**LEGEND**

**PCMS 1**
- Portable Changeable Message Sign
- TRANSPORTABLE ATTENUATOR
- SEQUENTIAL ARROW SIGN
- RADAR SPEED DISPLAY SIGN
- 42" TALL CHANNELIZATION DEVICE
- 28" REFLECTIVE TRAFFIC CONE
- TEMPORARY SIGN LOCATION
- PORTABLE CHANGEABLE MESSAGE SIGN

**PCMS 2**
- PORTABLE CHANGEABLE MESSAGE SIGN
- TRANSPORTABLE ATTENUATOR
- SEQUENTIAL ARROW SIGN
- RADAR SPEED DISPLAY SIGN
- 42" TALL CHANNELIZATION DEVICE
- 28" REFLECTIVE TRAFFIC CONE
- TEMPORARY SIGN LOCATION
- PORTABLE CHANGEABLE MESSAGE SIGN

**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 ZONE 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 8.3.1.13.
6. REOPENING TAPER OPTIONAL, TO ALLOW ROAD VEHICLES TO ACCELERATE STRAIGHT OUT OF WORK AREA INTO THE LEFT LANE.
7. OPTIONAL: PERMANENT SPEED LIMIT SIGNS ARE WITHIN 1500' 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.

**FREeway (3 LANES): DOUBLE LEFT 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**

**TC225**

**REGIONAL ADM.**

**REVISION**

**DATE**

**FILE NAME**

**C:\Users\LintzF\Desktop\Work Zone TCPs\225Fwy2LtLanes70to60WZSL.dgn**

**DATE**

**TIME**

**FED.AID PROJ.NO.**

**PLOTTERED BY**

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**DATE**
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC225, SHEET 1.
2. ACTUAL NUMBERS MAY VARY
3. FOR RIGHT EXIT-RAMP AND RIGHT ON-RAMP DETAILS FOR A SINGLE LEFT LANE CLOSURE: SEE TC224, SHEET 2.

OPEN RIGHT EXIT-RAMP DETAIL
NOT TO SCALE

CLOSED RIGHT EXIT-RAMP DETAIL
RIGHT EXIT-RAMPS ARE TO REMAIN OPEN WITH THIS DOUBLE LEFT LANE CLOSURE CONFIGURATION

FREeway (3+ Lanes): Double Left Lane Closure With No Lane Shifts
(70 MPH To 60 MPH Variable Work Zone Speed Limit Reduction)
NOT TO SCALE

PLOT NAME: TC225

DATE: 03/19/2019
TIME: 10:13:27 AM
LOCATION NO.: 10
CONTRACT NO.: 2
STATE: WA
JOB NUMBER: 3
REGION: 10
FED.AID PROJ.NO.: 10
PLAN REF NO.: TC225-1

PLOTTED BY: F. LINTZ
DESIGNED BY: S. HAAPALA & LINTZ
ENTERED BY: S. HAAPALA
CHECKED BY: S. HAAPALA

WASHINGTON STATE
Department of Transportation
TYPICAL TRAFFIC CONTROL PLANS

TC225
10-WASH
DESIGNER NOTES:
A. 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 09-084 RECOMMENDATIONS FOR VARIABLE REGULATORY AND ADVISORY SPEED LIMITS IN WORK ZONES. CONTACT WSDOT REGION TRAFFIC OFFICES FOR ADDITIONAL INFORMATION.
B. 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 LIMIT.
C. THE SIGN SIZES SHOWN ARE TYPICAL AND MEET MINIMUM SIZES REQUIRED PER MUTCD ON FREWAYS FOR TEMPORARY TRAFFIC CONTROL.
D. IN REGARDS TO ADVANCED WARNING SIGN SPACING: PER MUTCD SECTION 6D.04 PARAGRAPH 06, TABLE 6D-1, WAC 468-30-001-51 HAS BEEN MODIFIED PER WAC 468-30-300. RECOMMENDED DISTANCES AND SPACING FOR GUIDANCE PURPOSES ONLY AND SHOULD BE ADJUSTED FOR FIELD CONDITIONS. REDUCING FREEWAY SIGN SPACING TO 1000' IS ACCEPTABLE. A MINIMUM SPACING OF 600' IS RECOMMENDED ON FREEWAY MAINLINES ONLY WHEN NECESSARY. ADVISORY SIGNS AND RADAR SPEED DISPLAY SIGNS CAN BE SPACED AT 600' MINIMUM.
E. PER WAC 468-95-300, ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, ON-RAMP SPACING IS TYPICALLY 200' MINIMUM, EVEN IN SUBURBAN AND RURAL AREAS, BUT CAN BE REDUCED AS NEEDED TO FIT.
F. WHEN POSITIONED BEHIND CHANNELIZATION DEVICES, TEMPORARY SIGNS SHOULD BE MOUNTED AT 5' MINIMUM.
G. PER MUTCD 6H-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 BEHIND THE W2C-1 SIGN. FOR ADDITIONAL INFORMATION REGARDING ACTIVE QUEUE DETECTION TECHNOLOGY, CONTACT STEVE HAIPELA (HAIPELA@WSDOT.WA.GOV) OR FRED LINZ (LINZ@WSDOT.WA.GOV). PCMS 2 IS RECOMMENDED; FREEWAY LANE CLOSURES DO NOT REQUIRE A PCMS. PCMS 3 IS OPTIONAL TO HIGHLIGHT EXIT-RAMP CLOSURES.
H. THE RADAR SPEED DISPLAY SIGN (RSD) IS OPTIONAL FOR FREEWAY LANE CLOSURES NOT SHUTTING DOWN. PCMS 1-4 PERFORM BEST WHEN TRAFFIC REDUCED TO A SINGLE OPEN LANE CONTACT REGION TRAFFIC OFFICES FOR THEIR POLICY.
I. WHEN WITHIN THE REDUCED WORK ZONE SPEED LIMIT ZONE, THE DESIGN SPEED IS THE WORK ZONE SPEED MINUS ANY EXISTING SPEED LIMIT) FOR SIGN SPACING, TAPERS, CHANNELIZATION DEVICE SPACING, BUFFER, AND ROLL AHEAD DISTANCES.
J. WARNING LIGHTS ON CHANNELIZATION DEVICES ARE OPTIONAL; CONTACT REGION TRAFFIC OFFICES FOR THEIR POLICY.
K. CHANNELIZATION DEVICES MAY BE MODIFIED FROM THOSE SHOWN ON THESE TYPICAL PLANS. PER MUTCD, THE MINIMUM REQUIRED DEVICE ON HIGH-SPEED ROADS IS A 28' REFLECTIVE CONE.
L. VERTICAL PANEL CHANNELIZATION DEVICES SHALL NOT BE USED.
M. CHANNELIZATION DEVICE SPACING TABLE BASED ON WAC 468-95-101; HOWEVER, DEVICE SPACING MAY BE REDUCED.
N. TAPER LENGTHS ARE BASED ON MUTCD TABLES 6C-3 AND 6C-4. A TAPER LENGTH SHALL MEET OR EXCEED THIS SPECIFIED RATE WITHOUT EXCEPTION. THE TAPER DISTANCES PROVIDED ON THIS TYPICAL TRAFFIC CONTROL PLAN WERE BASED ON THE ASSUMPTION OF 15' LANES, BECAUSE SHOULDER WIDTHS VARY, A SHOULDER TAPER TAPER TABLE IS INCLUDED TO ADDRESS VARIOUS WIDTHS.
O. 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-OFF MERGES.
P. THE "2L" TAPER BETWEEN LANE CLOSURE TAPERS MAY BE REDUCED TO "L" IN TIGHT GEOMETRIC SITUATIONS, BUT "L" SHOULD BE OBTAINED WHEN POSSIBLE.

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 (ATERALLY 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 EXIT-RAMPS AND 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°-90° AND 5-FOOT SPACING IS AN EFFECTIVE TECHNIQUE TO MOVE ERRANT DRIVERS BACK OUT OF CLOSED LANES AND SHOULDERS.
U. PER MUTCD FIGURE 6H-33, THE OPENING 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 PAVEMENT MARKINGS BUT VERIFY CROSS-SLOPE IS TRAVERSIBLE, PAVEMENT THICKNESS IS ADEQUATE, CATCH BINS BINS BOXES ARE TRAFFIC BEARING TYPES.
X. A PARALLEL TEMPO ON-RAMP IS TYPICALLY USED. THE PARALLEL TEMPORARY ON-RAMP IS BASED ON WSDOT DESIGN MANUAL EXHIBIT 13E-1a. THE TAPER IS PLACED ACROSS EACH CLOSED LANE AT L2 PER CLOSED LANE SHIFTS. THEN AN ACCELERATION TANGENT OF L2 IS FOLLOWED BY AN L2 ON-RAMP MERGE TAPER IS IMPORTANT TO UNDERSTAND MUTCD FIGURE 6H-44 TYPICAL APPLICATION IS GUIDANCE PER MUTCD SECTION 6H-01.
Y. TO DISCOURAGE WORK ZONE INTRUSIONS, EXIT-RAMPS IS REDUCED BY HALF ACROSS CLOSED EXIT-RAMPS BETWEEN THE "EXIT CLOSED" SIGN AND THE END OF THE EXIT-RAMP'S PAVED 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 RAMPS IS TO A SPECIFIC ROUTE DIRECTION, INCLUDE ITS DIRECTION. MAXIMIZE THE SHIELDS, TEXT SIZE, AND ARROWS TO FIT ON THE 48"x48" SIGN.
CC. THIS TRAFFIC CONTROL PLAN IS NOT APPLICABLE WHEN HOV-RESTRICTED LANES ARE PRESENT. FOR FREEWAYS ACROSS HOV-RESTRICTED TYPICAL TRAFFIC CONTROL PLAN ARE PROVIDED IN THE WORK ZONE LIBRARY. FOR UNIQUE HOV LANE CONFIGURATIONS SUCH AS HOV LANE-CHANGE RESTRICTIONS INCLUDING JUMPING SEPARATION, DIRECT-ACCESS HOV RAMPS OR RIGHT LINES 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.