**Traffic Control Plans for 45+ MPH Highways**

**Overview:**

- **Temporary Sign Location:**
  - For alternating 1-lane, 2-way traffic, AFAD-controlled with temp. rumble strips.

- **Pilot Car Operation:**
  - Alternating with work zone,
  - Follows through lane closure.

**AFAD Gate Arm Details:**

- Gate arm shall be fully retroreflective on work zone.
- Gate arm shall be fully retroreflective on work zone.

**Longitudinal Buffer Space:**

- Adjusted to accommodate rural roads.
- Channelization devices may be optional.

**Notes:**

1. Avoid placing lane closure tapers within or immediately following horizontal & vertical curves by adjusting longitudinal buffer.
2. If longitudinal buffer space is reduced from distances listed in table, upgrade protective vehicle to a transportable attenuator.
3. Traffic cones recommended in traffic cones or tall channelization devices or traffic safety drums may also be used.
4. Only when mainline AFADs are less than 1000 ft apart, bicyclist & pedestrian accommodations are optional.
5. Only when mainline AFADs are less than 1000 ft apart, bipedal & pedestrian split lane closure.
6. PILOT CAR OPERATOR TO DRIVE SPEED PRUDENT FOR WORK ZONE CONDITIONS, STOPPING TRAFFIC IF NECESSARY, UP TO A MAXIMUM SPEED OF 25 MPH AT LANE SHIFT TO 5 MPH ENCOURAGING BICYCLES.
7. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. FOR PROJECT-SPECIFIC REQUIREMENTS, SEE SPECIAL PROVISIONS.
9. PILOT CAR OPERATOR TO DRIVING SPEED PRUDENT FOR WORK ZONE CONDITIONS, STOPPING TRAFFIC IF NECESSARY, UP TO A MAXIMUM SPEED OF 25 MPH AT LANE SHIFT TO 5 MPH ENCOURAGING BICYCLES.
10. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
11. AUTO PLACING TRAFFIC WARNING STRIPS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL & VERTICAL CURVES BY ADJUSTING LONGITUDINAL BUFFER.
12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
13. ACTUAL CENTERLINE PAINTING MARKINGS MAY VARY.
16. Work may occur across intersecting roadway approach (on same side as lane closure) by holding access traffic up to 5 minutes and restricting turns from mainline channelization devices delineating access may be removed.

17. Work may occur across driveway or access by adding a flagger and holding access traffic up to 5 minutes and restricting turns into access from mainline channelization devices delineating access may be removed.

18. Single flagger may be added to the intersecting roadway approach to help guide alternating traffic & bicyclists through intersection.

19. Work may occur across intersecting roadway up to 5 minutes and restricting turns into access from mainline channelization devices delineating access may be removed.

20. Pavement markings may vary.

NOTE 17

ON LOW-VOLUME INTERSECTING ROADS (LESS THAN 400 AADT SUCH AS FOREST ROADS OR TRIBAL ROADS IN RURAL AREAS) X 025-101 (24"x20", B/W) MAY BE USED AT STOPBAR IN LIEU OF FLAGGER AND SIGN SEQUENCE A.

NOTE 18

SIGN SEQUENCE A

40"x40" signs required on 45+ mph roadways

NOT TO SCALE

REGIONAL ADM.

FILE NAME: TC333-HWY45+ALTTRAFFICAFADBISTREERoutes.dgn

DATE: 7/20/2022

PLOTRED PLOTNO.

TYPICAL TRAFFIC CONTROL PLANS

NOTE: 

HIGH-VOLUME BICYCLE & PEDESTRIAN STRATEGIES (45+ MPH HIGHWAYS) 

NOTE:

HIGH-VOLUME BICYCLE & PEDESTRIAN STRATEGIES (45+ MPH HIGHWAYS)

NOTE:

HIGH-VOLUME BICYCLE & PEDESTRIAN STRATEGIES (45+ MPH HIGHWAYS)
**PILOT CAR OPERATION FOR ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED + TEMP. RUMBLE STRIPS**

**HIGH-VOLUME BICYCLE & PEDESTRIAN STRATEGIES (45+ MPH HIGHWAYS)**

**NOT TO SCALE**

**TYPICAL TRAFFIC CONTROL PLANS**

**REGIONAL ADM.**

**REVISION**

**DATE**

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**STOP CONDITION**

**SLOW CONDITION**

**TRANSITION TO STOP**

**FOR DRIVING, BUSINESS ACCESS, AND INTERSECTING ROADWAY DETAILS SEE TC313, SHEET 1B.**

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**REGIONAL ADM.**

**REVISION**

**DATE**

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**STOP CONDITION**

**SLOW CONDITION**

**TRANSITION TO STOP**

**FOR DRIVING, BUSINESS ACCESS, AND INTERSECTING ROADWAY DETAILS SEE TC313, SHEET 1B.**
NOTES:

16. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC333, SHEET 1.

17. WORK MAY OCCUR ACROSS INTERSECTING ROADWAY APPROACH (ON SAME SIDE AS LANE CLOSURE) BY HOLDING ACCESS TRAFFIC UP TO 5 MINUTES AND RESTRICTING TURNS FROM MAINLINE CHANNELIZATION DEVICES DELINEATING APPROACH MAY BE REMOVED.

18. SINGLE FLAGGER MAY BE ADDED TO THE INTERSECTING ROADWAY APPROACH TO HELP GUIDE ALTERNATING TRAFFIC AND BICYCLISTS THROUGH INTERSECTION.

19. WORK MAY OCCUR ACROSS DRIVEWAY OR ACCESS BY ADDING A FLAGGER AND HOLDING ACCESS TRAFFIC UP TO 5 MINUTES AND RESTRICTING TURNS INTO ACCESS FROM MAINLINE CHANNELIZATION DEVICES DELINEATING ACCESS MAY BE REMOVED.

20. PAVEMENT MARKINGS MAY VARY.

SIGN SEQUENCE A
48"x48" signs required on 45+ mph roadways

USE SIGN SEQUENCE A (ALWAYS REQUIRED FOR THIS CONFIGURATION)

NOTE:
ON LOW-VOLUME INTERSECTING ROADS (LESS THAN 400 AADT, SUCH AS FOREST ROADS OR TRIBAL ROADS IN RURAL AREAS), G25-101 (4X2, B/W) MAY BE USED AT STOPBAR IN LIEU OF FLAGGER AND SIGN SEQUENCE A.

STOP BAR IN LIEU OF FLAGGER AND SIGN G25-101 (24"x20", B/W) MAY BE USED AT ROADS OR TRIBAL ROADS IN RURAL AREAS), (LESS THAN 400 AADT, SUCH AS FOREST ON LOW-VOLUME INTERSECTING ROADWAYS)

NOTE 17
SEE NOTE 17

NOTE 18
SEE NOTE 18

NOTE 19
SEE NOTE 19

PILOT CAR OPERATION FOR ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED

TYPICAL TRAFFIC CONTROL PLANS

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

REGIONAL ADM.

REV

DATE

FILE NAME:

DATE:

PLOTTED BY:

CHECKED BY:

PROJECT:


14/8/2022

ANITA M. HAAPALA & LINTZ

3A

9/21/2022

S. HAAPALA
NOTES:

16. WORK MAY OCCUR ACROSS INTERSECTING ROADWAY APPROACH (ON SAME SIDE AS LANE CLOSURE) BY HOLDING ACCESS TRAFFIC UP TO 5 MINUTES AND RESTRICTING TURNS FROM MAINLINE CHANNELIZATION DEVICES DELETING MAY BE REMOVED.

18. SINGLE FLAGGER MAY BE ADDED TO THE INTERSECTING ROADWAY APPROACH TO HELP GUIDE ALTERNATING TRAFFIC & BICYCLISTS THROUGH INTERSECTION.

19. WORK MAY OCCUR ACROSS DRIVEWAY OR ACCESS BY ADDING A FLAGGER AND HOLDING ACCESS TRAFFIC UP TO 5 MINUTES AND RESTRICTING TURNS INTO ACCESS FROM MAINLINE CHANNELIZATION DEVICES DELETING MAY BE REMOVED.

20. PAVEMENT MARKINGS MAY VARY.

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SIGN SEQUENCE A
40"x40" signs required on 45+ mph roadways

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NOTE:
ON LOW-VOLUME INTERSECTING ROADS (LESS THAN 400 AADT), SUCH AS FOREST ROADS OR TRIBAL ROADS IN RURAL AREAS, W20-101 (24"x24" BW) MAY BE USED AT STOPBAR IN LIEU OF FLAGGER AND SIGN SEQUENCE A.

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UNSIGNALIZED INTERSECTING ROADWAY DETAIL
SAME SIDE AS LANE CLOSURE (TWO OPEN LANES)

USE SIGN SEQUENCE A

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UNSIGNALIZED INTERSECTING ROADWAY DETAIL
OPPOSITE OF LANE CLOSURE

PILOT CAR OPERATION FOR ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED HIGH-VOLUME BICYCLE & PEDESTRIAN STRATEGIES (45+ MPH HIGHWAYS)

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DRIVEWAY OR BUSINESS ACCESS DETAIL
SAME SIDE AS LANE CLOSURE

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DRIVEWAY OR BUSINESS ACCESS DETAIL
OPPOSITE OF LANE CLOSURE

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FILE: TC333

DATE: 7/20/2022

NOT TO SCALE
OLD WORK ZONE CELLS (or Update if the new work zone cells are already used).

PLOT USAGE EXPLANATION:

PRINTING IN FULL COLOR OR GRAYSCALE (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, legend, and symbols. Use these updated cells in all traffic control plans; at minimum, replace all work zone tables in old traffic control plans. This Typical Traffic Control Plan has updated cells as of (July 2022) already incorporated, but some cells have been modified.

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

For this to function properly (otherwise it will print out as a solid black block): **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 used).

- **#1:** Update color template settings in CAE. In the Color Table, select #5 = Default and Cells Adjust and Close.
- **#2:** Replace the old work zone cells using the Replace Cells command. Select Tools -> Cells -> Replace Cells. Set the Method to Replace and either Global or Hyperlink (Global will just replace that one cell, Hyperlink replaces all cells matching the selected cell’s name). Then select the cell to replace and accept it.

For additional information email TC430HelpDesk@wsdot.wa.gov.

### PLOT USAGE EXAMPLE:

**Plot 1:** Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic on 45+ mph 2-lane highways unshifted within the existing open lane with bike-vehicle shared lane, pedestrian shoulder usage, or shuttle strategies.

**Plot 2:** Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic on 45+ mph 2-lane highways within the existing open lane @ 10’ MIN for high-volume bicycle and pedestrian scenarios.

**Plot 3:** Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic with temporary portable transverse rumble strips on 45+ mph 2-lane highways unshifted within the existing open lane for bike-vehicle shared lane, pedestrian shoulder usage, or shuttle strategies.

**Plot 4:** Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic with temporary portable transverse rumble strips on 45+ mph 2-lane highways within the existing open lane @ 10’ MIN for high-volume bicycle and pedestrian scenarios.

**Plot 5:** Driveway, Business Access, or Intersecting Roadway details for Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic on 45+ mph 2-lane highways unshifted within the existing open lane with bike-vehicle shared lane, pedestrian shoulder usage, or shuttle strategies.

**Plot 6:** Driveway, Business Access, or Intersecting Roadway details for Plot Car Operation for AFAD-controlled 1-lane, 2-way alternating traffic on 45+ mph 2-lane highways within the existing open lane @ 10’ MIN for high-volume bicycle and pedestrian scenarios.

### TYPICAL TCP USAGE EXAMPLE:

Other Alternating Traffic TCPs (45+ mph):

- TC220s for flagger-controlled alternating traffic
- TC220s for other variations of AFAD-controlled alternating traffic
- TC420s for temporary signal controlled alternating traffic plans
- TC420s for traffic boils

If not published yet, they will be added in the future.

Other Alternating Traffic TCPs (40 mph or less):

- TC430s for flagger-controlled alternating traffic
- TC430s for variations of flagger-controlled alternating traffic
- TC430s for signal controlled alternating traffic plans
- TC420s for traffic boils

If not published yet, they will be added in the future.

### PILOT CAR OPERATION FOR ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED INCLUDING TEMP. RUMBLE STRIPS (45+ MPH HIGHWAYS)

- **TC333**

**DESIGNER NOTES:**

A. Contact Region Traffic Operations to determine which Typical TCP(s) to utilize, as there are several variations available (or soon will be).

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

C. These typical traffic control plans are not "Standard Plans".

D. See MUTCD Table 6-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently.

E. WAC 468-95-304 modifies MUTCD Table 6-1: "Recommended Advance Warning Sign Minimum Spacing". Sign spacing may be adjusted for field conditions based on engineering judgement. The Sign Spacing table is available to use in Typical TCPs; however, site-specific traffic control plans should include actual sign spacing values (with +/-) that have been verified in the field, on SR view, or via Google Maps.

F. When positioned behind channelization devices, temporary signs should be mounted at 5’ minimum.

G. The work zone design speed is typically the posted speed limit (or the work zone speed limit when in effect). For split speed limits (SPEED LIMIT 65 TRUCKS/80 CARS), use the higher 65 mph for work zone design. For this Typical TCP, the work zone design speed is based on the existing posted speed limit for sign spacing, channelization device spacing, buffer, and roll ahead distances.

H. **Flagger tags**, also used for AFADs, are always 50’-100’ per closed lane with 6 deviuous minimum 10’-20’ spacing on the taper), regardless of the posted speed limit or lane width per MUTCD 6C.06, Paragraph 17. Never use “L” for these tapers.

I. Channelization devices types may be modified (vertical panel channelization devices prohibited). 26’ reflective traffic cones are recommended on flagger-controlled alternating traffic for access to abandonment visibility for turning motorists). 36” reflective traffic cones, 42” tall channelization devices, or traffic safety 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.

J. Maximum channelization device spacing table for work zone is based on WAC 468-95-301 and may always be reduced.

K. Sequential arrow bars are prohibited at flagger tags per WSDOT standard practice and per MUTCD Guidance TA-10.

L. 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 feasible, but may be adjusted based on engineering judgement. The Longitudinal Buffer Table is acceptable in Typical TCPs; however, site-specific traffic control plans should include actual buffer distances that have been verified in the field, on SR view, or via Google Maps.

M. The lateral buffer (transverse distance between open travel lanes and work area) is optional. No lateral buffer has been provided in these Typical TCPs due to the low speeds of alternating traffic. Actual work area limits may be modified.

N. WSDOT best practice is to place a protective vehicle (PV) in the closed lane in advance of the work area for flagger-controlled alternating traffic, but provide a full longitudinal buffer space to ensure vehicle occupants an opportunity to stop at the posted speed limit on 45+ mph roadways before impacting the PV. If the longitudinal buffer distance must be reduced or eliminated on 45+ mph roadways with flagger-controlled alternating traffic, upgrade the PV to be a tunnelling attenuator (TA). Additional PVs (or TAs) may be added prior to multiple work crews within a work area. Contact Region Traffic Operations for their standard practice.

O. Raising channelization devices transversely (at 0’ and 3’ foot spacing) is an optionary strategy to stop move alternate drivers traveling within the closed lane(s) but is not shown in the Typical TCP.

P. The downstream taper of 50’-100’ is required on 1-lane, 2-way traffic configurations.

Q. Duration of traffic holds for driveways, business accesses, and/or roadway approaches is listed in minutes in this Typical Traffic Control Plan, but may be adjusted. Contact Region Traffic Operations for additional guidance.


R. When utilizing temporary transverse rumble strips in Contracts, include the three Section 1-10 General Specific Provisions for Specifications, Measurement, and Payment. (If GSPs not yet available, they soon will be) . https://wsdot.wa.gov/publications/fulltext/projectdev/gspspdf/egsp3.pdf