NOTES:
1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT TRAFFIC CONTROL PLAN (WITH PCMS IN ADVANCE OF LANE CLOSURE TAPER REMOVED).
2. SEE QUEUE WARNING SYSTEM (QWS) SPECIAL PROVISION OR RFP FOR DETAILS.
3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER.
4. ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERs, AND RAMPS.
5. LOCATE PCMSs PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON
6. IF SYSTEM FAILS, SEE 'QUEUE WARNING SYSTEM FAILURE PROTOCOL' PROVISION.
7. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 4.5 MILES. ADDITIONAL PCMSs OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERs, AND RAMPS. PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.
8. ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERs, AND RAMPS.
9. IF SYSTEM FAILS, SEE 'QUEUE WARNING SYSTEM FAILURE PROTOCOL' PROVISION.
10. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 4.5 MILES. ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERs, AND RAMPS. PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT

NOT TO SCALE
FOR 6-MILE QUEUE WARNING SYSTEM

PCMS MESSAGES AND COMPONENT LAYOUT

SEE TC234, SHEET 0A.

SECTION A-A

NOTES:
1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM ENGINEER MAY ORDER ADDITIONAL RSDS (WITH W23.4) AND W23.5 PRIOR TO EACH WORK CREW WITHIN WORK AREA.
4. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.
5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40.1 MIN SHIFT TAPER @ 16' MIN WIDTH) WITH W1-4 SIGNS 500 +/- PRIOR.
6. CONTACT WEecided COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE PROJECT (THEY DO NOT HAVE TO BE REMOVED DAILY/NIGHTLY).
8. 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
9. DOWNSTREAM TAPER OPTIONAL ACROSS LEFT LANE, BUT FIRST 50' REQUIRED. DOWNSTREAM TAPER DEVICE SPACING IS 25'.
10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' FOLLOWING THE DOWNSTREAM TAPER.
11. 240' TRUCKS ENTERING HIGHWAY AND TRUCKS LEAVING HIGHWAY': SIGNS 500 +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S), ADJUST TO AVOID W4-L SIGNS.
12. SIGNS ARE BLACK ON GRANITE UNLESS OTHERWISE INDICATED.
13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.
14. BICYCLES PROHIBITED THROUGH WORK ZONE (SEE NOTES 5 & 6)
15. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT

(55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)
NOT TO SCALE

LEGEND:
[Diagram with various symbols and notes]

FREEWAY: SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT

(55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)


**NOTES:**

1. If feasible, avoid placing lane closure or lane shift tapes with or immediately following horizontal curves.
2. Distance increases as work area moves downstream.
3. Relocate RSDs as work area moves downstream. Engineer may order additional RSDs (with W23-6) and W23-5 prior to each work crew within work area.
4. If used, place devices transversely across closed lanes at 45° +/- and 5' spacing at strategic locations.
5. When shoulder narrows, use lane shifts (40.1 min shift tape @ 16' min width) with W1-4 signs 500' +/- prior.
6. Contact WSDOT commercial vehicle services at least 7 days in advance for roadway width restrictions.
7. 7' traffic cones may remain in place throughout the project (they do not have to be removed daily/nightly).
8. Cover all conflicting signage per standard spec 8-21.3(3).
9. Downstream taper optional across left lane, but first 80' required. Downstream taper device spacing is 2'.
10. Signs optional if existing speed limit signs present within 1500' +/- following the downstream taper.
11. ADOT "TRUCKS LEAVING HIGHWAY" and "TRUCKS ENTERING HIGHWAY" (W23-3, 40'4'x 9') (10'X2') signs 100' +/- prior to where construction vehicles frequently exit and enter into the open lane(s). Adjust to avoid W1-4 sign.
12. Signs are black on orange unless otherwise indicated.
13. Plan is applicable to lane closures of 3 days or less.
14. Bicycles prohibited through work zone when wide lane closures. Consider providing detour alternative route or shuttle in high-use locations permitting permanent bicycle access.
Freeway (2 lanes): Single Left Lane Closure, 9' max Right Shoulder Shift (55 MPH Work Zone Speed Limit, 40 MPH Advisory Speed) Not to Scale

TYPICAL TRAFFIC CONTROL PLANS

HAAPALA & LINTZ
F. LINTZ
S. HAAPALA

NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC234, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE LEFT LANE CLOSURE (WITHOUT SHOULDER SHIFT) SEE TC103, SHEET 2. ADD R2.1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

OPEN RIGHT EXIT-RAMP DETAIL

CLOSED RIGHT EXIT-RAMP DETAIL

RIGHT EXIT-RAMPS ARE TO REMAIN OPEN

CLOSED RIGHT ON-RAMP DETAIL

COVER ALL CONFLICTING SPEED LIMIT SIGNS

ONLY USED WHEN RUMBLE STRIPS PRESENT

TYPICAL TRAFFIC CONTROL PLANS

Washington State Department of Transportation
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC234, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE LEFT LANE CLOSURE (WITHOUT SHOULDER SHIFT) SEE TC103, SHEET 3A. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

WORK AREA
WORK AREA
WORK AREA
WORK AREA

OPEN LEFT EXIT-RAMP DETAIL

CLOSED LEFT EXIT-RAMP DETAIL

CLOSED LEFT ON-RAMP DETAIL

CLOTS CLOSING PLAN

TYPICAL TRAFFIC CONTROL PLANS

Washington State Department of Transportation

TC234

NOT TO SCALE

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC234, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE LEFT LANE CLOSURE (WITHOUT SHOULDER SHIFT) SEE TC103, SHEET 3B. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE
NOTES:

1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT TRAFFIC CONTROL PLAN WITH PCMS IN ADVANCE OF LANE CLOSURE TAPER REMOVED.

2. SEE QUEUE WARNING SYSTEM (QWS) SPECIFIC PROVISION OR RFP FOR DETAILS.

3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER.

4. ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDER, AND RAMP.

5. LOCATE PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. PCMS ARE NOT TO SCALE.

6. IF SYSTEM FAILS, SEE 'QUEUE WARNING SYSTEM FAILURE PROTOCOL' PROVISION.

7. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 6.5 MILES.

8. ADJUST PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC CONTROL. TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

9. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

10. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

11. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

12. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

13. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

14. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

15. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

16. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

17. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.

18. PCMS MESSAGE TRAFFIC BACKUPS PRESENT I WATCH FOR SLOW TRAFFIC.
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT

NOT TO SCALE

FOR 6-MILE QUEUE WARNING SYSTEM
PCMs MESSAGES AND COMPONENT LAYOUT
SEE TC234, SHEET 0A.

LEGEND:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.

2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.

3. RELOCATE RSOS AS WORK AREA MOVES DOWNSTREAM. ENGINEER

4. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.

5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40.1 MIN SHIFT TAPER @ 15' MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 5 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

8. COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC 8-21.3(3).

9. DOWNSTREAM TAPER optional across left lane, but first 80' required. downstream taper device spacing is 20'.

10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.

11. ADD "TRUCKS ENTERING HIGHWAY" AND "TRUCKS LEAVING HIGHWAY" PER STANDARD SPEC 8-21.3(3) (OPTIONAL). 7/8" LINE sweep shoulder (SEE NOTES 5 & 6)

12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED. (SEE NOTES 5 & 6)

13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.

14. BICYCLES PROHIBITED THROUGH WORK ZONE PROVIDING DETOUR, ALTERNATIVE ROUTE, OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

NOTES:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES. 2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM. 3. RELOCATE RSOS AS WORK AREA MOVES DOWNSTREAM. ENGINEER MAY ORDER ADDITIONAL RSOS (WITH W23-6) AND W23-5 PRIOR TO EACH WORK CREW WITHIN WORK AREA.

4. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.

5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40.1 MIN SHIFT TAPER @ 15' MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 5 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE PROJECT (THEY DO NOT HAVE TO BE REMOVED DAILY/NIGHTLY).

8. COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC 8-21.3(3). 9. DOWNSTREAM TAPER optional across left lane, but first 80' required. downstream taper device spacing is 20'. 10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.

11. ADD "TRUCKS ENTERING HIGHWAY" AND "TRUCKS LEAVING HIGHWAY" PER STANDARD SPEC 8-21.3(3) (OPTIONAL). 7/8" LINE sweep shoulder (SEE NOTES 5 & 6)

12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED. (SEE NOTES 5 & 6)

13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.

14. BICYCLES PROHIBITED THROUGH WORK ZONE PROVIDING DETOUR, ALTERNATIVE ROUTE, OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.
3-MILE QUEUE WARNING SYSTEM MESSAGES

TRIGGER SPEED

<table>
<thead>
<tr>
<th>TRIGGER SPEED</th>
<th>PCMS 2</th>
<th>PCMS 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>35+ MPH</td>
<td>2.0 SEC</td>
<td>12.0</td>
</tr>
<tr>
<td>35+ MPH</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>35+ MPH &lt; 35 MPH</td>
<td>2.0 SEC</td>
<td>12.0</td>
</tr>
<tr>
<td>35+ MPH &lt; 35 MPH</td>
<td>12.0</td>
<td></td>
</tr>
</tbody>
</table>

LOCATE PCMS PER STD SPEC 1-10.3(3)C. PCMS MAY BE PLACED ON OR NEAR A MARSHAL. USE REFLECTIVE ARROW CONES BEHIND PCMS OR TRAFFIC SENSORS PLACED BEHIND THE CENTER/DOUBLE-LANE MARSHAL TO MAINTAIN VISIBILITY OF PCMS.

TRAFFIC SENSORS

- Radar Sensors
- Traffic Safety Drums
- QWS Traffic Sensors
- Radar Speed Display Sign (RSDS)
- Sequential Arrow Sign
- Portable Changeable Message Sign

NOTES:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM. ENGINEER MAY ORDER ADDITIONAL RSDS (W/ W23-6) AND W23-5 PRIOR TO EACH WORK CREW WITHIN WORK AREA.
4. USE PLACED DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9’ MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

- 3-MILE QUEUE WARNING SYSTEM MESSAGES
- TRIGGER SPEED
- PCMS 2
- PCMS 1
- 35+ MPH
- 2.0 SEC
- 12.0
- 35+ MPH
- 12.0
- 35+ MPH < 35 MPH
- 2.0 SEC
- 12.0
- 35+ MPH < 35 MPH
- 12.0

LEGEND:

- Temporary Sign Location (5' Minimum Height)
- 28" Reflective Traffic Cone
- Traffic Safety Drum
- QWS Traffic Sensor
- Radar Speed Display Sign (RSDS)
- Sequential Arrow Sign
- Portable Changeable Message Sign

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL PLANS

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9’ MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE
NOTES:
1. For legend, tables and additional notes see TC103, Sheet 2A.
2. For right ramp details for a single left lane closure (without shoulder shift) see Sheet 3, Add R2-1 (55) sign after on-ramp merges near covered existing speed limit sign.
3. See detour plan for additional ramp closure detour signage.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

FILE NAME: 234Fwy1LtLanes9MaxRtShift70to55WZSL40Adv.dgn
DATE: 2/22/2022
TIME: 9:24:08 AM

TC234

TYPICAL TRAFFIC CONTROL PLANS
NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC234, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE LEFT LANE CLOSURE (WITHOUT SHOULDER SHIFT) SEE TC103, SHEET 3B. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL PLANS

TC234

DATE: 2/22/2022

PLotted BY: LINTZ

DESIGNED BY: HAAPALA & LINTZ

ENTERed BY: LINTZ

CHECKED BY: HAAPALA

Pty. Env.: P.E. STAMP BOX

REGIONAL ADM.: P.E. STAMP BOX

FILE NAME: TC234-1

TIME: 9:24:10 AM

DATE: 1/22/2022

REV.: 3

LOC: CA32

CONTRACT NO.: 10

STATE: WASH

FED. AID PROJ. NO.: 38

TOTAL SHEETS: 3

1ST SHEET: 3

DATE: 1/22/2022

REVISION: 3

DATE: 1/22/2022

2ND SHEET: 3

DATE: 1/22/2022

REVISION: 3

DATE: 1/22/2022

3RD SHEET: 3

DATE: 1/22/2022

REVISION: 3

DATE: 1/22/2022

DRAFT SHEET: 3

NOTE: 

- For legend, tables, and additional notes, see TC234, Sheet 0B, 1A, or 1B.
- For right ramp details for a single left lane closure (without shoulder shift), see TC103, Sheet 3B. Add R2-1 (55) sign after on-ramp merges near covered existing speed limit sign.
- See detour plan for additional ramp closure detour signage.
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9’ MAX RIGHT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

A. Contact Region Traffic Operations to determine if a queuing mitigation system is needed, and which one is appropriate.

B. Sheets 3A & 3B needed only when ramps are present on the left side of freeway.

C. Contact Region Traffic Operations to determine whether Parallel (Sheet 3A) and/or Tapered (Sheet 38) temporary on-ramps is used.

D. These typical traffic control plans may be modified for site specific situations and/or WSDOT Region Traffic Operations standard practices.

E. MUTCD Table 6F-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently, and accept it.

For this to function properly (otherwise it will print out as a solid black glob); DESIGNERS MUST FIRST UPDATE THEIR COLOR TABLE AND THEN

PRINTING IN FULL COLOR OR GRAYSCALE (BLACK/WHITE):

and be printed in full color. mauve and teal have been programmed to print in color, when designers print in black/white.

For this to function properly (otherwise it will print out as a solid black glob); DESIGNERS MUST FIRST UPDATE THEIR COLOR TABLE AND THEN

PRINTING IN FULL COLOR OR GRAYSCALE (BLACK/WHITE):

Even though the work zone cells are full color, CAE has programmed Colors 224-239 (used for the work zone cells and the left edge line) to print in grayscale automatically when designers print in black/white.

IMPORTANT: An extensive library of updated work zone cells are now available for work zone signs, detour signs (generic and route-specific), tables, and other graphics. See WSDOT Traffic Manual Section 4.2.0, for more information.

External Folks

Reoccuring/Interminent Queuing Expected up to 6 Miles (Closures in Place Less Than 7 Days Typically)

Interminent Queuing Expected up to 3 Miles:

Use Plot 2 (modify reference of “6-Mile Queue Warning System” to “6-Mile Smart Work Zone System”)

Use Plot 5

Use Plot 6 and/or Plot 7 (if ramps on left side are present only; depends on whether Region uses Parallel and/or Tapered on-ramps)

WSDOT best practice is to place a temporary attenuator (TA) in the closed lane adjacent to traffic in advance of the work area when feasible (150 feet in advance of the TA may be added in all closed lane edges in the work area). In addition, TA(s) should be added prior to work areas following open temporary exit-ramps or on-ramps through the use of the design values suggested by the Region.

Ramping channelization (transversely or at 45° and 5 foot spacing) is an effective strategy to move errant drivers back out of closed lanes.

Per MUTCD Figure 6C-2, the downstream taper is optional across the reopened right lane (install the taper to shift traffic back into the left lane though). Eliminating the downstream taper allows construction vehicles (especially heavily loaded semi trucks) to accelerate straight out of the work area into the reopened lane with minimal traffic disruption and maximum traffic impacts. This maximizes work zone capacity and safety for all.

A: 20:1 tapered temporary exit-ramp is typical, but 15:1 is acceptable. The exit-ramp travel way width may range from 12 to 16 feet.

B. On-the-ramp cross overs may be added on-on-ramp go to 1 1/2, but verify the five lane cross traverse is acceptable, pavement texture adequate, and catch basin & ITS boxes are traffic calming features. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.

C. Two types of temporary on-ramp configurations, parallel and tapered. Parallel on-ramp uses a L/2 per lane ramp shift, L/2 MIN acceleration pocket that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is also acceptable. Use Plot 5 and/or Plot 6 (if ramps on right side are present only; depends on whether Region uses Parallel and/or Tapered on-ramps).

Calculating minimum taper lengths per MUTCD Tables 6C-3 AND 6C-4, which is Guidance per MUTCD 6C.08, Paragraph 04. Reducing lane closure (SPEED LIMIT 70 TRUCKS 60), use the higher 70 mph for work zone design. For this Typical TCP, the work zone design speed is 55 mph and is used for sign spacing, channelization device spacing, buffer, and road alignment details.

D. 3520:1 taper is effective from work area to the end of the gore. This will allow construction vehicles (especially heavily loaded semi trucks) to exit the work area at a safe distance.

E. Channelization device spacing is based on engineering judgment. Desirable spacing on freeway mainlines is 1500’ +/- for a 3-sign series and 1000’ +/- for a 5-sign series used with reduced work zone speeds. In freeway mainline sign spacing may be reduced even to 500’ +/- based on engineering judgement. See next note regarding sign spacing along freeway ramps.

E. WSDOT Traffic Manual Section 4.2.1, for details on the design of temporary traffic control plans incorporating work zone signs, detour signs, and other graphics. See WSDOT Traffic Manual Section 4.2.0, for more information.

F. WAC 468-95-302 modifies MUTCD Table 6-1: “Recommended Advance Warning Sign Minimum Spacing”. Sign spacing may be adjusted for field conditions based on engineering judgement. Desirable spacing on freeway mainlines is 1500’ +/- for a 3-sign series and 1000’ +/- for a 5-sign series used with reduced work zone speeds. In freeway mainline sign spacing may be reduced even to 500’ +/- based on engineering judgement. See next note regarding sign spacing along freeway ramps.

G. Per WAC 468-95-300, all sign spacing may be adjusted to accommodate interchange ramps. Among interchange ramps, sign spacing is typically 200’ longer, and will be substantially aligned with the ramp, but can be reduced where it is needed to fit site conditions.

H. When positioned behind channelization devices, temporary signs should be mounted at 7’ minimum. For MUTCD 64-H-4 Note 4 (Standard), a temporary "EXIT" sign shall be mounted at 7’ minimum when located in the temporary gore.

I. Modify all "ROADWAY NARROWS" (2) WSDOT PCMS messages to match the actual minimum travel width (a) + lane width + shoulder) available through the gore.

J. Ramp detour signage is recommended by MUTCD 6C.09, but using alternative routes is acceptable. Contact Region Traffic Operations for their

K. To discourage work zone intrusion, device spacing is reduced by one-half approaching and at closed exit-ramps.

L. Per MUTCD Section 6F.51, separate sequential arrow boards shall be used for each freeway lane closure. Sequential arrow boards shall NOT BE used for lane shifts or ramps.

M. Two types of temporary on-ramp configurations, parallel and tapered. Parallel on-ramp uses a L/2 per lane ramp shift, L/2 MIN acceleration pocket that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is also acceptable. Use Plot 5 and/or Plot 6 (if ramps on right side are present only; depends on whether Region uses Parallel and/or Tapered on-ramps).

N. Planning channelization (transversely or at 45° and 5 foot spacing) is an effective strategy to move errant drivers back out of closed lanes.

O. Per MUTCD Section 6C.06, longitudinal buffer spaces are optional. Using longitudinal buffer spaces listed in MUTCD Table 6C-2 is recommended as best practice when possible, but may be adjusted based on engineering judgment.

P. The federal taper (transverse between open travel lanes and work area) is recommended as 2 feet on stationary freeway lane closures, but may be adjusted based on engineering judgement. Actual work area limits may be modified.

Q. WSDOT best practice is to place a temporary attenuator (TA) in the closed lane adjacent to traffic in advance of the work area (at least 150 feet).

R. Channelization devices transversely (at 45° and 5 foot spacing) is an effective strategy to move errant drivers back out of closed lanes.

S. WSDOT Traffic Manual Section 4.2.1, for details on the design of temporary traffic control plans incorporating work zone signs, detour signs, and other graphics. See WSDOT Traffic Manual Section 4.2.0, for more information.

T. WSDOT best practice is to place a temporary attenuator (TA) in the closed lane adjacent to traffic in advance of the work area (at least 150 feet).

U. Ramp daylighting is recommended by MUTCD 6C.09, but using alternative routes is acceptable. Contact Region Traffic Operations for their

V. To discourage work zone intrusion, device spacing is reduced by one-half approaching and at closed exit-ramps.

W. Channelization device spacing is based on engineering judgment. Desirable spacing on freeway mainlines is 1500’ +/- for a 3-sign series and 1000’ +/- for a 5-sign series used with reduced work zone speeds. In freeway mainline sign spacing may be reduced even to 500’ +/- based on engineering judgement. See next note regarding sign spacing along freeway ramps.

X. Ramp daylighting is recommended by MUTCD 6C.09, but using alternative routes is acceptable. Contact Region Traffic Operations for their

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