Work Zone Speed Limit Reduction

12-4.02C(12)(a) General

Section 12-4.02C(12) includes specifications for providing, installing, maintaining, and removing traffic control devices for reducing the speed limit for the construction work zones.

Speed limit reduction is limited to 10 mph from the posted speed limit in construction work zones unless a greater speed limit reduction is specified. Construction work zone speed limit reduction can either be required when construction activities are active in a closure as a temporary condition or 24 hours a day, 7 days a week based on the roadway conditions when specified.

Temporary construction work zone speed limit reduction is required for lane closures when construction activities require workers to be present within the lane closures. Construction work zone speed limit reduction is not required for short duration closures of 1 hour or less or when the length of lane closure is 1/2 mile or less.

12-4.02C(12)(b) Materials

For temporary construction work zone speed limit reduction, signs must comply with the requirements for portable signs in section 12-3.11.

The PCMS must comply with section 12-3.32.

Radar feedback sign LED displays must have LED:

1. Character of at least 18 inches in height for freeways and expressways
2. Character of at least 14 inches in height for conventional highways
3. Character's width-to-height ratio from 0.7 to 1.0
4. Character's stroke width-to-height ratio of 0.2

Portable radar speed feedback sign must comply with section 12-3.37.

Portable radar speed feedback sign trailers must have a minimum of 9 cones placed on a taper in advance of the device and along the edge of shoulder or edge of the traveled way at 25-foot intervals to a point not less than 25 feet past the device.

Temporary radar speed feedback sign system must comply with the specifications for:

1. Temporary electrical system in section 87-20
2. Radar speed feedback sign system in section 87-14 except the LED character display must remain blank when no vehicles are detected or when the detected vehicle speed is 10 miles or less than the pre-set speed

12-4.02C(12)(c) Construction

Advise motorists of construction work zone speed limit reductions starting 14 days in advance of implementing the speed limit reduction using a PCMS displaying the alternating messages *Reduced Speed* and *Starting XX/XX/XX (Date)*.

When construction work zone speed limit reduction is in effect, the PCMS message must be *XX ZONE AHEAD* and *WILL BE ENFORCED*. Mount a 48-by-48-inch W3-5 XX "SPEED LIMIT" ahead symbol sign on the PCMS trailer.

Cover all existing speed limit signs while the construction work zone speed limit reduction is in effect. Remove covers when construction work zone speed limit reduction is no longer in effect. For construction work zone speed limit reduction for 24 hours a day, 7 days a week, you may remove the existing speed limit signs and replace the signs when the construction activities that required the 24 hours a day, 7 days a week speed limit reduction are completed.

For temporary construction work zone speed limit reduction for lane closures, install portable radar speed feedback system as shown. In addition to the portable radar speed feedback system shown, place a portable radar speed feedback system 400 feet upstream of active work areas. The portable radar speed feedback system must include a R2-1 sign with G20-5aP "WORK ZONE" plaque.

For on-ramps within the limits of a construction work zone speed limit reduction, place R2-1 signs with G20-5aP "WORK ZONE" plaque within 500 feet of entrance ramps. You may use the strap and saddle method for mounting these sign panels on the entrance ramp lighting standard at the merge point.

For freeway to freeway connector ramps, install signs and devices as shown for construction work zone speed limit reduction.

For expressways, place a R2-1 sign with G20-5aP "WORK ZONE" plaque approximately 500 feet downstream from intersections within the limits of a construction work zone speed limit reduction.

For conventional highways, place a R2-1 sign with G20-5aP "WORK ZONE" plaque approximately 500 feet downstream from major intersections within the limits of a construction work zone speed limit reduction.

Within the limits of a construction work zone speed limit reduction, place intermediate R2-1 signs with G20-5aP "WORK ZONE" plaque at intervals not exceeding three miles.

You may use variable speed limit signs where R2-1 signs are described.

For chip seal projects, place construction work zone speed limit reduction signs and devices as shown except place additional intermediate signs, W8-7 "LOOSE GRAVEL" sign, and a W13-1 (35) plaque every 2000 feet.

12-4.02C(12)(d) Payment

For construction work zone speed limit reduction only during lane closures, signs are included in the bid item for traffic control system, PCMS is paid for as traffic control system, and portable radar speed feedback sign is paid for as portable radar speed feedback sign systems. Covering and uncovering existing speed limit signs for each lane closure are included in the price paid for traffic control system.

14 ENVIRONMENTAL STEWARDSHIP

Replace Reserved in Section 14-9.05 with:

14-9.05 AIR QUALITY CONTROL DISTRICT JURISDICTIONS

The project is located within the jurisdiction of the following Air Quality Management District (AQMD) or Air Pollution Control District (APCD):

1. South Coast AQMD

Comply with Air District Rules. You may access these Rules at the California Air Resources Board website:

https://ww2.arb.ca.gov/current-air-district-rules

You are responsible for payment of all fees required by the AQMD or APCD.

Replace section 14-11.09 with:

14-11.09 MINIMAL DISTURBANCE OF REGULATED MATERIAL CONTAINING AERIALLY DEPOSITED LEAD

14-11.09A General

Section 14-11.09 includes specifications for handling and managing regulated material containing ADL when there is a minimal disturbance. Regulated material containing ADL has average ADL concentrations

over 80 mg/kg total lead or equal to or greater than 5 mg/L soluble lead tested using the California Waste Extraction Test or equal to or greater than 5 mg/L soluble lead tested using the toxicity characteristic leaching procedure.

Compliance with 22 CA Code of Regs is not required where there is minimal disturbance of regulated material containing ADL.

Management of regulated material containing ADL exposes workers to health hazards that must be addressed in your lead compliance plan under section 7-1.02K(6)(j)(ii).

Handle regulated material containing ADL under the rules and regulations of the following agencies:

1. Cal/OSHA
2. RWQCB, Region _4_— Los Angeles
3. South Coast Air Quality Management District

Regulated material containing ADL is typically found within the top 2 feet of material in ADL-impacted areas of the job site. Concentrations of ADL found in the area of minimal disturbance range from 67 to 210 mg/kg total lead with an average concentration of 154.7 mg/kg total lead using a 95 percent upper confidence limit. Lead concentrations were analyzed by US EPA Method 6010 or US EPA Method 7000 series.

Minimal disturbance of regulated material containing ADL occurs where the following work activities are conducted:

1. Installation of temporary stationary mounted construction area signposts.
2. Removal of existing MBGR and Installation of new MGS.
3. Trenching and Horizontal Directional Drilling for new conduits installation.
4. Planting, landscaping, and irrigation system installation.

Minimal disturbance of regulated material containing ADL occurs at the following locations:

Location	Work activity	Depth
Sta 491+51.5 Lt 70.2' to Sta 493+39 Lt 70.3' SB on Route 5	Removal of existing MBGR and Installation of new MGS	0.0-ft to 5.0-ft
Sta 759+44.5 Rt 25.7' to Sta 761+00 Lt 109.73' SB on Route 405	Removal of existing MBGR and Installation of new MGS	0.0-ft to 5.0-ft
Sta 759+20 Lt 110.97' to Sta 761+00 Lt 109.73' SB on Route 405	Removal of existing MBGR and Installation of new MGS	0.0-ft to 5.0-ft

14-11.09B Material Management

Handling of regulated material containing ADL must result in no visible dust migration. Use dust control measures. A means of controlling dust must be available at all times.

Separate material from vegetation. The resulting soil must remain on the job site.

Surplus material from the areas with regulated material containing ADL must remain in the area of disturbance. Do not dispose of surplus material outside the highway.

Add after the 2nd paragraph of section 14-11.12A:

This project includes removal of yellow thermoplastic traffic stripe and pavement markings, and/or yellow painted traffic stripe and pavement markings that will produce hazardous waste residue.

Add after the 1st paragraph of 14-11.12E:

After the Engineer accepts the analytical test results, dispose of yellow thermoplastic and yellow paint hazardous waste residue at a Class 1 disposal facility located in California 30 days after accumulating 220 lb of residue.

If less than 220 lb of hazardous waste residue and dust is generated in total, dispose of it within 30 days after the start of accumulation of the residue.

Replace section 14-11.14 with:

14-11.14 TREATED WOOD WASTE

14-11.14A General

Section 14-11.14 applies if treated wood waste is shown on the Bid Item List.

Section 14-11.14 includes specifications for handling, storing, transporting, and disposing of treated wood waste. Manage treated wood waste under Health & Safety Code §25230 et seq.

Wood removed from existing MBGR posts, temporary construction area signs, and/or roadside signs is treated wood waste.

14-11.14B Submittals

Within 5 business days of disposing of treated wood waste, submit as an informational submittal a copy of each completed shipping record and weight receipt.

14-11.14C Training

Provide training to personnel who handle or may come in contact with treated wood waste. Training must include:

1. Requirements of 8 CA Code of Regs
2. Procedures for identifying and segregating treated wood waste
3. Safe handling practices
4. Requirements of Health & Safety Code §25230 et seq
5. Proper disposal methods

Maintain training records for 3 years after contract acceptance.

14-11.14D Storage of Treated Wood Waste

Store treated wood waste at the jobsite until transport to the CA permitted disposal site.

Until disposal, store treated wood waste using the following methods:

1. Raise the waste on blocks above a foreseeable run-on elevation and protect it from precipitation for no more than 90 days.
2. Place the waste on a containment surface or pad protected from run-on and precipitation for no more than 180 days.
3. Place the waste in water-resistant containers designed for shipping or solid waste collection for no more than 1 year.
4. Place the waste in a storage building as defined in Health & Safety Code §25230 et seq.

Prevent unauthorized access to treated wood waste using a secure enclosure such as a locked chain-link-fenced area or a lockable shipping container located within the job site.

Resize and segregate treated wood waste at a location where debris including sawdust and chips can be contained. Collect and manage the debris as treated wood waste.

Identify treated wood waste and accumulation areas using water-resistant labels that comply with Health & Safety Code §25230 et seq. Labels must include:

1. The words *TREATED WOOD WASTE Do not burn or scavenge*
2. The words *Caltrans District* and the district number
3. The words *Construction Contract* and the contract number
4. District office address
5. Engineer's name, address, and telephone number
6. Contractor's contact name, address, and telephone number
7. Date placed in storage

14-11.14E Transport and Disposal of Treated Wood Waste

Dispose of treated wood waste within:

1. 90 days of generation if stored on blocks
2. 180 days of generation if stored on a containment surface or pad
3. 1 year of generation if stored in a water-resistant container or within 90 days after the container is full, whichever is shorter
4. 1 year of generation if stored in a storage building as defined in Health & Safety Code §25230 et seq

Before transporting treated wood waste, obtain agreement from the receiving facility that it will accept the waste. Protect shipments of the waste from loss and exposure to precipitation. For projects generating 10,000 lb or more of treated wood waste, request a generator's EPA Identification Number from the Engineer at least 5 business days before the 1st shipment. Each shipment must be accompanied by a shipping record such as a bill of lading or invoice that includes:

1. The words *Caltrans District* and the district number
2. The words *Construction Contract* and the contract number
3. District office address
4. Engineer's name, address, and telephone number
5. Contractor's name, contact person, and telephone number
6. Receiving facility's name and address
7. Description of the waste (e.g., treated wood waste with preservative type if known or unknown/mixture)
8. Project location
9. Estimated weight or volume of the shipment
10. Date accumulation begins
11. Date of transport
12. Name of transporter
13. Date of receipt by the treated wood waste facility
14. Weight of shipment measured by the receiving facility
15. Generator's US EPA Identification Number for projects generating 10,000 lb or more of treated wood waste

The shipping record must be 8-1/2 by 11 inches and a 4-part carbon or carbonless form to provide copies for the Engineer, transporter, and treated wood waste facility.

Transport treated wood waste directly to the CA permitted disposal site after leaving the jobsite. Do not mix treated wood waste from the job site with waste from any other generator.

Dispose of treated wood waste at one of the following:

1. An approved California disposal site operating under a RWQCB permit that includes acceptance of treated wood waste
2. California disposal site operating under a DTSC permit that includes acceptance of treated wood waste

Treated wood waste may be disposed as a hazardous waste at any of the following Resource Conservation and Recovery Act (RCRA) Subtitle C disposal facilities:

1. US Ecology, Beatty, Nevada
2. US Ecology, Grandview, Idaho
3. Chemical Waste Management of the Northwest, Arlington, Oregon

^^

DIVISION III EARTHWORK AND LANDSCAPE

20 LANDSCAPE

~~Replace the 1st through 5th paragraphs of section 20-1.02C with:~~

~~Do not use pesticides.~~

~~Replace the 3rd paragraph of section 20-1.02C with:~~

~~Do not use rodenticides.~~

Add to section 20-1.02C:

Select herbicides from the following table:

Herbicides

Herbicide name	Herbicide type					
	Preemergent (granular)	Preemergent (non granular)	Post-emergent	Selective	Non-selective	Systemic
Aminocyclopyrachlor	--	X	--	--	X	X
Aminopyralid	--	--	--	X	--	--
Chlorsulfuron	--	--	--	X	--	--
Clopyralid	--	--	--	--	X	--
Diquat dibromide	--	--	--	--	X	--
Dithiopyr	--	X	--	--	--	--
Fluazifop-P-Butyl	--	--	--	X	--	--
Glyphosate	--	--	X	--	--	X
Imazapyr	--	--	--	--	X	--
Indaziflam	--	X	--	--	X	X
Isoxaben	--	X	--	--	--	--
Oryzalin	--	X	--	--	--	--
Oxadiazon	X	X	--	--	--	X
Oxyfluorfen	--	X	X	--	--	--
Pendimethalin	X	X	X	--	--	--
Rimsulfuron	--	--	--	X	--	--
Sethoxydim	--	--	X	X	--	--
Sulfentrazone	--	--	--	--	X	--
Sulfometuron-methyl	--	--	--	--	X	--
Sulfosulfuron	--	--	--	--	X	--
Triclopyr	--	--	--	--	--	X

~~Delete the 4th paragraph of section 20-1.03A.~~

~~Replace *You may reduce* in the 1st sentence of the 5th paragraph of section 20-1.03A with:~~

~~Reduce~~

Delete the 5th paragraph of section 20-1.03A.

Add to the list in the 1st paragraph of section 20-1.03C(1):

3. Removing noxious and invasive plants

Replace the 1st paragraph of section 20-1.03C(2) with:

When removing plants, noxious and invasive trees stumps or root crowns that are greater than__24__ inches in diameter at the lowest cut must remain. Lowest cut must be no more than__1__ inches above finished grade.

Brush pesticide directly on the remaining stump or root crown immediately after the cut is made. After initial cutting, re-cut and re-brush pesticide if new plant growth appears.

Add to section 20-1.03C(3):

~~Control weeds within the highway including medians and surfaced areas such as new and existing pavement, curbs, and sidewalks.~~

~~Control weeds within the highway. In the median and surfaced areas such as new and existing pavement, curbs, and sidewalks, weeds do not need to be controlled.~~

Control weeds within the areas shown.

In groundcover areas and within the area extending beyond the outer limits of the groundcover to the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, existing planting, and fences, control weeds with pesticides or by hand pulling. Where groundcover areas are 12 feet or more from the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, and fences, control weeds within the groundcover areas and 6 feet beyond the outer limits of the groundcover areas.

In mulched areas and within the area extending beyond the outer limits of the mulched areas to the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, existing planting, and fences, control weeds with pesticides or by hand pulling. Where mulched areas are 12 feet or more from the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, and fences, control weeds within the mulched areas and 6 feet beyond the outer limits of the mulched areas.

Control weeds under guard rails, from within asphalt concrete surfacing, concrete surfacing, rock blankets, rock mulch, gravel mulch or decomposed granite areas, and unpaved gore areas between the edge of pavement and planting areas with pesticides or by hand pulling.

Replace the 2nd paragraph of section 20-1.03C(4) with:

Dispose of mowed material during roadside clearing. Dispose of noxious and invasive plants within 3 days of removal. Dispose of seed pods and heads the same day as removed. Prevent seed dispersal during transportation to the disposal site.

Replace the 3rd paragraph of section 20-2.01A(4)(b)(i) with:

Perform pressure testing using Method B to test supply lines (1) located on the discharge side of the valve, (2) installed by trenching and backfilling, or (3) completely visible after installation.

~~**Replace the 1st paragraph of section 20-2.01B(7) with:**~~

~~Valve boxes must be polymer concrete.~~

Add to the 1st paragraph of section 20-2.01B(7):

~~**Add to the 1st paragraph of section 20-2.01B(7):**~~

Replace item 1 in the list in the 2nd paragraph of section 20-2.01B(7) with:

1.Cast iron with hinge

Add to the list in the 2nd paragraph of section 20-2.01B(7):

4.Secured using a commercial-quality locking mechanism.

Add between the 4th and 5th paragraphs of section 20-2.01B(7):

Remote control valves must be labeled with a polyurethane tag. Attach the tag tightly with a nylon tie to the conductor wire. The tag must be stamped on both sides with the appropriate letters and numbers at least 1 inch high showing the valve's controller and station.

Add to section 20-1.02C:

Select herbicides from the following table:

Herbicides

Herbicide name	Herbicide type				
	Preemergent	Post-emergent	Selective	Non-selective	Systemic
Aminocyclopyrachlor	X	--	--	X	X
Aminopyralid	--	--	X	--	--
Chlorsulfuron	--	--	X	--	--
Clopyralid	--	--	--	X	--
Diquat dibromide	--	--	--	X	--
Dithiopyr	X	--	--	--	--
Fluazifop-P-Butyl	--	--	X	--	--
Glyphosate	--	X	--	--	X
Imazapyr	--	--	--	X	--
Indaziflam	X	--	--	X	X
Isoxaben	X	--	--	--	--
Oryzalin	X	--	--	--	--
Oxadiazon	X	--	--	--	X
Oxyfluorfen	X	X	--	--	--
Pendimethalin	X	X	--	--	--
Rimsulfuron	--	--	X	--	--
Sethoxydim	--	X	X	--	--
Sulfentrazone	--	--	--	X	--
Sulfometuron-methyl	--	--	--	X	--
Sulfosulfuron	--	--	--	X	--
Triclopyr	--	--	--	--	X

Add to section 20-2.04B:

You may use conductors that are not armor-clad if installed in a conduit.

Replace the paragraph of section 20-2.10B(2) with:

Each ball valve must be PVC or chlorinated PVC and must comply with the requirements shown in the following table:

Quality characteristic	Requirement
Nonshock working pressure for 3/4 to 4 inch valves (min, psi)	235
Nonshock working pressure for 6 inch valves (min, psi)	150
Seats	PTFE
O-ring seals	EPDM or fluoroelastomer

Replace item 2 in the list in the 1st paragraph of section 20-2.10B(10)(a) with:

2. Be glass-filled nylon

Add to the list in 1st paragraph of section 20-2.10B(10)(a):

12. Be equipped with a self-flushing feature for recycled water.
13. Not have external tubing.

Add to the end of section 20-2.10B(10)(a):

Each remote control valve must have a nylon scrubber that scrapes a stainless steel screen to clean and break down grit and prevents debris build-up and clogging.

Add to section 20-3.01B(3)(a):

Soil amendment must be Compost.

Add to section 20-4.01A:

This project has a Type 2 plant establishment period.

Replace the 1st paragraph of section 20-4.01C(1) with:

Submit the following seasonal watering schedules for use during the plant establishment period:

1. March through May
2. June through August
3. September through October
4. November through February

Submit the first season's watering schedule within 10 days after the start of the plant establishment period. Submit subsequent watering schedules at least 5 business days before start of the next seasonal period. Remote irrigation control system watering schedule must use the remote irrigation control system software program.

Add to the beginning of the 1st paragraph of section 20-4.03A:

Maintain a neat and presentable job site during plant establishment including areas not visible to the public.

Add to section 20-4.03C:

Apply slow-release fertilizer to the plants during the 1st week of April and October of each year.

Add to section 20-4.03D:

Dispose of weeds under section 20-1.03C(4).

Add to section 20-4.03:

20-4.03H Pest Control

Control pests under sections 20-1.03B and 20-1.03C(1).

Replace section 20-10.02C(2) with:

20-10.02C(2) Check and Test Existing Irrigation Facilities

Check and test existing irrigation system facilities that will remain in place or will be relocated before performing clearing and grubbing, earthwork, or other construction activity that will affect the existing irrigation system.

When available, use existing irrigation control software program and flow sensors to conduct the test. Clear obstructions in strainers and filters before conducting tests. The Engineer determines the test watering cycle lengths and controller information to be utilized during the tests.

Check for deficiencies in the existing irrigation systems including:

1. Missing, damaged or malfunctioning irrigation components
2. Leaks on supply line and irrigation components
3. Electrical continuity between irrigation controller and irrigation components
4. Electrical power at the irrigation controller
5. Communication between irrigation controller and remote access devices

Correct deficiencies as ordered. The correction of deficiencies is change order work.

21 EROSION CONTROL

Replace the 1st paragraph in section 21-2.01C(2) with:

Submit the compost producer's Compost Technical Data Sheet including test results and seal of testing assurance certificate with the compost sample. Submit a current Compost Technical Data Sheet with each compost delivery as required. Compost Technical Data Sheets must not be older than 90 days.

Add to the end of section 21-2.02K:

The particle size must comply with the requirements shown in the following table:

Compost Gradation

Quality characteristic	Test method[a]	Requirement	
		Min	Max
Gradation fine (dry weight % passing):			
1-inch sieve	TMECC 02.02-B	99	--
3/8-inch sieve		95	--
Gradation medium (dry weight % passing):			
2-inch sieve	TMECC 02.02-B	95	--
3/8-inch sieve		30	75
Gradation coarse (dry weight % passing):			
2-inch sieve	TMECC 02.02-B	95	--
3/8-inch sieve		--	50

[a]TMECC refers to *Test Methods for the Examination of Composting and Compost*, published by the United States Department of Agriculture and the United States Compost Council (USCC).

DIVISION IX TRAFFIC CONTROL DEVICES

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83 RAILINGS AND BARRIERS

Replace section 83-2.01B with:

83-2.01B Minor Concrete Vegetation Control

83-2.01B(1) General

83-2.01B(1)(a) Summary

Section 83-2.01B includes specifications for constructing minor concrete vegetation control around railing and barrier posts.

Constructing minor concrete vegetation control includes clearing and excavation.

83-2.01B(1)(b) Definitions

Not Used

83-2.01B(1)(c) Submittals

Submit a mix design for the minor concrete to be used for vegetation control. The mix design must show proportions of:

1. Coarse aggregate
2. Fine aggregate
3. Cementitious material
4. Reinforcing fiber
5. Water

Include compressive strength test results with the mix design.

Submit a certificate of compliance for the crumb rubber aggregate, if used. Include the quantity in pounds of crumb rubber.

83-2.01B(1)(d) Quality Assurance

Not Used

83-2.01B(2) Materials

83-2.01B(2)(a) General

Not Used

83-2.01B(2)(b) Minor Concrete

83-2.01B(2)(b)(i) General

Concrete for vegetation control must comply with the specifications for minor concrete, except the concrete:

1. Must include reinforcing fibers
2. May include crumb rubber aggregate
3. Must contain:
   3.1. At least 505 pounds of cementitious material per cubic yard, if crumb rubber aggregate is used
   3.2. At least 400 pounds of cementitious material per cubic yard, if crumb rubber aggregate is not used
4. Must have a maximum aggregate size of 3/8 inch

All ingredients must be added at the concrete plant before delivery to the job site.

You may use volumetric proportioning complying with ASTM C685/C685M or as specified.

The minor concrete must have a 28-day compressive strength from 1,400 to 2,500 psi.

83-2.01B(2)(b)(ii) Crumb Rubber Aggregate

Crumb rubber aggregate must consist of ground or granulated scrap tire rubber from automobile and truck tires. Do not use tire buffings.

Crumb rubber aggregate must be ground and granulated at ambient temperature.

The crumb rubber aggregate gradation must comply with the requirements shown in the following table:

Gradation Requirements

Sieve size	Percentage passing
1/2"	100
3/8"	90–100
1/4"	35–45
No. 4	5–15
No. 8	0–5
No. 16	0

Crumb rubber aggregate must not contain more than 0.01 percent of wire by mass and must be free of oils and volatile organic compounds.

Do not commingle crumb rubber from different sources.

The crumb rubber aggregate must be 3.5 ± 0.5 percent by weight of the concrete.

83-2.01B(2)(b)(iii) Reinforcing Fibers

Reinforcing fibers for minor concrete must be:

1. Manufactured specifically for use as concrete reinforcement from one of the following:
   1.1. Polypropylene, polyethylene, or a combination of both.
   1.2. Copolymer of polypropylene and polyethylene.
2. Blended ratio from 4 to 5.67 parts by weight of macro synthetic fibers to 1 part by weight of micro synthetic fibers. Synthetic fibers must be:
   2.1. Nonfibrillated macro fibers with individual fiber lengths less than 2 ± 1/2 inches.
   2.2. Fibrillated or monofilament micro fibers of various lengths and thicknesses.
3. Supplied in sealed, degradable bags of appropriate size for adding whole bags to concrete batches.
4. From a commercial source.

The reinforcing fiber content of the minor concrete must be from 5 to 6 lb/cu yd.

83-2.01B(2)(b)(iv) Coloring Agent

Not Used

The coloring agent must be integral to the concrete mix and added at the concrete plant.

83-2.01B(2)(c) Block-Out Material

The block-out material must be a commercially available expanded polystyrene foam with a compressive strength of 13 ± 5 psi at 10 percent deformation when tested under ASTM D1621.

If authorized, you may substitute an alternative block-out material that complies with the compressive strength requirements of the expanded polystyrene foam.

83-2.01B(2)(d) Backfill Material

Backfill material must be Class 2 aggregate base complying with section 26.

83-2.01B(3) Construction

83-2.01B(3)(a) General

Not Used

83-2.01B(3)(b) Clearing

Clear areas to receive minor concrete vegetation control of vegetation, trash, and debris. Dispose of the removed material.

83-2.01B(3)(c) Earthwork

Excavate or backfill areas to receive minor concrete vegetation control.

If the minor concrete vegetation control abuts the existing surfacing, and the edge of the existing surfacing is not on a neat line, cut the surfacing on a neat line to a minimum depth of 2 inches before removing the surfacing.

Perform grading so that the finished elevation of the minor concrete vegetation control maintains the existing or planned flow lines, slope gradients, contours, and existing surfacing.

Grade the areas to receive minor concrete vegetation control to a smooth, uniform surface and compact to a relative compaction of at least 90 percent.

83-2.01B(3)(d) Block Outs

For block-out material supplied in more than 1 piece, tape the pieces together to make a smooth surface on the top and sides.

Ensure that the block-out material does not move during concrete placement.

83-2.01B(3)(e) Forming

Forming must comply with section 73-1.03C.

Leave forms in place for at least 12 hours after surface finishing.

83-2.01B(3)(f) Minor Concrete

Strike off and compact the minor concrete until a layer of mortar is brought to the surface. Match the finished grade to the adjacent section of minor concrete vegetation control, pavement, shoulder, or existing grade.

Construct contraction joints by scoring concrete with a grooving tool and rounding corners with an edger tool.

If the curing compound method is used for colored concrete, use curing compound no. 6.

83-2.01B(3)(g) Backfill Material

Backfill material required for minor concrete vegetation control under existing guardrail or barrier is change order work. Excavate or backfill areas to receive vegetation control.

83-2.01B(4) Payment

Not Used

Add to section 83-2.01:

83-2.01C Vegetation Control Mat

83-2.01C(1) General

83-2.01C(1)(a) Summary

Section 83-2.01C includes specifications for installing vegetation control mat around railing, barrier posts, and roadside signs.

Installing vegetation control mat includes clearing and earthwork.

Vegetation control mat must be FIBER.

83-2.01C(1)(b) Definitions

Not Used

83-2.01C(1)(c) Submittals

Submit the following:

1. One square-foot sample of vegetation control mat
2. Copy of the manufacturer's product sheet and instructions for installation
3. Certificate of compliance for:
   3.1. Vegetation control mat
   3.2. Adhesive caulking
   3.3. Fasteners

83-2.01C(1)(d) Quality Assurance

Vegetation control mat with cuts other than those required for installation will be rejected. Vegetation control mat may have markings to help align and center the mat for cutting and installation.

83-2.01C(2) Materials

83-2.01C(2)(a) General

Not Used

83-2.01C(2)(b) Rubber Mat

Not Used

83-2.01C(2)(c) Fiber Mat

Fiber mat must:

1. Be a commercial vegetation control product consisting of a composite of polyester base fiber and vinyl chloride resin
2. Be permeable to air and water and able to prevent sunlight from reaching the soil surface
3. Be resistant to ultraviolet light, mildew, and algae
4. Contain no herbicides
5. Be fire retardant
6. Be a continuous-roll product, up to 250-foot-long
7. Have a minimum thickness of 0.25 inch and a minimum weight of 1.8 lb/sq yd
8. Be black, tan, or green

Fiber mat must come with preformed, equally spaced openings for guardrail posts, except where installed at guardrail terminal systems.

Fiber mat installed under existing guardrail systems or roadside signs must include preformed seams at each post opening.

Furnish prefabricated post collars and joining strips of the same material. Collars must fit snuggly around each post with a gap no greater than 1/4 inch. Joining strips must be 4 inches in width.

83-2.01C(2)(d) Adhesive Caulking

Adhesive caulking for vegetation control mat must be as recommended by the mat manufacturer.

83-2.01C(2)(e) Fasteners

Fasteners for the vegetation control mat must be hooked stakes, stainless steel spikes with washers, or staples as recommended by the mat manufacturer.

83-2.01C(2)(f) Pre-emergent Herbicide

Not Used

83-2.01C(2)(g) Crack Treatment Material

Crack treatment material must be on the Authorized Material List for asphalt concrete pavement (flexible pavement) crack treatment material and comply with Type 5 in section 37.5.

83-2.01C(3) Construction

83-2.01C(3)(a) General

Vegetation control mat surface must be flat, smooth, and in uniform contact with the soil, without air pockets, bulges or wrinkles.

83-2.01C(3)(a)(i) Clearing

Areas to receive vegetation control mat must be cleared of vegetation, trash, and debris. Dispose of removed material.

83-2.01C(3)(a)(ii) Earthwork

The finished elevation of the vegetation control mat must maintain the planned flow lines, slope gradients, and contours of the job site.

83-2.01C(3)(a)(iii) Pre-emergent Herbicide

Not Used

83-2.01C(3)(b) Rubber Mat

Not Used

83-2.01C(3)(c) Fiber Mat

Place fiber mat around each post. Do not install rail elements or roadside sign panels until the fiber mat has been placed and secured around posts.

Make cuts and seams as necessary in fiber mat to accommodate the edge of road and guardrail post along sharp curves.

Secure the fiber mat in place with fasteners as recommended by the mat manufacturer.

Overlap the edge of pavement, curbs, dikes or adjacent fiber mat at least 2 inches and trim to a straight and uniform edge. Secure edges between the fiber mat and pavement with crack treatment and fill gaps to the full thickness of the fiber mat.

Seal seams and joints between the fiber mat pieces with adhesive caulking along the full width and thickness of the mat. Staple and apply joining strip. Do not leave gaps at sealed joints.

Place prefabricated post collars over each post after the fiber mat has been installed and secure perimeter with adhesive caulking. Fill any gap between the collar and post with adhesive caulking.

83-2.01C(4) Payment

Not Used

Replace section 83-2.04A with:

83-2.04A General

83-2.04A(1) General

83-2.04A(1)(a) Summary

Section 83-2.04A includes general specifications for constructing terminal systems.

83-2.04A(1)(b) Definitions

Not Used

83-2.04A(1)(c) Submittals

Submit a certificate of compliance for each model of terminal system installed.

At least 10 days before installation, for each model of terminal system used on the project, submit at least 2 copies of the following:

1. Manufacturer's:
   1.1. Installation manuals with installation checklists

1.2. Maintenance manuals
1.3. List and drawing of parts and surfaces that cannot be stained or coated if surface treatment is specified
2. Installation locations for each model

For each terminal system installed, submit a completed manufacturer's checklist within 10 days of installation.

83-2.04A(1)(d) Quality Assurance

Use personnel trained by the manufacturer to install each terminal system. A record of training provided by the manufacturer may be requested by the Engineer at any time.

83-2.04A(2) Materials

Not Used

83-2.04A(3) Construction

Use the same type of post and block as described for the guardrail downstream of the terminal if allowed by the manufacturer.

If surface treatment is specified, comply with terminal system manufacturer's requirements.

Confirm terminal location and layout with Engineer prior to installation.

Use the approved manufacturer installation manual as described in the manufacturer approval letter obtained from the following website:

http://dot.ca.gov/safety-programs/mash

Install terminal systems under the manufacturer's installation instructions.

For each model of terminal system being installed, have a copy of the installation manual and the Department's authorized manufacturer drawings onsite and available for reference.

As each terminal system is installed, complete the manufacturer's installation checklist and include the following:

1. Contract number
2. Name of installation Contractor
3. Type of terminal system installed
4. Flare offset used in layout
5. Date of installation
6. Location on the project by post mile, and by station if stationing is shown
7. Name and signature of person completing the checklist

If a terminal ends with a post at an element splice, use a 9'-4-1/2" or 15'-7-1/2" rail element to transition to mid-post splices.

Identify each terminal system installed by painting the terminal system type in 2-inch-high, neat, black letters and figures on the backside of the rail element between system posts number 4 and 5 or as directed. Use black metallic acrylic resin type paint applied to a clean dry surface.

Install and backfill posts, steel foundation tubes, and soil tubes used in terminal systems under the manufacturer's recommendations and section 83-2.02C(1)(b).

83-2.04A(4) Payment

Not Used

Replace section 83-2.04B with:

83-2.04B Alternative In-line Terminal—TL-3

83-2.04B(1) General

83-2.04B(1)(a) Summary

Section 83-2.04B includes specifications for constructing alternative in-line terminal—TL-3.

83-2.04B(2) Materials

Alternative in-line terminal must be one of the following or a Department-authorized equal:

1. MAX-Tension Tangent Guardrail End Treatment is a tangent, re-directive gating guardrail terminal meeting MASH TL-3 requirements and manufactured by Barrier Systems, Inc. The terminal length is 55'-1/2". The MAX-Tension terminal is available from the distributor:

Address	Telephone no.
STATEWIDE SAFETY AND SIGNS INC 130 GROBRIC COURT FAIRFIELD CA 94533	(800) 770-2644

2. MASH Sequentially Kinking Terminal (MSKT) is a tangent, re-directive gating end terminal meeting MASH TL-3 requirements and manufactured by Road Systems, Inc. The terminal length is 50'-0”. The MSKT terminal is available from the following distributors:

Address	Telephone no.
UNIVERSAL INDUSTRIAL SALES PO BOX 699 PLEASANT GROVE UT 84062	(801) 785-0505
GREGORY HIGHWAY 4100 13TH ST SW CANTON OH 44710	(330) 477-4800

3. SPIG Guardrail End Terminal (SGET) is a tangent, re-directive gating end terminal meeting MASH TL-3 requirements and manufactured by SPIG Industries, LLC. The terminal length is 50’-0”. The SGET terminal is available from the manufacturer:

Address	Telephone no.
SPIG INDUSTRY, LLC 14675 INDUSTRIAL PARK ROAD BRISTOL VA 24202	(276) 644-9510

4. Soft-Stop Guardrail Terminal is a tangent, re-directive gating end terminal meeting MASH TL-3 testing requirements and manufactured by Valtir, LLC. The terminal length is 50'-9-1/2". The Soft-Stop terminal is available from the manufacturer:

Address	Telephone no.
VALTIR, LLC 15601 DALLAS PARKWAY, STE 525 ADDISON TX 75001	(888) 323-6374

83-2.04B(3) Construction

Not Used

83-2.04B(4) Payment

Not Used

Replace section 83-4.07 with:

83-4.07 ALTERNATIVE CRASH CUSHION—TL-3

83-4.07A General

83-4.07A(1) Summary

Section 83-4.07 includes specifications for constructing alternative crash cushion—TL-3, including foundations, transitions, and hardware required to connect to a structure or barrier as described.

83-4.07A(2) Definitions

Not Used

83-4.07A(3) Submittals

At least 10 days before installation, submit the following from the manufacturer for each model of the crash cushion used:

1. A certificate of compliance
2. A minimum of 2 copies of drawings
3. Installation instruction manual
4. Maintenance manual

For each crash cushion, submit a completed manufacturer's installation checklist within 10 days after installation. The checklist must be completed by personnel that have been trained by the manufacturer. The checklist must include the following:

1. Contract number
2. Name of installation contractor
3. Type of crash cushion installed
4. Date of installation
5. Location by post mile and by station if stationing is shown
6. Name and signature of person completing the checklist

83-4.07A(4) Quality Assurance

Personnel trained by the manufacturer must be on site during installation. Provide list of trained personnel to the Engineer.

83-4.07B Materials

Concrete for foundations must comply with the specifications for minor concrete and the manufacturer’s strength requirements. Reinforcement must comply with section 52.

Alternative crash cushion must be one of the following or a Department-authorized equal:

1. Delta Crash Cushion, is a potentially reusable, re-directive, non-gating crash cushion manufactured by TrafFix Devices, Inc. It consists of a nose assembly, three bays, a tension strut backup, and the monorail guide system. The crash cushion length is 21’. The Delta Crash Cushion can be obtained from the following manufacturer:

Address	Telephone and fax nos.
LAWRENCE BERG TRAFFIX DEVICES, INC. 160 AVE. LA PATA SAN CLEMENTE, CA 92679 e-mail: lberg@traffixdevices.com	Telephone: (949) 350-7048

2. QuadGuard Elite M10, 8-bay is a potentially reusable, re-directive, non-gating crash cushion manufactured by Trinity Highway Products, LLC/Valtir, LLC. It must include Tension Strut Backup with the use of an approved transition. The crash cushion length is 27’-1”. The QuadGuard Elite M10, 8-bay crash cushion can be obtained from the following manufacturer or distributor:

Address	Telephone and fax nos.
TRINITY HIGHWAY-PRODUCTS, LLC/VALTIR, LLC 15601 DALLAS PARKWAY, SUITE 525 ADDISON TX 75001	Telephone: (888) 323-6374
TRAFFIC MANAGEMENT INCOPORATED 4900 AIRPORT PLAZA DR, STE 300 LONG BEACH CA 90815 e-mail: trinity@trafficmanagement.com	Telephone: (510) 289-6975 Telephone: (760) 421-4112

3. QuadGuard M10, 6-bay is a potentially reusable, re-directive, non-gating crash cushion manufactured by Trinity Highway Products, LLC/Valtir, LLC. It must include Tension Strut Backup with the use of an approved transition. The crash cushion length is 21'-11". The QuadGuard M10, 6-bay crash cushion can be obtained from the following manufacturer or distributor:

Address	Telephone and fax nos.
TRINITY HIGHWAY-PRODUCTS, LLC/VALTIR, LLC 15601 DALLAS PARKWAY, SUITE 525 ADDISON TX 75001	Telephone: (888) 323-6374
TRAFFIC MANAGEMENT INCOPORATED 4900 AIRPORT PLAZA DR, STE 300 LONG BEACH CA 90815 e-mail: trinity@trafficmanagement.com	Telephone: (510) 289-6975 Telephone: (760) 421-4112

4. SCI-100GM is a potentially reusable, re-directive, non-gating, bidirectional crash cushion manufactured by Hill & Smith, Inc. The crash cushion length is 21'-6" and must be used with an approved transition. The SCI-100GM can be obtained from the following distributors:

Address	Telephone and fax nos.
WORK AREA PROTECTION CORPORATION 2500 PRODUCTION DRIVE ST. CHARLES IL 60174-9081	Telephone: (800) 327-4417 Fax: (614) 340-6296
D&M TRAFFIC SERVICES INCORPORATED 845 REED STREET SANTA CLARA CA 95050	Telephone: (408) 436-1127 Fax: (408) 436-1675

5. TAU-M, 7-bay is a potentially reusable, re-directive, non-gating crash cushion manufactured by Barrier Systems, Inc. The crash cushion length is 23'-11" and shields up to 27.5 inches in width with use of an approved transition. The TAU-M crash cushion can be obtained from the distributor:

Address	Telephone and fax nos.
STATEWIDE SAFETY AND SIGNS INCORPORATED 130 GROBRIC COURT FAIRFIELD CA 94533	Telephone: (800) 770-2644 Fax: (707) 864-9956

83-4.07C Construction

Install crash cushion under the manufacturer's installation instructions. A copy of the Caltrans-approved manufacturer's drawings and installation manual must be onsite for each model of crash cushion installed.

Attach a manufacturer-supplied retroreflective marker panel to the front of the crash cushion if the closest point of the crash cushion is within 12 feet of the traveled way. Install left, right, or median marker as appropriate. Attach the marker panel to the crash cushion as recommended by the manufacturer or other methods if authorized.

Do not install alternative crash cushion over expansion joint, drainage basin, conduit or utility.

Use the reinforced concrete foundation option.

Before installing crash cushion on the foundation:

1. Concrete foundations must attain compressive strength
2. Clean the foundation surface of debris, dirt, and loose material

Install Delta Crash Cushion, on a 6-inch reinforced concrete pad or on an 8-inch unreinforced concrete pad. The foundation cross-slope shall not exceed 10:1. Install a transition panel or side panel for bidirectional traffic. Use concrete anchorage devices provided by the manufacturer.

Install QuadGuard Elite M10, 8-bay with Tension Strut Backup on a 6-inch reinforced concrete pad or on an 8-inch unreinforced concrete pad. The foundation cross-slope shall not exceed 8 percent and must not twist more than 2 percent over the length of the crash cushion. Install a transition panel or side panel on each side of the backup. Use concrete anchorage devices provided by the manufacturer.

Install QuadGuard M10, 6-bay with Tension Strut Backup on a 6-inch reinforced concrete pad or on an 8-inch unreinforced concrete pad. The foundation cross-slope shall not exceed 8 percent and must not twist more than 2 percent over the length of the crash cushion. Install a transition panel or side panel on each side of the backup. Use concrete anchorage devices provided by the manufacturer.

Install SCI-100GM crash cushion on a 6-inch reinforced concrete pad or on an 8-inch unreinforced concrete pad. The crash cushion is a self-contained backup and the foundation has a cross slopes of 10:1 or less.

Install TAU-M, 7-bay crash cushion on a 6-inch reinforced concrete pad, 8-inch unreinforced concrete pad, or 6 inches of asphalt concrete over 6 inches of compacted subbase. For bi-directional traffic, connect the crash cushion to the barrier using the manufacturer's recommended transition. For unidirectional traffic, a transition is not required. Use concrete anchorage devices provided by the manufacturer.

Identify each crash cushion installed by painting the crash cushion type, installation date, and project identification number in 2-inch-high, neat letters and figures in a contrasting color on the crash cushion near the impact head. Before applying paint, clean the surface of dirt, grease, oil, salt, or other contaminants and allow to dry.

83-4.07D Payment

Not Used

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84 MARKINGS

Replace section 84-9.03B with:

84-9.03B Remove Traffic Stripes and Pavement Markings Containing Lead

Residue from the removal of painted or thermoplastic traffic stripes and pavement markings contains lead from the paint or thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations exceeding the thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

Management of this material exposes workers to health hazards that must be addressed in your lead compliance plan.

DIVISION X ELECTRICAL WORK

86 GENERAL

Add to section 86-1.01C:

86-1.01C(11) Cellular Routers

Submit:

1. Manufacturer's warranty documentation.
2. Certificate of compliance and the manufacturer's QC test data.
3. Operation manuals. The manual must include the following:
   3.1. Installation.
   3.2. Configuration settings.
   3.3. Troubleshooting.

Replace section 86-1.01D(2) with:

86-1.01D(2) Training

Arrange 8 hours of training by the manufacturer's representative 30 days prior to contract acceptance for up to 6 Department employees. Notify the Engineer 20 days in advance of the proposed training and obtain authorization for time and place of training. If an agreement cannot be reached, the Engineer determines the time and place of training. Provide training manuals and material.

Provide training for the following:

1. Cellular router

Replace section 86-1.01D(3) with:

86-1.01D(3) Warranty

Provide manufacturer's replacement warranty against defective or failed material from date of installation. Warranty must cover all expenses for replacement of parts, technical support, and shipping.

Provide warranty for the following:

1. Cellular router
2. Cabinet strap

Warranty must show the California Department of Transportation as the owner. Deliver replacement parts to the following address:

CALTRANS
5510 E Willow Street
Long Beach CA 90815

Add to section 86-1.01D:

86-1.01D(4) Source Quality Control

Not Used

Add to section 86-1.01D:

86-1.01D(5) Department Acceptance

86-1.01D(5)(a) General

Deliver material and equipment for testing to METS.

Allow 30 days for testing. The Department notifies you when testing is complete.

If the Department accepts the material or equipment, you must pick it up from the test site and deliver it to the job site.

If the Department rejects material or equipment, remove it within 5 business days after you are notified it is rejected. If it is not removed within that period, the Department may remove it and ship it to you and deduct the costs of labor, material and shipping.

Resubmit a new sample and allow 30 days for retesting. The retesting period starts when the replacement material or equipment is delivered to METS.

86-1.01D(5)(b) Cellular Routers

Submit cellular routers to the Engineer and allow 14 days for activation and configuration. Once the routers have been activated and configured, they will be returned for installation.

Replace section 86-1.02C(2)(d)(iil) with:

86-1.02C(2)(d)(iii) Tamper Resistant Traffic Pull Box

86-1.02C(2)(d)(iii)(A) General

A tamper resistant traffic pull box must include a traffic pull box with an anchored cover.

The cover fastening hardware must be non-welded stainless steel, passivated stainless steel Type 304, 304L, 305, 316, 316L, or UNS Designation S30430.

Epoxy must conform to Loc-tite No. E-120HP, Scotch-weld No. DP460, Devcon Plus 25 No. 14278, or equal.

The cover and fastening hardware must be manufactured by one of the following companies or equal:

1. Factory Direct Fastening, Inc., 5655 Cahuenga Blvd., North Hollywood, CA 91601, telephone (800) 942-4844.
2. ERC, Inc., 2970 E. Maria St., Rancho Dominguez, CA 90221, telephone (310) 941-9390.
3. Pendarvis Manufacturing, 1808 American St., Anaheim, CA 92801, telephone (714) 992-0950.

The cover manufactured by Factory Direct Fastening Inc., is patented and royalty payment may apply.

86-1.02C(2)(d)(iii)(B) Anchored Cover

The anchored cover must:

1. Be of 1/2-inch-thick mild steel, hot dip galvanized, post fabrication.
2. Be hot dip galvanized after manufacturing with spikes removed from the galvanized surfaces.
3. Have a center space for a hex nut and a top lock nut.
4. Have a center opening for a stainless steel threaded cap nut cover. The opening must include a minimum 8 by 3 by 3/16-inch steel plate cover.
5. Weigh a minimum of 85 lb.
6. Include an all-around security skirt of 1/4-inch thick steel. The skirt must be sized to fit within the traffic pull box.
7. Be factory welded to the skirt.
8. Attach to the traffic pull box with an L shape steel anchor rod. The anchor rod must be a minimum 1-inch diameter by 4-feet long.

Replace the 2nd paragraph of section 86-1.02D(3) with:

The warning tape must have a printed message that reads: *CAUTION: CALTRANS FACILITIES BELOW CALL* 1 - (323)259-1922.

Replace the 4th paragraph of section 86-1.02F(1) with:

Conductors must be copper.

Add to section 86-1.02Q(2):

The cabinet components include:

1. Multiple AC outlet strip

The multiple AC outlet strip must:

1. Be 19-inch, rack mountable
2. Have a minimum of 6 receptacle outlets
3. Be rated for 15 A, 125 V(ac)
4. Have internal 12 A, 125 V(ac) circuit breaker
5. Be rated for 36,000 A surge current protection from Hot to Neutral
6. Have a UL 1449 rating for a minimum 400 V
7. Have a minimum 6-foot-long cord

Add to section 86-1.02:

86-1.02AA Cellular Routers

86-1.02AA(1) General

Cellular router(s) must:

1. Have rugged housing.
2. Have firmware, hardware, and protocol features that are fully compatible with the existing service providers in the area.
3. Be programmable and configurable remotely.
4. Have LED indicators for power, activity, signal strength and network.
5. Have MAC address filtering.
6. Support custom or private carrier Access Point Names (APNs).
7. Operate in a temperature range from -22 to 158 degrees F.
8. Operate in a non-condensing humidity range from 5 to 95 percent.
9. Support FirstNet®.
10. Support 4G LTE Bands B3,B4, B5, B7, B8, B12, B13, B14, B18, B19, B20, B26, B29, B41, B66.
11. Support National Marine Electronics Association (NMEA) 0183 v3.0 GNSS protocol
12. Have minimum one USB communications port.
13. Have minimum 2 auto-carrier section SIM slots.
14. Have a (dc) power port and an operating input voltage from 9 to 33 V(dc).
15. Include minimum 4 years of cloud management support. Cloud management support must include remote:
    15.1. Configuration.
    15.2. Diagnostics.
    15.3. Cellular health.
    15.4. Node connection.
    15.5. Speed test.
    15.6. Technical support.
16. Have a 6 foot communication patch cable.
17. Have antenna mounting hardware.
18. Have a 120 V (ac) power adapter.

A cellular router must have a multiple-input and multiple-output (MIMO) antenna of a low-profile design with 4 cellular antennas and a Global Navigation Satellite System (GNSS). antenna. The antenna must be multiple-band MIMO of a low-profile design with integrated ground plane for outdoor permanent mount using a threaded bolt with a metallic structure and compatible with cellular communications.

A cellular router must have a multiple-input and multiple-output (MIMO) antenna of a low-profile design with 2 cellular antennas and a Global Navigation Satellite System (GNSS). antenna. The antenna must be multiple-band MIMO of a low-profile design with integrated ground plane for outdoor permanent mount using a threaded bolt with a metallic structure and compatible with cellular communications.

Cellular routers must have a minimum of two connectors and antenna for Wi-Fi. The Wi-Fi antenna must be a multiple-input and multiple-output antenna (MIMO) and be integrated with the cellular and GPS antenna. The router must support 2.4/5 GHz Wi-Fi bands. Wi-Fi must support:

1. Dual radio, 802.11 b/g/n/ac
2. Single Service Set Identifier (SSID) support per radio
3. Wi-Fi Protected Access 2 (WPA2) enterprise security

86-1.02AA(2) Type 1 Cellular Routers

Type 1 cellular router must:

1. Support minimum download speeds of 3 Gbps.
2. Support minimum upload speeds of 650 Mbps.
3. Support 5G NR Bands n1, n2, n3, n7, n8, n12, n20, n25, n28, n38, n, 40, n41, n66, n71, n77, n78 and n79.
4. Support automatic 4G fallback.
5. Have minimum 4 switchable WAN LAN female gigabit ethernet ports (RJ45).
6. Have four connectors for cellular antennas.

86-1.02 AB Cabinet strap

The cabinet strap must be furnished by:

Factory Direct Fastening
5655 Cahuenga Blvd
North Hollywood, CA 91601
Telephone: (800)942-4844

ITEM	DESCRIPTION	UNIT PRICE
QS-METRO	CABINET STRAP	$385.88

The cabinet strap unit shall include:

1. Cabinet strap
2. Carriage bolts
3. Nylon lock nuts
4. Flat washers
5. Round "Puck" type lock
6. Hinge brackets

The unit price is good thru April 1, 2025. This project requires 460 cabinet straps at a unit cost of $385.88 each for a total amount of $177,504.80 including tax.

^^

87 ELECTRICAL SYSTEMS

Replace the 22nd paragraph of section 87-1.03A with:

The Department places identification characters on the electrical equipment.

Replace the 20th paragraph of section 87-1.03B(1) with:

Terminate conduit through the bottom of a nonmetallic pull box 2 inches above the bottom and 2 inches from the wall closest to the direction of the run.

Replace the 3rd paragraph of section 87-1.03C(2)(a) with:

Install a pull box on a bed of crushed rock.

Replace section 87-1.03C(2)(d) with:

87-1.03C(2)(d) Tamper-Resistant Traffic Pull Boxes

Install tamper resistant traffic pull box, anchored cover, and steel anchor rod under the manufacturer's instructions.

Torque the hex nut and a top lock nut to 200 ft-lb.

Install the threaded cap using epoxy on the last three threads and torque the cap to 700 ft-lb.

Encase the traffic pull box in a minimum 12-inch layer of minor concrete around and under the traffic pull box.

Replace the 1st paragraph of section 87-1.03F(2)(c)(ii) with:

Install a Type B loop detector lead-in cable in conduit.

Replace the 1st paragraph of section 87-1.03F(3)(c)(ii) with:

Use a Type 2 loop wire. Use only Type 2 loop wire for Type E and F loop detectors.

Replace the 2nd paragraph of section 87-1.03H(2) with:

Use Method B to insulate a splice.

Add between the 1st and 2nd sentences in the 2nd paragraph of section 87-1.03V(2):

Saw the slots to allow a minimum of 2 inches of sealant above the top of the uppermost loop wire in the slot.

Add between the 9th and 10th paragraphs of section 87-1.03V(2):

Use hot-melt rubberized asphalt sealant to fill slots.

Add to the end of section 87-1.03:

87-1.03AA Cellular Router

Demonstrate the cellular router is connected to the provider's network and the LED indicators show a strong signal.

87-1.03AB Cabinet strap

Install the cabinet strap and mount the hidden shackle padlock. Demonstrate proper operation of the hidden shackle padlock by opening, closing, and removing without force. Adjust the strap if necessary and remount the hidden shackle padlock.

Cabinet strap shall be installed as described on project plans and per manufacturers guide and recommendations.

Padlock must be keyed to Caltrans standard key.

replace section 87-10 with:

87-10 AUTOMATIC VEHICLE CLASSIFICATION STATION

87-10.01 GENERAL

87-10.01A Summary

Section 87-10 includes specifications for modifying an existing automatic vehicle classification station.

An automatic vehicle classification station includes:

1. Foundations
2. Pull boxes
3. Conduit
4. Cables
5. Conductors
6. Detectors
7. Piezoelectric axle sensors
8. Controller cabinet
10. Traffic counter assembly
11. Wireless modems

The components of an automatic vehicle classification station are shown on the project plans.

87-10.01B Definitions

traffic counter: A traffic counter is an automatic device which counts, classifies, and measures the speed of vehicular traffic passing along a given roadway. A traffic counter must be an automated traffic counter (ATC) as shown on the plans.

87-10.01C Submittals

Not Used

87-10.01D Quality Assurance

87-10.01D(1) General

Not Used

87-10.01D(2) Department Acceptance

87-10.01D(2)(a) General

Not Used

87-10.01D(2)(b) Department Testing

A traffic counter assembly acceptance is based on:

1. Collecting data locally and remotely, meeting the accuracy specifications, for a minimum of 5 consecutive days
2. Successfully processing downloaded-files for input in Caltrans Transportation System Network (TSN) database

The traffic counter assembly acceptance test for each lane of travel must consist of the following:

1. Vehicle counts must be collected simultaneously from the traffic counter assembly and manually. A minimum of 100 vehicle counts must be collected for each lane. The accuracy of the collected data from the traffic counter assembly must be within ±3 percent of the manually collected data.
2. The traffic counter assembly must be monitored for 5 consecutive days. The traffic counter assembly must record and store data for 5 consecutive days. If the traffic counter assembly fails to record and store data for an accumulated time of 3 hours during the 5 day period, then this is cause for the acceptance test to be rejected and repeated.

87-10.02 MATERIALS

87-10.02A General

Not Used

87-10.02B Traffic Counter Assembly

87-10.02B(1) General

A traffic counter assembly consists of a traffic counter and traffic counter firmware.

87-10.02B(2) Traffic Counter

87-10.02B(2)(a) General

Each traffic counter component must be furnished by the following manufacturer.

Oriux (Peek) Traffic Corporation
5825 N Sam Houston Parkway West, Suite 220
Houston, TX 77086
Telephone (281) 453-0200

Component is as follows

Counter Type	Part Number	Description
Automated Traffic Counter	100AVCC	ADR3500, 8L, 14C, KD, PWR, AM/SP
	81-292-AG	External Sensor Harness

87-10.02B(2)(b) Traffic Counter Firmware

The firmware must be compatible with all existing traffic counters. Access to stored data in the traffic counter must be available through personal computers, both laptop and desktop with Windows XP, Windows 10, or newer operating system via standard TIA-232 interface. Remote access must be available through a modem, either hard wired or wireless.

87-10.03 CONSTRUCTION

Connect the field wiring to the terminal blocks in the cabinet. The Engineer provides you a list of field conductor terminations for the cabinet.

Perform the conductor and operational tests for the system.

87-10.04 PAYMENT

Not Used

Replace section 87-12 with:

87-12 CHANGEABLE MESSAGE SIGN SYSTEMS

87-12.01 GENERAL

87-12.01A Summary

Section 87-12 includes specifications for constructing changeable message sign system.

Changeable message sign system includes:

1. Pull boxes
2. Conduit
3. Conductors and cables
4. Changeable Message Sign
5. 334LS CMS controller cabinet
6. CMS controller
7. Ethernet switch
8. Field box interface

9. Remote power switch
10. Cellular router
11. ES-1
12. SFP modules
13. Patch cords
14. FDU
15 Multiple AC outlet strip
16. Circuit breakers
17. Cabinet strap

The components of a changeable message sign system are shown on the project plans.

87-12.01B Definitions

CMS: Changeable Message Sign
FBI: Field Box Interface
NTCIP: National Transportation Communications for ITS Protocol
PMM: Pixel Matrix Module
PP: Pixel Panel

87-12.01C Submittals

CMS submittals must include:

1. Manufacturer's warranty documentation with technical support contact information.
2. Welding certifications.
3. Power requirements calculations and electrical wiring diagrams.
4. Shop drawing with housing design and Z bar attachment to sign structure. The shop drawings must:
   4.1. Be sealed by an independent registered civil or structural engineer in the state of California.
   4.2. Show the shape, size, thickness, materials, and connections for each component used in the housing and structure mounting.
5. Certificate of compliance and the manufacturer's QC test data.
6. Maintenance and operation manuals. The manual must include the following categories:
   6.1. Operation.
   6.2. Communication.
   6.3. Maintenance.
   6.4. Pixel module and power supply replacement.
   6.5. Trouble shooting.
   6.6. Safety procedures.

87-12.01D Quality Assurance

87-12.01D(1) General

Not Used

87-12.01D(2) Qualifications

The CMS manufacturer must be listed on the Department's Qualified Product List.

87-12.01D(3) Training

Arrange 8 hours of training by the changeable message sign manufacturer's representative 30 days prior to contract acceptance for up to 10 Department employees. Notify the Engineer 20 days in advance of the proposed training and obtain authorization for time and place of training. If an agreement cannot be reached, the Engineer determines the time and place of training. Provide training manuals and material.

87-12.01D(4) Warranty

Provide a 5-year manufacturers replacement warranty for the CMS against defective or failed material from date of installation. Warranty must cover technical support, all expenses for repair, replacement of parts, and shipping. Warranty must show the California Department of Transportation as the owner. Deliver replacement parts to the following address:

CALTRANS
5510 E Willow Street
Long Beach CA 90815

87-12.01D(5) Quality Control

Not Used

87-12.01D(6) Department Acceptance

Source QA testing and acceptance of the CMS will be performed by METS Electrical Testing Branch at the manufacturer's facility. Request testing from METS and allow 15 days minimum after an arrangement is made to initiate testing. METS requires 5 days to complete testing and acceptance.

The CMS Source QA test and acceptance consist of verifying:

1. NTCIP 1203 v03.05 compliance with Fortis software.
2. Physical material compliance.
3. Power supplies, LED's, LED circuit boards and CMS operation.
4. Waterproofing with:
    - 4.1. A minimum of 1 water source. The water source must:
        - 4.1.1. Be 5 feet from the sign at a 60-degree angle.
        - 4.1.2. Be moved along the perimeter of the sign and housing.
        - 4.1.3. Have a constant water flow of 5 PSI or greater.
        - 4.1.4. Operate continuously for a minimum of 45 minutes.
    - 4.2. A post-inspection for water intrusion. The inspection must show water did not enter:
        - 4.2.1. Energized components.
        - 4.2.2. Spaces with wiring.

87-12.02 MATERIALS

87-12.02A General

The CMS must be furnished by:

SolarMax LED, Inc.
3080 12th St., Riverside CA 92507

Items	Model	Description	Quantity.	Total Price after Sales Tax
CMS Type 1	FC-CMS800-R	CALTRANS TEES2020 Chapter 13 Errata 2 CMS800 with Right-side access door, 96 pixels H x 368 pixels W Full Matrix, 3-in-1 RGB SMD, pixel pitch 20mm, 87.34" H x 308.2" W x 18" D, 240VAC applied power	29	$2,696,456.25
	Remote I/O	In-sign Remote I/O Unit	29	
	Ethernet Switch	In-sign Ethernet Switch (Active)	29	
	Ethernet Switch	In-sign Ethernet Switch (Spare)	29	
Ground Cabinet	334LS	334LS cabinet	29	
	FBI Unit	Field Box Interface Unit (ACTIVE)	29	

	FBI Unit	Field Box Interface Unit (SPARE)	29	
	CMS Controller	CMS Controller with NTCIP 1203 V3 Compliant Software	29	
	Ethernet Switch	Ethernet Switch for 334LS cabinet	29	
	Remote Power Switch	4-ports Remote Power Switch for 334LS Cabinet	29	
Spare PMM	PMM-T5	TYPE 5 PMM, RGB color pixel, 32 pixels H x 16 pixels W per Pixel Matrix Module, 24VAC input, Dual-Ethernet Ports	58	
Cable	CAT6 Cable	1,000 ft. CAT6 cable	29,000 ft.	
Training	Training	CMS Product Training @ SolarMax facility	1	

The total price is valid till April 2025, with two (2) years extension subject to annual price review at the end of the previous year.

87-12.02B Changeable Message Signs

The changeable message sign must:

1. Have a weatherproof NEMA 3R rated housing, or higher. The housing must be manufactured from aluminum alloy, minimum 0.125-inch-thick 5052-H32.
2. Attach directly to the sign structure using the Z bars and layout.
3. Match color no. 37769 beige of AMS-STD-595 for CMS sides, back and z-bars.
4. Have a terminal block sized for No. 2 conductors minimum and operate on 240 V(ac) at 60 Hz.
5. Have a maximum power consumption of 4,000 W.
6. Have a main disconnect circuit breaker.
7. Have photometric sensors to measure luminosity in 255 linear increments.
8. Have automatic dimming and brightness control not affected by traffic lights.
9. Have PDAs with replaceable surge suppression and status LED indicators.
10. Have an operating temperature range from -40 to 185 degrees F in up to 95 percent relative humidity.
11. Have a display color matching no. 37038 of AMS-STD-595. The display must:
    - 11.1. Have a right front access door with hinges on the right side. The door must:
        - 11.1.1. Provide access to the equipment rack, power supplies and grounding termination points without the removal of any LED circuit boards.
        - 11.1.2. Have a failsafe device to prevent closure when opened.
    - 11.2. Be continuous and full matrix.
        - 11.2.1 All Pixel Panels (PP) shall be configured to communicate properly to receive and display messages on the CMS Sign.
    - 11.3. Be NEMA TS4 compliant for luminosity, chromaticity, uniformity, and contrast ratio.
    - 11.4. Have minimum viewing angles of:
        - 11.4.1. -15° to 15° (30°) horizontal.
        - 11.4.2. -10° to 0° (10°) vertical.
    - 11.5. Have LED circuit board arrays. LED circuit board arrays must:
        - 11.5.1. Have UL 60950-1 compliant power supplies.
        - 11.5.2. Be individually replaceable.
        - 11.5.3. Be sealed and waterproof.
        - 11.5.4. Have Full color LED's. LED's must have:
            - 11.5.4.1. A mean time between failure of 100,000 hours.
            - 11.5.4.2. Pixel pitch of 20 mm or less.
12. Have a CMS controller. The CMS controller must:

12.1. Be removable and replaceable.
12.2. Have fully compliant NTCIP 1203 v3 communication software or firmware.
12.3. Have an independently addressable, fully configurable, IP over Ethernet communication ports.
12.4 Communicate with the District Los Angeles Regional Traffic Management Center (LARTMC)
13. Have in sign ethernet switches, one active and one spare unit
14. Have in sign remote I/O

The changeable message sign types must meet the requirements in the following table, and as described in the Caltrans TEES 2020 Errata 2 Chapter 13:

Changeable Message Signs

Type	Max CMS Dimensions Width x Height x Depth (inches)	Full Matrix Display Min Resolution Width x Height (pixels)	Lifting Eye[a] (Qty)	Max Weight (pounds)
1	308 x 87 x 18	368 x 96	2	2,400

[a]Each lifting eye must have sufficient structural straight for lifting and mounting the sign.

87-12.02C Changeable Message Sign Controller Cabinets

1. The CMS controller cabinet must be a Model 334LS, complying with the TEES, and without:
   1. Input file I
   2. Input panel #3
   3. C1 harness #2
   4. Blank pane
2. The CMS controller cabinet must be with:
   1. Slide-out drawer
   2. Mounting rails as specified in IEC 60715
3. The CMS system shall include the minimum electronic equipment installed in the 334LS CMS controller cabinet:
   1. Industrially-rated Sign Controller
   2. Rackmount CMS Field Box Interface (FBI)
   3. Industrially-rated or hardened managed ethernet switch
   4. A 4-ports minimum Remote Power Switch
   5. One (1) spare CMS FBI unit to be rack mounted in the free rack spaces at the bottom most of the 334LS CMS controller cabinet
   6. 2-spare PMM

87-12.02D Changeable Message Sign Interface Units

The CMS Field Box interface unit must:

1. Be EIA 19 rack mounted
2. Operate on 120 V(ac)
3. Communicate with the CMS controller over ethernet via a fully configurable user datagram protocol (UDP) port
4. Have a recessed reset button
5. Be compatible with the CMS controller
6. Have 15 programable memory switches with led indicators for testing:
   6.1. Full sequential colors
   6.2. Individual full colors, green, blue, red, amber, and white
   6.3. Photometric control
   6.4 Brightness control
   6.5. Communications
   6.6. Temperature
   6.7. Power supplies
   6.8. Text Message
   6.9. Photo graphic file display
   6.10. Vertical and horizontal scroll message lines
   6.11. Blank sign
7. Default from local to remote control after idling for 5 minutes

The CMS interface unit may be integrated with the CMS controller.

87-12.03 CONSTRUCTION

Install the changeable message sign on the sign structure under section 56-2.

Perform the operational test of the system within 5 days after installation.

87-12.04 PAYMENT

Not Used

Replace section 87-17 with:

87-17 WIRELESS DATA SYSTEM

87-17.01 General

87-17.01A Summary

Section 87-17 includes specifications for installing the Wireless Data System in the controller cabinet.

87-17.01B Definitions

LARTMC:
Los Angeles Regional Transportation Management Center.
2901 W Broadway St, Los Angeles, CA 90041

87-17.01C Submittals

Submit signal strength measurements report for acceptance.
Submit certificates of compliance and warranty documentation before installation.

87-17.01C(1) Warranty

Furnish a 5-year replacement warranty from the manufacturer of the modems and power supplies against any defects or failures. The effective date of the warranty is the date of installation. Furnish replacement modems and power supplies within 5 days after receipt of the failed parts. The Department does not pay for the replacement parts. Deliver replacement modems and power supplies to LARTMC.

87-17.02 Materials

87-17.02A General

The Wireless Data System consists of:

1. cellular router
2. hardened DIN-rail power supply
3. mounting hardware
4. serial or ethernet cable
5. antenna
6. software
7. low loss adapter
8. cable and wire management components and
9. sealant.

The Wireless Data System must be installed in CCTV cabinets, Ramp Metering Station (RMS) cabinets, Changeable Message Sign (CMS) cabinets, Highway Advisory Radio (HAR) cabinets and Traffic Monitoring Station (TMS) cabinets, be compatible with controllers in above cabinets and with existing ATMS and other ITS software communications.

The Wireless Data System must also be installed in traffic signal controller cabinets and be compatible with traffic signal controllers specified in Department TEES and with existing traffic signal management and field software.

No modification must be required for the Wireless Data System to work with all of above existing hardware and software.

87-17.02A(1) Cellular Router

The cellular router must, at a minimum, meet the following specifications:

Cellular Router	
Ethernet Downlink Interface	At least 3 10/100 Mbps 8P8C Ethernet ports
Cellular Interface	At least 2 mini SIM slots 2FF form factor Must be certified to operate on both Verizon and AT&T Must support dynamic cellular Wireless Wide Area Network (WWAN) switching LTE features: Bit rate 100 Mbps Down Link (DL) / 50 Mbps Up Link (UL), 3GPP release 8 standard; User Equipment (UE) CAT. 3 Output power: Class 3 (+23dBm ±2 dB) Supported bandwidths: 5 MHz, 10 MHz, 20 MHz Supported frequencies: 700 (B13) / 700 (B17) / 850 (B5) /AWS (B4) / 1900 MHz (B2) HSPA+ features: Bit rate 42 Mbps (DL) / 5,76 Mbps (UL), 3GPP rel. 7 standard; UE CAT. 14, 24 Data compression 3GPP TS25.212 Supported frequencies: 850 (BV) /AWS (BIV) / 1900 MHz (BII) UMTS features: PS bit rate 384 kbps (DL) / 384 kbps (UL) Output power: Class 3 (+24dBm +1/-3 dB) Supported frequencies: 850 (BV) /AWS (BIV) / 1900 MHz (BII) GPRS/EDGE features: Bit rate 237 kbps (DL) / 59,2 kbps (UL) GPRS multi slot class 12, CS 1 to 4 EDGE multi slot class 12, CS 1 to 4, MCS 1 to 9 Supported frequencies: 850 / 900 / 1800 / 1900 MHz GPRS/EDGE power classes: EGSM 850 / 900: Class 4 (+33dBm ±2 dB) GSM 1800 / 1900: Class 1 (+30dBm ±2 dB) GSM 850 / 900: Class E2 (+27dBm ±3 dB) GSM 1800 / 1900: Class E2 (+26dBm +3/-4 dB)
Serial Interfaces	At least 1 RS-232 Serial Port on 4-pin terminal block At least 1 RS-485 Serial Port on 3-pin terminal block
Other interfaces	At least 1 USB 2.0 Host connector At least 1 Micro SD card slot
Antenna interfaces	At least 3 SMA type Antenna ports (ANT, DIV, GPS) At least 1 R-SMA type Wi-Fi Antenna port

GNSS	Antenna: 50 Ohms – active Protocols: NMEA 0183 v3.0 Frequency GPS: 1575.42MHz Typical Tracking Sensitivity (Open sky): Active antenna or LNA: -159 dBm Passive antenna: -156 dBm Acquisition Sensitivity (Open sky): Active antenna or LNA: -149 dBm Passive antenna: -145 dBm Cold Start Sensitivity: -145 dBm Acquisition time (TTFF): Warm start: 29 s Max. Cold start: 32 s Max.
Wi-Fi	802.11 A/B/G/N, AP or client modes Supported Wi-Fi band: 2.4 GHz, 5 GHz Encryption: None, WEP, TKIP, AES 5 GHz supported channels: 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165 2.4 GHz supported channels: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 Number of clients: 10 Authentication: Open, Shared, WPA–PSK, WPA2–PSK
Software Requirements	Network and Routing: DHCP Server, , DHCP Client, NAT/PAT, VRRP, Dynamic DNS client, DNS proxy, VLAN, QoS, NTP Client/ Server, IGMP, BGP, OSPF, RIP, SMTP, SMTPS, SNMP v1/ v2c/ v3, Backup routes, PPP, PPPoE, SSL, Port Forwarding, Host Port Routing, Ethernet Bridging Security: HTTPS, SSH, VPN tunnels, SFTP, Firewall (IP Filtering, MAC address filtering, Inbound and outbound Port filtering), DMZ (via iptables) VPN Tunnelling: Open VPN client and server and P2P, L2TP, PPTP, GRE, EasyVPN, DMVPN, IPSec with IKEv1 and IKEv2 Configuration: Web server, SSH, Four configuration switchable profiles, Automatic configuration update from server Backup configuration, Restore configuration Firmware Management: Automatic firmware update from server, Locally via LAN and USB or remotely OTA (HTTP, HTTPS), Over-the-Air software updates, Over-the-Air cellular module update from FW Diagnostic: One CLICK report – current configuration / factory identification / system log / kernel log / reboot log / routing table, Remote diagnostics possible via SSH Status: Network Status, DHCP Status, IPSec Status, Statistics history for last 60 days Log: System Log, Reboot Log, Kernel Log Controlling and Diagnostic: SMS, SNMP v1/v2c/v3, Statuses, Log Event Engine: Start Up script & Up/Down script (Bash), Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature Report Types: RAP, SMS, email, SNMP Trap Other: IPv6 support

Environmental Requirements	Minimum Range of Operating Temperature: -40 to +167 °F Storage: -40 to +185 °F Minimum Range of Operating Humidity: 0 to 95 % Storage (Non-condensing): 0 to 95 % Cold Start -31 °F Operating Altitude: 2000 m / 70 kPa Ingress Protection Rating: IP30
Mechanical Requirements	Fan-less design Maximum Device Size (H x W x D): 4” x 6” x 6” Integrated mounting including either 4 keyhole screw mounts in 19” rack or mounting bracket using DIN rail
Power Requirements	Power Supply: 10 - 60 VDC (2-Way Molex connector) Maximum Power Consumption: Idle: 2.5 W Average: 4 W Peak: 11 W Sleep Mode: 10mW
Emission	ETSI EN 301 511 v9.0.2, ETSI EN 300 440-2 v1.4.1 ETSI EN 300 328 v1.8.1, ETSI EN 301 489-17 v2.2.1 FCC 15.107 Class B, FCC 15.109 Class B FCC ID 2AIQR-SR305, Contains: FCC ID 2AIQR-PLS8-X, IC ID 7830A-PLS8X.WiFi versions contain FCC ID Z64-WL18DBMOD, IC ID 4511-WL18DBMOD. PTCRB ETSI EN 301 489-1 v1.9.2, IEC 61000-6-2:2005, IEC 61000-6-3:2006
Safety	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013, EN 62311:2008 UL C1D2 and ATEX: UL 60950-1, 2nd ed. + am1 + am2 CAN/CSA C22.2 No. 60950-1-07, 2nd ed. + am1 + am2 UL E4861 ATEX II 3 G Ex nA IIC T4 Gc, DEMKO 16 ATEX 1801X

The cellular router must:

1. Be configurable remotely through the cellular network and locally through the router serial and Ethernet port.
2. Be configured before acceptance.
3. Have a minimum 53.6 Kbps raw data transfer rate for serial port
4. Have a full duplex transceiver for both serial and Ethernet port.
5. Be fully compatible with existing cellular (mobile) network carrier used in District 7 TMC field network and be compatible with 4G cellular (mobile) networks with fall back to 3G. The contractor must contact District 7 TMC Support office to find out:
    - Cellular (mobile) network currently used in District 7 TMC field network
    - List of approved cellular routers

    At the following address and phone number:
    TMC Support Unit, ITS, Division of Operations, District 7,Caltrans LARTMC
    2901 W Broadway St, Room 407, Los Angeles, CA 90041,
    Office: 323-259-1833
6. Have an integrated TCP/IP stack with user datagram protocol (UDP).
7. Have a user-settable password to prevent unauthorized access.
8. Include a DC power cable at least 3 feet long with a connector compatible with the cellular router power connector (2-way Molex)

9. Operate in a static IP address environment of 4G networks (with fall back to 3G) at their designated frequency bands for existing cellular (mobile) network carrier used in District 7 TMC field network and meet the requirement of receiver sensitivity of at least -90dBm.

The cellular router and associated firmware, software, hardware, protocol, and other features must be fully compatible with the existing cellular (mobile) network carrier used in District 7 TMC field network and this required compatibility must be demonstrated to Caltrans designated Engineer by actual installation or by other authorized means.

87-17.02A(2) Hardened DIN-Rail Power Supply

Hardened DIN-rail power supply must, at a minimum, meet the following specifications:

Hardened DIN-Rail Power Supply	
Output Requirements	Output Voltage: 24VDC Output Voltage Adjustment Range: 22VDC to 27VDC Rated Current: 1.67A Peak Current: (Max Output Current, 3 seconds) 2.50A Output Power 40 Watts
Input Requirements	Input Voltage: 85 - 264 VAC; 110 - 375 VDC Input Frequency: 47 - 63 Hz Input Current < 0.93 A @ 115VAC, < 0.40 A @ 230VAC
Protection Requirements	OVP (Over Voltage Protection): 35V max OCP (Output Peak Current Protection, 3-5 sec.): 2.50A SCP (Short Circuit Protection) < 0.1 ohm OTP (Over Temperature Protection): 100 ± 10%
Environmental Requirements	Operating Temperature -13 to +158 °F Cold Start -40°F Operating Humidity 5 to 95% RH, non-condensing Storage Temperature -40 to +185 °F Operating Altitude 5,000 m
Safety and EMC Emissions Requirements	CB/UL/TUV/CCC: IEC60950-1/GB4943.1 EMC Emission EN55032 (CISPR32), EN61000-3-2,EN61000-3-3, EN55011 EMC Immunity EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 , EN61000-6-4 , EN61204-3, heavy industry level, criteria A,SEMI F47
Mechanical Requirements	Fan-less design Maximum Device Size (H x W x D): 3” x 6” x 6” DIN-Rail mounting EN60715 Metal Case Input Connector: 3 Pins (300V/ 20A) Output Connector: 4 Pins (300V/ 20A) Terminal Type: Screw Terminal Wire AWG22-16
Reliability and Warranty Requirements	MTBF (hours): 500,000 (based on SR-332) Warranty: 5 Years

87-17.02A(3) Mounting Hardware

Cellular router mounting hardware must include 4 self-tapping screws and washers that match the keyhole screw mounts or mounting bracket of the cellular router for 19-inch rack mounting. For DIN-rail mounting, the cellular router must have DIN-rail mounts attached to the device, that can be mounted to DIN-rails inside cabinets. If DIN-rail is not available inside cabinets then DIN-rail 19-inch rack mount kit can be used where a DIN-rail is available inside a rack mounted kit.

The mounting must:

1. Be made of stainless steel or Aluminum.
2. Securely hold the cellular router and the hardened DIN-rail power supply in a vertical position with all cables and conductors installed.
3. Hold the cellular router and the hardened DIN-rail power supply using a method that allows the removal of the router and the power supply devices without tools or without removing the bracket from its attachment to the cabinet frame.

87-17.02A(4) Serial or Ethernet Cable

The serial cable connects the 170 controller to the cellular router and includes all conductors and connectors required for that purpose. The connectors for the cellular router end for serial cable must be able to connect to 4-pin terminal block for the RS-232 serial port and 3-pin terminal block plug for the RS-485 serial port at the cellular router. The controller side connectors for the serial cables must be C2 type. The C2 connector for the Department-furnished controller must comply with AMP 201360-2 or equivalent. All pins in both connectors must be gold plated. The cable must have no. 20 AWG conductors with (UL) Type CM shielded or AWM 2464 80C 300 Volts. The cable must be at least 3 feet long.

The ethernet cable connects the 2070 controllers to the cellular router. The ethernet cable must be CAT-5E type network patch cable which must be manufacturer certified as TIA/EIA-568-B standard compliant. Connectors at both ends of the CAT-5E patch cables must be 8P8C-type modular connectors using T568B termination. Appropriate length must be used for all cables with sufficient length to allow for cable organization using cable ties but cable lengths must not exceed 368 feet.

87-17.02A(5) Antenna

The cellular router antenna must:

1. Be low profile design for outdoor surface bolt mount.
2. Be Omni-directional with vertical polarization and must match the supported modem frequency bands.
3. At a minimum meet the following requirements:
    a. (2) LTE 4G, 3G, 2G MiMo 690~960/ 1710~2170/ 2500~2700 MHz
    b. Wi-Fi 2.4~2.5 GHz
    c. DSRC 5.8~6 GHz
    d. GPS 1575.42 ± 1.023 MHz
    e. IP67 Water and Dust Migration Protection
    f. RG174 Low Loss Cable
    g. SMA Connectors (4 Male / 1 RP Male - Wi-Fi)

87-17.02A(6) Software

Cellular router internal installed software must include user manual. The user manual and system manual must describe the function of all configuration parameters used by the software, describe default values and provide valid range or values for all configuration settings.

The internal installed software at the cellular router must support the following management functions locally through device ports and remotely using over the air interface:

- control
- configuration
- firmware upgrades
- diagnostics
- monitoring of signal level at receiver, and
- resetting of the cellular router.

The internal installed software at the cellular router must support above management function access individually using SSH, telnet etc. or by using central management software.

87-17.02A(7) Low Loss Adapter

Low loss adapter must be a SMA socket to BNC plug low loss in-line straight adapter. Low loss adapter must comply with the following requirements:

Nominal Impedance	50-Ohm
Operating Frequency Range	0 to 2 GHz
Maximum VSWR	1.2
Maximum Insertion Loss	0.1 dB
Operating Temperature	-25 to +170 °F
Body Finish	Gold or Nickel plated
Contacts Finish	Gold plated
Body Materials	Beryllium Copper or Brass

87-17.02A(8) Cable and Wire Management Components

Cable and wire management components include cable ties, wire and cable mounting devices, non-metallic strain reliefs, fixed diameter clamps, and wire management brackets.

87-17.02A(9) Sealant

Sealant must be UL listed heat resistant, weatherproof, waterproof, watertight and high temperature silicone sealant, withstand -45 to +200 degrees F, and resist vibration.

87-17.03 Construction

The Cellular Router installation may be adjusted for field conditions if authorized by Caltrans Engineer.

Equipment installation must not affect the normal movement of the controller cabinet's doors. Use wire management brackets every 1 foot in the cabinets to route cable. Use cables and wire management system components in the controller cabinet and equipment rack to avoid physical interference between cables and adjacent equipment, to allow equipment to be removed from controller cabinet without physical interference, and to keep terminal blocks clearly visible.

Comply with the manufacturer's installation instructions and recommendations to avoid equipment damage during installation. Cellular Router must be mounted using mounting hardware, connected to:

- port C20S of Model 170E controller using serial cable or
- 2070-1E CPU module ethernet port in Model 2070 controller using ethernet cable

used as signal system master, connected to SMA Cellular network connector of antenna, and connected to hardened DIN-rail power supply. Antenna must be surface mounted and connected to the Cellular Router. Hardened DIN-rail power supply must be connected to an equipment outlet, not to a controller outlet, in the power distribution assembly (PDA) and to the Cellular Router.

Use a serial cable or ethernet cable, a laptop computer, the management software, and the Cellular Router to measure signal strength. Before Cellular Router antenna is permanently installed, conduct signal strength measurements and add measurements to signal strength measurements report.

If signal strength measurements report shows that the radio signal is below the signal strength specifications (-90 dBm), then a more powerful antenna or a combination of antenna and booster device with higher gain must be installed to bring the measured signal strength above the signal strength specifications (-90 dBm).

After acceptance of the signal strength measurements report, install the Cellular Router, the mounting hardware, the hardened DIN-rail power supply, and the router serial cable or ethernet cable. The mounting hardware must secure in place the Cellular Router to a mounting plate and mounting screws must not touch the cabinet walls. Measure the radio signal strength in dBm, verify that the radio signal exceeds the signal strength specifications (-90 dBm), and add measurements to signal strength measurements report.

Water deflection assemblies must not be damaged and must be re-installed if removed during the installation of the antenna.

After the signal strength measurements report shows that the radio signal exceeds the signal strength specifications, install the antenna along with additional booster device if required. The installation of the antenna must include sealing gasket and bolt mount using a locknut and a torque wrench, and must be

weatherproof and watertight. The center of the antenna must be placed at the same distance from the sides of the controller cabinet and a maximum of 5 inches from the back of the controller cabinet. Seal the controller cabinet after installing the antenna and use specified sealant inside the controller cabinet on the hole used to install the antenna. Measure the radio signal strength in dBm after installation of the antenna, add measurements to signal strength measurements report.

87-17.04 Payment

Not used.

Add to the list in the 1stparagraph of section 87-19.02H:

4. Labeled as shown including phone number (323) 259-1922.

Add to the list in the 1stparagraph of section 87-19.02I:

3. ST, LC, and as shown

Add to the end of section 87-19.02:

87-19.02J Ethernet Switch Type 1

87-19.02J(1) General

Ethernet switch type 1 must be installed in IP station cabinets such as changeable message sign (CMS) cabinets and traffic monitoring station (TMS) cabinets.

Ethernet switch type 1 must be properly configured with IP address provided by TMC support so that after installation at above field cabinets, it can be remotely accessed from the TMC.

The Ethernet switch type 1 must be connected via small form-factor pluggable (SFP) fiber ports to Ethernet switches in other IP station field cabinets or IP nodes. IP node field cabinets extend the ITS field IP network from the communication hubs to the Ethernet switch type 1 edge switches installed in IP station cabinets such as CMS cabinets and TMS cabinets. Placed between the communication hubs and IP stations, IP nodes facilitate two-way communication between field equipment at the IP stations and LARTMC data center.

All non-Ethernet equipment in field cabinets must be converted to Ethernet using compatible suitable terminal servers in the field cabinet to enable connection to the Ethernet switch type 1 in the cabinet. Connections are to be done using CAT-6 network patch cables which must be manufacturer certified as TIA/EIA-568-B standard compliant. Connectors at both ends of the CAT-6 patch cables must be 8P8C-type modular connectors using T568B termination. Appropriate length must be used for all cables with sufficient length to allow for cable organization using cable ties but cable lengths must not exceed 368 feet.

Ethernet switch type 1 must have at least one compatible power supply unit, provided with the switch as an included part, which must meet the following requirements:

POWER SUPPLY	
Electrical Requirements	Input Voltage: 85~264 VAC and 110~375 VDC Input Frequency: 47~63 Hz Output voltage: 24VDC Rated Current: At least 1.5A AC and DC line voltage separately fused Short circuit/Overload/Over voltage/Over temperature protections

Environmental and Safety Compliance	Operating temperature: -25 ~ +70°C (-13F to 158F) Power Derating: Full load to 60°C, output power derated 2.5% per °C IEC60950-1/GB4943.1 approved and EN61000-6-2(EN50082-2) industrial immunity level
Mechanical Requirements	DIN Rail mounting
MTBF	>499,999 hours

Ethernet switches must be provided with compatible fiber optic SFP modules to populate the SFP slots on the switches as required. The choice of SFP module types must be determined based on the distance of the fiber link involved.

Ethernet switch type 1 must, at a minimum, meet the following specifications:

Ethernet Switch Type 1	
Ethernet Downlink/Uplink Interfaces	Downlink: 4 x 10/100/1000Base-T(X) with RJ45 Auto MDI/MDIX Uplink: 2 x 100/1000Mbps SFP Ports 8K MAC addresses, 4.1Mbit Packet buffer
Application Interfaces and Network Management/Configuration	TCP/IP, UDP/IP, HTTP/TFTP, Command line interface (CLI), IPv4/IPv6, TELNET, DHCP server/ client, DHCP option 66/67/82, Flow control, Ingress/Egress Rate limit, Jumbo frame Web interface, Serial (Console) interface, multiple user accounts, LLDP, SNMP v1/v2c/v3, SMTP, RMON, Smart PoE management, SNTP, Standard MIB, Private MIB, DHCP Persistence
Network Monitoring, Redundancy, and Filtering	Port statistics and utilization, LLDP/IGMP/MLD statics, Loop detection, and power status in WebGUI interface Ring (Self-Recovery < 20 ms at 250 units), STP/RSTP/MSTP, ERPSv2 (G.8032), Link Aggregation Control Protocol (LACP) Multicast (IGMP Snooping/Querier), Unknown multicast filtering, 802.1Q VLAN, Port-based VLAN, GVRP, GARP, Q in Q, QoS (IEEE802.1p) with 8 classes and TOS/DiffServ, and flow control
Security Requirements	Support Device Binding, enable/disable MAC based port security, Support Port based network access control (802.1x), VLAN (802.1Q) segregation and network traffic security, Radius centralized password management, SNMPv3 encrypted authentication and access security Layer 3 Security: Access Control List (ACL), DHCP Snooping, ARP Spoofing Prevention, IP Source Guard, TACACS+/RADIUS, Secure FTP
Diagnostics and Provisioning	Cable Diagnostics, IPv4/IPv6 ping testing, Syslog, Port Mirror, Digital-Diagnostic-Monitoring (DDM), Port Mirroring 1:1 and N:1 Intelligent provisioning, offers auto-sync function of firmware and configuration settings for middle/large-scale multi-switch deployment, and built-in WebGUI features
Additional Requirements	IP Multicast capable, IEEE 802.1Q standard VLAN Fully compatible to existing network and switch management and monitoring software, allowing full integration with and usage of all available features of this software Fanless design Store-and-Forward capability Switching Bandwidth: 12Gbps VLAN capacity: 256 IGMP multicast group capacity: 256 Support user-defined port rate limiting 9.216kbyte Jumbo Frame MTU

Physical Characteristic, Environmental and Regulatory Requirements	Enclosure: Metal shell, IP30 Operating temperature: -40C to 85C (-40F to 185F) Operating humidity: 10 to 95% non-condensing EMI shall meet FCC part 15, CISPR (EN55022) class A, EMS sections EN61000-4-2(ESD).EN61000-4-3(RS), EN61000-4-4(EFT), EN61000-4-5(CS), EN61000-4-8,and EN61000-4-11, IEC60068-2-27 for Shock, IEC60068-2-32 for Free Fall, IEC60068-2-6 for vibration, UL61010 for safety
Mechanical Requirement	Maximum Device Size (H x W x D): 4.8" x 1.7" x 3.4" DIN rail mounting
Electrical Requirements	Redundant Dual Power Input: From 12 to 48 V(dc) Overload current protection, Reverse polarity protection Power Consumption: less than 5 Watts at 48V(dc)
IEEE Compliance	IEEE standards 802.3 for 10Base-T, 802.3u for 100Base-TX,802.3z for 1000Base-x,802.3ab for 1000Base-T, 802.3x for Flow control, 802.3ad for LACP, 802.1D for STP, 802.p for COS, 802.1Q for VLAN tagging, 802.1w for RSTP, 802.1s for MSTP, 802.1x for Authentication, 802.1AB for LLDP, IEEE 802.3az for low energy consumption
MTBF	>858,000 hours

Switches shall have the ability to scan all IP addresses in the network and have dual firmware (FW) image support to avoid FW upgrade failures/operations, power failures, and human error. Switches must be able to automatically boot through secondary back up image in case of primary image boot failures.

Switches shall have additional FW backup/restore dongle device connected with console interface for the user to be able to hot-swap failed switches without processing reconfiguration during new device replacement.

87-19.02K Fiber Optic Small Form Factor Pluggable (SFP) Modules

Fiber optic SFP modules for the Ethernet switch type 1 must meet the following requirements:

1. Be from the same manufacturer of the Ethernet switch.
2. Be of appropriate type depending on the distance covered by the fiber optic link and must also be compatible with the appropriate type of fiber (Single mode) used in the fiber optic link in question.
3. Be compliant with small form-factor pluggable (SFP) multi-source agreement (MSA)
4. Use optical connector type: LC
5. Have metal enclosure for EMI
6. If Class 1 laser product is used, it must comply with EN 60825-1
7. Support plug-n-play operation (hot pluggable)
8. Have a minimum operating temperature range of -40 to +185 degrees F
9. Have Digital-Diagnostic-Monitoring (DDM) functionality.

SFP modules used in Ethernet switch type 1 must be of the following type:

SFP Module Type	Throughput	Fiber Type	Wavelength	Maximum Transmission Distance	Sensitivity (dB)
1000BASE-LX10	1000 Mbps	Single Mode	1310 nm	6.2 miles/10 km	-21

In case of too high transmit power at receiving end, inline optical attenuator must be used at both ends to avoid overloading the receiver.

Add between the 12th and 13th paragraphs of section 87-19.03C:

Use the county abbreviations for the fiber optic cable identification as shown in the following table:

Fiber Optic Cable Identification for County

County	County Abbreviation				
Los Angeles	LA				

Add to the end of section 87-21.03C:

Modifying a traffic monitoring station includes removing, adjusting, or adding:

1. Foundations
2. Pull boxes
3. Conduit
4. Cables
5. Conductors
6. Service equipment enclosure
7. Controller cabinet
8. Detectors
9. Telephone demarcation cabinet

Modifying a changeable message sign system includes removing, adjusting, or adding:

1. Pull boxes
2. Conduit
3. Conductors and cables
4. Changeable Message Sign
5. 334LS CMS controller cabinet
6. CMS controller
7. Ethernet switch
8. Field box interface
9. Remote power switch
10. Cellular router
11. ES-1
12. SFP modules
13. Patch cords
14. FDU
15 Multiple AC outlet strip
16. Circuit breakers
17. Cabinet strap

Modifying fiber optic cable system includes removing, adjusting, or adding:

1. Fiber optic cable
2. Conductors
3. Conduit
4. Innerduct
5. HDPE conduit
6. Pull boxes
7. FOSE
8. FDU
9. ES-1
10. SFP modules
11. Patch cords
12. CAT6
13. Warning tape
14. Fiber optic markers

Modifying a traffic census station includes removing, adjusting, or adding:

1. Foundations
2. Pull boxes
3. Conduit
4. Cables
5. Conductors
6. Service equipment enclosure
7. Controller cabinet
8. Detectors
9. Telephone demarcation cabinet