SECTION 3 LANE CLOSURE REQUIREMENTS

3.1 Closing a Lane

The Contractor must properly plan, use, place and maintain traffic control devices while in use at the construction site. In general, closing a traffic lane requires the use of a flashing arrow board. Solar or battery powered flashing arrow boards are required in residential areas, especially at night, to minimize noise problems. For certain lane closures, the use of high-level warning flags along with other devices in place of flashing arrow board is acceptable. Flashing arrow boards and high level warning flags must be installed in accordance with the California MUTCD. Typical lane closure plans are presented in Appendix F.

3.2 Traffic Lane Requirements

The Contractor shall provide the required number of through traffic lanes according to the table and notes below.

Table 3: Traffic Lane Requirements Per Direction

Existing Number of Through Traffic Lanes	Minimum Number of Through Traffic Lanes to Remain Open
1	1
2	1
3	2
4	2
5	3
6	4

Notes:

A. For two-way streets, Contractor shall consider each direction separately. For example, a four-lane road with two lanes in each direction shall provide a minimum of one lane in each direction.

B. **Lane Widths**: The minimum width required for a single traffic lane is 12 feet. The minimum width required for a vehicular traffic lane contiguous to one or more vehicular traffic lanes in the same direction is 10 feet. Lane widths must be clear of any obstructions, including traffic cones and

delineators.

C. **Existing Turn Lanes**: When streets have existing left and/or right turn lanes, Contractor must provide a separate 10’ wide left and/or right turn lane of equal length to the existing turn lane. Turn lanes must be provided in addition to maintaining the required number of through lanes in Table 3.

D. **Within 100 Feet of an Intersection - Streets with Two Lanes in the Same Direction – Without Existing Turn Lanes:** This applies where two lanes in a single direction are reduced to one lane and because of a traffic lane closure, through vehicles cannot physically pass a left or right turning vehicle. Contractor shall provide a left and/or right turn lane (each lane minimum 10’ wide, 50’ long), **or** shall request a Special Traffic Permit to prohibit left and/or right turns at the intersection and post a signed detour for each prohibited turn.

E. **Two-Way “Reversible Lane” Flag Control:** Completely closing any direction of traffic is not allowed without a valid Special Traffic Permit or a SFMTA approved traffic routing plan. This includes any plan which allows one lane to be used for two directions of traffic (“Two-Way Flag Control”).

F. **Roadway Closures:** The complete closure of a roadway is not permitted without a valid Special Traffic Permit or a SFMTA approved traffic routing plan.

G. **Muni Trolley Coaches**: Contractor is responsible for ensuring that the lanes provided allow Muni trolley coaches to reach the overhead wires at all times (see Section 7.2 for details).

H. **Traffic Signal Visibility**: When lanes are shifted the Contractor must ensure that at least two traffic signal heads are visible from the shifted lanes. Requirements for visibility may be seen in the MUTCD. Temporary traffic signal heads may be provided as needed or personnel posted to mitigate the loss of visibility.

I. **Complex Traffic Signal Phasing**: Some intersections have traffic signals with Bicycle, Vehicular Turn Phases and Turn Restriction Blank-Out indications. At intersections where these indications appear, separate dedicated traffic lanes must be provided to accommodate traffic or bicycles that will be required to use the signals to move through the intersection. In these cases, these special lanes cannot be closed without first mitigating the conflicts caused by the special traffic signal phases.

3.3 Temporary Traffic Lanes and Transition Lengths

Space for a traffic lane(s) can be made available by temporarily prohibiting parking. Full transition length must be provided when shifting or ending a traffic lane. Transition lengths calculated using the California MUTCD formula $L = ws^2/60$, where "L" is the transition length, "w" is width across which the lane is being laterally shifted, and "s" is the speed. (Units for the formula in feet and miles/hour).

3.4 Multi-Lane Shifts

When shifting multiple lanes (2 or more), the Contractor must provide transition delineation for each lane shifted. If the parking strip is used to route vehicular lanes, the contractor must shift each lane with physical traffic control devices or traffic lane tape. The contractor must channelize each lane into and out of the curb space provided for the temporary lanes. See Figures 3.4a, b and c.

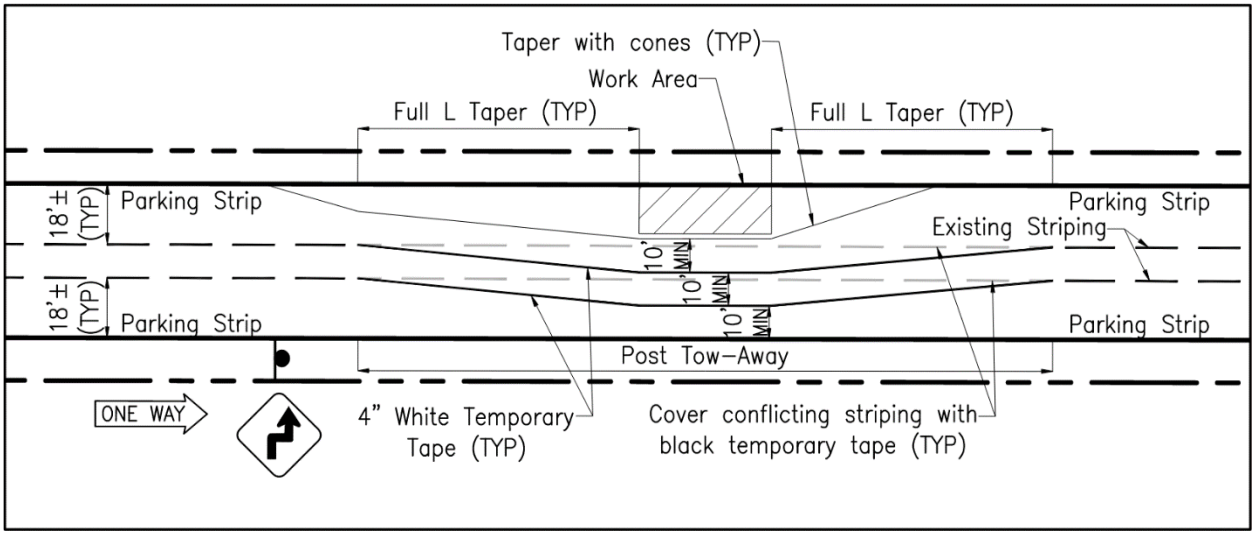

Figure 3.4a: One-Way Multi-lane Shift with Curbside Worksite

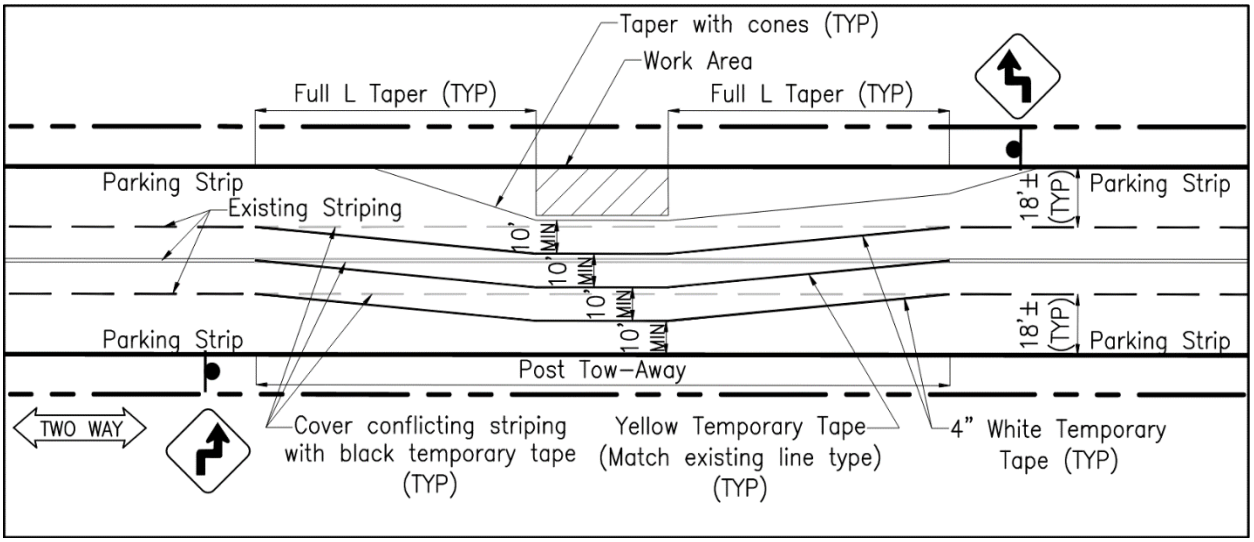

Figure 3.4b: Two-Way Multi-lane Shift with Curbside Worksite

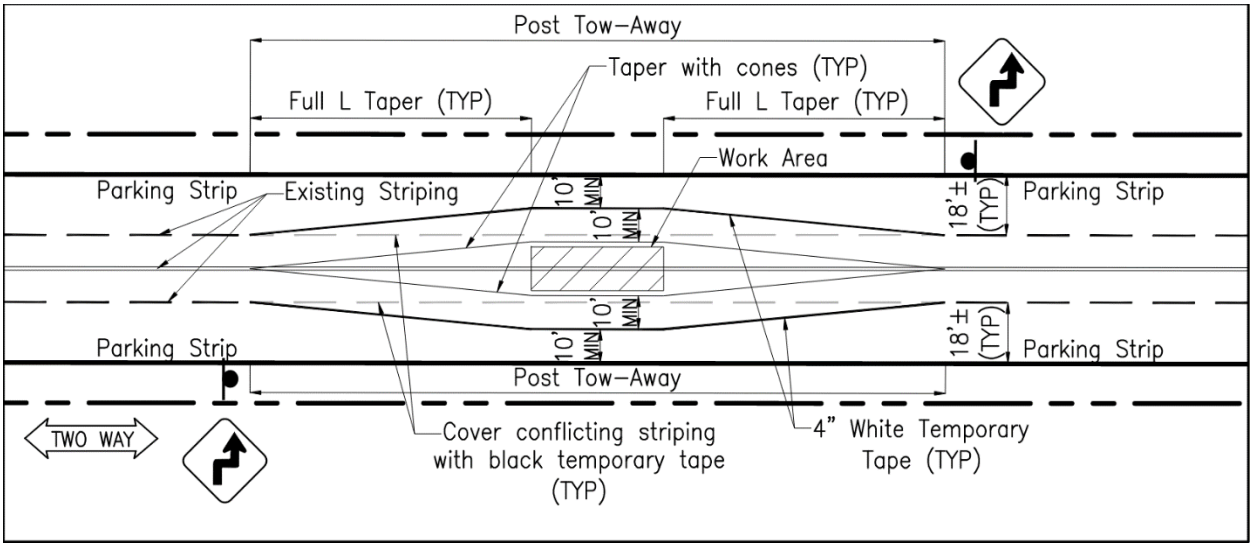

Figure 3.4c: Two-Way Multi-lane Shift with Center Worksite

3.5 Flag Control

Flaggers may be required by Contract Specifications or an STP.

The following rules apply to flaggers:

Flaggers must be properly equipped with a Type II vest (daytime) or Type III

(nighttime) and a sign paddle.

Flaggers must be certified and must have their certification card at all times.

When an STP or Contract Specification allows the use of one lane for two directions of traffic (i.e., Two-Way Flag Control), a minimum of two (2) flaggers are required.

SFMTA or SFPD Officers may be hired to provide flag control (see Section 10 for details).

3.6 Coordination with Others

In order to ensure that the traffic lanes provided are adequate and continuous, only one contractor at a time is allowed to work on any one block. If a second contractor is planning to work on that block or on an adjacent block, then the second contractor shall obtain an STP before starting any work. Moreover, a contractor is not allowed to work within a block of a project under City Contract without the approval of the Resident Engineer of the subject contract, and an STP