**NOTES:**

1. AVOID PLACING LANE CLOSURE TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL & VERTICAL CURVES BY ADJUSTING LONGITUDINAL BUFFER SPACE.

2. IF LONGITUDINAL BUFFER SPACE IS REDUCED FROM DISTANCES LISTED IN TABLE, UPGRADE PROTECTIVE VEHICLE TO A TRANSPORTABLE ATTENUATOR.

3. 28" TRAFFIC CONES RECOMMENDED. 36" TRAFFIC CONES, 42" TALL CHANNELIZATION DEVICES, OR TRAFFIC SAFETY DRUMS MAY ALSO BE USED.

4. BICYCLISTS MAY BE COMBINED WITH ALTERNATING VEHICULAR TRAFFIC TO CLEAR PRIOR TO FLAGGERS RELEASING ONCOMING TRAFFIC.

5. ACCOMODATE PEDESTRIANS VIA SHUTTLE THROUGH LANE CLOSURE USING THE PAVED SHOULDER OPPOSITE THE WORK AREA, OR ANOTHER METHOD THE ENGINEER ACCEPTS.

6. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS:
   - 1-07.8(1) HIGH-VISIBILITY APPAREL
   - 1-10.3(1)A FLAGGERS AND NIGHTTIME ILLUMINATION
   - 1-10.3(2)A TRAFFIC CONTROL PROCEDURES
   - 9-35.1 24-INCH STOP/SLOW PADDLE SIZE

7. FOR PROJECT-SPECIFIC REQUIREMENTS, SEE SPECIAL PROVISIONS.

8. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.

9. ACTUAL CENTERLINE PAVEMENT MARKINGS MAY VARY.

**TABLE:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Spacing (feet)</th>
<th>Speed (MPH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flagger Paddle W21-1201 (W/R, B/O)</td>
<td>24&quot;</td>
<td>60+</td>
</tr>
<tr>
<td>24&quot;</td>
<td>45-55</td>
<td></td>
</tr>
<tr>
<td>48&quot;</td>
<td>30+</td>
<td></td>
</tr>
</tbody>
</table>

**Diagram:**

- **Alternating 1-Lane, 2-Way Traffic: Flagger-Controlled (45+ MPH Highways)**

- **Section A-A**

  - WORK AREA
  - LANE OPEN TO ALTERNATING TRAFFIC
  - LANE CLOSURE TAPERS
  - WORK AREA
  - EXISTING SHOULDER
  - EXISTING LANE
  - EXISTING SHOULDER

**Legend:**

- Temporary Sign Location
- 28" Reflective Traffic Cone (See Note 1)
- Optional Channelization Device
- Protective Vehicle (See Note 2)
- Flagger

**Figure:**

- 1000' Max & Up To 2 Driveway, Business Access, And/or Intersecting Roadways

- Strategic Position Work Vehicle to Protect Work Crew.
NOTES:
10. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC320, SHEET 1
11. WORK MAY OCCUR ACROSS INTERSECTING ROADWAY APPROACH BY HOLDING ACCESS TRAFFIC UP TO 3 MINUTES AND RESTRICTING TURNS FROM MAINLINE CHANNELIZATION DEVICES DELINEATING APPROACH MAY BE REMOVED.
12. SINGLE FLAGGER MAY BE ADDED TO THE INTERSECTING ROADWAY APPROACH TO HELP GUIDE ALTERNATING TRAFFIC THROUGH INTERSECTION.
13. WORK MAY OCCUR ACROSS DRIVEWAY OR ACCESS APPROACH BY HOLDING ACCESS TRAFFIC UP TO 3 MINUTES AND RESTRICTING TURNS FROM MAINLINE CHANNELIZATION DEVICES DELINEATING ACCESS MAY BE REMOVED.
14. PAVEMENT MARKINGS MAY VARY.

ALTERNATING 1-LANE, 2-WAY TRAFFIC: FLAGGER-CONTROLLED (45+ MPH HIGHWAYS)

NOT TO SCALE

WORK AREA

USE SIGN SEQUENCE A

INTERSECTING ROADWAY

30' SPACING

50' TAPER

5+ DEVICES

USE SIGN SEQUENCE A

INTERSECTING ROADWAY

30' SPACING

50' TAPER

5+ DEVICES

WORK AREA

UNIGNALIZED INTERSECTING ROADWAY DETAIL

SAME SIDE AS LANE CLOSURE (TWO OPEN LANES)

OPPOSITE OF LANE CLOSURE

WORK AREA

UNIGNALIZED INTERSECTING ROADWAY DETAIL

SAME SIDE AS LANE CLOSURE (SINGLE OPEN LANES)

OPPOSITE OF LANE CLOSURE

WORK AREA

DRIVEWAY OR BUSINESS ACCESS DETAIL

SAME SIDE AS LANE CLOSURE

OPPOSITE OF LANE CLOSURE

WORK AREA

DRIVEWAY OR BUSINESS ACCESS DETAIL

SAME SIDE AS LANE CLOSURE

OPPOSITE OF LANE CLOSURE
NOTES:
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ALTERNATING 1-LANE, 2-WAY TRAFFIC: FLAGGER-CONTROLLED
(45+ MPH HIGHWAYS)

SIGN SPACING = X (1)

| RURAL HIGHWAYS | 50-55 MPH | 80' TAPER |
| RURAL ROADS    | 45-55 MPH | 100' TAPER |

LONGITUDINAL BUFFER SPACE = B

SPEED (MPH) 45 50 55 60 65 70 75 80
LENGTH (Ft) 100 150 200 250 300 350 400 450

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)

MPH TAPER TANGENT
50-65 10 to 25 80
45 10 to 20 50

STATIONARY TRANSPORTABLE ATTENUATOR

ROLL AHEAD DISTANCE = R

HOST VEHICLE WEIGHT 10,000 TO 22,000 lbs
45-55 MPH 45-55 MPH 60+ MPH
45-55 MPH 60+ MPH 45-55 MPH 60+ MPH

HOST VEHICLE WEIGHT 22,001+ lbs
150' 100' 60-65 MPH
65 570 55 495 50 425 45 360 45

48" REFLECTIVE TRAFFIC CONE

TEMPORARY SIGN LOCATION

LEGEND:

- X TEMPORARY SIGN LOCATION
- 28" REFLECTIVE TRAFFIC CONE (SEE NOTE 1)
- OPTIONAL CHANNELIZATION DEVICE
- 9. ACTUAL CENTERLINE PAVEMENT MARKINGS MAY VARY.
- PROTECTIVE VEHICLE (SEE NOTE 2)

SEE NOTES 1 & 2

SEE TC320, SHEET 2.

PLOTTED BY S. HAAPALA
CHECKED BY S. HAAPALA
PROJ. ENGR.
REGIONAL ADMIN.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
TYPICAL TRAFFIC CONTROL PLANS
10. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC320, SHEET 1.

11. WORK MAY OCCUR ACROSS INTERSECTING ROADWAY APPROACH BY HOLDING ACCESS TRAFFIC UP TO 5 MINUTES AND RESTRICTING TURNS FROM MAINLINE. CHANNELIZATION DEVICES DELINEATING APPROACH MAY BE REMOVED.

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14. PAVEMENT MARKINGS MAY VARY.
**UPDATED WORK ZONE MICROCHANNELIZATION CELLS:**

**IMPORTANT:** An extensive library of updated work zone cells are now available for work zone signs, detour signs (generic and route-specific), tables, legends, and symbols. Use these updated cells in all traffic control plans; at minimum, replace all work zone tables in all traffic control plans. This Traffic Control Plan has updated cells (as of July 2022) already incorporated, but some cells have been modified.


**WSDOT Staff:**

1. Cell libraries are automatically updated by CAE.
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

**External Cells:** (e.g. Local Agencies, Design-Roof Contractors, and Consultants:)

1. Manually install updated WSDOT cell libraries into Microstation. For download and installation instructions see https://wsdot.wa.gov/engineering-standards-design-topics-engineering-applications/software-resource-updates
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/WHITE):**

Even though the work zone cells are full color, CAE has programmed Colors 224-229 (used for the work zone cells and the centerline) 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 graft), 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).

<table>
<thead>
<tr>
<th>Plot 1:</th>
<th>Flagger-controlled 1-lane, 2-way alternating traffic on 45+ mph 2-lane highways unshielded within the existing open lane up to 1000 ft maximum between mainline flaggers and up to 2 driveways, business access, and/or intersecting roadways.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plot 2:</td>
<td>Details for intersecting roadways and driveway/business access for Plot 1.</td>
</tr>
</tbody>
</table>

**TYPICAL TCP USAGE EXPLANATION:**

- If not published yet, they will be added in the future.
- TC450s for traffic holds
- TC430s for AFAD-controlled alternating traffic
- TC420s for variations of flagger-controlled alternating traffic

**DESIGNER GUIDANCE:**

- **Note:** Contact Region Traffic Operations to determine which Typical TCP(s) to utilize, as they are several variations available (or soon will be).
- **Important:** These typical traffic control plans may be modified for site specific situations and/or WSDOT Region Traffic Operations practices. **Typical TCPs are not "Standard Plans."**


**ALTERNATING 1-LANE, 2-WAY TRAFFIC: FLAGGER-CONTROLLED (45+ MPH HIGHWAYS)**

**FILE NAME:** C:\...

**DATE:** 7/1/2022

**DESIGNER GUIDANCE:**

**DESIGNER:**

- Contact Region Traffic Operations to determine which Typical TCP(s) to utilize, as they are several variations available (or soon will be).
- **These typical traffic control plans may be modified for site specific situations and/or WSDOT Region Traffic Operations practices. Typical TCPs are not "Standard Plans."**

- See MUTCD Table 6F-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently.
- **WAC 468-95-306 modifies MUTCD Table 6-1.** Recommended Advance Warning Sign Minimum Spacing. Sign spacing may be adjusted for field conditions based on engineering judgment. The Sign Spacing table is acceptable to use in "Typical TCPs; however, 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.

- **Note:** When positioned behind channelization devices, temporary signs should be mounted at 5' minimum.

- 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), 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 devices spacing, buffer, and roll ahead distances.

- **Flagger” tags are always 52'-100' per closed lane with 6 devices minimum (10'-20' spacing on the taper), regardless of the posted speed limit or lane width per MUTCD 6C.08, Paragraph 15. Never use “%” for these tags.

- Channelization devices types may be modified (vertical panel channelization devices prohibited). 26" reflexive traffic cones are recommended on flagger-controlled alternating traffic (especially for access discrimination to maintain visibility for turning motorists). 36" reflexive traffic cones, 42" tall channelization devices, or traffic safety drums may be used. Warning lights on channelization devices is being phased out in Washington. Contact Region Traffic Operations for information regarding their standard practices.

- **Maximum channelization devices spacing table for tangents is based on WAC 468-95-301 and may always be reduced.**

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

- Per MUTCD Section 6C.06, longitudinal buffer spaces are optional. Using longitudinal buffer spaces listed in MUTCD Table 5C-2 is recommended as best practice when feasible, but may be adjusted based on engineering judgment. The Longitudinal Buffer Space Table is acceptable in Typical TCPs; however, site-specific traffic control plans should indicate actual buffer lengths that have been verified in the field, on SR view, or via Google Maps.

- 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.

- 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 provide errant motorists 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, then upgrade the PV to be a transportable 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.

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

- **Note:** The downstream taper of 5'-100' is required on 1-lane, 2-way traffic configurations.

- Duration of traffic holds for driveways, business accesses, and/or roadway approaches is listed as 5 minutes in this Typical Traffic Control Plan, but may be adjusted. Contact Region Traffic Operations for additional guidance.