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 PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMPS WHEN LOCATED BEHIND BARRIERS/GUARDRAIL OR WITHIN CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.
6. IF SYSTEM FAILS, SEE 'QUEUE WARNING SYSTEM FAILURE PROTOCOL' PROVISION.
7. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 5 MILES. RELOCATE TO REMAIN 3+/- MILE IN ADVANCE OF QUEUE. TRUCK-MOUNTED PCMS WITH 10+ INCH CHARACTERS ACCEPTABLE. TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES. ADDED PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC.
8. PCMS MESSAGES MAY BE MODIFIED TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES.
9. PCMS MESSAGES MUST BE ACCEPTED BY THE ENGINEER.

LEGEND
TRAFFIC SAFETY DRUM
TRAFFIC SENSOR
SEQUENTIAL ARROW SIGN
PCMS PORTABLE CHARACTERS MESSAGE SIGN

6-MILE QUEUE WARNING SYSTEM
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT
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) SPECIAL PROVISION OR RFP FOR DETAILS.
3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER.
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8. PCMS MESSAGES MAY BE MODIFIED TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES.
9. PCMS MESSAGES MUST BE ACCEPTED BY THE ENGINEER.
PORTABLE CHANGEABLE MESSAGE SIGN
1000' +/-

WORK AREA

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

NOT TO SCALE

TYPICAL TRAFFIC CONTROL PLANS

DATE: 2/22/2022

MAY REMAIN IN PLACE (SEE NOTE 7)

SHOULDERS CLOSURE TAPER LENGTH IS L/3
SHOULDERS WIDTH IS L/3

HOST VEHICLE WEIGHT
R
9,900 TO 22,000 lbs.
123'
22,001+ lbs.
100'

MAXIMUM CHANNELIZATION DEVICE SPACINGS
TAPER	TANGENT
50' 60'

LEGEND:
K: TEMPORARY SIGN LOCATION
E: TEMPORARY SIGN LOCATION (MIN HEIGHT)
28" REFLECTIVE TRAFFIC CONE
\( T \): TRAFFIC SAFETY DRUM
W: QB'S TRAFFIC SENSOR
I: RADAR SPEED DISPLAY SIGN (RSDS)
W: SEQUENTIAL ARROW SIGN
PCMS: 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.
4) IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.
5) WHEN SHOULDER NARROWS, USE LANE SHIFTS (30' MIN SHIFT TAPER @ 15' MIN WIDTH) WITH W1-4 SIGNS 50' +/- PRIOR.
6) CONTACT WSDOT 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) COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC B21.1(3).
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) ADD 'FREEWAY CLOSING' OR 'FREEWAY CLOSING 1/4 MILE AHEAD' SIGNS 1000' +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S). ADJUST TO AVOID W1-4L 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. 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 SHIFTS
(45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

TYPICAL TRAFFIC CONTROL PLANS

DATE: 2/22/2022

MAY REMAIN IN PLACE (SEE NOTE 7)

SHOULDERS CLOSURE TAPER LENGTH IS L/3
SHOULDERS WIDTH IS L/3

HOST VEHICLE WEIGHT
R
9,900 TO 22,000 lbs.
123'
22,001+ lbs.
100'

MAXIMUM CHANNELIZATION DEVICE SPACINGS
TAPER	TANGENT
50' 60'

LEGEND:
K: TEMPORARY SIGN LOCATION
E: TEMPORARY SIGN LOCATION (MIN HEIGHT)
28" REFLECTIVE TRAFFIC CONE
\( T \): TRAFFIC SAFETY DRUM
W: QB'S TRAFFIC SENSOR
I: RADAR SPEED DISPLAY SIGN (RSDS)
W: SEQUENTIAL ARROW SIGN
PCMS: 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.
4) IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- AND 5' SPACING AT STRATEGIC LOCATIONS.
5) WHEN SHOULDER NARROWS, USE LANE SHIFTS (30' MIN SHIFT TAPER @ 15' MIN WIDTH) WITH W1-4 SIGNS 50' +/- PRIOR.
6) CONTACT WSDOT 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) COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC B21.1(3).
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) ADD 'FREEWAY CLOSING' OR 'FREEWAY CLOSING 1/4 MILE AHEAD' SIGNS 1000' +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S). ADJUST TO AVOID W1-4L 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. CONSIDER PROVIDING DETOUR ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.
2.0 SEC EEG F O I B F VARIES

PORTABLE CHANGEABLE MESSAGE SIGN

BY ER2-A (B/W)

D O I P.E. STAMP BOX

2.0 SEC EE A S E

F O I Z

N N N N I O O I I E

E R A-A A A E

D A I O I D R

2.0 SEC

EE I A S O T S E O F

2.0 SEC

E A S E

REGIONAL ADM.

PROJ. ENGR.

CHECKED BY

ENTERED BY

DESIGNED BY

DATE

PLotted BY

REVIEWED BY

TIME

HOST VEHICLE WEIGHT

R

9,900 TO 22,000 lbs.

12'

22,001+ lbs.

100'

MAXIMUM CHANNELIZATION DEVICE SPACINGS

TAPER TANGENT

36' 60'

5-8" TEXT (B/W)

LED DISPLAY

5-8" TEXT

SECTION A-A

NOT TO SCALE

WORK AREA

QUEUE LOCATION MEASURED FROM HERE

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

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

NOT TO SCALE

NOTE:

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

2. DISTANCE INCREASES AS WORK AREA MOVES AWAY FROM TRAFFIC.

3. RELOCATE RESIDUAL SPEED LIMIT SIGNS DOWNSTREAM ENGINEER MAY ORDER ADDITIONAL RESIDUAL SPEED LIMIT SIGNS (WITH W2-5) PRIOR TO EACH WORK AREA (B/W)

4. USE LANE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45° +/- 5° SPACING AT STRATEGIC LOCATIONS.

5. USING SHOULDER NARROWS, USE LANE SHIFTS (10' MIN SHIFT TAPER @ 15' MIN WIDTH) WITH W-4 SIGNS 50'-60' PRIOR.

6. CONTACT WSDOT 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. COVER ALL PROFESSIONAL SIGNAGE PER STANDARD SPEC B21.3(3).

9. DOWNSTREAM TAPER REQUIRED ACROSS LEFT LANE, BUT FIRST 80' REQUIRED. DOWNSTREAM TAPER DEVICE SPACING IS 270'.

10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' FOLLOWING THE DOWNSIDE TAPER.

11. ADD "TRUCKS ENTERING HIGHWAY" AND "TRUCKS LEAVING HIGHWAY" (W2-35 40'-4" W3-6) SIGNS 100'-60' PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S). ADJUST TO AVOID W-4L SIGN.

12. SIGNS ARE BLACK ON GRAY UNLESS OTHERWISE INDIATED.

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

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

NOTES:

3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM. ENGINEER TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.

4. IF USE OF TRANSVERSE LANE DEVICES REQUIRED, USE BOTH LANE DEVICES TAKE TURNS AT MILE MARKERS.

5. WEST OF I-5 USE CABLE-HELD SWING BARRIERS AS REQUIRED.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

7. PROVIDE DETOUR, ALTERNATIVE ROUTE, OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

8. COVER ALL PROFESSIONAL SIGNAGE PER STANDARD SPEC B21.3(3).

9. DOWNSTREAM TAPER REQUIRED ACROSS LEFT LANE, BUT FIRST 80' REQUIRED. DOWNSTREAM TAPER DEVICE SPACING IS 270'.

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5. WEST OF I-5 USE CABLE-HELD SWING BARRIERS AS REQUIRED.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

7. PROVIDE DETOUR, ALTERNATIVE ROUTE, OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDERS SHIFT (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

CLOSED RIGHT EXIT-RAMP DETAIL
RIGHT EXIT-RAMPS ARE TO REMAIN OPEN

OPEN RIGHT EXIT-RAMP DETAIL
RAMP OPENING VARIES

ONLY USED WHEN RUMBLE STRIPS PRESENT

NOT TO SCALE

Washington State Department of Transportation

TYPICAL TRAFFIC CONTROL PLANS

NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC254, 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 (45) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\254Fwy1LtLanes9MaxRtShift60to45WZSL40Adv.dgn

DATE: 2/22/2022
TIME: 9:24:41 AM

PLOTTED BY: LINTZ
DESIGNED BY: HAAPALA & LINTZ
ENTERED BY: S. LINTZ
CHECKED BY: S. HAAPALA
PROJ. ENG.:
REGIONAL ADM.:
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC254, 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 (45) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXITING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIF (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

WORK AREA

500' MIN TANGENT
120' RAMP OPENING
360' MIN

25' WORKER

4'8" 7' SEMI TRAFFIC

EXIT OPEN

ES-2A

EXISTING SPEED LIMIT SIGN.

CLOSED LEFT EXIT-RAMP DETAIL

FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

WORK AREA

TRAFFIC SAFETY DRUMS

@ 30' SPACING

502' -

320' +-

CLOSED LEFT ON-RAMP DETAIL

CLOSING 60' RAMP IF DISTANCE IS NOT AVAILABLE

OPEN LEFT PARALLEL ON-RAMP DETAIL

200' +/-

360' MIN AREA WORK

WORK AREA

500' MIN TANGENT

OPENING

WORK AREA

EXIT-RAMP DETAIL

OPEN LEFT EXIT-RAMP DETAIL

SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC254, 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 (45) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.

NOTES:

- WORK AREA
- OPEN LEFT EXIT-RAMP DETAIL
- CLOSED LEFT EXIT-RAMP DETAIL
- CLOSED LEFT ON-RAMP DETAIL
- OPEN LEFT TAPERED ON-RAMP DETAIL
- FREeways (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL PLANS

TC254
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 PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES.
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.

ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

TRANVERSE TRAFFIC SAFETY DRUMS OPTIONAL.

OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL.

OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL.

OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.
### Notes:

1. If feasible, avoid placing lane closure or lane shift tapered 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 W23-5) 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 (101 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(2).

9. Downstream taper optional across left lane, but first 50' required. Downstream taper device spacing is 27'.

10. Signs optional if existing speed limit signs present within 1500' following the downstream taper.

11. Add "Trucks leaving highway" and "Trucks entering highway" (W21-30, 48"x48", 5' height) signs 500' +/- 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. 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

(45 MPH Work Zone Speed Limit, 40 MPH Advisory Speed)

**Not to Scale**

---

**Table: Porta-Changeable Message Sign (PCMS)**

<table>
<thead>
<tr>
<th>PCMS</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROADWAY</strong></td>
<td><strong>SHOULDER</strong></td>
<td><strong>SLOW TRAFFIC</strong></td>
<td><strong>AHEAD</strong></td>
</tr>
<tr>
<td><strong>NARROWS</strong></td>
<td><strong>DRIVING</strong></td>
<td><strong>AHEAD</strong></td>
<td><strong>AHEAD</strong></td>
</tr>
<tr>
<td><strong>1.5 SEC</strong></td>
<td><strong>1.5 SEC</strong></td>
<td><strong>1.5 SEC</strong></td>
<td><strong>1.5 SEC</strong></td>
</tr>
</tbody>
</table>

**Field locate 1.5 +/- miles prior to first lane closure taper.**

**Remove phase 3 when traffic queues no longer present.**

**Increase display to 2.0 sec.**

**Locate PCMS per WSDOT standard spec 1-10.3(3).C.**

---

**Diagram:**

- **PCMS:** Portable Changeable Message Sign
- **PORTA:** Portable attenuator
- **PORTA:** Porta-Changeable Message Sign
- **PCMS:** Portable changeable message sign

---

**Legend:**

- **1.** Temporary sign location
- **2.** Temporary sign location (9" min height)
- **3.** 28" Reflective traffic cone
- **4.** Traffic safety drum
- **5.** Sequential arrow sign
- **6.** Portable changeable message sign

---

**Typical Traffic Control Plans**

- **TC254**

---

**Title:** Freeway (2 Lanes): Single Left Lane Closure, 9' Max Right Shoulder Shift

**Speed:** (45 MPH Work Zone Speed Limit, 40 MPH Advisory Speed)

**Not to Scale**

---

**Notes:**

1. If feasible, avoid placing lane closure or lane shift tapered 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 W23-5) 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 (101 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(2).

9. Downstream taper optional across left lane, but first 50' required. Downstream taper device spacing is 27'.

10. Signs optional if existing speed limit signs present within 1500' following the downstream taper.

11. Add "Trucks leaving highway" and "Trucks entering highway" (W21-30, 48"x48", 5' height) signs 500' +/- 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. Consider providing detour alternative, route, or shuttle in high-use locations permitting permanent bicycle access.
NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC254 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 (45) 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 (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, 9' MAX RIGHT SHOULDER SHIFT (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

CLOSED LEFT EXIT-RAMP DETAIL

OPEN LEFT EXIT-RAMP DETAIL

OPEN LEFT PARALLEL ON-RAMP DETAIL

CLOSED LEFT ON-RAMP DETAIL

NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC254, 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 (45) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

TYPICAL TRAFFIC CONTROL PLANS

TC254

DATE: 2/22/2022
TIME: 9:24:46 AM
FILE: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\254Fwy1LtLanes9MaxRtShift60to45WZSL40Adv.dgn

PLOTTED BY: LINTZ
DESIGNED BY: HAAPALA
ENTERED BY: LINTZ
CHECKED BY: HAAPALA
PROJ. ENGR.:
REGIONAL ADM.

FILE NAME: TIME: DATE: DESIGNER:
ENTRY:
CHECK:
PROJ.:
ADM:

P.E. STAMP BOX

LOCATION NO.: STATE:
CONTRACT NO.: JOB NUMBER:
FED.AID PROJ.NO.: WASH:

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NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC254, 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 (45) 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 (45 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

CLOSED LEFT ON-RAMP DETAIL

CLOSED LEFT EXIT-RAMP DETAIL

OPEN LEFT EXIT-RAMP DETAIL

OPEN LEFT TAPERED ON-RAMP DETAIL

SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

SEE TABLE FOR ADDITIONAL NOTES: SEE TC254, SHEET 0B, 1A, OR 1B.
UPDATED WORK ZONE MICROSTATION CELLS:

- IMPORTANT: An extensive library of updated work zone cells are now available for work zone signs, dotter signs (generic and route specific), tables, and other design updates in all traffic control plans. Use these updated cells in all traffic control plans at minimum reduce all old work zone tables in old traffic control plans. This Typical Traffic Control Plan has updated cells (as of February 2022) already incorporated.


WSDOT Staff:

(1) Microstation cell libraries are automatically updated by CAE.
(2) Manually update or replace Microstation cells at least annually. For technical support and guidance see.

External Firms (e.g., Local Agencies, Design-Builder-Consultants, and Contractors):

(1) Manually install updated WSDOT cell libraries into Microstation.
(2) Download and installation instructions are available on the WSDOT Engineering-standards/design-topics/software-resource-updates тек текст.

(2) Manually update or replace Microstation cells at least annually. For technical support and guidance see.

https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/technical-support-guidance

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

Even though the work zone cells are full color, CAE has programmed Color 238-239 (used for the work zone cells and the left edge line) to print in grayscale automatically when designers print in black/white.

For this to function properly (otherwise it will print out as a solid black grab), DESIGNERS MUST FIRST UPDATE THEIR COLOR TABLE AND THEN REPLACE THE OLD WORK ZONE CELLS (or Update if the new work zone cells are already incorporated).

(1) Update color table by selecting Settings > Color Table. In the Color Table, select RGB > Default and click Add/Close.
(2) Replace the old work zone cells using the Replace Cells command. Select Toss > Cells > Replace Cells. Set the Method to Replace and either drag and drop the new cell file (Linux users must first replace one cell, replace all cells matching the selected cells name) then select the cell to replace and add it.

For additional informal email, mqa@helth.dept.wsdot.wa.gov.

PLOT USAGE EXPLANATION:

Which plots to use will be determined from work zone traffic analysis performed by the Region Traffic Operations (see WSDOT Traffic Manual Sections 5-9 thru 5-10, https://wsdot.wa.gov/publications/manuals/fulltext/M51-02/Chapter5.pdf).

- Minimal Traffic Queuing Expected:
  - Use Plot 5 or 6 and/or Plot 7 (if ramps on left side are present only; depends on whether Region uses Parallel and/or Tapered on-ramps).

- Intermittent Queuing Expected up to 3 Miles:
  - Use Plot 3 (3-Mile QWS).

- Reoccurring/Intermittent Queuing Expected up to 6 Miles (Closures in Place Less Than 7 Days Typically):
  - Use Plot 5 (Pending EWS
d of EWS on the left side are present only; depends on either Regional Policy uses Parallel and/or Tapered on-ramps).

- Reoccurring/Intermittent Queuing Expected up to 9 or 12 Miles (Closures in Place More Than 7 Days Typically):
  - Use Plot 8 (Pending EWS

- Tapered lane shifts are used for lane shifts, ramp shifts, or at on-ramp merges.

DESIGNER NOTES:

- Contact Region Traffic Operations to determine if a queuing mitigation system is needed, and which one is appropriate.
- Contact Region Traffic Operations to determine whether Parallel (Sheet 3A) and/or Tapered (Sheet 3B) temporary on-ramps are used.
- Contact Region Traffic Operations for a lane shift guidance chart used for traffic lane shifting, ramp shifting, or at on-ramp merges.
- Contact Region Traffic Operations for general design considerations.

F. WAC 466-95-302 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 4 sign series used with reduced work zone speed limits. In freeway mainline sign spacing may be reduced down to 100' +/- based on engineering judgement. See next note regarding sign spacing along freeway ramps.

G. Per WAC 466-95-330, all sign spacing may be adjusted to accommodate interchange ramps. Along interchange ramps, sign spacing is typically 200' +/- ever submarine and rural areas, but can be adjusted as needed to fit site conditions.

H. When positioned behind channelization devices, temporary signs should be mounted at 9' minimum. Per MUTCD 44-02 Note (4), a temporary "EXIT" sign shall be mounted at 9' minimum when located in the temporary gore.

I. Modifying all "ROADWAY NARROW" or "WSDOT" POCS messages to match the actual minimum travel distance (w/ lane width + shoulder) available through the work zone. Freeway lane closures do not require a POCS per MUTCD 44-01; however, a POCS is recommended since traffic is shifted off the shoulder.

J. The ",", ",", and "" signs are typically on the middle median speed limit (work zone speed limit in effect) when available features.

K. Channelization devices types may be modified (vertical panel channelization devices prohibited). Traffic safety drums are recommended on freeway lane consolidation shift tapers; however, on the freeway tangent sections 42' tall channelization devices, 36' traffic cones, or 28' traffic cones may be used. Warning lights on channelization devices is being phased out in Washington. Contact Region Traffic Operations for information regarding their standard practices.

L. Maximum channelization devices spacing table is based on WAC 466-95-301 and may ALWAYS be reduced.

M. 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.

N. The on-ramp sign spacing may exceed the packet-on-ramp gore at 1/2", but verify the sign's cross-section is traversible, pavement thickness adequate, and catch basin & ITS boxes are traffic bearing types. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.

O. Per MUTCD Section 6-5.1, separate sequential arrow boards shall be used for any lane shifts, ramp shifts, or at on-ramp merges.

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

Q. The federal traffic (transverse distance between open travel lanes and work area) may be reduced down to 2 feet on stationary freeway lane closures, but may be adjusted based on engineering judgment. Actual work area limits may be modified.

R. WSDOT worst practice is to place a traffic diversion ramp (TA) in the closed lane adjacent to traffic in advance of the work area (rail ahead distance provided for freeway mainline closures). This TA may be added in all closed lanes prior to each work area. An Addendum of TA should be added prior to works areas following temporary exit-ramps or through the lane shift process for their standard practices.

S. Placing channelization devices transversely (at 45° and 5' spacing) is an effective strategy to move errant drives back out of closed lanes.

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

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

V. The ramp sign spacing may exceed the packet-on-ramp gore at 1/2", but verify the sign's cross-section is traversible, pavement thickness adequate, and catch basin & ITS boxes are traffic bearing types. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.

W. To discourage work zone traffic, device spacing is reduced by one half approximating at closed exit-ramps.

X. Ramp dotter signage is recommended by MUTCD 6-C.9, but using alternative routes is acceptable. Contact Region Traffic Operations for their lane shift guidance chart used for traffic lane shifting, ramp shifting, or at on-ramp merges.

Y. Contact Region Traffic Operations for general design considerations.

Z. Contact Region Traffic Operations for a lane shift guidance chart used for traffic lane shifting, ramp shifting, or at on-ramp merges.