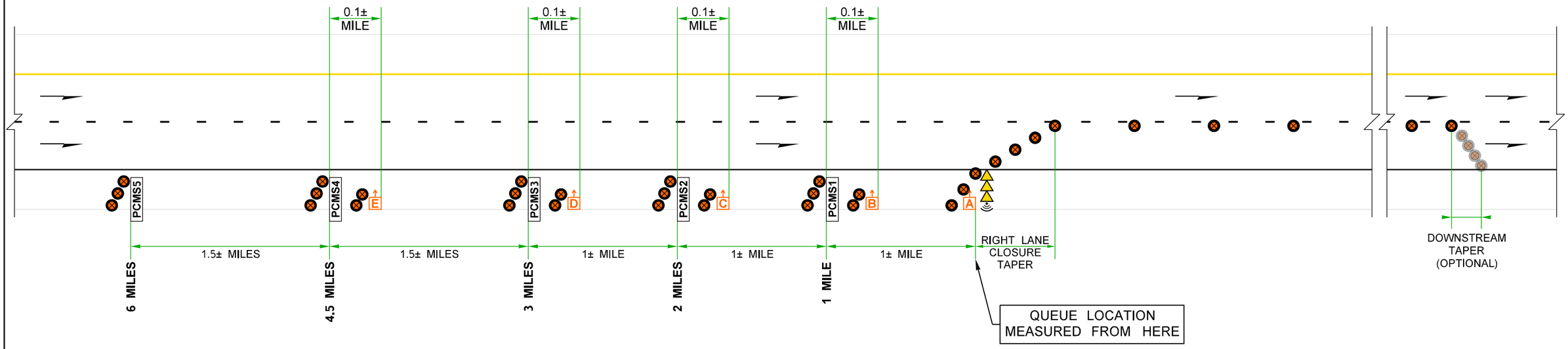

NOTES:

1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE RIGHT LANE CLOSURE TRAFFIC CONTROL PLAN (PCMSs REPLACED WITH ONES SHOWN ON THIS PLAN).
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 LOCATION TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS. WHEN LOCATED BEHIND BARRIER/GUARDRAIL OR WITHIN LANE CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.
5. LOCATE PCMSs PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. MINIATURE PCMSs (~6' WIDE, 12+ INCH CHARACTERS) ALLOWED FOR ALL PCMSs.
6. IF SYSTEM FAILS, SEE "QUEUE WARNING SYSTEM FAILURE PROTOCOL" PROVISION.
7. IF TRAFFIC QUEUES REACH 5.5 MILES, PLACE ADDITIONAL PCMS AT 8± MILES. RELOCATE FARTHER BACK AS NEEDED TO REMAIN 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 / SLOW TRAFFIC AHEAD

LEGEND:

- TRAFFIC SAFETY DRUM
- TRAFFIC SENSOR
- SMART SEQUENTIAL ARROW SIGN (CONNECTED)
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 5)

SYMBOL	TRIGGER SPEED (mph)	TRAFFIC CONDITION
FF	35+	Free Flow
SL	<35	Slowed

QUEUE LOCATION (miles)	TRAFFIC SENSORS E	D	C	B	A	PCMS 5 1 2.0 SEC	PCMS 5 2 2.0 SEC	PCMS 4 1 2.0 SEC	PCMS 4 2 2.0 SEC	PCMS 3 1 2.0 SEC	PCMS 3 2 2.0 SEC	PCMS 2 1 2.0 SEC	PCMS 2 2 2.0 SEC	PCMS 1 1 2.0 SEC	PCMS 1 2 2.0 SEC
	TRAFFIC CONDITION														
None	FF	FF	FF	FF	FF	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	RIGHT LANE CLOSURE	1 MILE AHEAD
0.01 TO 0.9	FF	FF	FF	FF	SL	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	LANE CLOSURE 2 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 1 MILE
0.91 TO 1.9	FF	FF	FF	SL	SL	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	LANE CLOSURE 3 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
1.91 TO 2.9	FF	FF	SL	SL	SL	■ ■ ■ ■	(Blank)	LANE CLOSURE 4.5 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
2.91 TO 4.4	FF	SL	SL	SL	SL	LANE CLOSURE 6 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 4.5 MILES	3 MILES TO MERGE POINT	USE ALL LANES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
4.41+	SL	SL	SL	SL	SL	SLOW OR STOPPED TRAFFIC	NEXT 6 MILES	LANE CLOSURE 4.5 MILES	USE ALL LANES	3 MILES TO MERGE POINT	USE ALL LANES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO

6-MILE QUEUE WARNING SYSTEM
FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE

NOT TO SCALE

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PROJ. ENGR.							
REGIONAL ADM.		REVISION	DATE	BY			

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

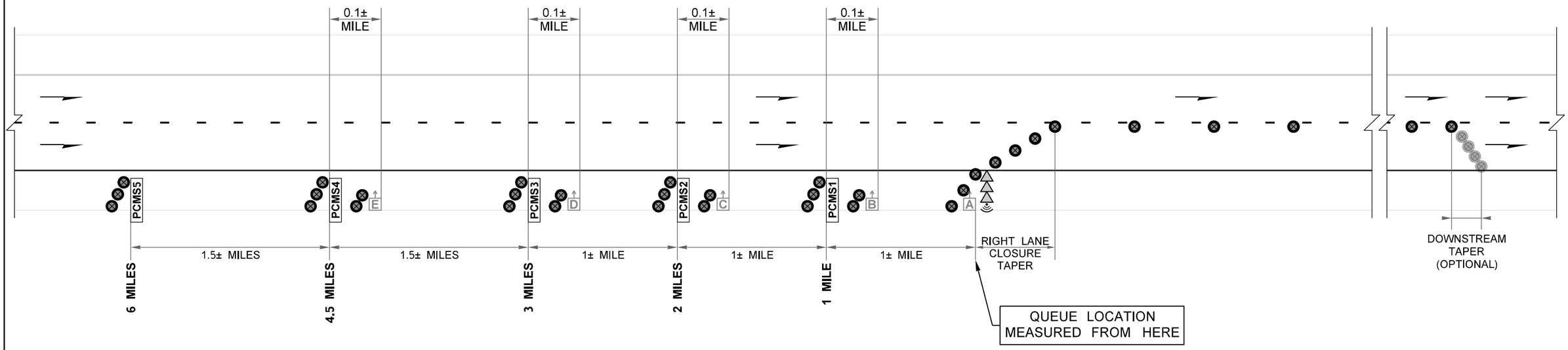
Washington State Department of Transportation

TYPICAL TRAFFIC CONTROL PLANS

Plot 1

PLAN REF NO TC155

SHEET 1 OF 1 SHEETS



SYMBOL	TRIGGER SPEED (mph)	TRAFFIC CONDITION
FF	35+	Free Flow
SL	<35	Slowed

QUEUE LOCATION (miles)	TRAFFIC SENSORS					PCMS 5		PCMS 4		PCMS 3		PCMS 2		PCMS 1	
	E	D	C	B	A	1	2	1	2	1	2	1	2	1	2
	TRAFFIC CONDITION					2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
None	FF	FF	FF	FF	FF	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	RIGHT LANE CLOSURE	1 MILE AHEAD
0.01 TO 0.9	FF	FF	FF	FF	SL	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	LANE CLOSURE 2 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 1 MILE
0.91 TO 1.9	FF	FF	FF	SL	SL	■ ■ ■ ■	(Blank)	■ ■ ■ ■	(Blank)	LANE CLOSURE 3 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
1.91 TO 2.9	FF	FF	SL	SL	SL	■ ■ ■ ■	(Blank)	LANE CLOSURE 4.5 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
2.91 TO 4.4	FF	SL	SL	SL	SL	LANE CLOSURE 6 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 4.5 MILES	3 MILES TO MERGE POINT	USE ALL LANES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO
4.41+	SL	SL	SL	SL	SL	SLOW OR STOPPED TRAFFIC	NEXT 6 MILES	LANE CLOSURE 4.5 MILES	USE ALL LANES	3 MILES TO MERGE POINT	USE ALL LANES	2 MILES TO MERGE POINT	USE ALL LANES	ZIPPER MERGE 1 MILE	USE RIGHT LANE TOO

NOTES:

1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE RIGHT LANE CLOSURE TRAFFIC CONTROL PLAN (PCMSs REPLACED WITH ONES SHOWN ON THIS PLAN).
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   ADDED PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / SLOW TRAFFIC AHEAD

LEGEND:

- TRAFFIC SAFETY DRUM
- # TRAFFIC SENSOR
- SMART SEQUENTIAL ARROW SIGN (CONNECTED)
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 5)

6-MILE QUEUE WARNING SYSTEM
FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE

NOT TO SCALE

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DESIGNED BY						
ENTERED BY					CONTRACT NO.	LOCATION NO.
CHECKED BY						
PROJ. ENGR.						
REGIONAL ADM.		REVISION	DATE	BY		

P.E. STAMP BOX — DATE

P.E. STAMP BOX — DATE

Washington State Department of Transportation

TYPICAL TRAFFIC CONTROL PLANS

Plot 1

PLAN REF NO TC155

SHEET 1 OF 1 SHEETS

WORK ZONE MICROSTATION CELLS: Updated work zone cells incorporated (January 2024).

WSDOT CAE automatically updates cell libraries on WSDOT and on-site consultant staff computers (no action needed); however, external users or off-site consultants must manually install them. For additional information email HQCAEHelpDesk@wsdot.wa.gov.

Division 4 in WSDOT Plans Preparation Manual, Section 400.06(29), provides updated work zone cell library policy and information for PS&Es. See https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/manuals/plans-preparation-manual

TYPICAL TCP USAGE EXPLANATION:

Plot 1: Supplements Typical Traffic Control Plans TC107, TC223, TC243 when 6-mile Queue Warning System utilized on 2-Lane Freeways.

DESIGNER NOTES:

A. **Region Transportation Operations will determine if and what queue mitigation system is needed** using work zone traffic analysis (Traffic Manual 5-9). For additional information, see Traffic Manual 5-17 or *Work Zone Traffic Control Fundamentals* presentation.

B. These typical traffic control plans may be modified for site-specific situations and/or WSDOT Region Transportation Operations standard practices. **Typical Traffic Control Plans are not "Standard Plans"**.

C. When used, include the following **Queue Warning System General Special Provisions** listed below:
1-10.3(3).OPT4.FR1 Specifications
1-10.4(2).OPT7.GR1 Measurement (Traffic Control as Bid Items)
1-10.5(2).OPT4.GR1 Payment

D. If traffic queues regularly exceed 6 miles, this plan can be modified into a 8-mile or 9-mile queue warning system without needing additional PCMSs or traffic sensors. Contact State Work Zone Engineers for guidance at HQWorkZone@wsdot.wa.gov.

E. Except for projects requiring them in the Provisions, Pan-Tilt-Cameras (PTZ Cameras) are optional and may be mounted on various PCMSs as desired. PTZ Cameras are used remotely by Agency to monitor incidents and queues.

6-MILE QUEUE WARNING SYSTEM
FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE

INFORMATIONAL USE ONLY

DO NOT INCLUDE THIS SHEET IN CONTRACT PS&Es or TCP SUBMITTALs.

DESIGNER GUIDANCE

Plot 2

TC155