NOTES:
1. DISTANCE BETWEEN LANE CLOSURE TAPER AND ALL OPEN RAMPS SHALL BE 500' MINIMUM.
2. IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN LIMITS OF HORIZONTAL CURVES.
3. AS ORDERED BY THE ENGINEER, ADDITIONAL SPEED RADAR DISPLAY SIGNS MAY BE USED 500' PRIOR TO EACH WORK CREW WITHIN WORK AREA.
4. PLACE TRANSVERSELY ACROSS CLOSURE AT A 45° ANGLE WITH 5' SPACING AT STRATEGIC LOCATIONS OR EVERY 1000'.
5. ALL SPEED LIMIT SIGNS CONDUCTING WITH WORK ZONE SPEED LIMIT SHALL BE CENTERED PER STANDARD SPECIFICATIONS 8-31.1(3).
6. REOPENING TAPER, OPTIONAL, TO ALLOW FOR CONSTRUCTION VEHICLES TO ACCELERATE STRAIGHT OUT OF WORK AREA INTO THE RIGHT LANE.
7. IF PERMANENT SPEED LIMIT SIGNS ARE WITHIN 150' OF THE REOPENING TAPER.
8. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
9. THIS TRAFFIC CONTROL PLAN IS APPLICABLE TO SHORT-TERM AND INTERMEDIATE TERM DURATION LANE CLOSURES OF 3 DAYS OR LESS.

LEGEND
A TEMPORARY SIGNS LOCATION
B TEMPORARY SIGNS LOCATION (5 MIN HEIGHT)
C 28' REFLECTIVE TRAFFIC CONE
D 40' TALL CHANNELIZATION DEVICE
E TRAFFIC SAFETY DRUM
F RADAR SPEED DISPLAY SIGN
G TEMPORAL ARROW SIGN
H PORTABLE MESSAGE BOARD

FREEWAY (3 LANES): DOUBLE RIGHT LANE CLOSURE WITH NO LANE SHIFTS
(70 MPH TO 60 MPH VARIABLE WORK ZONE SPEED LIMIT REDUCTION)

WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
TYPICAL TRAFFIC CONTROL PLANS
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC229 SHEET 1.
2. ACTUAL NUMBER OF LANES MAY VARY.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.
4. FOR RIGHT EXIT-RAMP AND RIGHT ON-RAMP DETAILS FOR A SINGLE RIGHT LANE CLOSURE SEE TC229 SHEET 2.

OPEN RIGHT EXIT-RAMP DETAIL

CLOSED RIGHT EXIT-RAMP DETAIL

FREeway (3+ Lanes): Double Right Lane Closure With No Lane Shifts
(70 MPH To 60 MPH Variable Work Zone Speed Limit Reduction)

NOT TO SCALE
NOTES:
1. For legend, tables, and additional notes, see TC229, sheet 1.
2. Actual number of lanes may vary.
3. See detour plan for additional ramp closure detour signage.
4. For left exit-ramp and left on-ramp details for a single right lane closure, see TC228, sheet 3.

OPEN LEFT EXIT-RAMP DETAIL

CLOSED LEFT EXIT-RAMP DETAIL
Left exit-ramps are to remain open with this double right lane closure configuration.

OPEN LEFT ON-RAMP DETAIL

CLOSED LEFT ON-RAMP DETAIL

FREEWAY (3+ LANES): DOUBLE RIGHT LANE CLOSURE WITH NO LANE SHIFTS
(70 MPH TO 60 MPH VARIABLE WORK ZONE SPEED LIMIT REDUCTION)

TYPICAL TRAFFIC CONTROL PLANS

Washington State Department of Transportation

TC229
A. **DESIGNER NOTES:**

   1. See WSDOT project delivery memo 19-01 in regards to freeway work zone variable regulatory speed limit and advisory speed implementation. In addition, see WSDOT executive order 25-01 regarding variable speed advisory information in work zones. Contact WSDOT region traffic offices for additional information.

   2. These traffic control plans are typical and may be modified for site specific situations and/or WSDOT region traffic practices. Contact WSDOT region traffic offices for any modifications of the work zone variable regulatory speed limit or advisory speed plans.

   3. The sign sizes shown are typical and minimal sizes required per MUTCD on freeways for temporary traffic control.

   4. In regards to advanced warning sign spacing: per MUTCD section 6C.04 paragraph 06, table 6-14, wac 265-65-505 A.1 has been modified per WAC 456-65-505. A.1 has been deleted and WAC 456-65-505. A.2 have been added.

   5. The policy of using channelization devices, temporary sign should be mounted at 5’ minimum.

   6. Per MUTCD 6-33, using PCMs for freeway lane closures is not required. PCMs 1 is optional and intended only to be used when work zone traffic queues are expected to extend beyond the WSDOT site. For additional information regarding active queue detection technology contact Steve Haapala (haapala@wsdot.wa.gov) or Fred Hintz (hintz@wsdot.wa.gov). PCMs 2 is recommended; freeway lane closures do not require a PCMs. PCMs 3 is optional to highlight exit-ramp closures.

   7. The radar speed display sign (RSDS) is optional for freeway lane closures not shifted off the shoulder or when lane is used as an emergency lane. Contact region traffic offices their policy.

   8. When within the reduced work zone speed limit zone, the design speed is the work zone speed limit minus the expected speed reduction. (For sign spacing, tapers, channelization device spacing, buffer, and roll ahead distances.)

   9. Warning lights on channelization devices are optional; contact region traffic offices for their policy.

   10. Channelization device may be modified from those shown on these typical plans. PER MUTCD, the minimum required device on high-speed roadways is a 28’ reflective cone.

   11. Vertical channelization device shall not be used.

   12. Channelization device spacing table is based on WAC 466-95-301; however, device spacing may be reduced.

   13. Taper lengths are based on MUTCD tables 6C-1 and 6C-4. A taper length shall meet or exceed this specified rate without exception. The taper distances on this typical traffic control plan were based on the assumption of 63 lanes. Because shoulder widths vary, a shoulder closure taper table is included to address various widths.

   14. Per MUTCD figure 6H-33, sequential arrow boards shall be used for all freeway lane closure tapers. Each lane closure shall have a separate sequential arrow board. Sequential arrow boards shall not be used for lane shifts, ramp shifts, or on on-ramp mergers.

   15. The “2L” tangent between lane closure tapers may be reduced to “L” in tight geometric situations, but “L” should be obtained when possible.

   Q. PER MUTCD figure 6H-33, longitudinal buffer spaces are optional. Their use is recommended when feasible. If the design buffer is not available, the buffer should be maximized. The buffer can exceed the design buffer distance (thus “MIN” is used).

   R. The transverse buffer (laterally between travel lane and work area) is recommended as 2-foot but may be increased as desired.

   S. PER MUTCD figure 6H-33, transportable attenuators are optional but their use is strongly recommended for freeway lane closures. Transportable attenuator should be placed in closed lane adjacent to traffic prior to separate work areas, particularly after open temporary on-ramps. Either protective vehicles or transportable attenuators can be placed in the additional closed lanes except the closed lane adjacent to traffic.

   T. Placing channelization devices transversely (at 45° and 5' spacing) is an effective technique to move errant drivers back out of closed lanes and shoulders.

   U. PER MUTCD figure 6H-33, the reopening taper is optional.

   V. A tapered temporary exit-ramp is typically used with a typical 20:1 taper rate.

   W. The on-ramp shift can occur through the paved gore instead at the end of the gore. Permanent markings only if cross-slope is traversible. Plant marking is adequate, catch basins boxes are traffic bearing types.

   X. A parallel temporary on-ramp is typically used. The parallel temporary on-ramp is based on WSDOT Design Manual Exhibit 13H-1. The ramp should be placed across each closed lane. The ramp is placed across each closed lane. The ramp is placed across each closed lane at L/2 per closed lane. If L/2 is followed by an L/2 on-ramp, the ramp is important to understand MUTCD figure 6H-44. Typical application is guidance per MUTCD section 6H-01.

   Y. To discourage work zone intrusions, devices such as temporary channelizing is used by half across closed exit-ramps between the "exit closed" sign and the end of the exit-ramp's paver gore.

   Z. Actual work area limits can be modified.

AA. Ramp detour signage is recommended by MUTCD 6C-09. It is recommended to use route specific detour signage for significant ramp closures.

BB. The route specific detour route sign includes either an interstate shield (for freeway ramps), highway shields (for state highway ramps), or roadway description. If the ramp is to a specific route direction, include its direction. Maximize the shields, text size, and arrows to fit on the 40"x48" sign.

CC. This traffic control plan is not applicable when HOV-restricted lanes are present. For intersections with less than one HOV lane restrictions, separate typical traffic control plans are provided in the work zone library. For unique HOV lane configurations (such as HOV lane-change restrictions including a buffer separation directly-access HOV ramps or right lanes that are HOV-restricted) contact region traffic office when developing plans.

DD. This traffic control plan is not applicable when express toll lane(s) present. For freeways with express toll lane(s), contact region traffic office when developing plans.

**FREEWAY (3+ Lanes): DOUBLE RIGHT LANE CLOSURE WITH NO LANE SHIFTS**

(MUTCD 600-600) (60 MPH TO 60 MPH VARIABLE WORK ZONE SPEED LIMIT REDUCTION)

(NOT TO SCALE)