TRAFFIC OPERATIONS MANUAL

Chapter 115 Appendices

Call Boxes

October 2025

California Department of Transportation
Division of Traffic Operations

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Appendix 115 A Statewide Call Box Numbering System

The standard statewide numbering system approved by Caltrans and California Highway Patrol (CHP) for all California call box systems is as follows:

1. The unique number for each call box shall contain a two-letter county designation, a freeway or roadway number, a hyphen followed by a specific two- or three-digit number representing milepost, and another number signifying the quarter-mile road segment.
2. Refer to Table C-1 for the two-letter county designations for the call box statewide numbering system. This designation shall be used for some documentation procedures and in automatic databases and appears on the call box sign identifying the county where it is located.
3. The freeway or roadway number used is the number normally used to represent the road in the California Streets and Highways Code. The designation may consist of one to three numbers and may include a letter (for example, 299E, 80, 680, or 1).
4. The specific box number after the hyphen shall be represented first by the milepost whole number.
5. A number shall be added representing the quarter-mile segment in which the box is placed. Even numbers shall be used for boxes placed on the north and eastbound sides of the road, and odd numbers shall be used for boxes placed on the south and westbound sides.
    - For example, a call box placed in the first quarter mile segment of the mile between the 45th and 46th mile posts in Ventura County on Highway 101 on the northbound side would be numbered: 101-452.
6. The even numbers used for the north and eastbound sides are 2, 4, 6, and 8. The odd numbers used for the south and westbound are 3, 5, 7, and 9.
7. Transition or connector roads will use the same numbering system with a "T" added to the number. A letter code may follow the post mile number to designate a special type of road, such as "R" for realignment.
8. Modifications to the above numbering system may be required for call boxes installed on Caltrans toll bridges.

Table A-1 County Letter Designation

No.	County	Code
1	Alameda	AL
2	Alpine	AP
3	Amador	AM
4	Butte	BU
5	Calaveras	CV
6	Colusa	CO
7	Contra Costa	CC
8	Del Norte	DN
9	El Dorado	EL
10	Fresno	FR
11	Glenn	GL
12	Humboldt	HU
13	Imperial	IM
14	Inyo	IN
15	Kern	KR
16	Kings	KN
17	Lake	LK
18	Lassen	LS
19	Los Angeles	LA
20	Madera	MD
21	Marin	MR
22	Mariposa	MP
23	Mendocino	MC
24	Merced	ME
25	Modoc	MO
26	Mono	MN
27	Monterey	MY
28	Napa	NP

No.	County	Code
30	Orange	OR
31	Placer	PL
32	Plumas	PM
33	Riverside	RV
34	Sacramento	SA
35	San Benito	ST
36	San Bernardino	SB
37	San Diego	SD
38	San Francisco	SF
39	San Joaquin	SJ
40	San Luis Obispo	SL
41	San Mateo	SM
42	Santa Barbara	SR
43	Santa Clara	SC
44	Santa Cruz	SZ
45	Shasta	SH
46	Sierra	SI
47	Siskiyou	SK
48	Solano	SO
49	Sonoma	SN
50	Stanislaus	SS
51	Sutter	SU
52	Tehama	TE
53	Trinity	TR
54	Tulare	TU
55	Tuolumne	TM
56	Ventura	VE
57	Yolo	YL
58	Yuba	YB

Appendix 115 B California Highway Patrol Reimbursable Position Formula

Topic 1 Initial Implementation

The SAFE will estimate initial call box telephone activity using call data from similar dispatch centers, considering the number of boxes to be installed and applicable statistics.

During initial implementation, CHP will monitor actual call box call activity monthly to determine whether the SAFE's recommendation was accurate and allows for sufficient staffing to answer the SAFE's call box calls. Based on actual activity, CHP will recommend staffing increases, as necessary, during the initial implementation and after call box call volume has "leveled off."

Topic 2 Staffing Analysis Assessment

The SAFE may request or CHP may perform a staffing analysis. If a change of staffing is required due to a non-predicted need, the CHP, SAFE, or both may request, in writing, such a change. Staffing changes may be necessary for, but need not be limited to, the following:

- Increases or decreases in the number of call boxes.
- Significant changes in the number of call box calls.

Topic 3 Reimbursable Position Formula

The following formula will be used to determine the number of reimbursable positions:

Number of Incoming Call Box Calls x Average Length of Incoming Call Box Calls (in years, unit conversion below)

3,600 seconds/hour x 1,758 hours/year

= Personnel Years (PY) Incoming Calls

PY Incoming Calls x 20% (Estimated Outgoing Call Rate*) = PY Outgoing Calls

*(Twenty percent *Estimated Outgoing Call Rate* is an approximate statewide average. This figure will be used to calculate SAFE-reimbursed staffing at all CHP communications centers.)

Topic 4 "Rounding" of Operators

When computations using the Reimbursable Positions Formula yield results that include a "partial operator" (for example, 4.2), the following method of rounding will be used:

0.01 to 0.09 = exact fraction

0.10 to 1.00 = 1

1.01 to 1.09 = 1 + exact fraction

1.10 to 2.00 = 2

Implementation of this method will not affect the total number of public safety operator and public safety dispatcher positions currently funded by the SAFEs, but will allow CHP to provide call box call answering services to smaller SAFEs at an affordable price. However, determining actual reimbursable positions can be treated on a case-by-case basis.

Appendix 115 C California Highway Patrol Reports and Fee Schedule for Motorists

In accordance with the *California Highway Patrol Administrative Procedures Manual* and Vehicle Code, Section 20012, the CHP shall take responsible steps to ensure parties requesting review or purchase of photographs or copies of incident or collision reports are authorized to receive them. A party requesting copies of a report shall complete form CHP 190, "Application for Release of Information", and submit the application to the CHP area office responsible for the accident report. Parties requesting the report can obtain their records online through the CHP Crash Report Search. Records are provided electronically free of charge or printed for a flat fee of $10.00.

Appendix 115 D Sample Position Request Letter

Commander _____

California Highway Patrol

Communications Center Support Section

P.O. Box 942898

Sacramento, CA 94298-0001

Dear Commander _____:

The _(county)_ Service Authority for Freeway Emergencies/Expressways (SAFE) intends to begin the installation of the call box system on _____, 20##. Approximately ___ call boxes will be installed, checked out, and activated every week. The full system of ___ boxes should be completely operational by _____, 20##.

The full system design, with technical and operational configurations, will be submitted to the California Highway Patrol (CHP) for review and final approval from the Office of the Commissioner by _____, 20##. The sixty days required for CHP review will permit us to begin according to schedule.

To have sufficient public safety dispatchers hired with time to provide three months of training when the system begins operation, SAFE requests that CHP begin the process of hiring public safety dispatcher(s). SAFE and CHP agree that ___ public safety dispatchers are sufficient to answer an estimated average of ___ call box calls per day at a ___ second level of service. The SAFE understands and agrees that all costs associated with these positions will be assumed by the SAFE in accordance with Contract Number ____.

Please direct all questions concerning the call box program to __(name and phone number)__.

Sincerely,

Signature

First Name Last Name

Appendix 115 E Call Box Placement Criteria

Topic 1 General

- Call boxes shall be installed in pairs on opposite sides of a freeway, expressway, or multilane highway. To optimize accessibility, the first call box that is installed can be placed within 500 feet (ft) of its preliminary design location. The companion call box should be placed within 200 ft of the first call box (as measured along the roadway centerline).
- On conventional state routes, a single call box can be placed on one side to serve both directions of traffic where no more than two lanes of traffic exist for the entire cross section of the facility and there is no concrete barrier, median, left-hand turn lane, or other feature that divides directional flow lanes.
- Where possible on new installations, effort should be made to install type "A," "L," and "M" sites. New installations of call box site types "B" and "C" should be avoided. See Chapter 115, Section 5, Topic 5 for new call box site type "B" and "C" installations and Appendix 115 E, Topic 2 "Call Box Site Types" for call box site type depictions.
- Call boxes should be placed alongside the right shoulder. The shoulder does not have to be paved, but it should be a minimum of 8 ft wide. A level paved path that is compliant with the Americans with Disabilities Act (ADA) must be provided to call boxes off the shoulder.
- Placement or replacement of call boxes should be coordinated with any proposed construction project.

Table E-1 Comparison of Desirable Versus Undesirable Call Box Sites

Desirable Call Box Sites	Undesirable Call Box Sites
Within interchanges, sites that minimize the need to cross traffic lanes to reach the call box.	Sites in gore areas.
Sites near existing luminaires or illuminated overhead signs that provide supplemental lighting during hours of darkness.	Sites adjacent to transition lanes where weaving traffic is common.
Sites that provide a clear, unobstructed pathway to the call box pad.	Sites where existing roadway features such as dikes, curbs, or ditches affect call box accessibility or ADA compliance.
Sites behind existing roadway features, such as guard rails or bridge rails. (In the case of guard rails, place call box installations behind fixed portions only.)	Sites where sound walls and fences may restrict pedestrian emergency escape routes.
Sites that do not require a retaining wall. Minor shaping and grading of roadside soil slopes can provide suitable conditions without constructing a retaining wall.	Sites that require the construction of a retaining wall.
Highly visible sites, such as the crest of a vertical curve.	Sites shaded by landscaping or obscured by existing signs or structures. Sites near drainage inlets or grates. **Note:** Exceptions to these guidelines should be addressed during the permit application process. Exceptions may be given on a case-by-case basis.

Topic 2 Call Box Site Types

Figure E-1 Site Type A – Installed At-Grade, in Soil

Figure E-2 Site Type B – Installed in a Cut Slope (See Chapter 115, Section 5, Topic 5)

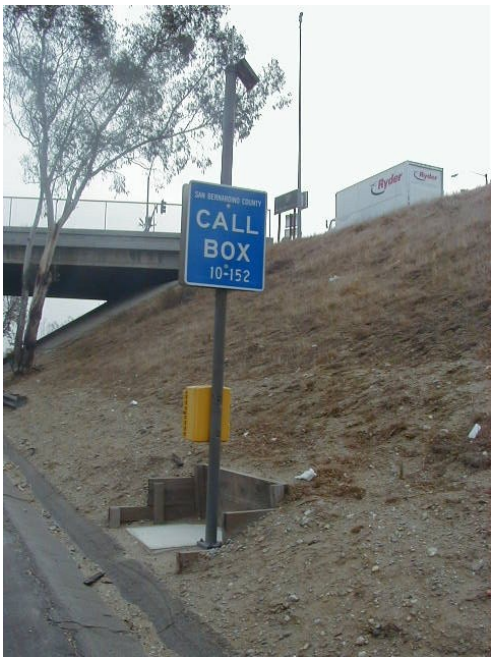


Figure E-3 Site Type C – Installed on a Fill Slope (See Chapter 115, Section 5, Topic 5)

Figure E-4 Site Type D – Mounted on a Soundwall

Figure E-5 Site Type E – Installed Behind a K-Rail or Concrete Barrier

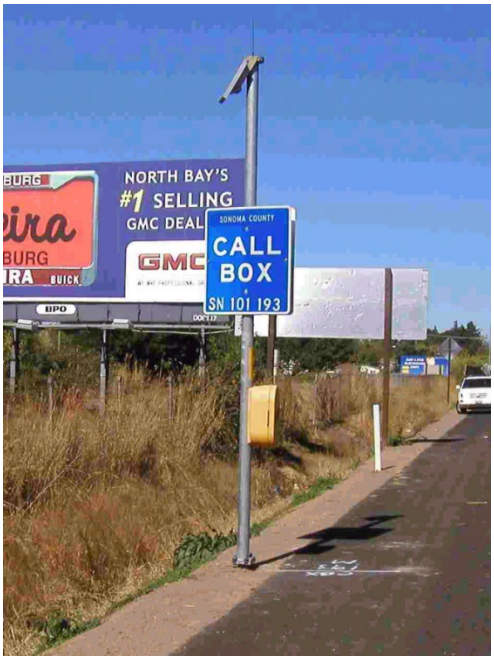
Figure E-6 Site Type F – Installed Behind a Guard Rail

Figure E-7 Site Type G – Installed At-Grade, in Pavement

Figure E-8 Site Type H or K – Installed on a K-Rail or Concrete Barrier

Figure E-9 Site Type L – Installed Behind a Dike

Figure E-10 Site Type M – Similar to Site Type F but Without Guard Rail



Appendix 115 F Call Box Retaining Wall Policy

The following is the Caltrans policy regarding the design and construction of retaining walls at call box sites. This policy has been developed by a joint subcommittee of local Service Authority for Freeway Emergencies/Expressways (SAFE) staff, Caltrans, and Federal Highway Administration (FHWA) representatives. The purpose of the policy is to:

- Improve the site design of call box systems which are operated within the state highway right-of-way; and
- Ensure crashworthiness of features at call box sites.

Retaining walls at call box sites are most often constructed in "cut" (Type "B") and "fill" (Type "C") sections of freeways and highways, and typically include one longitudinal wall and two transverse walls. The longitudinal wall is parallel to the flow of traffic, and the two transverse walls are installed perpendicular to the flow of traffic.

The site design of these installations may be improved by reducing the number of transverse walls at these site types. The SAFEs and Caltrans agree to jointly achieve this design objective by implementing the following:

- SAFE replacement of Type "B" and "C" installations with other site types where possible.
- SAFE grading surrounding terrain to eliminate or minimize the size of necessary retaining walls on Type B sites.
- Caltrans and SAFE prioritization of transverse wall mitigation efforts on call box sites with transverse walls greater than 12 inches.
- SAFE mitigation plan to replace all Type "C" sites with transverse walls greater than 4 inches.
- Acknowledgment that "shielded" "B" and "C" sites would not require mitigation efforts.

The above bullets outline the general effort between the SAFEs and Caltrans; below outlines specific steps required of both the SAFEs and Caltrans for achieving this design objective:

New Installations:

1. Effective February 1, 1999, all SAFE agencies should avoid the installation of call box site types "B" and "C" unless installed where shielded by existing roadway features, i.e., bridges, guard rails, etc. Greater latitude in spacing requirements should be used to allow for the installation of site types other than "B" or "C."
2. In the event spacing requirements recommend an optimal site that may require a retaining wall, the SAFE should first consider grading the surrounding area to convert the installation to an "A" site type.

3. If grading for a particular site is not reasonable, the SAFE will attempt to relocate the call box up or down the highway to an alternate site. Although each SAFE is encouraged to maintain the spacing as outlined in Section 5 of the Caltrans/CHP Call Box and Motorist Aid Guidelines, this particular safety issue should be weighed against the need for a "regularly spaced system." The Caltrans HQ traffic reviewer, through the District SAFE Coordinator, should be consulted when issues arise. The SAFE should work with the HQ Traffic Reviewer through the district SAFE coordinator if spacing beyond 200 feet (along the roadway centerline) appears desirable.
4. If an alternate site cannot be found using options 2 or 3 above, consideration should be given to eliminating the site and its companion entirely.
5. Per item 1 of New Installations above, if alternatives listed in 2 and 3 above do not yield a desirable site and because of a need for system continuity, a site or sites cannot be eliminated, the SAFE should work with the Caltrans HQ traffic reviewer through the district SAFE coordinator to install a "B" retaining wall that does not exceed 12 inches above finished grade. Type "C" sites shall not use retaining walls greater than 4 inches in height.
6. In the event the SAFE deems that a site cannot be moved and it requires special grading consideration, the SAFE should contact the Caltrans HQ traffic reviewer through the district SAFE coordinator to develop a solution.

Existing Installations:

7. No later than June 30, 2000, all existing SAFEs should perform a general survey of their systems to determine the distribution and nature of non-shielded "B" and "C" site types. SAFEs should determine height information of each transverse wall and other site characteristics to estimate the scope of work and cost to address in a transverse wall mitigation effort. Results of the survey should be shared with Caltrans and will be used to develop a retaining wall mitigation plan, described in item 8 below.
8. Based on the results of the survey mentioned in item 7 above, each SAFE should adopt a retaining wall mitigation plan to reduce transverse retaining walls more than 12 inches at non-shielded type "B" sites and eliminate retaining walls and handrails at Type "C" sites, where the retaining walls are greater than 4 inches. This mitigation plan will identify a schedule and steps for removal of transverse walls, grading to eliminate the need for retaining walls, relocation of call box sites to non-"B" and "C" sites, or reconstruction. In cases where sites must be repaired within 24 hours (e.g., knockdowns and site repairs), these shall be restored as is, per existing SAFE contracting requirements.
9. Existing type "B" and "C" call box sites modified for intelligent transportation system improvements will be addressed under the "Existing Installations" criteria. Each SAFE has flexibility regarding its mitigation schedule for existing installations. The time frame to complete this schedule will vary among SAFEs due to their

unique financial condition, but each SAFE should develop a systematic program to identify, fund, and reconstruct all relative existing call box sites that have these conditions.

10. For issues that cannot be resolved through the above-listed means, the SAFE should work with the Caltrans HQ traffic reviewer through the district SAFE coordinator to establish a solution for exceptions.

Appendix 115 G Implementation Plan

This appendix outlines what is expected in an implementation plan. To obtain Caltrans and CHP approval for a SAFE program implementation plan, a SAFE shall electronically submit the implementation plan to the Caltrans division chief for the Division of Traffic Operations, the call box program coordinator, and the CHP SAFE coordinator. An implementation plan shall be submitted if one of the following conditions apply:

- No current implementation plan is on file with Caltrans and the CHP.
- A SAFE amends its implementation plan for any reason, including, but not limited to, funding programs to comply with ADA provisions.

To assist Caltrans and the CHP reviewers, the SAFE program implementation plan should include sections that are labeled and presented in the following order.

Topic 1 Implementation Plan Sections

Section 1: Title Sheet and Table of Contents

This section should include:

- Implementation plan title.
- Name and address of the agency responsible for the county or regional service authority.
- Date of implementation plan and reference to the following five fiscal years that the plan covers.
- Name, title, and telephone number of the current regional SAFE program manager.
- A table of contents for the implementation plan.

Section 2: Implementation Plan Summary

This section should include a description of the history of the SAFE and what has been accomplished since it was first established. It should outline the reasons why the implementation plan is being submitted and, if applicable, a brief outline of what changes are being made to the current implementation plan.

Section 3: Implementation Plan Status and Schedule

This section describes the status of the call box program in the service authority and presents a schedule for the implementation of call boxes and other motorist aid systems within the jurisdiction of the service authority. This section contains a listing of highway routes and the total number of call boxes on each route.

The implementation plan should show the program status as it now exists, and how it is proposed upon full implementation.

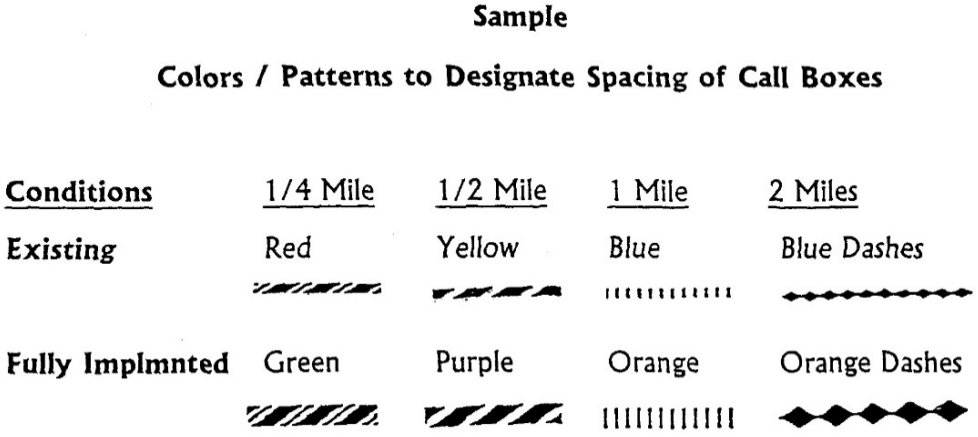
The implementation plan should include a summary of the existing and proposed call box system totals. It should show a year-by-year breakdown of system development from the present fiscal year to five years in the future. An implementation plan for a new system, for example, may have a five-year call box installation plan. This schedule may include anticipated expansion of the call box system and implementation of other motorist aid systems.

The implementation plan should include a listing of priorities that were developed to qualify the rationale for the schedule for the implementation of call box placement. It should specify whether the program is funded by bonds or if it is being financed by funds collected by the Department of Motor Vehicles. If other motorist aid systems are part of the implementation plan, this section should include a brief discussion to explain how other motorist aid systems relate to the overall call box development plan. Other motorist aid systems are usually funded by a SAFE only after it is demonstrated that call boxes can be fully implemented within five years.

Section 4: SAFE Call Box System Maps

Caltrans has compiled a set of post mile maps of all state highway routes. These maps are available for base maps that can be referenced and marked to show existing and proposed call box placement. Maps of the county or regional SAFE identify existing and proposed call box locations. A map entitled "Existing Conditions" is marked to indicate the current status of call box system development and shows the date of existing facilities. A second map entitled "Fully Implemented Conditions" is marked to indicate the fully implemented plan and the date that full implementation is anticipated. The maps are marked with a pattern scheme as outlined in the following Figure H-1. Note that if an agency prefers to use color, various color codes are also provided.

Figure G-1 Color and Pattern Examples for SAFE Call Box System Maps



A legend should be provided on each map to designate other motorist aid systems funded by the SAFE that are operational or planned, such as call box installations at commuter rail park-and-ride lots not located within the Caltrans right-of-way, lighted call boxes, changeable message signs, and FSP areas.

Section 5: Detailed Budget Projection

This section projects the SAFE operating budget based on existing and anticipated revenues and expenditures within ten fiscal years. It shows anticipated revenues and expenditures until the full implementation of all call boxes and other motorist aid systems has been achieved within five years and an additional five years beyond the implementation schedule.

Appendix 115 H Satellite Call Boxes

Although call boxes utilizing satellite communication systems offer some potential for call box programs, especially those in remote areas not covered by cellular communications, call box programs should note that satellite teletype (TTY) systems are different from TTY systems currently compatible with cellular call boxes. Certain satellite systems used in the satellite call boxes work well for voice transmission, but do not perform well in transmitting tones generated by a TTY device.

To address this, engineering staff developed an option for a satellite call box that includes the installation of TTY components developed for satellite-based call boxes. The TTY solution created for the satellite call boxes was approved by the CHP to meet ADA requirements that all call boxes be equipped with TTY devices to assist people who are deaf or hard of hearing.

SAFEs considering the use of satellite call boxes need to coordinate these efforts with CHP to ensure the unique configuration that was developed for satellite TTY systems works properly with satellite call boxes.