

STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
ENCROACHMENT PERMIT GENERAL PROVISIONS
TR-0045 (REV. 09/2017)

1. **AUTHORITY:** The California Department of Transportation (“Department”) has authority to issue encroachment permits under Division 1, Chapter 3, Article 1, Sections 660 through 734 of the Streets and Highways Code.
 2. **REVOCATION:** Encroachment permits are revocable on five (5) business days’ notice unless otherwise stated on the permit and except as provided by law for public corporations, franchise holders, and utilities. Notwithstanding the foregoing, in an emergency situation as determined by the Department, an encroachment permit may be revoked immediately. These General Provisions and any applicable Special Provisions are subject to modification or abrogation at any time. Permittees’ joint use agreements, franchise rights, reserved rights or any other agreements for operating purposes in State of California (“State”) highway right-of-way are exceptions to this revocation.
 3. **DENIAL FOR NONPAYMENT OF FEES:** Failure to pay encroachment permit fees when due may result in rejection of future applications and denial of encroachment permits.
 4. **ASSIGNMENT:** No party other than the permittee or permittee’s authorized agent is allowed to work under this encroachment permit.
 5. **ACCEPTANCE OF PROVISIONS:** Permittee understands and agrees to accept and comply with these General Provisions, the Special Provisions, any and all terms contained in this encroachment permit, and all attachments to this encroachment permit, for any work to be performed under this encroachment permit.
 6. **BEGINNING OF WORK:** When traffic is not impacted (see General Provision # 35), the permittee must notify the Department’s representative two (2) business days before starting permitted work. Permittee must notify the Department’s representative if the work is to be interrupted for a period of five (5) business days or more, unless otherwise agreed upon. All work must be performed on weekdays during regular work hours, excluding holidays, unless otherwise specified in this encroachment permit.
 7. **STANDARDS OF CONSTRUCTION:** All work performed within State highway right-of-way must conform to all applicable Departmental construction standards including but not limited to: Standard Specifications, Standard Plans, Project Development Procedures Manual, Highway Design Manual and Special Provisions.
- Departmental standards, nothing in these General Provisions is intended to give any third party any legal or equitable right, remedy, or claim with respect to these General Provisions or any provision herein. These General Provisions are for the sole and exclusive benefit of the permittee and the Department.
- Where reference is made in such standards to “Contractor” and “Engineer,” these are amended to be read as “Permittee” and “Department’s representative,” respectively, for purposes of this encroachment permit.
8. **PLAN CHANGES:** Deviations from plans, specifications, and/or encroachment permit provisions are not allowed without prior approval from the Department’s representative.
 9. **INSPECTION AND APPROVAL:** All work is subject to monitoring and inspection. Upon completion of work, permittee must request a final inspection for acceptance and approval by the Department. The local public agency permittee must not give final construction approval to its contractor until final acceptance and approval by the Department is obtained.
 10. **PERMIT AT WORKSITE:** Permittee must keep the permit package or a copy thereof at the work site at all times, and must show it upon request to any Department representative or law enforcement officer. If the permit package, or a copy thereof, is not kept and made available at the work site at all times, the work must be suspended.
 11. **CONFLICTING ENCROACHMENTS:** Permittee must yield start of work to ongoing, prior authorized work adjacent to or within the limits of the permittee’s project site. When existing encroachments conflict with permittee’s work, the permittee must bear all cost for rearrangements (e.g., relocation, alteration, removal, etc.).
 12. **PERMITS FROM OTHER AGENCIES:** This encroachment permit is invalidated if the permittee has not obtained all permits necessary and required by law, including but not limited to permits from the California Public Utilities Commission (CPUC), California Occupational Safety and Health Administration (Cal-OSHA), or any other public agency having jurisdiction. Permittee warrants all such permits have been obtained before beginning work under this encroachment permit.
 13. **PEDESTRIAN AND BICYCLIST SAFETY:** A safe minimum continuous passageway of four (4) feet must be maintained through the work area at existing pedestrian or bicycle facilities. At no time must pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where safe alternate passageways cannot be provided, appropriate signs and barricades must be installed

Other than as expressly provided by these General Provisions, the Special Provisions, the Standard Specifications, Standard Plans, and other applicable

at the limits of construction and in advance of the limits of construction at the nearest crosswalk or intersection to detour pedestrians to facilities across the street. Attention is directed to Section 7-1.04, *Public Safety*, of the Department's Standard Specifications.

14. **PUBLIC TRAFFIC CONTROL:** As required by law, the permittee must provide traffic control protection, warning signs, lights, safety devices, etc., and take all other measures necessary for the traveling public's safety. While providing traffic control, the needs of all road users, including but not limited to motorists, bicyclists and pedestrians, including persons with disabilities in accordance with the Americans with Disabilities Act, must be an essential part of the work activity.

Lane and/or shoulder closures must comply with the Department's Standard Specifications and Standard Plans for traffic control systems, and with the applicable Special Provisions. Where issues are not addressed in the Standard Specifications, Standard Plans, and/or Special Provisions, the California Manual on Uniform Traffic Control Devices (Part 6, *Temporary Traffic Control*) must be followed.

15. **MINIMUM INTERFERENCE WITH TRAFFIC:** Permittee must plan and conduct work so as to create the least possible inconvenience to the traveling public, such that traffic is not unreasonably delayed. On conventional highways, permittee must place properly attired flagger(s) to stop or warn the traveling public in compliance with the California Manual on Uniform Traffic Control Devices (Chapter 6E, *Flagger Control*).

16. **STORAGE OF EQUIPMENT AND MATERIALS:** The storage of equipment or materials is not allowed within State highway right-of-way, unless specified within the Special Provisions of this encroachment permit. If encroachment permit Special Provisions allow for the storage of equipment or materials within the State highway right-of-way, the equipment and material storage must also comply with Section 7-1.04, *Public Safety*, of the Department's Standard Specifications.

17. **CARE OF DRAINAGE:** Permittee must provide alternate drainage for any work interfering with an existing drainage facility in compliance with the Department's Standard Specifications, Standard Plans, and/or as directed by the Department's representative.

18. **RESTORATION AND REPAIRS IN STATE HIGHWAY RIGHT-OF-WAY:** Permittee is responsible for restoration and repair of State highway right-of-way resulting from permitted work (Streets and Highways Code, section 670 et seq.).

19. **STATE HIGHWAY RIGHT-OF-WAY CLEAN UP:** Upon completion of work, permittee must remove and dispose of all scraps, refuse, brush, timber, materials, etc.

off the State highway right-of-way. The aesthetics of the highway must be as it was before work started or better.

20. **COST OF WORK:** Unless stated otherwise in the encroachment permit or a separate written agreement with the Department, the permittee must bear all costs incurred for work within the State highway right-of-way and waives all claims for indemnification or contribution from the State, the Department, and from the Directors, officers, and employees of the State and/or the Department.

21. **ACTUAL COST BILLING:** When specified in the permit, the Department will bill the permittee actual costs at the currently set Standard Hourly Rate for encroachment permits.

22. **AS-BUILT PLANS:** When required, permittee must submit one (1) set of folded as-built plans within thirty (30) calendar days after completion and acceptance of work in compliance with requirements listed as follows:

- a) Upon completion of the work provided herein, the permittee must submit a paper set of As-Built plans to the Department's representative.
- b) All changes in the work will be shown on the plans, as issued with the permit, including changes approved by Encroachment Permit Rider.
- c) The plans are to be prominently stamped or otherwise noted "AS-BUILT" by the permittee's representative who was responsible for overseeing the work. Any original plan that was approved with a Department stamp, or by signature of the Department's representative, must be used for producing the As-Built plans.
- d) If construction plans include signing or striping, the dates of signing or striping removal, relocation, or installation must be shown on the As-Built plans when required as a condition of the encroachment permit. When the construction plans show signing and striping for staged construction on separate sheets, the sheet for each stage must show the removal, relocation, and installation dates of the appropriate staged striping and signing.
- e) As-Built plans must contain the Encroachment Permit Number, County, Route, and Post Mile on each sheet.
- f) The As-Built Plans must not include a disclaimer statement of any kind that differs from the obligations and protections provided by sections 6735 through 6735.6 of the California Business and Professions Code. Such statements constitute non-compliance with Encroachment Permit requirements, and may result in the Department retaining Performance Bonds or deposits until proper plans are submitted. Failure to comply may also result in denial of future encroachment permits or a provision requiring a public agency to supply additional bonding.

23. **PERMITS FOR RECORD PURPOSES ONLY:** When work in the State highway right-of-way is within an area under a Joint Use Agreement (JUA) or a Consent to Common Use Agreement (CCUA), a fee exempt encroachment permit is issued to the permittee for the purpose of providing a notice and record of work. The permittee's prior rights must be preserved without the intention of creating new or different rights or obligations. "Notice and Record Purposes Only" must be stamped across the face of the encroachment permit.
24. **BONDING:** The permittee must file bond(s), in advance, in the amount(s) set by the Department and using forms acceptable to the Department. The bonds must name the Department as obligee. Failure to maintain bond(s) in full force and effect will result in the Department stopping all work under this encroachment permit and possibly revoking other encroachment permit(s). Bonds are not required of public corporations or privately owned utilities unless permittee failed to comply with the provisions and/or conditions of a prior encroachment permit. The surety company is responsible for any latent defects as provided in California Code of Civil Procedure section 337.15. A local public agency permittee also must comply with the following requirements:
- a) In recognition that project construction work done on State property will not be directly funded and paid by State, for the purpose of protecting stop notice claimants and the interests of State relative to successful project completion, the local public agency permittee agrees to require the construction contractor to furnish both a payment and performance bond in the local public agency's name with both bonds complying with the requirements set forth in Section 3-1.05 *Contract Bonds* of the Department's Standard Specifications before performing any project construction work.
 - b) The local public agency permittee must defend, indemnify, and hold harmless the State and the Department, and the Directors, officers, and employees of the State and/or Department, from all project construction related claims by contractors, subcontractors, and suppliers, and from all stop notice and/or mechanic's lien claimants. The local public agency also agrees to remedy, in a timely manner and to the Department's satisfaction, any latent defects occurring as a result of the project construction work.
25. **FUTURE MOVING OF INSTALLATIONS:** Permittee understands and agrees to relocate a permitted installation upon notice by the Department. Unless under prior property right or agreement, the permittee must comply with said notice at the permittee's sole expense.
26. **ENVIRONMENTAL:**
- a) **ARCHAEOLOGICAL/HISTORICAL:** If any archaeological or historical resources are identified or encountered in the work vicinity, the permittee must immediately stop work, notify the Department's representative, retain a qualified archaeologist who must evaluate the site at permittee's expense, and make recommendations to the Department's representative regarding the continuance of work.
 - b) **HAZARDOUS MATERIALS:** If any hazardous waste or materials (such as underground storage tanks, asbestos pipes, contaminated soil, etc.) are identified or encountered in the work vicinity, the permittee must immediately stop work, notify the Department's representative, retain a qualified hazardous waste/material specialist who must evaluate the site at permittee's expense, and make recommendations to the Department's representative regarding the continuance of work.
- Attention is directed to potential aerially deposited lead (ADL) presence in unpaved areas along highways. It is the permittee's responsibility to take all appropriate measures to protect workers in conformance with California Code of Regulations Title 8, Section 1532.1, "Lead," and with Cal-OSHA Construction Safety Orders, and to ensure roadway soil management is in compliance with Department of Toxic Substances Control (DTSC) requirements.
27. **PREVAILING WAGES:** Work performed by or under an encroachment permit may require permittee's contractors and subcontractors to pay appropriate prevailing wages as set by the California Department of Industrial Relations. Inquiries or requests for interpretations relative to enforcement of prevailing wage requirements must be directed to the California Department of Industrial Relations.
28. **LIABILITY, DEFENSE, AND INDEMNITY:** The permittee agrees to indemnify and save harmless the State, the Department, and all Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description brought for or on account of property damage or injury to or death of any person, including but not limited to members of the public, the permittee, persons employed by the permittee, and persons acting on behalf of the permittee, arising out of or in connection with: (a) the issuance and/or use of this encroachment permit, and/or (b) the work or other activity conducted pursuant to this encroachment permit, and/or (c) the installation, placement, subsequent operation, and/or maintenance of said encroachment, and/or (d) the failure by the permittee or anyone acting on behalf of the permittee to perform permittee's obligations under this encroachment

permit in respect to maintenance or any other obligation, and/or (e) a defect or defects in the work, or obstructions related to the work, or from any cause whatsoever. The duty of the permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code.

It is the intent of the parties that except as prohibited by law, the permittee will defend, indemnify, and hold harmless as set forth above regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of the State, the Department, the Directors, officers, employees, agents and/or contractors of the State and/or Department, including but not limited to the Director of Transportation and the Deputy Directors, the permittee, persons employed by the permittee, and/or persons acting on behalf of the permittee.

The permittee waives any and all rights to any type of expressed or implied indemnity against the State, the Department, the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors.

The permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the permitted activity, and further agrees to defend, indemnify, and save harmless the State, the Department, the Directors, officers, employees, and/or agents of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of or by virtue of the Americans with Disabilities Act.

Permittee understands and agrees the Directors, officers, employees, and/or agents of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, are not personally responsible for any liability arising from or by virtue of this encroachment permit.

For the purpose of this section and all paragraphs herein, "State's contractors" includes contractors and their subcontractors under contract to the State and/or the Department performing work within the same postmile limits as the work under this encroachment permit.

This section and all paragraphs herein take effect upon issuance of this encroachment permit, and apply both during and after the work or other activity contemplated under this encroachment permit, except as otherwise provided by California law.

29. **NO PRECEDENT ESTABLISHED:** This encroachment permit is issued with the understanding that it does not establish a precedent.

30. **FEDERAL CIVIL RIGHTS REQUIREMENTS FOR PUBLIC ACCOMMODATION:**

a) As part of the consideration for being issued this encroachment permit, the permittee, on behalf of permittee and on behalf of permittee's personal representatives, successors in interest, and assigns, does hereby covenant and agree that:

- i. No person on the grounds of race, color, or national origin may be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
- ii. That in connection with the construction of any improvements on said lands and the furnishings of services thereon, no discrimination must be practiced in the selection and retention of first-tier subcontractors in the selection of second-tier subcontractors.
- iii. That such discrimination must not be practiced against the public in their access to and use of the facilities and services provided for public accommodations (such as eating, sleeping, rest, recreation), and operation on, over, or under the space of the State highway right-of-way.
- iv. That the permittee must use the premises in compliance with all other requirements imposed pursuant to Title 15, Code of Federal Regulations, Commerce and Foreign Trade, Subtitle A. Office of the Secretary of Commerce, Part 8 (15 C.F.R. Part 8) and as said Regulations may be amended.

b) That in the event of breach of any of the above nondiscrimination covenants, the State and the Department have the right to terminate this encroachment permit and to re-enter and repossess said land and the facilities thereon, and hold the same as if said permit had never been made or issued.

31. **MAINTENANCE OF HIGHWAYS:** By accepting this encroachment permit, the permittee agrees to properly maintain any encroachment. This assurance requires the permittee to provide inspection and repair any damage, at permittee's expense, to State facilities resulting from the encroachment.

32. **SPECIAL EVENTS:** In accordance with subdivision (a) of Streets and Highways Code section 682.5, the Department is not responsible for the conduct or operation of the permitted activity, and the applicant agrees to defend, indemnify, and hold harmless the State, the Department, and the Directors, officers, employees, agents, and

contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of any activity for which this encroachment permit is issued.

The permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the event, and further agrees to defend, indemnify, and save harmless the State and the Department, and the Directors, officers, and employees of the State and/or Department, including but not limited to the Director of the Department and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of or by virtue of the Americans with Disabilities Act.

33. **PRIVATE USE OF STATE HIGHWAY RIGHT-OF-WAY:** State highway right-of-way must not be used for private purposes without compensation to the State. The gifting of public property use and therefore public funds is prohibited under the California Constitution, Article 16.
34. **FIELD WORK REIMBURSEMENT:** Permittee must reimburse the Department for field work performed on permittee's behalf to correct or remedy hazards or damaged facilities, or to clear refuse, debris, etc. not attended to by the permittee.
35. **NOTIFICATION OF CLOSURES TO DEPARTMENT AND TRAFFIC MANAGEMENT CENTER (TMC):** The permittee must notify the Department's representative and the Transportation Management Center (TMC) at least seven (7) days before initiating a lane closure or conducting an activity that may cause a traffic impact. A confirmation notification should occur three (3) days before closure or other potential traffic impact. In emergency situations when the corrective work or the emergency itself may affect traffic, TMC and the Department's representative must be notified as soon as possible.
36. **SUSPENSION OF TRAFFIC CONTROL OPERATION:** The permittee, upon notification by the Department's representative, must immediately suspend all lane closure operations and any operation that impedes the flow of traffic. All costs associated with this suspension must be borne by the permittee.
37. **UNDERGROUND SERVICE ALERT (USA) NOTIFICATION:** Any excavation requires compliance with the provisions of Government Code section 4216 et. seq., including but not limited to notice to a regional notification center, such as Underground Service Alert (USA). The permittee must provide notification to the regional notification center at least forty-eight (48) hours

before performing any excavation work within the State highway right-of-way.

38. **COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA):** All work within the State highway right-of-way to construct and/or maintain any public facility must be designed, maintained, and constructed strictly in accordance with all applicable Federal Access laws and regulations (including but not limited to Section 504 of the Rehabilitation Act of 1973, codified at 29 U.S.C. § 794), California Access laws and regulations relating to ADA, along with its implementing regulations, Title 28 of the Code of Federal Regulations Parts 35 and 36 (28 C.F.R., Ch. I, Part 35, § 35.101 et seq., and Part 36, § 36.101 et seq.), Title 36 of the Code of Federal Regulations Part 1191 (36 C.F.R., Ch. XI, Part 1191, § 1119.1 et seq.), Title 49 of the Code of Federal Regulations Part 37 (49 C.F.R., Ch. A, Part 37, § 37.1 et seq.), the United States Department of Justice Title II and Title III for the ADA, and California Government Code section 4450 et seq., which require public facilities be made accessible to persons with disabilities.

Notwithstanding the requirements of the previous paragraph, all construction, design, and maintenance of public facilities must also comply with the Department's Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects."

BACKFILL REQUIREMENTS

A. Backfill Within Existing or Proposed Paved Areas:

1. Material for use as structure backfill shall have a sand equivalent of not less than 20. The percentage composition by weight as determined by laboratory sieves shall conform to the following grading:

<u>Sieve Sizes</u>	<u>Percentage Passing Sieves</u>
3" -----	100
No. 4 -----	35-100
No. 30 -----	20-100

Backfill material shall be placed in horizontal, uniform layers not exceeding 8 in. in thickness, before compaction, and shall be brought up uniformly on all sides of the structure or facility. Each layer of backfill shall be compacted to a relative compaction of not less than 95 percent.

Controlled Low Strength Material (CLSM) shall be allowed for trench backfill if it meets Caltrans 2010 Standard Specifications 19-3.02F and 19-3.03I.

2. The upper 8 in. shall consist of 6 in. Class 1 high early strength portland cement concrete (7 sack Type III cement) or Class 1 portland cement concrete (7 sack Type II with 2 percent calcium chloride by weight of cement). Cold plane a depth of 0.15' (2 in.) of asphalt concrete extending outside the underlying trench a minimum distance of 12 in on each side. Pavement shall be saw-cut a minimum of 2.5 in. deep to a neat, straight line. Traffic shall not be allowed across the trench area until the PCC has been poured and has had reasonable time to set and permanent or temporary AC paving is in place.
3. In cases where the trench width does not exceed 6 feet, requirement A2 may be waived and the following requirements substituted: the backfill material shall conform to A1 above and shall be thoroughly mixed with 2 sacks of portland cement per cubic yard. Placement and compaction shall conform to A.1. The upper portion shall consist of a tack coat of liquid asphalt and 4 in. asphalt concrete placed and compacted in two even lifts and rolled to a smooth even finish. Traffic shall not be allowed across the trench area until the AC paving is in place.
4. For paved shoulders only, upon express permission of the State's Inspector, Provision A may be waived and Provision 3 backfill requirements shall apply.

B. Backfill in Paved Shoulder Areas:

The backfill to within 12 in. of the existing or proposed profile grade shall conform to A1 above. The upper 12 in. shall consist of 8 in. Class 2 aggregate base compacted to a relative compaction of not less than 95 percent, covered with a tack coat of liquid asphalt and 4 in. asphalt concrete placed and compacted in two lifts and rolled to a smooth, even finish.

C. Backfill in Unpaved Shoulder Areas:

The backfill to within 12 in. of the existing or proposed profile grade shall conform to A1 above. The upper 12 in. shall consist of Class 2 aggregate base compacted to not less than 95 percent.

D. Backfill Outside of Highway Shoulders:

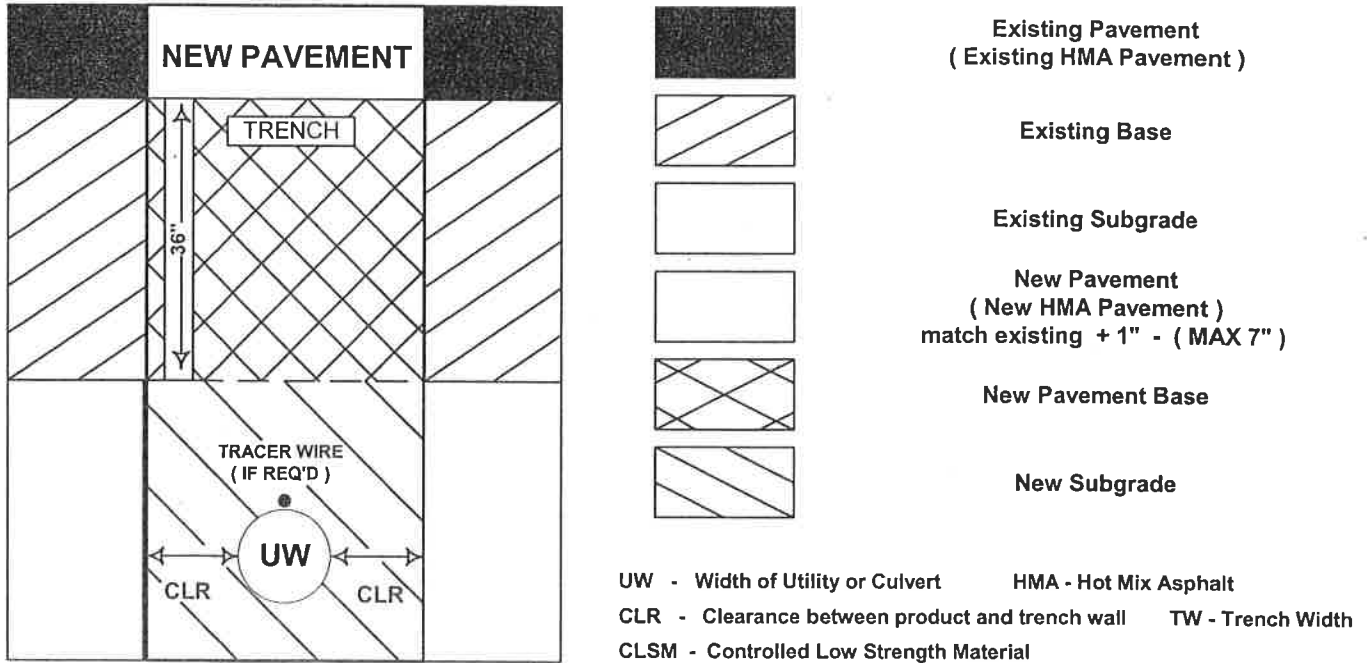
The backfill material may consist of material from excavation, free from stones or lumps exceeding 3 in., vegetable matter, or other unsatisfactory material, and shall be compacted in lifts not exceeding 8 in. to a relative compaction of 90 percent. When the material from excavation is unsuitable for use as backfill, it shall be disposed of and replaced with material meeting the above requirements of A1.

Excess material shall be disposed of outside the State right of way or at a location designated by the Department of Transportation's representative.

ENCROACHMENT PERMIT TRENCH DETAIL

TR-0153 (REV. 09/2006)

TYPICAL TRENCH DETAIL



STRUCTURE BACKFILL SHALL CONFORM TO SECTION 19 - 3.06 OF THE STANDARD SPECIFICATIONS

SLURRY CEMENT BACKFILL SHALL CONFORM TO SECTION 19 - 3.062 OF THE STANDARD SPECIFICATIONS

HMA SHALL CONFORM TO SECTION 39 OF THE STANDARD SPECIFICATIONS

ALL METHODS OF COMPACTION SHALL BE BY MECHANICAL MEANS. PONDING, JETTING OR FLOODING SHALL NOT BE ALLOWED.

AGGREGATE BASE SHALL CONFORM TO SECTION 26 OF THE STANDARD SPECIFICATIONS

WHEN CLSM IS UTILIZED THE MIX DESIGN AND TEST RESULTS SHALL BE SUBMITTED TO THE STATE'S REPRESENTATIVE.

ALL WORK SHALL BE AS AUTHORIZED BY THE APPROVED ENCROACHMENT PERMIT PLANS, AND/OR AS DIRECTED BY THE STATE'S REPRESENTATIVE.

WHEN THE UW IS $\geq 6"$ THEN THE MINIMUM CLR SHALL BE 6"

COLD PLANING AND RE-SURFACING OVERLAY SHALL BE PARALLEL TO THE ROADWAY AND TO THE NEAREST LANE LINE FOR THE ENTIRE LENGTH OF THE TRENCH/DISTURBED AREAS, AND/OR AS DIRECTED BY THE STATE'S REPRESENTATIVE.

WHEN COLD PLANING IS REQUIRED, THE MINIMUM SHALL BE 0.10' OR AS DIRECTED BY THE STATE'S REPRESENTATIVE TO ACCOMMODATE FIELD CONDITIONS.

COLD PLANING MAY BE REQUIRED AT THE DIRECTION OF THE STATE'S REPRESENTATIVE TO ACCOMMODATE THE PLACEMENT OF STEEL PLATES.

WHEN TRENCH PLACEMENT IS WITHIN 4' OF CURB & GUTTER, ADDITIONAL COLD PLANING MAY BE REQUIRED AT THE DISCRETION OF THE STATE'S REPRESENTATIVE.

ANY PAVEMENT MARKINGS AND/OR STRIPING REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AS DIRECTED BY THE STATE'S REPRESENTATIVE.

A TRACER WIRE SHALL BE PLACED ON TOP OF THE FACILITY, WHEN REQUIRED BY THE STATE'S REPRESENTATIVE.

OTHER TRENCH RELATED DETAILS ARE SHOWN IN FIGURE 6.1, CHAPTER 6 OF THE ENCROACHMENT PERMITS MANUAL.

A PAINT BINDER (TACK COAT) OF ASPHALTIC EMULSION CONFORMING TO SECTION 39-4.02, PRIME COAT & PAINT BINDER (TACK COAT) SHALL BE FURNISHED AND APPLIED.

NEW PAVEMENT BASE SHALL CONSIST OF EITHER CL. II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS $< 24,"$ CL. II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.

NEW SUBGRADE SHALL CONSIST OF EITHER CL. II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS $< 24,"$ CL. II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ENCROACHMENT PERMIT STEEL PLATE BRIDGING UTILITY PROVISIONS

TR -0157 (Rev. 07/2009)

To accommodate excavation work, steel plate bridging may be necessary. All conditions for use of steel plate bridging should be set forth in the special provisions.

Consideration of steel plate bridging should take into account the following factors:

1. Traffic speed.
2. Traffic Volume and Composition.
3. Duration and dimensions (width & daily estimated lengths) of the proposed excavation.
4. Weather conditions.

When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring (see Trenching & Shoring) may be required to preserve unobstructed traffic flow. In such cases, the following conditions shall apply:

1. Steel plate bridging on freeways is not allowed.
2. Steel plates used for bridging must extend a minimum of 12" beyond the edges of the trench.
3. Steel plate bridging shall be installed to operate with minimum noise.
4. The trench shall be adequately shored, (as mentioned in Section 629 of the Encroachment Permits Manual) to support the bridging and traffic loads.
5. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
6. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

As required by the district, steel plate bridging and shoring shall be installed using either Method (1) or (2):

Method 1 For speeds of 45 MPH or greater:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other.

Method 2 For Speeds less than 45 mph:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Caltrans' representative.

The permittee is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications. Unless specifically noted or granted in the special provisions, or approved by the State representative, steel plate bridging shall not exceed 4 consecutive working days in any given week. Backfilling of excavations shall be covered with a minimum 3" temporary layer of cold asphalt concrete.

The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual).

Trench Width	Minimum Plate Thickness
10"	One-half inch - 1/2"
1'-11"	Three-quarters inch - 3/4"
2'-7"	Seven-eighths inch - 7/8"
3'-5"	One inch - 1"
5'-3"	One & three-quarter inch - 1 3/4"

NOTE: For spans greater than 5'-3", a structural design shall be prepared by a California registered civil engineer.

All steel plates within the right of way whether used in or out of the traveled way shall be without deformation. Inspectors can determine the trueness of steel plates by using a straight edge and should reject any plate that is permanently deformed.

Steel plates used in the traveled portion of the highway shall have a surface that was manufactured with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342 (See Appendix H, Encroachment Permits Manual). If a different test method is used, the permittee may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342. Based on the test data, the permittee shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual plate.

Caltrans Inspectors should not enforce plate removal unless it is permanently deformed or delivered without the required surfacing. However, an inspector should document in a diary all contacts with the contractor.

A Rough Road sign (W8-8) with black lettering on an orange background may be used in advance of steel plate bridging. This sign is used along with any other required construction signing.

Surfacing requirements are not necessary for steel plates used in parking strips, on shoulders not used for turning movements, or on connecting driveways, etc., not open to the public.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ENCROACHMENT PERMIT UNDERGROUND UTILITY PROVISIONS

TR - 0163 (Rev. 03/2013)

Highway and Freeway encasement requirements for Transverse crossings of Utility installations, installed by the following methods. The pavement or roadway shall not be open-cut unless specifically allowed under a "UT" permit. Utility installations shall not be installed inside of culverts or drainage structures.

The installation of Uncased High Pressure Natural Gas pipelines, on a case by case basis may be allowed, when in compliance with TR-0158 Special Provisions, "Exception to Policy" for Uncased High Pressure Natural Gas Pipelines.

Encasement Requirements based on: Installation Method, Type of Highway Facility and Material Transported in carrier.						
Facility Type	Bore and Jack		Directional Drilling		Trenching	
	Frwy/Expwy	Conventional	Frwy/Expwy	Conventional	Frwy/Expwy	Conventional
High Risk (Section 605)	Encase	Encase	Encase	Encase	Encase	Encase
Low Risk (Section 605)	Encase	Encase	Encase	Encase	Encase	Encase
Exempt Facilities (Section 605)	Encase	Encase	Encase	Encase	Encase	Encase
Pressurized Fluids	Encase	Encase	Encase	Encase	Encase	Encase
Natural Gas Lines Minimum 7.5' Depth (Appendix H)	Encase	Encase	Encase	Encase	Encase	Encase
Gravity Flows	Encase	Encase	Encase	Encase	Encase	Encase

***NOTE: The District Permit Engineer may waive at his/her discretion the encasement requirement when warranted**

UG 1. CASINGS:

Casings should be steel conduit with a minimum inside diameter sufficiently larger than the outside diameter of the pipe or ducts to accommodate placement and removal. The casing can be either new or used steel pipe, or an approved connector system. Used pipe shall be pre-approved by the Department's engineer or representative before installation.

When the method of Horizontal Directional Drilling is used to place casing, the use of High Density Polyethylene Pipe (HDPE) as casing is acceptable. In specific instances the approval of Headquarters Office of Encroachment Permits, may be required.

Reinforced Concrete Pipe (RCP) in compliance of State Standard Specifications is an acceptable carrier for storm drain gravity flow or non-pressure flow. RCP when installed by Bore & Jack shall have rubber gaskets at the joints, and holes for grouting of voids left by jacking operations, see "E" below.

- A. All pipes 6" or larger in diameter, or placement of multiple pipes or ducts, regardless of diameters, shall require encasement.
- B. Minimum wall thickness for steel pipe casing for different lengths and diameters of pipes are as follows:

Casing Pipe (Diameter)	Minimum Wall Thickness	
	Up to 150 ft (Length)	Over 150 ft (Length)
6" to 28"	1/4"	1/4"
30" to 38"	3/8"	1/2"
40" to 60"	1/2"	3/4"
62" to 72"	3/4"	3/4"

- C. Spiral welded casing is authorized provided the casing is new and the weld is smooth,

- D. The ends of the casing shall be plugged with ungrouted bricks or other suitable material approved by the Department's representative.
- E. When required by the Department's representative, the permittee shall at his expense, pressure grout the area between the pavement and the casing from within the casing in order to fill any voids caused by the work covered under this permit. The increments for grout holes inside the pipe shall be 8' staggered and located 22-1/2 degrees from vertical axis of the casing. Pressure shall not exceed 5 psig for a duration sufficient to fill all voids.
- F. There is a spacing requirement when placement of multiple encasements is requested. The distance between multiple encasements shall be the greater of either 24" or twice that of the diameter of the larger pipe being installed.
- G. The casings placed within freeway right-of-way shall extend to the access control lines.
- H. Wing cutters, if used, shall be a maximum of 1" larger than the casing. Voids caused by the use of wing cutters shall be grouted in accordance with "E" above.
- I. A band welded to the leading edge of the casing should be placed square to the alignment. The band should not be placed on the bottom edge. Flaring the lead section on bores over 100' shall not be permitted.
- J. All casing lengths shall equal to the auger length.
- K. The casings within conventional highways shall extend 5' beyond the back of curb or edge of pavement, or to the right of way line if less. Where PCC cross-gutter exists, the casing shall extend at least 5' beyond the back of the cross-gutter, or to the right of way line if less.

Bore and receiving pits shall be:

- A. Located at least 10' or more from the edge of pavement on conventional highways in rural areas.
- B. Located 5' behind the concrete curb or AC dike on conventional highways in urban areas.
- C. Located 5' outside the toe of slope of embankment areas.

- D. Located outside freeway right of way.
- E. Adequately fenced and/or have a Type-K barrier placed around them.
- F. Adequately shored in accordance with Cal-OSHA requirements. Shoring for jacking and receiving pits located within 15' of traffic lanes on a State highway shall not extend more than 36" above the pavement grade unless otherwise authorized by Department's representative. Reflectors shall be affixed to the shoring on the sides facing traffic. A 6' chain link fence shall be installed around the perimeter of the pits during non-working hours.
- G. All pits should have crushed-rock and sump areas to clear groundwater and water used to clean the casing. Where ground water is found and pumping is required, the pits shall be lined with filter fabric.

**UG 2. DIRECTIONAL DRILLING:
Bore and Receiving Pits**

When directional drilling is the approved method for pipe installation, drilling plans shall contain information listed as follows:

1. Location of: entry and exit point, access pit, equipment, and pipe staging area.
2. Proposed drill path alignment (horizontal and vertical).
3. Location and clearances of all other facilities.
4. Depth of cover.
5. Soil analysis.*
6. Carrier pipe length, diameter, thickness, and material (HDPE/steel) and ream pipe diameter.
7. Detailed carrier pipe calculations confirming ability to withstand installation loads and long term operational loads including H₂O.
8. Proposed drilling fluid composition, viscosity, and density (based on soils analysis).
9. Drilling fluid pumping capacity, pressures, and flow rates
10. State right-of-way lines, property, and utility right of way or easement lines.
11. Elevations.
12. Type of tracking method/system and accuracy used.
13. A detailed plan for monitoring ground surface movement (settlement or heave) resulting from the drilling operation.

* May be waived by the District Permit Engineer for HDD jobs less than 6" in diameter and a traverse crossing less than 150'.

UG 3. LIMIT OF EXCAVATION:

No excavation is allowed within 10' from the edge of pavement except in curbed urban areas or as specified in the permit. Where no curb exists and excavations within 10' of the traveled way are to remain open, a temporary Type-K railing shall be placed at a 20:1 taper or as otherwise directed by the Department.

UG 4. TUNNELING:

Review, requirements of Section 623.6 of the Encroachment Permits Manual, if applicable. In addition to the requirements of "UG1" the following requirements apply:

- A. For the purpose of this provision, a tunnel is defined as any pipe, 30" or larger in diameter placed.
- B. When tunneling is authorized, the permittee shall provide full-time inspection of tunneling operations. The Department's representative shall monitor projects.

- C. A survey grid shall be set and appropriately checked over the centerline of the pipe jacking or tunneling operation. Copies of the survey notes shall be submitted to the Department's representative.
- D. Sand shields may be required as ground conditions change.
- E. The method used to check the grade and alignment shall be approved by the Department's representative.
- F. Pressure grouting for liner plates, rib and spiling, or rib and lagging tunnels shall be at every 8' section or at the end of work shift before the next section is excavated. All grouting shall be completed at the end of each workday.
- G. A method for securing the headway at the end of each workday is required. Breastplates shall be installed during working hours for running sand or super-saturated soil.

UG 5. HIGH AND LOW RISK FACILITIES:

High and Low Risk Facilities, as defined in the Department's current Manual on High and Low Risk Underground Facilities, shall be installed with a minimum cover of 42".

UG 6. EXEMPT AND OTHER UNDERGROUND FACILITIES:

A. Exempt Facilities:

1. Gas service lines no larger than 2" in diameter or operating at 60 psig or less.
2. Underground electrical service conductors with a potential to ground of 300 volts or less.
3. Departmental owned electrical systems.

B. All facilities other than high and low risk shall have a minimum cover of 36" except for service connections, which shall have a minimum cover of 30".

UG 7. DETECTOR STRIP:

A continuous metallic detector strip shall be provided with non-metallic main installations. Service connections shall be installed at right angles to the centerline of the State highway where possible.

UG 8. BACKFILLING:

All backfilling shall conform to the applicable sections of the Department's Standard Specifications. Ponding or jetting methods of backfilling is prohibited.

Any required compaction tests shall be performed by a certified laboratory at no cost to the Department and the laboratory report furnished to the Department's representative.

UG 9. ROADWAY SURFACING AND BASE MATERIALS:

When the permit authorizes installation by the open cut method, surfacing and base materials and thickness thereof shall be as specified in the permit.

Temporary repairs to pavements shall be made and maintained upon completion of backfill until permanent repairs are made. Permanent repairs to pavements shall be made within thirty (30) days of completion of backfill unless otherwise specified by the Department. Temporary pavement patches shall be placed and maintained in a smooth riding plane free of humps and/or depressions.

UG 10. DAMAGE TO TREE ROOTS:

No tree roots over 3" will be cut within the tree drip line when trenching or other underground work is necessary adjacent to roadside trees. The roots that are 3" or more in diameter inside the tree drip line shall be tunneled under and wrapped in burlap and kept moist until the trench is refilled. Trenching machines may not be used under trees if the trunk or limbs will be damaged by their use.

If the trees involved are close together and of such size that it is impractical to protect all roots over 3" in diameter, or when roots are less than 4" in diameter, outside tree drip line, special arrangements may be made whereby pruning of the tree tops to balance the root loss can be done by the permittee under the close supervision of the District Landscape Specialist or District Tree Maintenance Supervisor. Manholes shall not be installed within 20' of any trunk.

UG 11. PIPES ALONG ROADWAY:

Pipes and conduits paralleling the pavement shall be located as shown on the plans or located outside of pavement as close as possible to the right-of-way line.

UG 12. BORROW AND WASTE:

Borrow and waste will be allowed within the work limits only as specified in the permit.

UG 13. MARKERS:

The permittee shall not place any markers that create a safety hazard for the traveling public or departmental employees.

UG 14. CATHODIC PROTECTION:

The permittee shall perform stray current interference tests on underground utilities under cathodic protection. The permittee shall notify the Department prior to the tests. The permittee shall perform any necessary corrective measures and advise the Department.

UG 15. TIE-BACKS:

- A. Tie-backs shall be placed for the sole purpose of supporting shoring and/or soldier piles placed outside State highway rights-of-way to facilitate permittee's excavation.
- B. Tiebacks shall be disconnected from the shoring and/or soldier piles one (1) year prior to releasing the bond.

UG 16. INSTALLATION BY OPEN CUT METHOD:

When the permit authorizes installation by the open cut method no more than one lane of the highway pavement shall be open-cut at any one time. Any exceptions shall be in writing by the Department's representative. After the pipe is placed in the open section, the trench is to be backfilled in accordance with specifications, temporary repairs made to the surfacing and that portion opened to traffic before the pavement is cut for the next section.

If, at the end of the working day, backfilling operations have not been properly completed, steel plate bridging shall be required to make the entire highway facility available to the traveling public in accordance with the Steel Plate Bridging Special Provisions (TR-0157)

UG 17. PAVEMENT REMOVAL:

PCC pavement to be removed shall be saw cut at a minimum depth of 4" to provide a neat and straight pavement break along both sides of the trench. AC pavement shall be saw cut to the full depth.

Where the edge of the trench is within 2' of existing curb and gutter or pavement edge, the asphalt concrete pavement between the trench and the curb or pavement edge shall be removed.

UG 18. MAINTAIN ACCESS:

Where facilities exist (sidewalks, bike paths), a minimum width of 4' shall be maintained at all times for safe pedestrian and bicyclist passage through the work area.

UG 19. SIDES OF OPEN-CUT TRENCHES:

Sides of open cut trenches in paved areas shall be kept as nearly vertical as possible. Trenches shall not be more the 2' wider than the outside diameter of the pipe to be laid therein, plus the necessary width to accommodate shoring.

UG 20. EXCAVATION UNDER FACILITIES:

Where it is necessary to excavate under existing curb and gutter, or underground facilities, the void shall be backfilled with two (2) sack cement-sand slurry.

UG 21. PERMANENT REPAIRS TO PCC PAVEMENT:

Repairs to PCC pavement shall be made of Portland Cement Concrete containing a minimum of 658 lbs. or 7 sack of cement per cubic yard. Replaced PCC pavement shall equal existing pavement thickness. The concrete shall be satisfactorily cured and protected from disturbance for not less than forty-eight (48) hours. Where necessary to open the area to traffic, no more than two (2%) percent by weight of calcium chloride may be added to the mix and the road opened to traffic after six (6) hours.

UG 22. REMOVAL OF PCC SIDEWALKS OR CURBS:

Concrete sidewalks or curbs shall be saw cut to the nearest score marks and replaced equal in dimension to that removed with score marks matching existing sidewalk or curb.

UG 23. SPOILS:

No earth or construction materials shall be dragged or scraped across the highway pavement, and no excavated earth shall be placed or allowed to remain at a location where it may be tracked on the highway traveled way, or any public or private approach by the permittee's construction equipment, or by traffic entering or leaving the highway traveled way. Any excavated earth or mud so tracked onto the highway pavement or public or private approach shall be immediately removed by the permittee.

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DISTRICT COUNTY ROUTE TOTAL MILES SHEET NO. OF SHEETS
 REGISTERED CIVIL ENGINEER
 January 20, 2017
 PLANS APPROVAL DATE
 654610
 CIVIL
 6-30-17
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
 TO ACCOMPANY PLANS DATED _____

TABLE 1

SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)		MAXIMUM CHANNELIZING DEVICE SPACING				
	TANGENT ZL	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	50	100	25
60	1440	720	360	240	50	100	25
65	1560	780	390	260	50	100	25
70	1680	840	420	280	50	100	25
75	1800	900	450	300	50	100	25

* - For other offsets, use the following merging taper length formula for L:
 For speed of 40 mph or less, $L = WS^2/60$
 For speed of 45 mph or more, $L = WS$

Where: L = Taper length in feet

W = Width of offset in feet

S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

SPEED *	Min D ***	DOWNGRADE Min D ***		
		-3%	-6%	-9%
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891
75	820	866	927	1003

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM TABLES
FOR LANE AND RAMP CLOSURES

NO SCALE

RSP T9 DATED JANUARY 20, 2017 SUPERSEDES STANDARD PLAN T9
DATED OCTOBER 30, 2015 - PAGE 249 OF THE STANDARD PLANS BOOK DATED 2015.

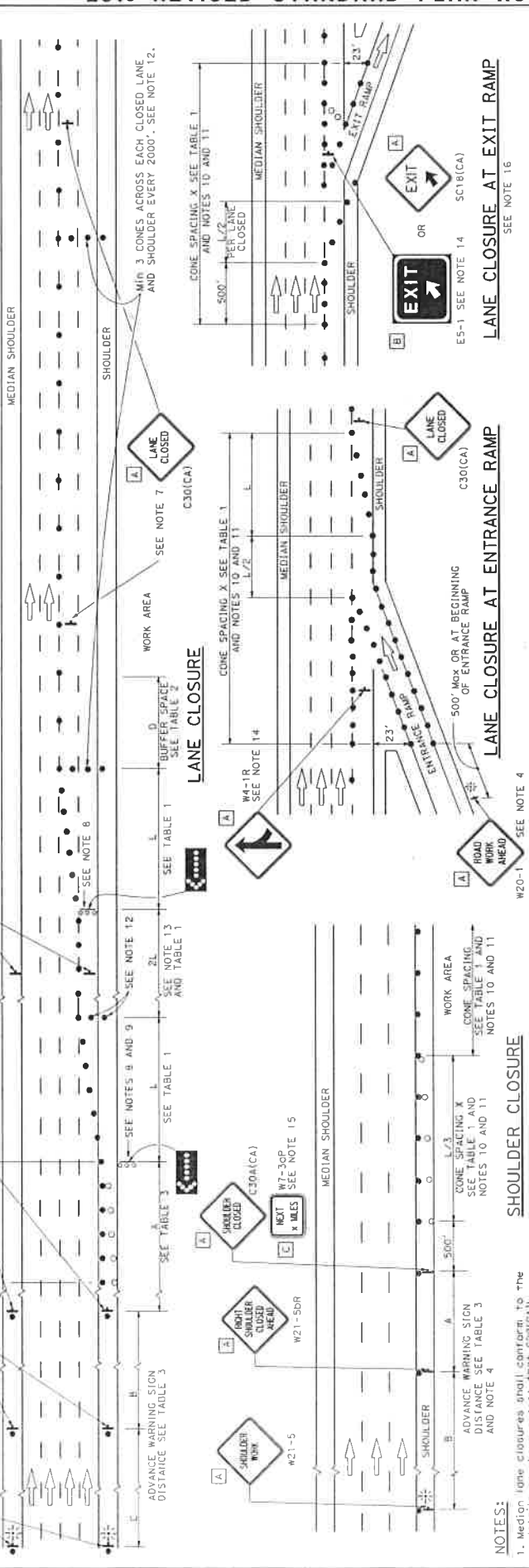
REVISED STANDARD PLAN RSP T9

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TO ACCOMPANY PLANS DATED _____
Use cone spacing X for taper segment, Y for tangent segment, or Z for cone spacing as shown on this sheet.
All temporary warning signs shall have black legend on fluorescent orange background.
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

DATE: January 20, 2017
BY: [Signature]
CHECKED BY: [Signature]
DESIGNED BY: [Signature]

- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CAL) and W4-ZL signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On approaches to the shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each sign shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of the closure is obvious or ends within a longer project's limits.
 6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or C30(CA) sign, the W20-1 sign shall be replaced with the first advance warning sign.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. Use one flashing arrow sign for each lane closed. The flashing arrow sign shall be Type L.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at curve or vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be equipped with retroreflective bands (or sleeves).
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.



LANE CLOSURE AT EXIT RAMP

ES-1 SEE NOTE 14 SC18(CA)
SEE NOTE 16

MINIMUM CONE SPACING X SEE TABLE 1 AND NOTES 10 AND 11

PER LANE CLOSED
500'

MIN 3 CONES ACROSS EACH CLOSED LANE AND SHOULDER EVERY 2000'. SEE NOTE 12.

SHOULDER
MEDIAN SHOULDER
EXIT RAMP
23'

LEGEND

●	TRAFFIC CONE
○	TRAFFIC CONE (OPTIONAL TAPER)
⬇	TEMPORARY TRAFFIC CONTROL SIGN
⬆	FLASHING ARROW SIGN (FAS)
⚡	FAS SUPPORT OR TRAILER
⚡	PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

A	48" x 48"
B	72" x 60"
C	36" x 30"

LANE CLOSURE AT ENTRANCE RAMP

W20-1 SEE NOTE 4
C30(CA)

LANE CLOSURE

W4-1R SEE NOTE 14
W7-3GP SEE NOTE 15
W20-1 SEE NOTE 16
C30(CA)

SHOULDER CLOSURE

W21-5
W21-5BR
W4-2R
W4-1R
W7-3GP
W20-1
C30(CA)

LANE CLOSURE AT EXIT RAMP

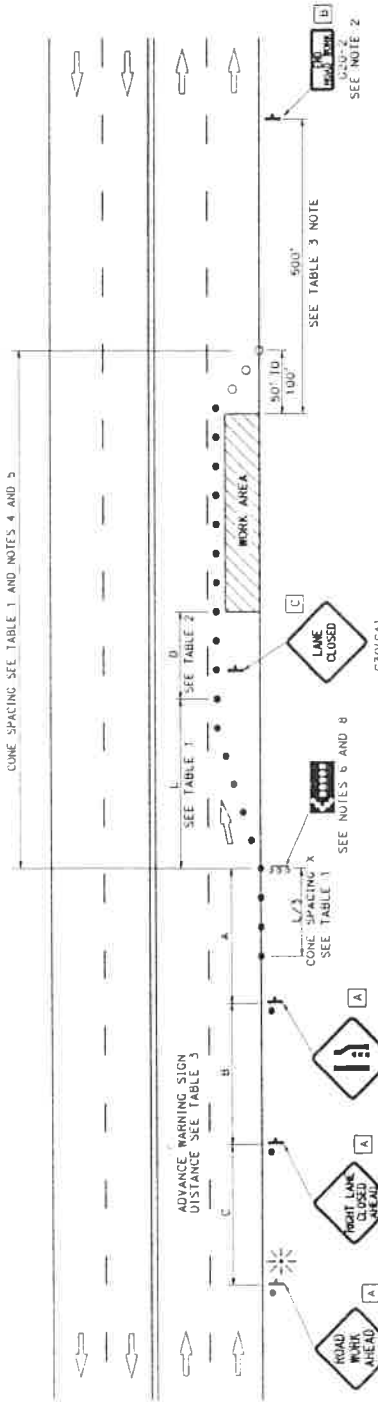
ES-1 SEE NOTE 14 SC18(CA)
SEE NOTE 16

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE
RSP T10 DATED JANUARY 20, 2017 SUPERSEDES STANDARD PLAN T10 DATED OCTOBER 30, 2015 - PAGE 250 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP T10

PROJECT NO. 1001
 COUNTY 101
 SHEET NO. 101
 DATE 10/30/15
 DRAWN BY [Signature]
 CHECKED BY [Signature]
 APPROVED BY [Signature]
 TITLE: TYPICAL LANE CLOSURE
 DATE: OCTOBER 30, 2015
 SCALE: AS SHOWN
 PROJECT LOCATION: [Blank]



NOTES:

- See Standard Plan T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- All temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

TYPICAL LANE CLOSURE

C30(CA)
 SEE NOTE 9

SEE NOTES 6 AND 8

SEE TABLE 1

SEE TABLE 1

SEE TABLE 2

SEE TABLE 1

SEE TABLE 3

SEE TABLE 4 AND 5

NOTES:

- Each advance warning sign shall be equipped with a reflective sheeting that meets the minimum retroreflective requirements of the MUTCD. Each sign shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A C20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationing advance sign, use a C20-1 "ROAD WORK NEXT MILES" or C20(CA) sign for the first advance warning sign.
- All cones used for lane closure during the hours of darkness shall be fitted with retroreflective bands (or sleeves).
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the Traffic Control System for Lane Closure on Freeways and Expressways plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of a vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details shown except that C20(CA) and W4-24 signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPEK)
- ↑ TEMPORARY TRAFFIC CONTROL SIGN
- ⬆ FLASHING ARROW SIGN (FAS)
- ⚡ FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 36" x 18"
- C 30" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 MULTILANE CONVENTIONAL
 HIGHWAYS**

NO SCALE
T11

DIST COUNTY ROUTE TOTAL SHEETS

Deirdere Smith
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

10/30/15
150870
150870
150870

THE STATE OF CALIFORNIA
DIVISION OF HIGHWAYS
DIVISION OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION OF TRANSPORTATION

NOTES:

- Barricades shall be Type I, II, or III for closures lasting longer than one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, block on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A lighting section shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.

TRAFFIC CONE

TEMPORARY TRAFFIC CONTROL SIGN

BARRICADES

PORTABLE FLASHING BEACON

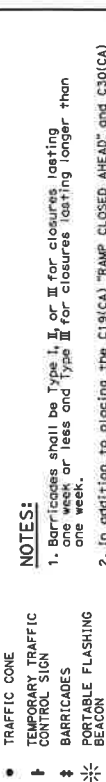
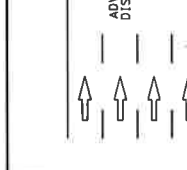
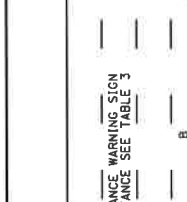
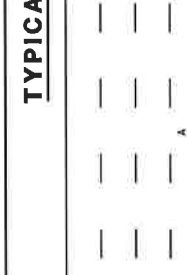
SIGN PANEL SIZE (MIN)

A 48" x 48"

B 48" x 30"

C 36" x 36"

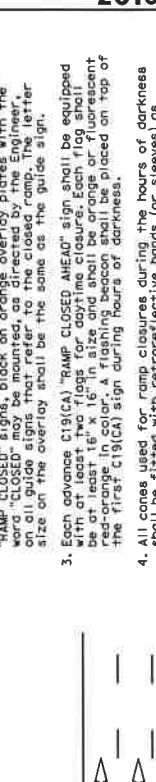
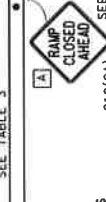
D 48" x 36"



NOTES:

- See Standard Plan T9 for tables.
- Use cone spacing X for upper segment, Y for tangent segment or Z for lower segment. Cone spacing Y, Z, or X is shown on this sheet.
- All temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

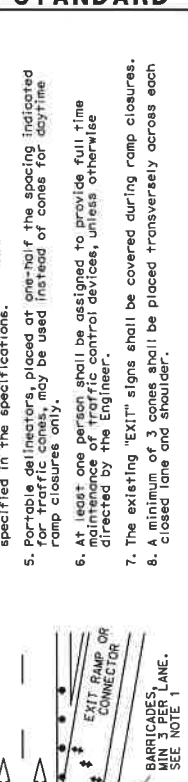
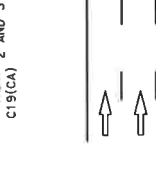
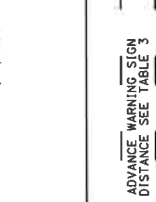
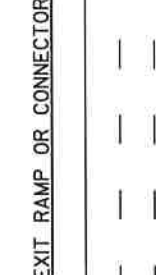
ENTRANCE RAMP WITHOUT TURNING POCKETS



NOTES:

- See Standard Plan T9 for tables.
- Use cone spacing X for upper segment, Y for tangent segment or Z for lower segment. Cone spacing Y, Z, or X is shown on this sheet.
- All temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

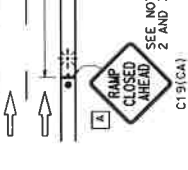
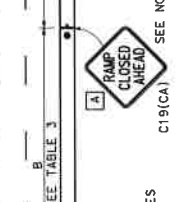
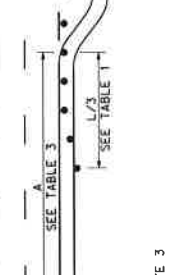
EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



NOTES:

- See Standard Plan T9 for tables.
- Use cone spacing X for upper segment, Y for tangent segment or Z for lower segment. Cone spacing Y, Z, or X is shown on this sheet.
- All temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

ENTRANCE RAMP WITH TURNING POCKETS

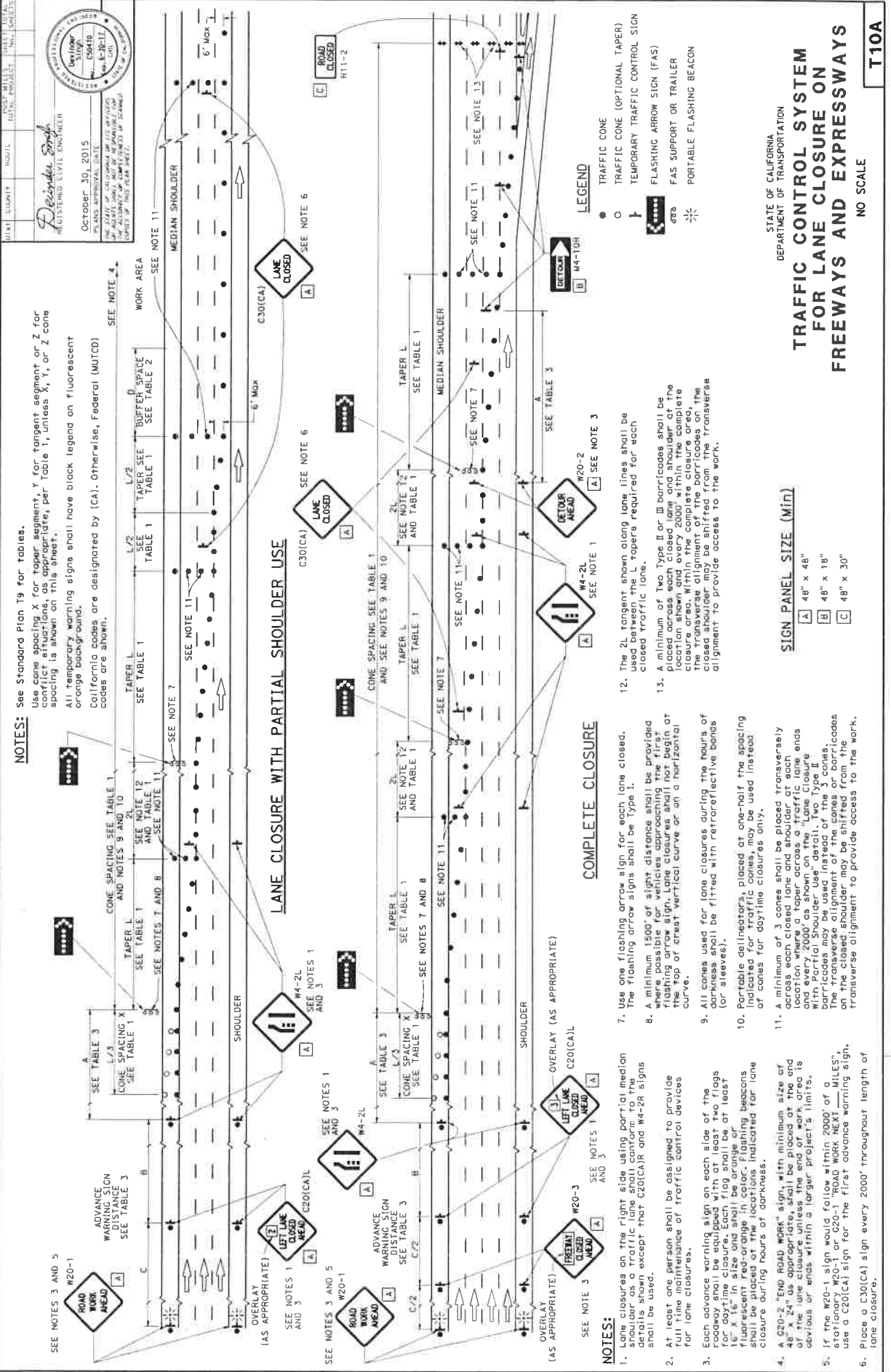


STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

NO SCALE

T14



NOTES: See Standard Plan T9 for Tables. Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet. All temporary warning signs shall have black legend on fluorescent orange background. California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

UNIT COUNTY ROUTE DISTRICT DISTRICT NUMBER SHEETS

October 30, 2015

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

DATE: [Signature]

PROJECT: [Signature]

SCALE: [Signature]

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURE ON
FREEWAYS AND EXPRESSWAYS**

NO SCALE
T10A