

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

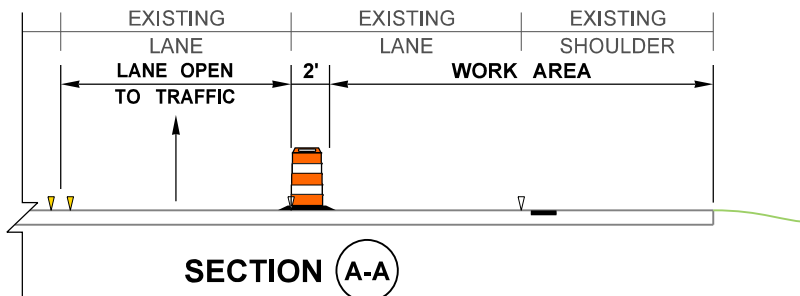
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

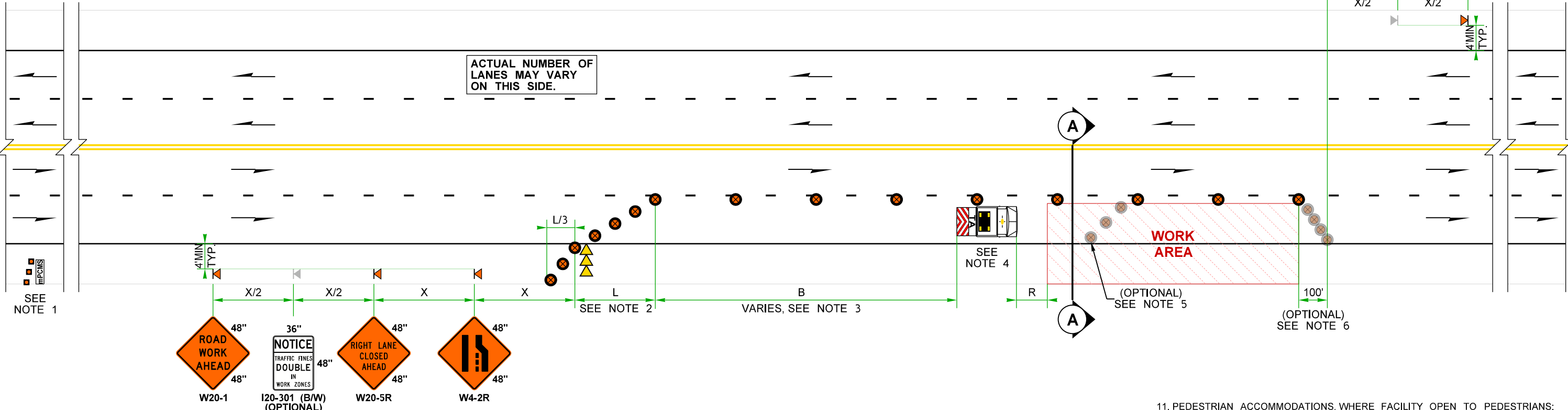
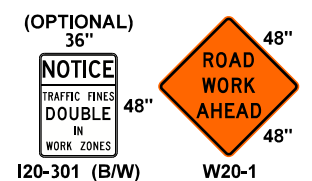
SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

FOR INTERSECTION DETAILS: SEE TC361, SHEET 2A & 2B.



SEE NOTE 1

ACTUAL NUMBER OF LANES MAY VARY ON THIS SIDE.

SEE NOTE 4

(OPTIONAL) SEE NOTE 5

(OPTIONAL) SEE NOTE 6



LEGEND:

- TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- SEQUENTIAL ARROW SIGN
- TRANSPORTABLE ATTENUATOR (TL-3)
- mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11' x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.

- IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
- IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
- 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.
- ADD W21-30 SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLE INGRESS/EGRESS INTO OPEN LANE(S).

- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - BICYCLES PROHIBITED VIA R5-601 & R5-6 SIGNS. PROVIDE SIGNED DETOUR OR ALTERNATIVE ROUTE.
 - BICYCLES PROHIBITED VIA R5-6 SIGN(S). PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK) + CONTACT INFORMATION/PHONE BOX/LABORER.
 - STOP WORK OPS & ESCORT BICYCLISTS THROUGH CLOSURE.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.



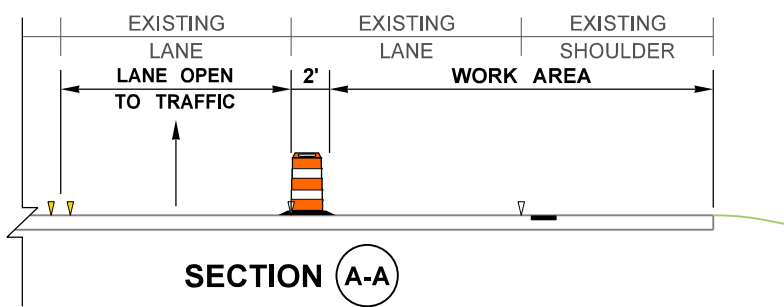
SINGLE RIGHT LANE CLOSURE (45+ MPH MULTILANE HIGHWAYS)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.		Plot 1	
TIME: 10:36:00 AM	DATE: 9/24/2024	PLOTTED BY: LintzF	DESIGNED BY:	ENTERED BY:	CHECKED BY:	PROJ. ENGR.:	REGIONAL ADM.:
REVISION				DATE	BY	DATE	
P.E. STAMP BOX				P.E. STAMP BOX		DATE	
						PLAN REF NO TC361	
TYPICAL TRAFFIC CONTROL PLANS						SHEET 1A OF 4 SHEETS	

3-MILE QUEUE WARNING SYSTEM MESSAGES					
TRAFFIC SENSORS		PCMS 2		PCMS 1	
B	A	1	2	1	2
TRIGGER	SPEED	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
35+ MPH	35+ MPH	■	■	(Blank)	RIGHT LANE CLOSURE
35+ MPH	< 35 MPH	LANE CLOSURE 3 MILES		TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC
< 35 MPH	< 35 MPH	SLOW OR STOPPED TRAFFIC		NEXT 3 MILES	USE ALL LANES
					TAKE TURNS AT MERGE

SEE QUEUE WARNING SYSTEM SPECIAL PROVISION OR RFP FOR DETAILS.
 LOCATE PCMSs PER STD. SPEC 1-10.3(3)C. WHEN PCMSs/TRAFFIC SENSORS PLACED BEHIND BARRIER/GUARDRAIL, TRANSVERSE TRAFFIC DRUMS ARE NOT REQUIRED.
 ADJUST QWS COMPONENTS AS NEEDED TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, INTERSECTIONS, OR TO MAINTAIN VISIBILITY OF SEQUENTIAL ARROW SIGN.
 IN THE EVENT OF A SYSTEM FAILURE SEE SPECIAL PROVISIONS OR RFP "QUEUE WARNING SYSTEM FAILURE PROTOCOL".



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

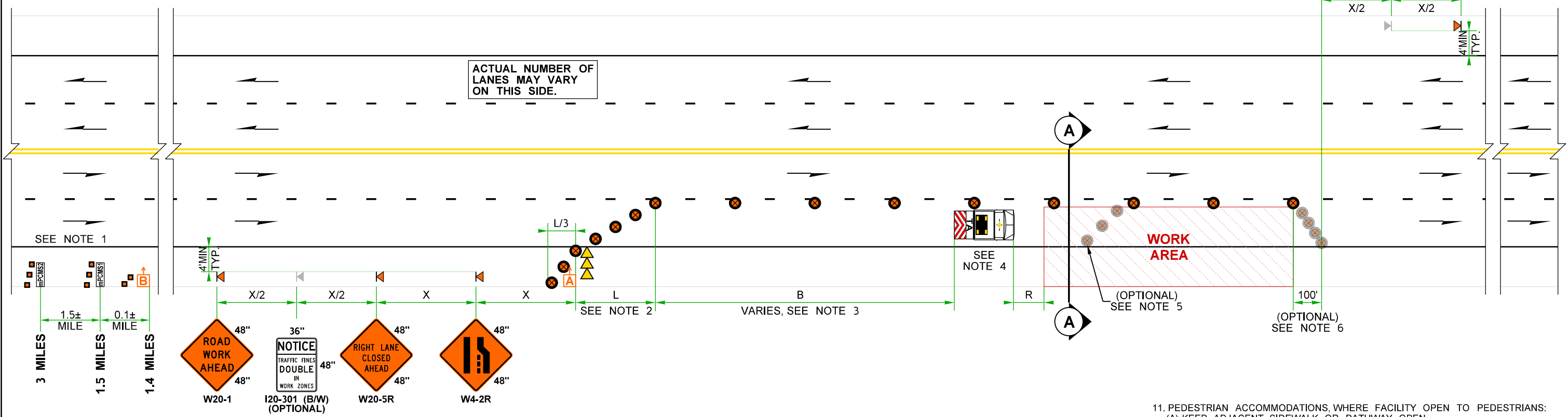
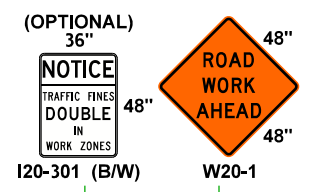
LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

FOR INTERSECTION DETAILS: SEE TC361, SHEET 2A & 2B.



LEGEND:

- ▲ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊗ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- # QWS TRAFFIC SENSOR
- ▶▶▶ SEQUENTIAL ARROW SIGN
- TL-3 TRANSPORTABLE ATTENUATOR
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11' x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
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 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
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 - BICYCLES PROHIBITED VIA R5-601 & R5-6 SIGNS. PROVIDE SIGNED DETOUR OR ALTERNATIVE ROUTE.
 - BICYCLES PROHIBITED VIA R5-6 SIGN(S). PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK) + CONTACT INFORMATION/PHONE BOX/LABORER.
 - STOP WORK OPS & ESCORT BICYCLISTS THROUGH CLOSURE.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.

SINGLE RIGHT LANE CLOSURE + 3-MILE QUEUE WARNING SYSTEM (45+ MPH MULTILANE HIGHWAYS)

NOT TO SCALE



FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		Plot 2	
TIME: 10:36:01 AM		10	WASH			PLAN REF NO. TC361	
DATE: 9/24/2024						SHEET 1B OF 4 SHEETS	
PLOTTED BY: LintzF						<p>Washington State Department of Transportation</p> <p>TYPICAL TRAFFIC CONTROL PLANS</p>	
DESIGNED BY:							
ENTERED BY:							
CHECKED BY:							
PROJ. ENGR.:							
REGIONAL ADM.:	REVISION	DATE	BY	DATE	DATE		

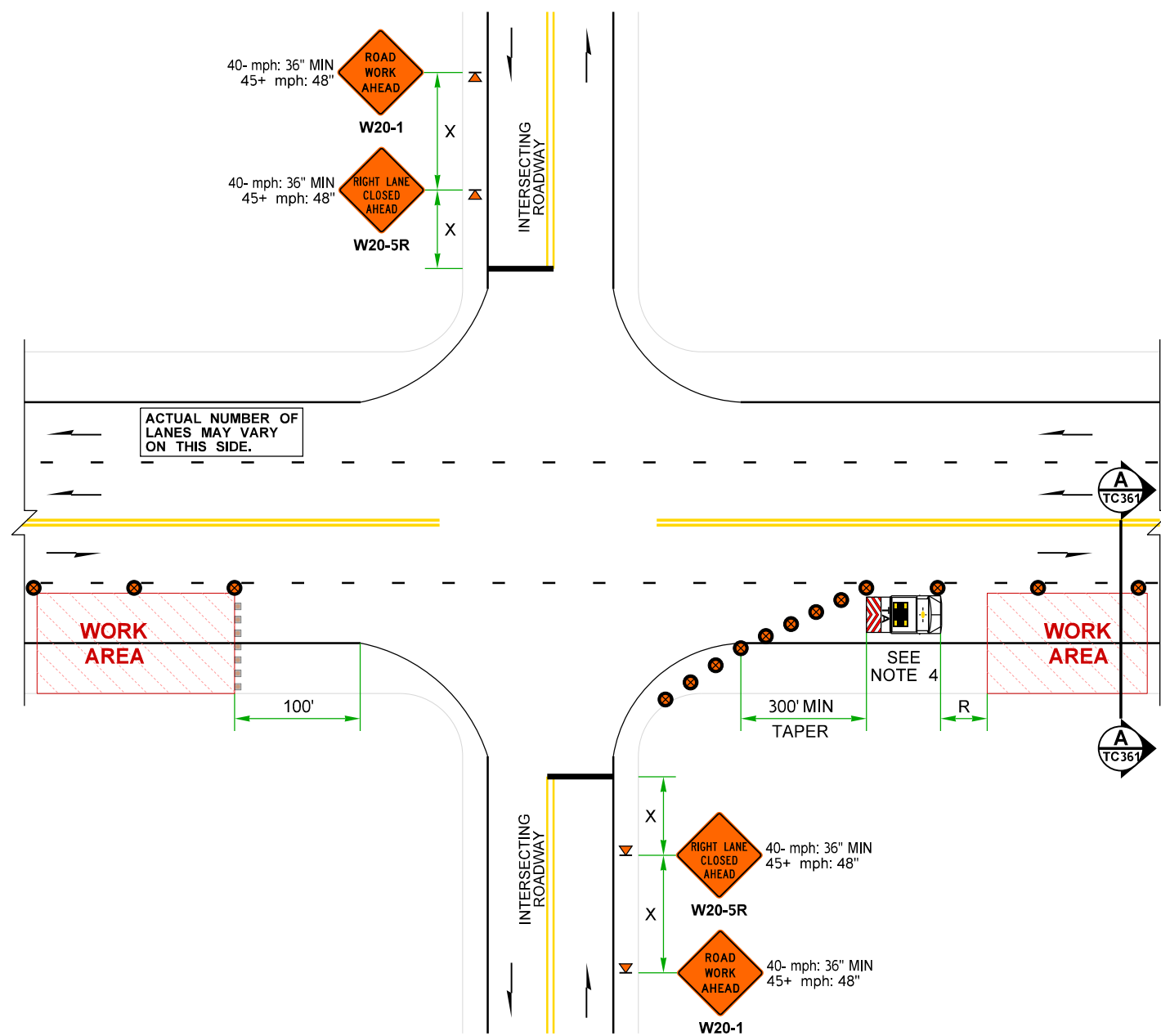
NOTES:

13. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 1A OR 1B.

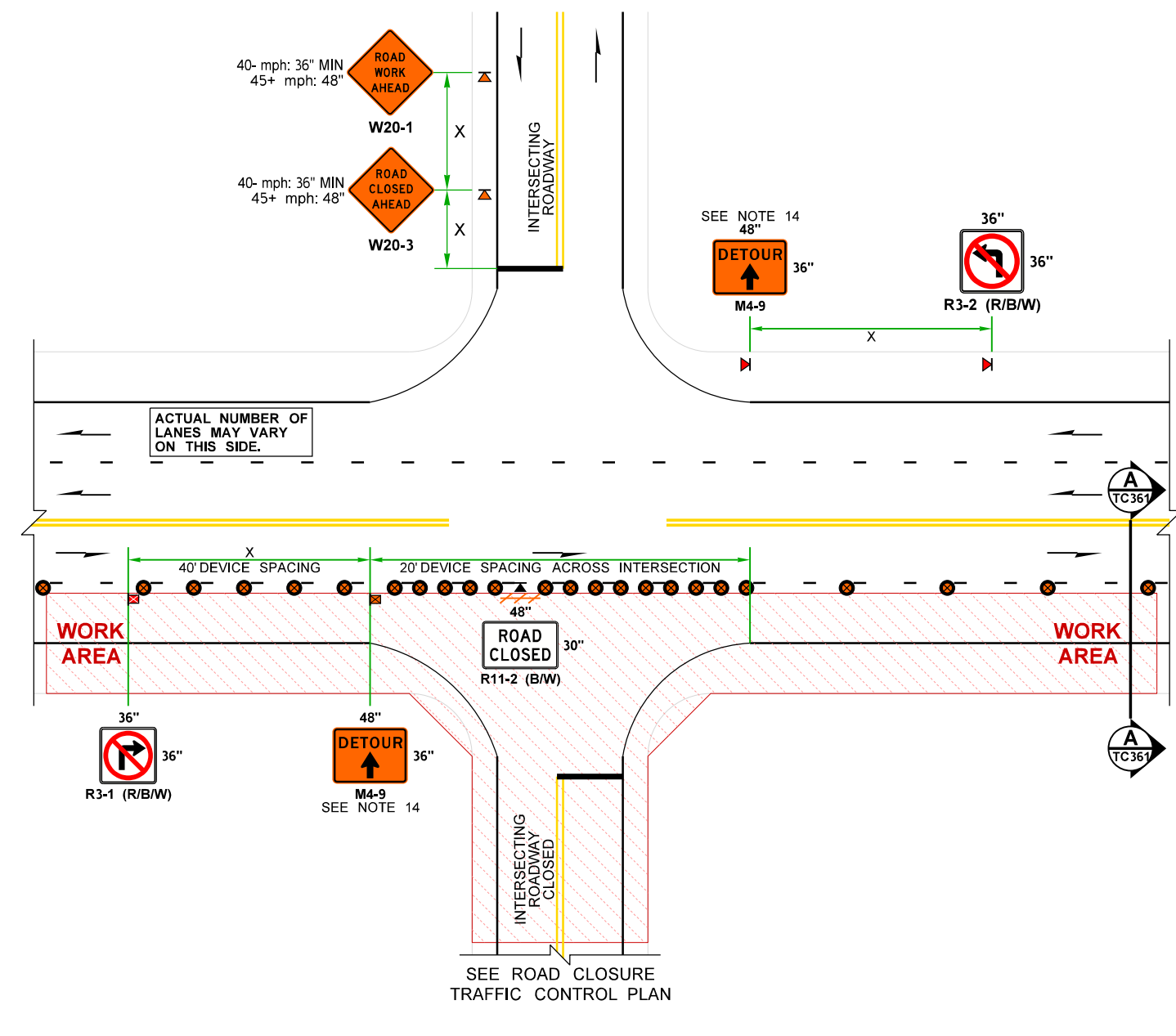
14. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.




AT-GRADE INTERSECTION (NO TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (NO TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	 Washington State Department of Transportation	Plot 3
TIME	10:36:01 AM	REGION NO.	10	STATE							WASH
DATE	9/24/2024	JOB NUMBER									SHEET 2A
PLOTTED BY	LintzF	CONTRACT NO.		LOCATION NO.							OF 4
DESIGNED BY											SHEETS
ENTERED BY											
CHECKED BY											
PROJ. ENGR.											
REGIONAL ADM.		REVISION		DATE	BY						

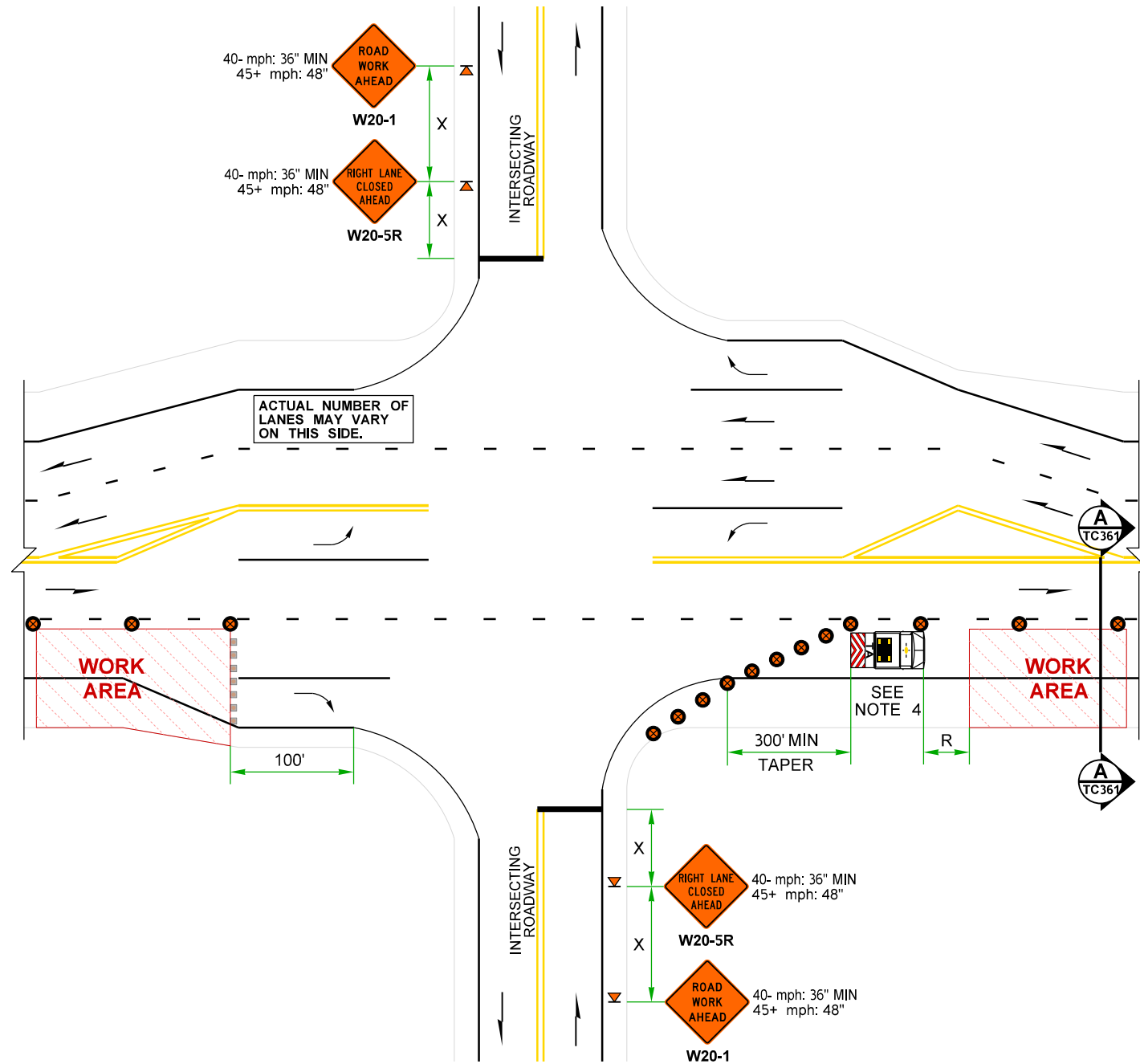
NOTES:

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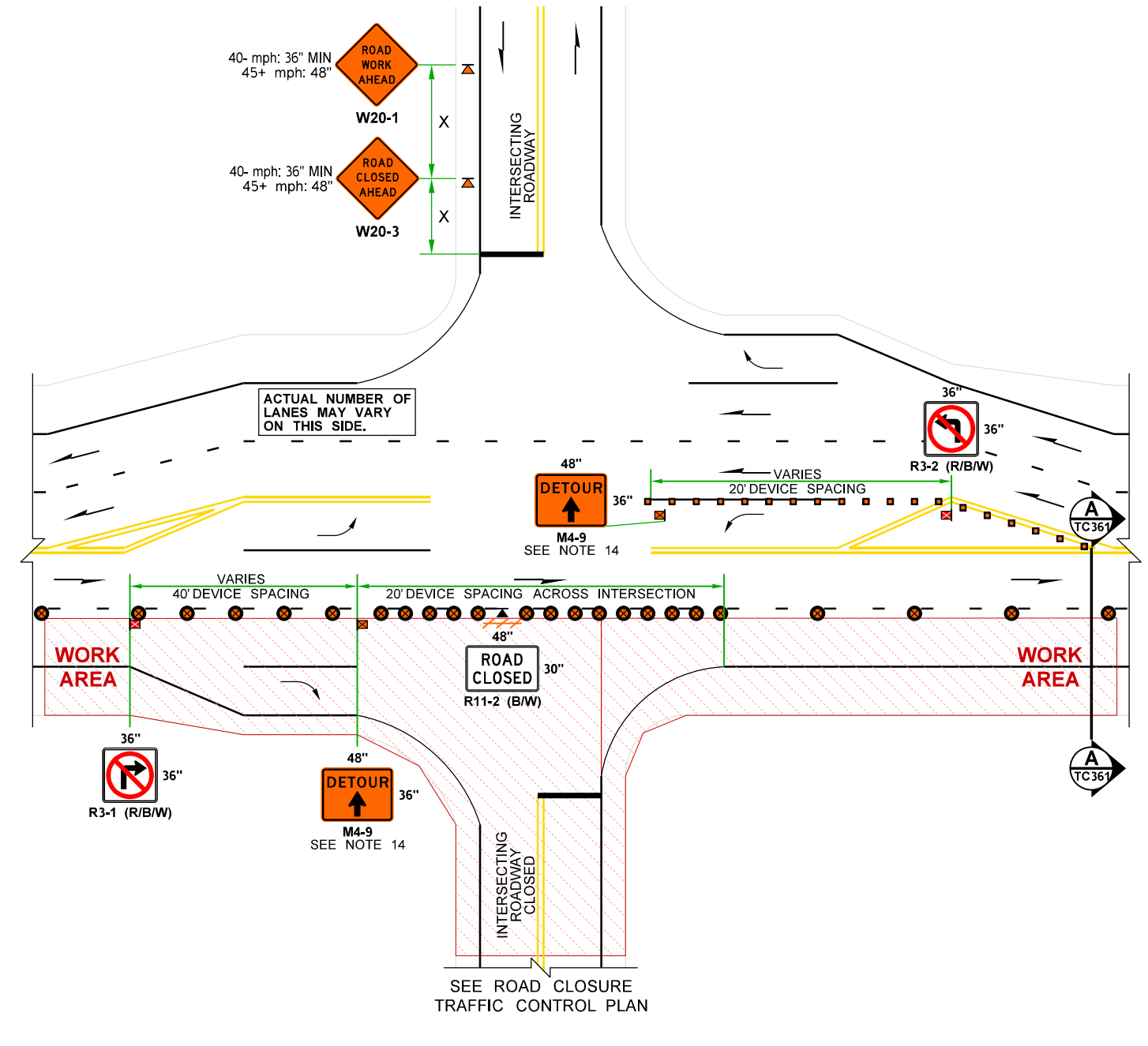
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RECOMMENDED SIGN SPACING = X (1)		
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URBAN STREETS	25 MPH OR LESS	100'± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (WITH TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (WITH TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPS\361MLHwy45+1RtLane.dgn		REGION NO. 10		STATE WASH	FED.AID PROJ.NO.	DATE		DATE		Plot 4
TIME 10:36:02 AM	DATE 9/24/2024	JOB NUMBER		LOCATION NO.		P.E. STAMP BOX		P.E. STAMP BOX		PLAN REF NO TC361
PLOTTED BY LintzF	DESIGNED BY	CONTRACT NO.				Washington State Department of Transportation		TYPICAL TRAFFIC CONTROL PLANS		SHEET 2B OF 4 SHEETS
ENTERED BY	CHECKED BY	REVISION		DATE		BY				
PROJ. ENGR.	REGIONAL ADM.									

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

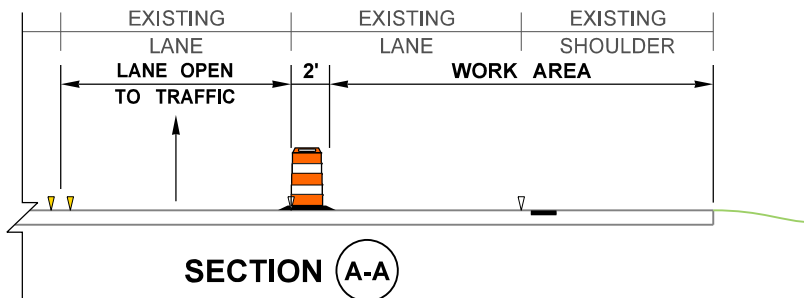
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



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LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

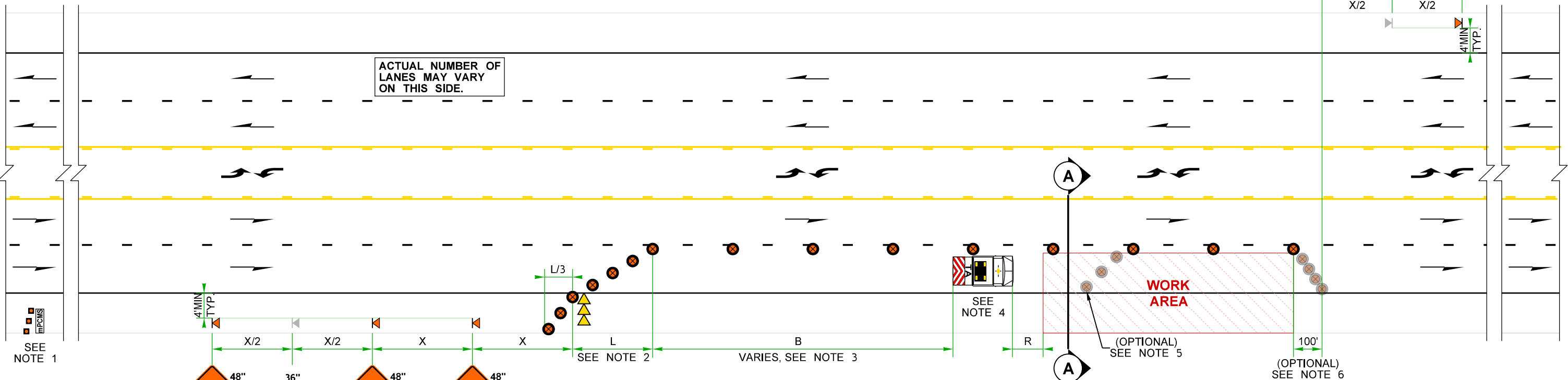
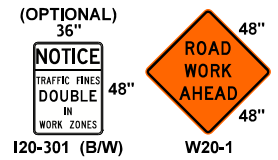
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
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SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
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Buffer space may be adjusted (±) based on field conditions.



SEE NOTE 1



NOTES:

- FULL-SIZE PCMS (11'x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
- IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
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- ADD W21-30 SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLE INGRESS/EGRESS INTO OPEN LANE(S).

- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
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 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
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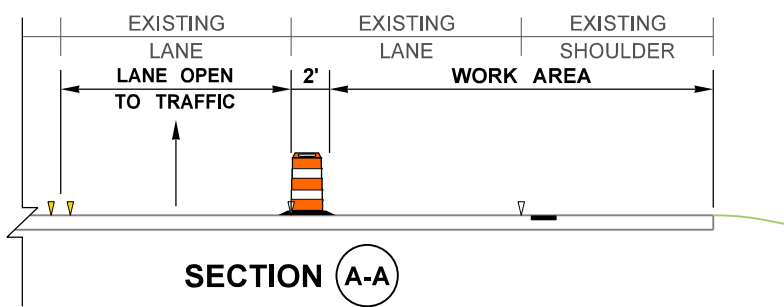
SINGLE RIGHT LANE CLOSURE (45+ MPH MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		DATE		DATE		Plot 5	
TIME: 10:36:02 AM		10	WASH							PLAN REF NO TC361	
DATE: 9/24/2024										SHEET 3A OF 4 SHEETS	
PLOTTED BY: LintzF										TYPICAL TRAFFIC CONTROL PLANS	
DESIGNED BY:											
ENTERED BY:											
CHECKED BY:											
PROJ. ENGR.:											
REGIONAL ADM.:		REVISION		DATE	BY						

3-MILE QUEUE WARNING SYSTEM MESSAGES					
TRAFFIC SENSORS		PCMS 2		PCMS 1	
B	A	1	2	1	2
TRIGGER	SPEED	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
35+ MPH	35+ MPH	■	■	(Blank)	RIGHT LANE CLOSURE
35+ MPH	< 35 MPH	LANE CLOSURE 3 MILES		TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC
< 35 MPH	< 35 MPH	SLOW OR STOPPED TRAFFIC		NEXT 3 MILES	USE ALL LANES
					TAKE TURNS AT MERGE

SEE QUEUE WARNING SYSTEM SPECIAL PROVISION OR RFP FOR DETAILS.
 LOCATE PCMSs PER STD. SPEC 1-10.3(3)C. WHEN PCMSs/TRAFFIC SENSORS PLACED BEHIND BARRIER/GUARDRAIL, TRANSVERSE TRAFFIC DRUMS ARE NOT REQUIRED.
 ADJUST QWS COMPONENTS AS NEEDED TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, INTERSECTIONS, OR TO MAINTAIN VISIBILITY OF SEQUENTIAL ARROW SIGN.
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RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
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LANE WIDTH	SPEED (MPH)	45	50	55	60	65
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Avoid reducing lane closure length on 45+ mph roadways.

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	123'	172'
45-55 MPH	60+ MPH	100'	150'

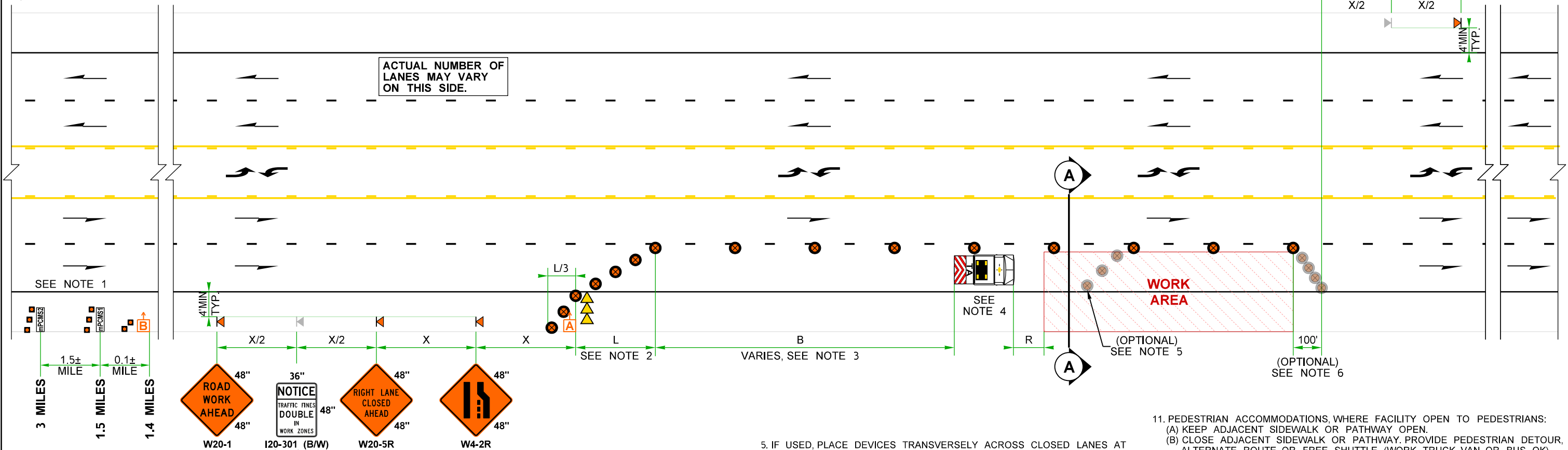
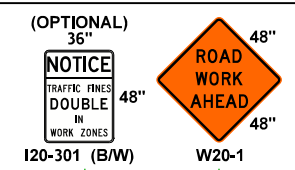
LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

FOR INTERSECTION DETAILS: SEE TC361, SHEET 4A & 4B.



LEGEND:

- ▲ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊙ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- ⊕ QWS TRAFFIC SENSOR
- ➡ SEQUENTIAL ARROW SIGN
- TL-3 TRANSPORTABLE ATTENUATOR
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11' x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.

- IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
- IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
- 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.
- ADD W21-30 SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLE INGRESS/EGRESS INTO OPEN LANE(S).

- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - BICYCLES PROHIBITED VIA R5-601 & R5-6 SIGNS. PROVIDE SIGNED DETOUR OR ALTERNATIVE ROUTE.
 - BICYCLES PROHIBITED VIA R5-6 SIGN(S). PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK) + CONTACT INFORMATION/PHONE BOX/LABORER.
 - STOP WORK OPS & ESCORT BICYCLISTS THROUGH CLOSURE.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.



SINGLE RIGHT LANE CLOSURE + 3-MILE QUEUE WARNING SYSTEM (45+ MPH MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		Plot 6	
TIME: 10:36:03 AM		10	WASH			PLAN REF NO. TC361	
DATE: 9/24/2024						SHEET 3B OF 4 SHEETS	
PLOTTED BY: LintzF		JOB NUMBER		LOCATION NO.		<p>Washington State Department of Transportation</p> <p>TYPICAL TRAFFIC CONTROL PLANS</p>	
DESIGNED BY:							
ENTERED BY:							
CHECKED BY:							
PROJ. ENGR.:		CONTRACT NO.		DATE			
REGIONAL ADM.:		REVISION		DATE BY			

NOTES:

13. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 3A OR 3B.

14. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

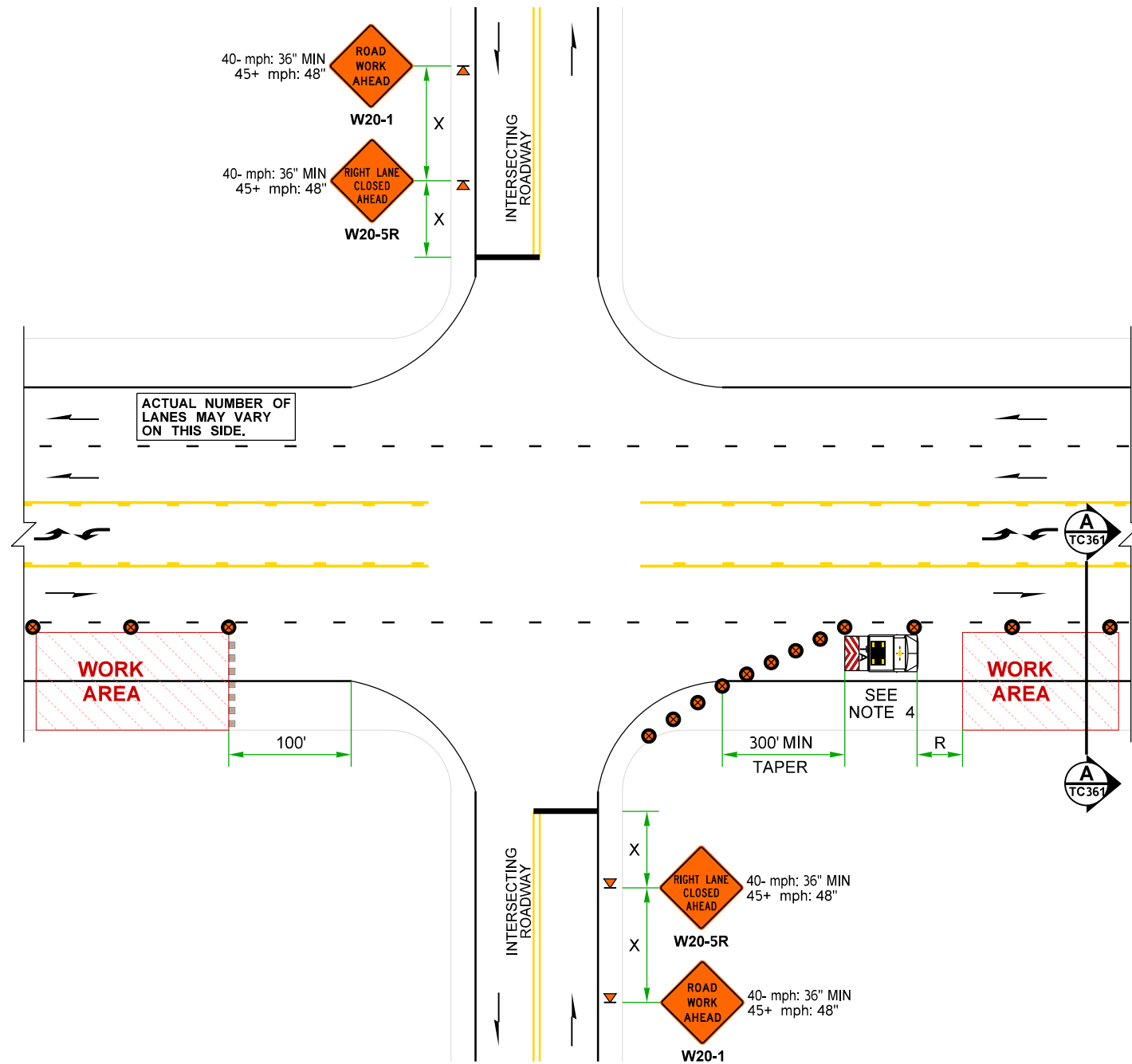
2-WAY LEFT TURN LANE CLOSURE TAPER LENGTH = L/2

LANE WIDTH	SPEED (MPH)	45	50	55	60	65
10'	L/2 (feet)	240	280	280	320	360
12'		280	320	360	360	400
14'		320	360	400	440	480
Lane shift length may be adjusted based on field conditions.						

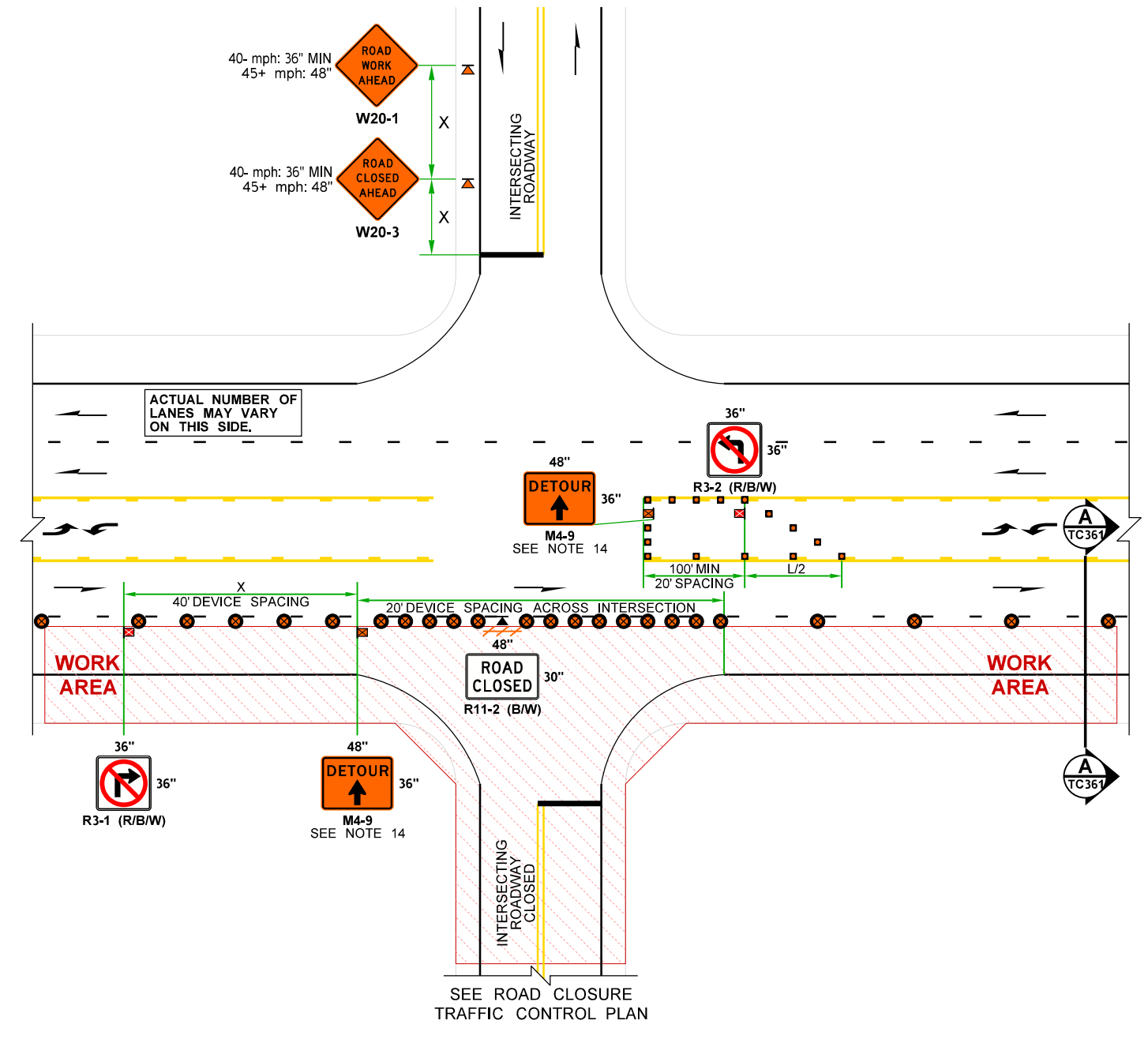
RECOMMENDED SIGN SPACING = X (1)

RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (NO TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (NO TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	<p>Washington State Department of Transportation</p>	Plot 7
TIME	10:36:03 AM	REGION NO.	10	STATE							WASH
DATE	9/24/2024	JOB NUMBER									SHEET 4A OF 4 SHEETS
PLOTTED BY	LintzF	CONTRACT NO.		LOCATION NO.							TYPICAL TRAFFIC CONTROL PLANS
DESIGNED BY											
ENTERED BY											
CHECKED BY											
PROJ. ENGR.											
REGIONAL ADM.		REVISION		DATE	BY						

NOTES:

13. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 3A OR 3B.

14. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

2-WAY LEFT TURN LANE CLOSURE TAPER LENGTH = L/2

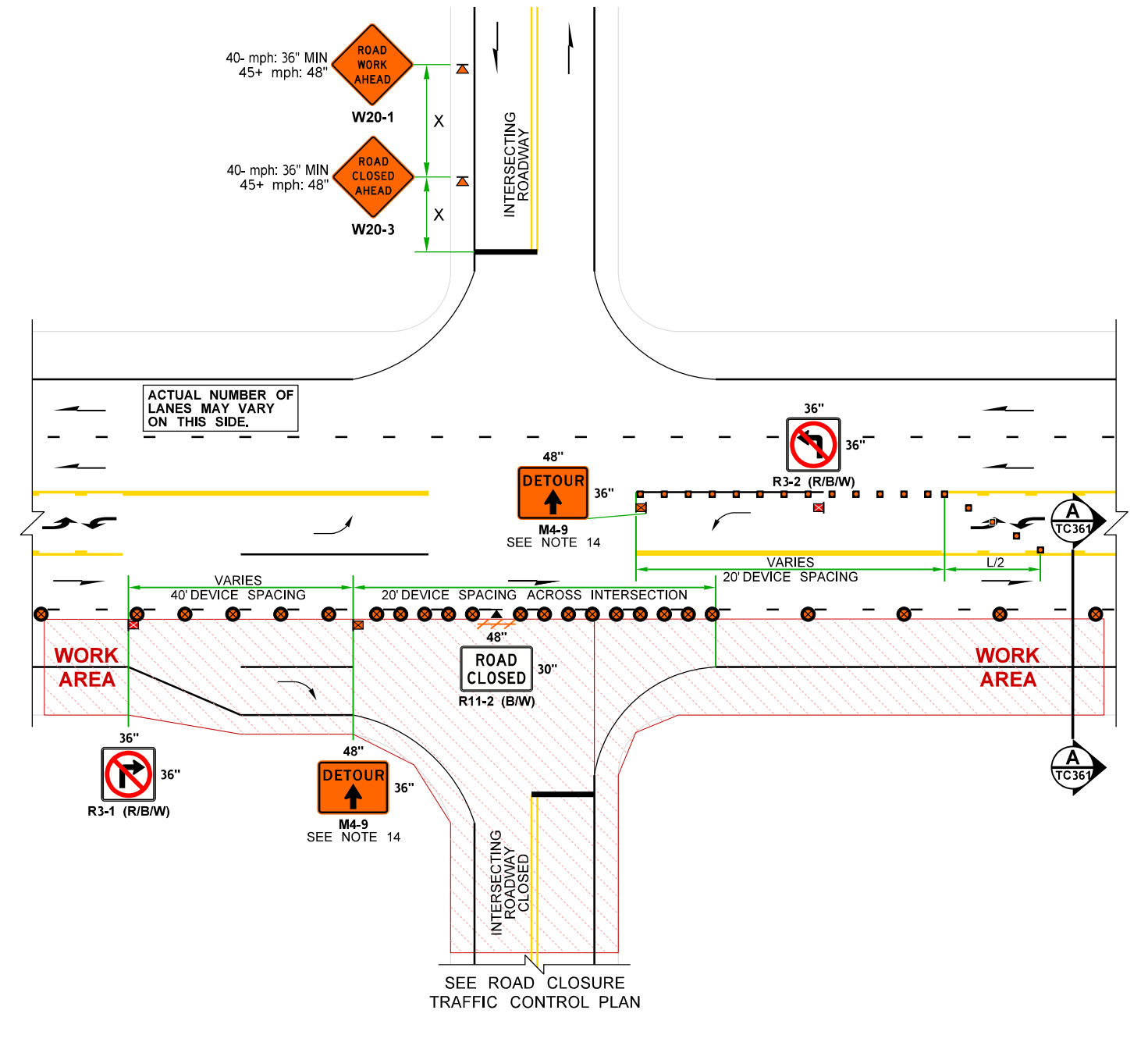
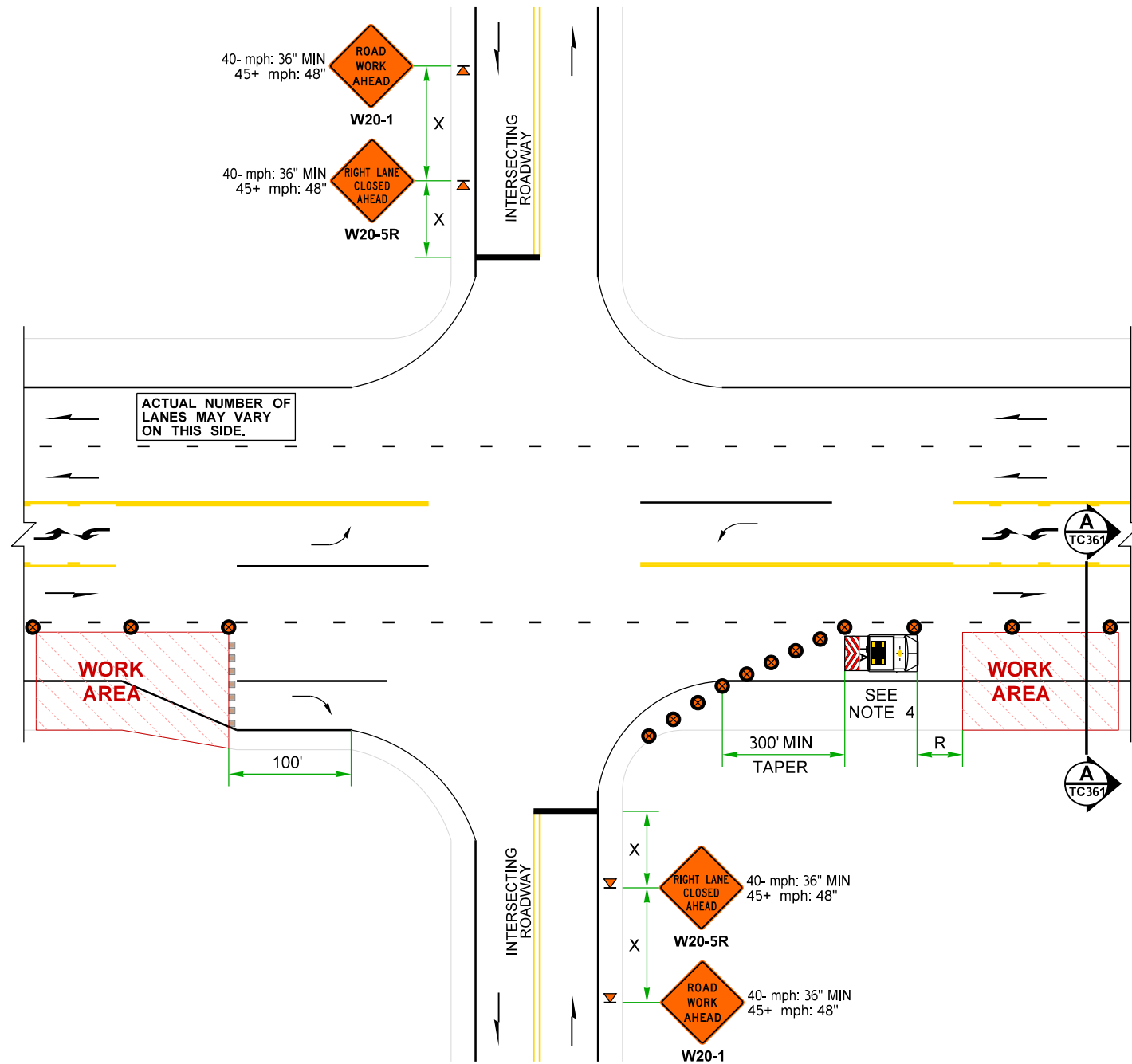
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
10'	L/2 (feet)	240	280	280	320	360
12'		280	320	360	360	400
14'		320	360	400	440	480

Lane shift length may be adjusted based on field conditions.

RECOMMENDED SIGN SPACING = X (1)

RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (WITH TURN LANES): KEPT OPEN

AT-GRADE INTERSECTION (WITH TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Washington State Department of Transportation	Plot 8
TIME	10:36:04 AM	REGION NO.	10	STATE							WASH
DATE	9/24/2024	JOB NUMBER									SHEET
PLOTTED BY	LintzF	CONTRACT NO.									4B
DESIGNED BY		LOCATION NO.									OF
ENTERED BY											4
CHECKED BY											SHEETS
PROJ. ENGR.											
REGIONAL ADM.		REVISION		DATE	BY						

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

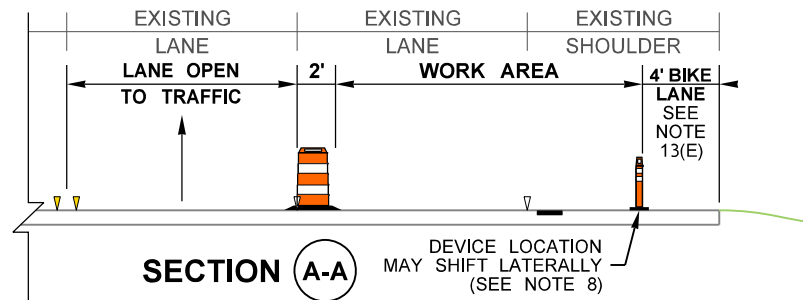
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

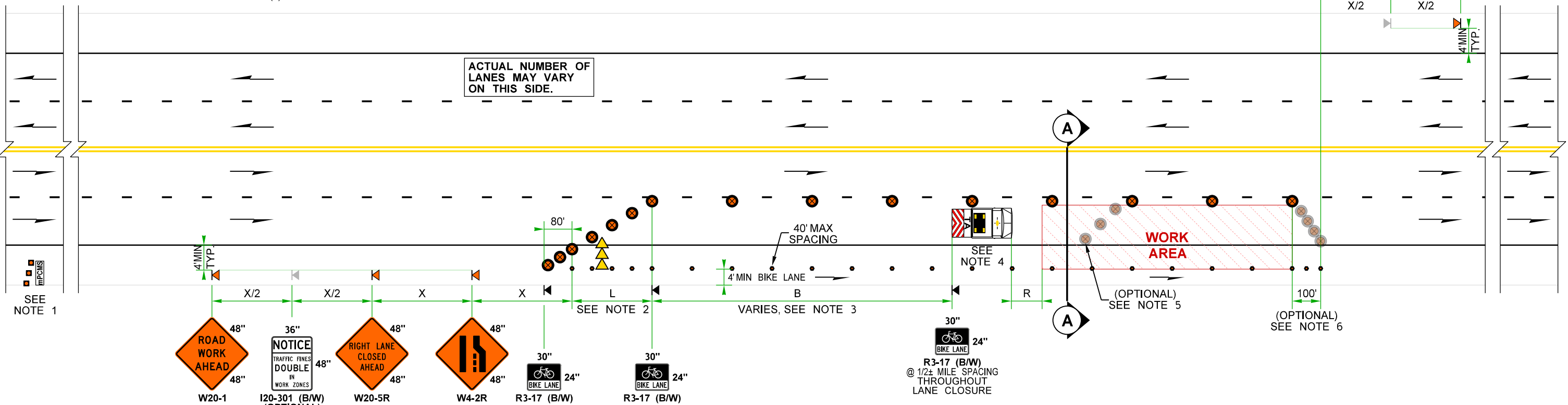
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

FOR INTERSECTION DETAILS: SEE TC361, SHEET 2C & 2D.

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.



LEGEND:

- ◀ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊗ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- ▶▶▶ SEQUENTIAL ARROW SIGN
- ⊠ TRANSPORTABLE ATTENUATOR (TL-3)
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11' x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
 - IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
 - IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
 - 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
 - 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT Laterally TO PROVIDE 4' MIN BIKE LANE.
 - SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
 - PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.

- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - (A) KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - (B) CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - (C) STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - (D) ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - (E) PROVIDE TEMP. 4' MIN BIKE LANE ON EDGE OF PAVED SHOULDER THROUGH CLOSURE.

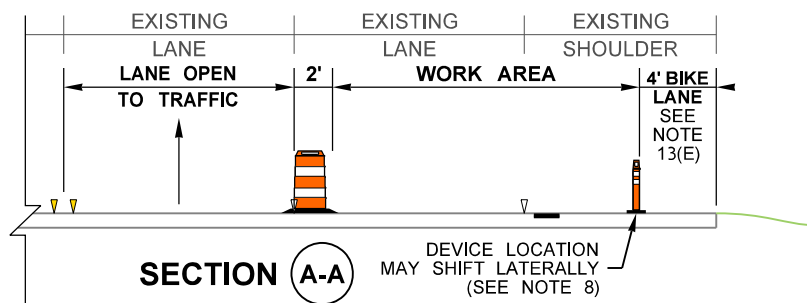
SINGLE RIGHT LANE CLOSURE (45+ MPH MULTILANE HIGHWAYS)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn TIME: 10:36:04 AM DATE: 9/24/2024 PLOTTED BY: LintzF DESIGNED BY: ENTERED BY: CHECKED BY: PROJ. ENGR. REGIONAL ADM.	REGION NO. 10 STATE WASH JOB NUMBER CONTRACT NO. LOCATION NO.	FED.AID PROJ.NO. DATE P.E. STAMP BOX	 Washington State Department of Transportation	DATE P.E. STAMP BOX	Plot 11 PLAN REF NO TC361 SHEET 1C OF 4 SHEETS
TYPICAL TRAFFIC CONTROL PLANS					

3-MILE QUEUE WARNING SYSTEM MESSAGES					
TRAFFIC SENSORS		PCMS 2		PCMS 1	
B	A	1	2	1	2
TRIGGER	SPEED	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
35+ MPH	35+ MPH	■	■	(Blank)	RIGHT LANE CLOSURE
35+ MPH	< 35 MPH	LANE CLOSURE 3 MILES		TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC
< 35 MPH	< 35 MPH	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	USE ALL LANES	TAKE TURNS AT MERGE

SEE QUEUE WARNING SYSTEM SPECIAL PROVISION OR RFP FOR DETAILS.
 LOCATE PCMSs PER STD. SPEC 1-10.3(3)C. WHEN PCMSs/TRAFFIC SENSORS PLACED BEHIND BARRIER/GUARDRAIL, TRANSVERSE TRAFFIC DRUMS ARE NOT REQUIRED.
 ADJUST QWS COMPONENTS AS NEEDED TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, INTERSECTIONS, OR TO MAINTAIN VISIBILITY OF SEQUENTIAL ARROW SIGN.
 IN THE EVENT OF A SYSTEM FAILURE SEE SPECIAL PROVISIONS OR RFP "QUEUE WARNING SYSTEM FAILURE PROTOCOL".



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPs, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

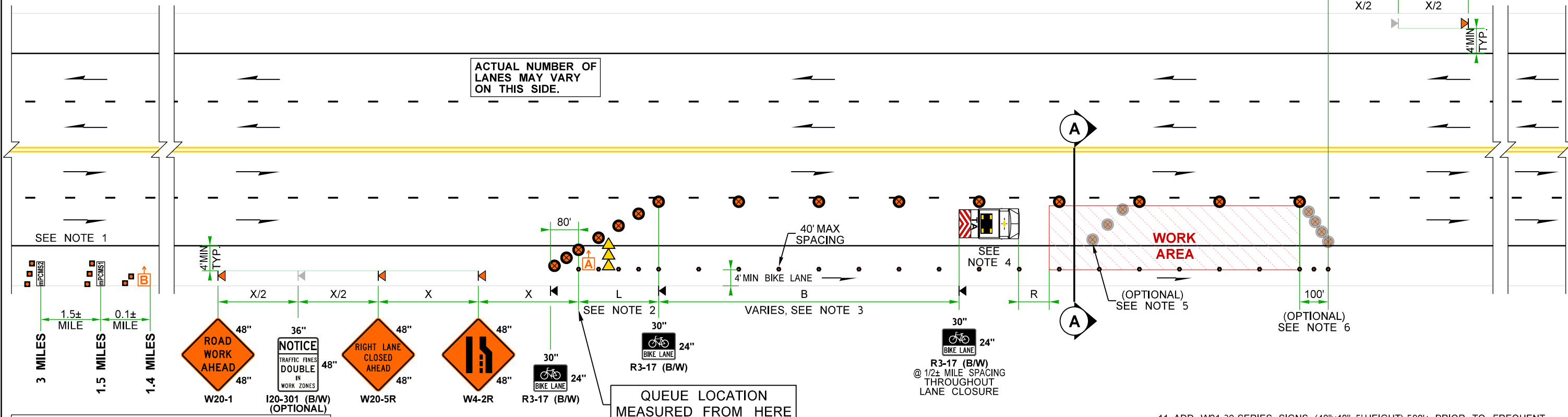
STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

FOR INTERSECTION DETAILS: SEE TC361, SHEET 2C & 2D.

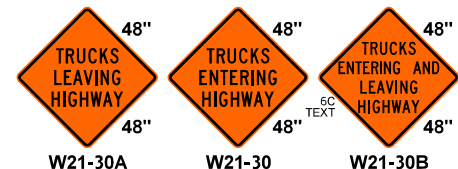


LEGEND:

- ◀ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊗ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- # QWS TRAFFIC SENSOR
- ▶▶▶ SEQUENTIAL ARROW SIGN
- ⊠ TRANSPORTABLE ATTENUATOR (TL-3)
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11'x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
 - IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
 - IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
 - 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
 - 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT Laterally TO PROVIDE 4' MIN BIKE LANE.
 - SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
 - PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.

- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - PROVIDE TEMP. 4' MIN BIKE LANE ON EDGE OF PAVED SHOULDER THROUGH CLOSURE.



SINGLE RIGHT LANE CLOSURE + 3-MILE QUEUE WARNING SYSTEM (45+ MPH MULTILANE HIGHWAYS)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. 10		STATE WASH		FED.AID PROJ.NO.		DATE		DATE		Plot 12	
TIME: 10:36:05 AM		JOB NUMBER		CONTRACT NO.		LOCATION NO.		P.E. STAMP BOX		P.E. STAMP BOX		PLAN REF NO. TC361	
DATE: 9/24/2024		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		SHEET 1D OF 4 SHEETS	
PLOTTED BY: LintzF		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		TYPICAL TRAFFIC CONTROL PLANS	
DESIGNED BY:		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		REVISION	
ENTERED BY:		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		DATE	
CHECKED BY:		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		DATE	
PROJ. ENGR.:		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		DATE	
REGIONAL ADM.:		CONTRACT NO.		LOCATION NO.		DATE		DATE		DATE		DATE	



NOTES:

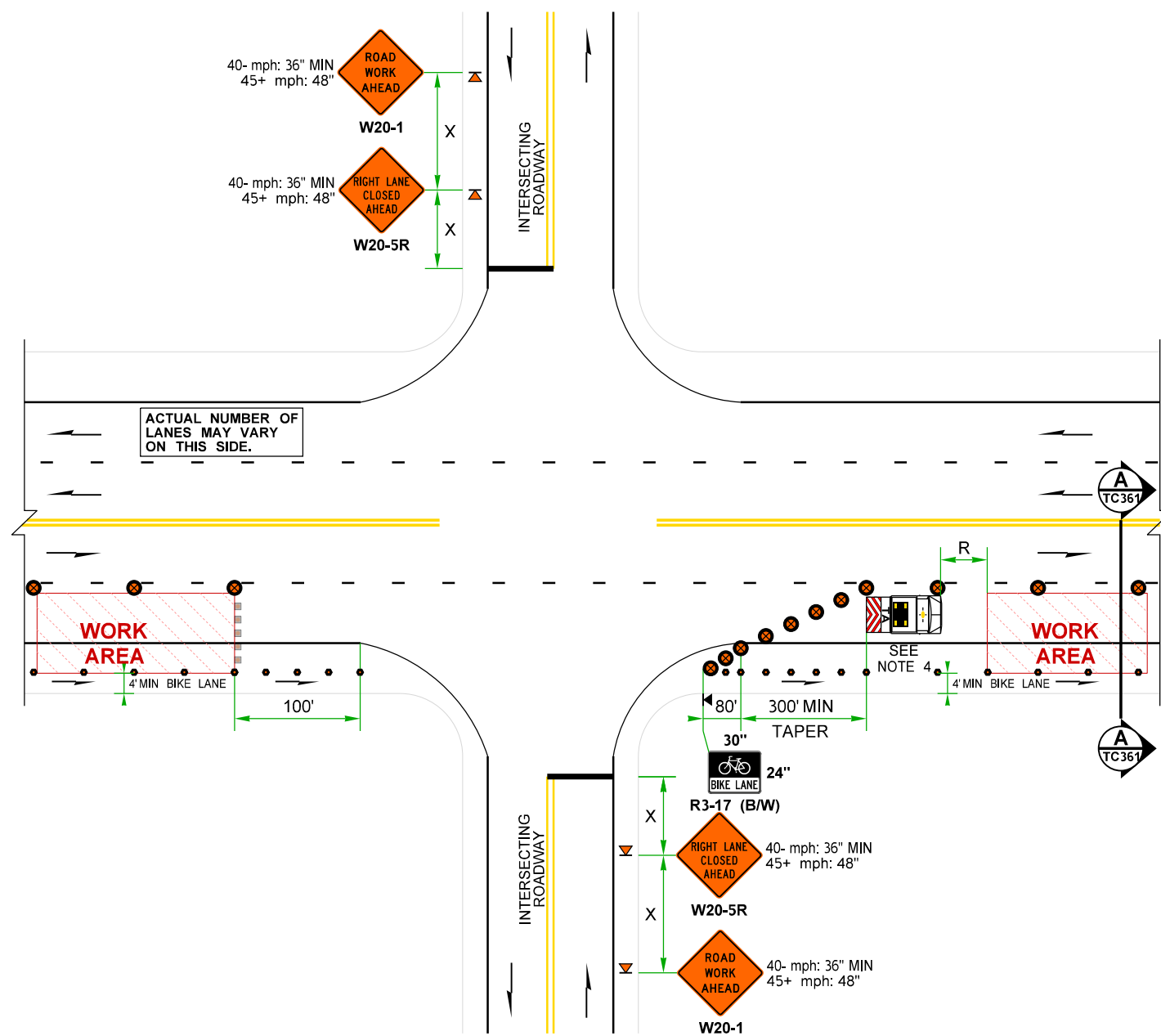
14. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 1C OR 1D.

15. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

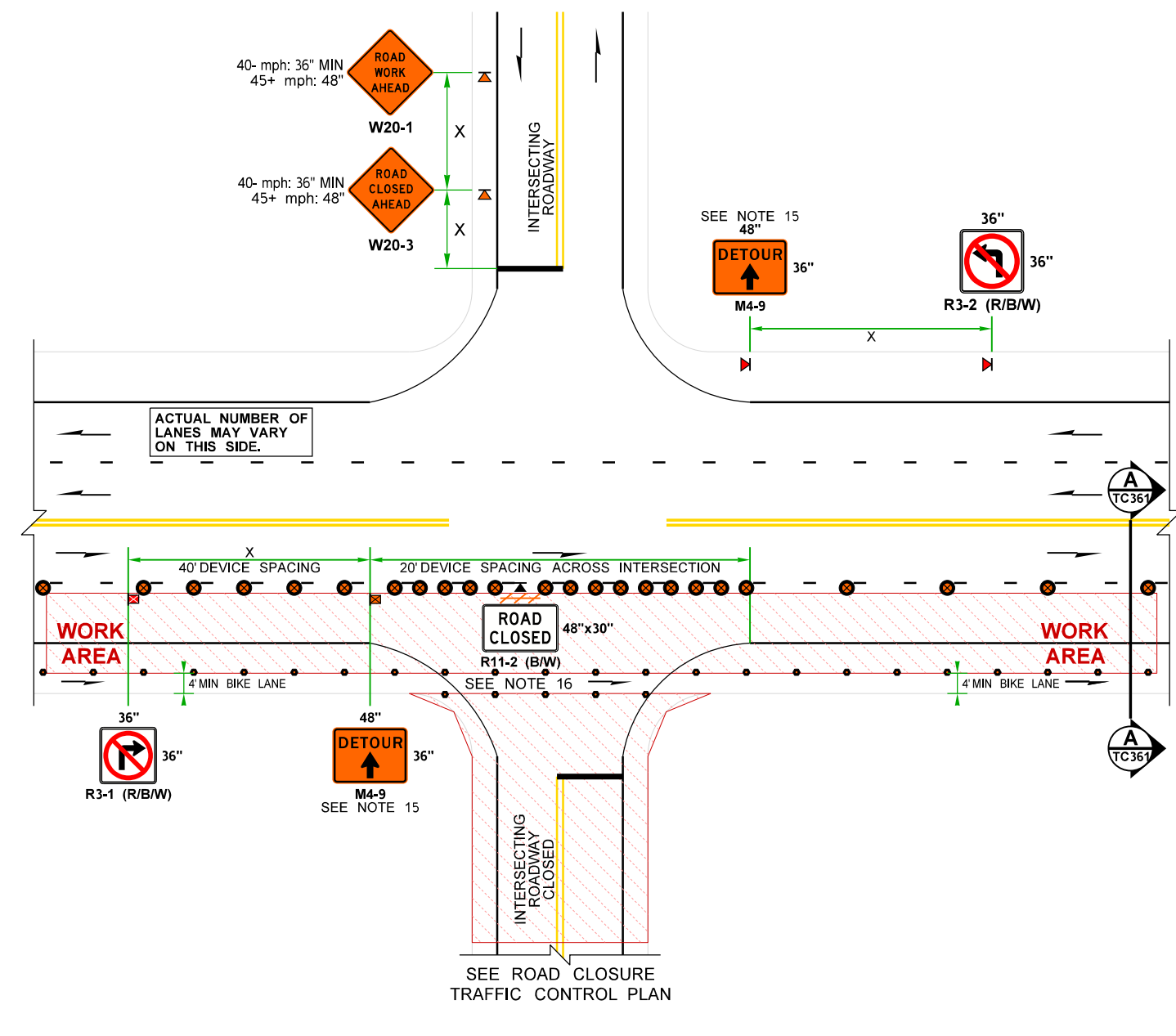
16. TEMP BIKE LANE ACROSS PARTIAL CLOSURE MAY BE REMOVED. IF SO, ESCORT BICYCLISTS THROUGH WORK AREA AFTER STOPPING WORK OPERATIONS WHEN FEASIBLE.

RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (NO TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (NO TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPS\361MLHwy45+1RtLane.dgn			FED.AID PROJ.NO.		<p>Washington State Department of Transportation</p>	Plot 13
TIME	10:36:05 AM	REGION NO.	10	STATE	WASH		PLAN REF NO
DATE	9/24/2024	JOB NUMBER		CONTRACT NO.		<p>TYPICAL TRAFFIC CONTROL PLANS</p>	<p>SHEET 2C OF 4 SHEETS</p>
PLOTTED BY	LintzF	LOCATION NO.		DATE			
DESIGNED BY		DATE		DATE			
ENTERED BY		BY		P.E. STAMP BOX			
CHECKED BY							
PROJ. ENGR.							
REGIONAL ADM.							

NOTES:

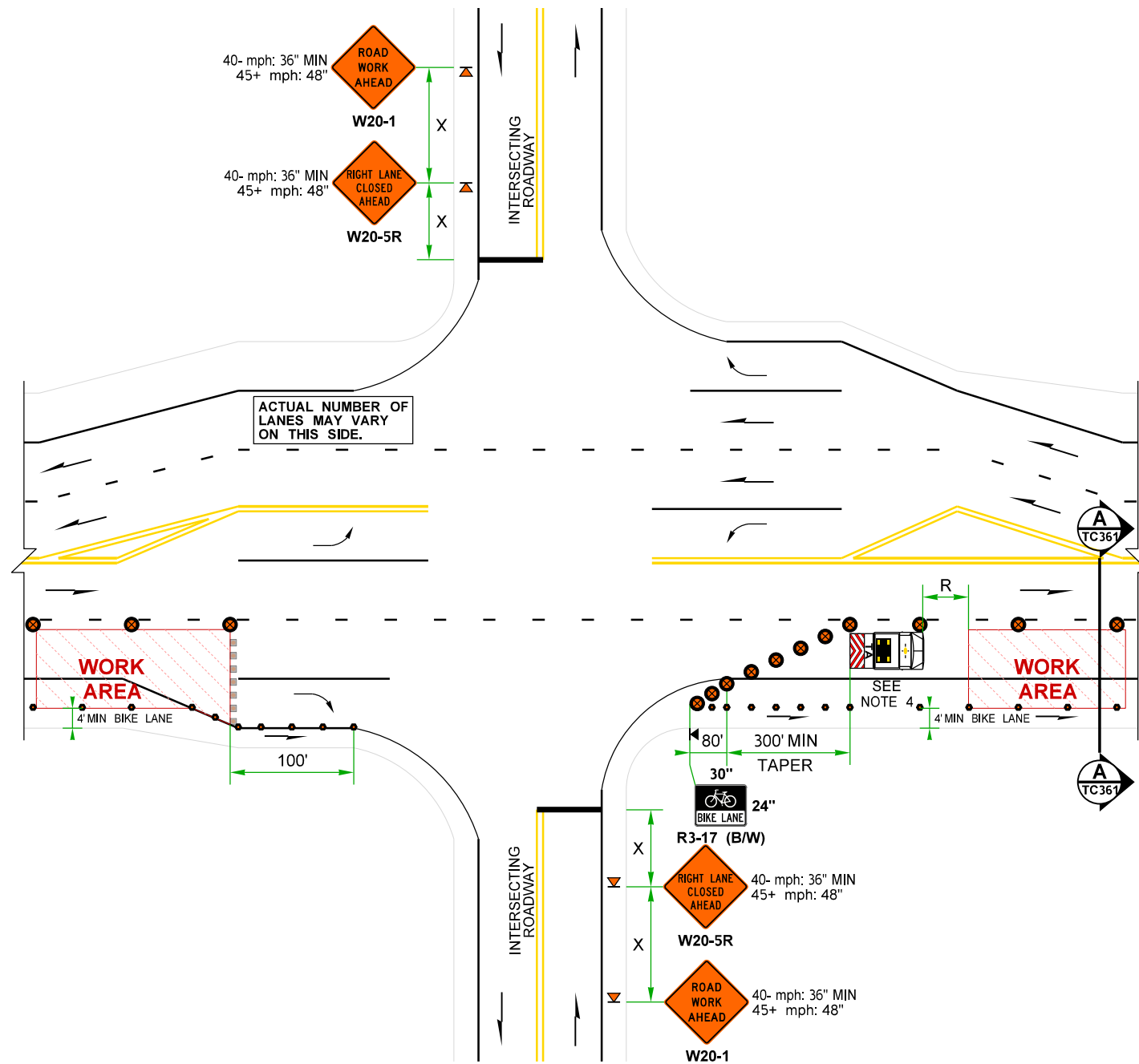
14. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 1C OR 1D.

15. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

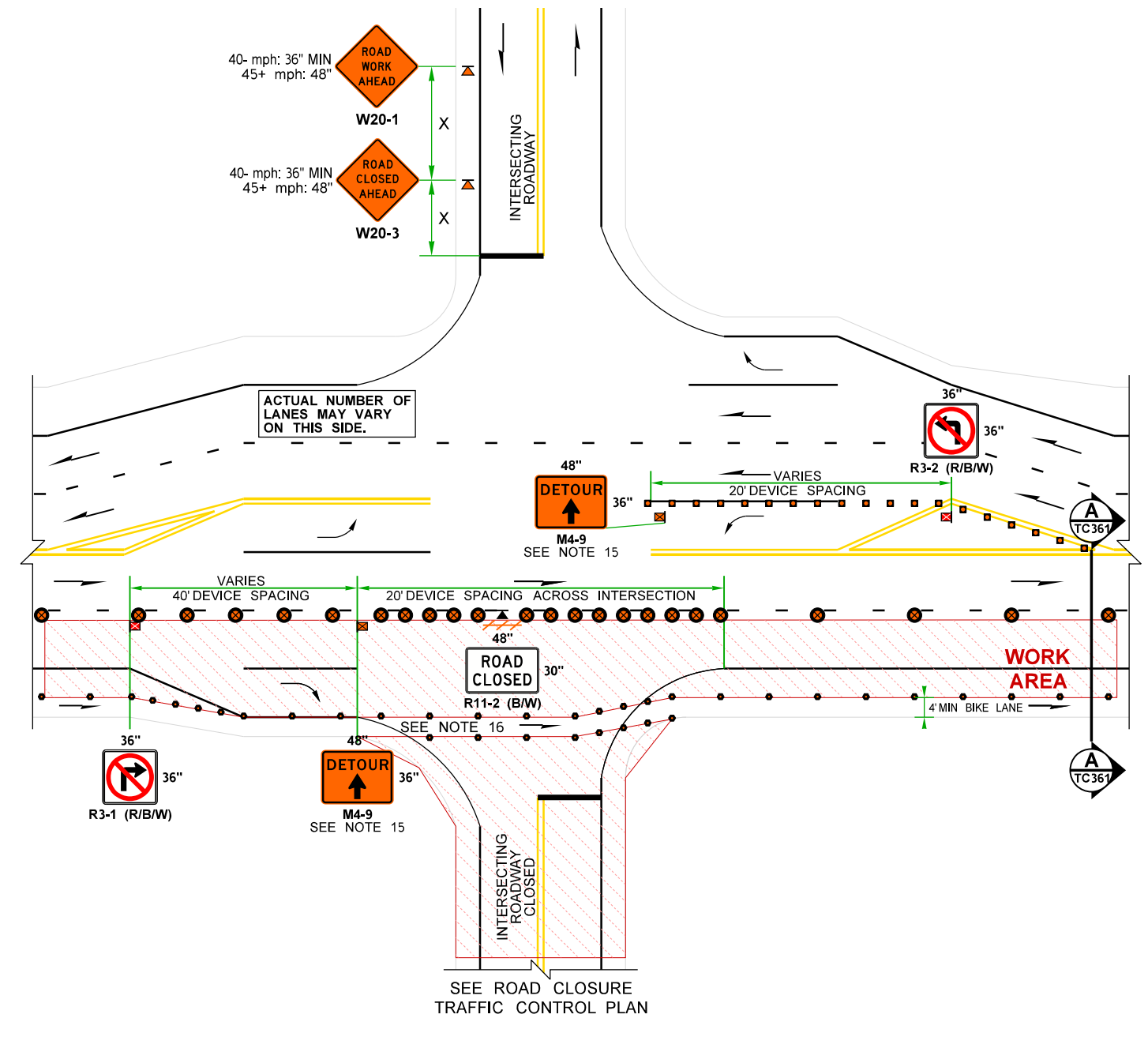
16. TEMP BIKE LANE ACROSS PARTIAL CLOSURE MAY BE REMOVED. IF SO, ESCORT BICYCLISTS THROUGH WORK AREA AFTER STOPPING WORK OPERATIONS WHEN FEASIBLE.

RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800'±
RURAL ROADS	45-55 MPH	500'±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350'±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200'± (2)
URBAN STREETS	25 MPH OR LESS	100'± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (WITH TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (WITH TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn			REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	Plot 14
TIME	10:36:06 AM			10	WASH			PLAN REF NO TC361
DATE	9/24/2024			JOB NUMBER				SHEET 2D
PLOTTED BY	LintzF			CONTRACT NO.		LOCATION NO.		OF 4
DESIGNED BY								SHEETS
ENTERED BY								
CHECKED BY								
PROJ. ENGR.								
REGIONAL ADM.	REVISION	DATE	BY	P.E. STAMP BOX	DATE	P.E. STAMP BOX	TYPICAL TRAFFIC CONTROL PLANS	

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

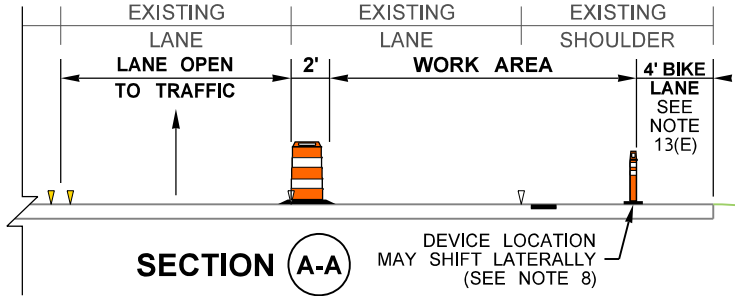
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

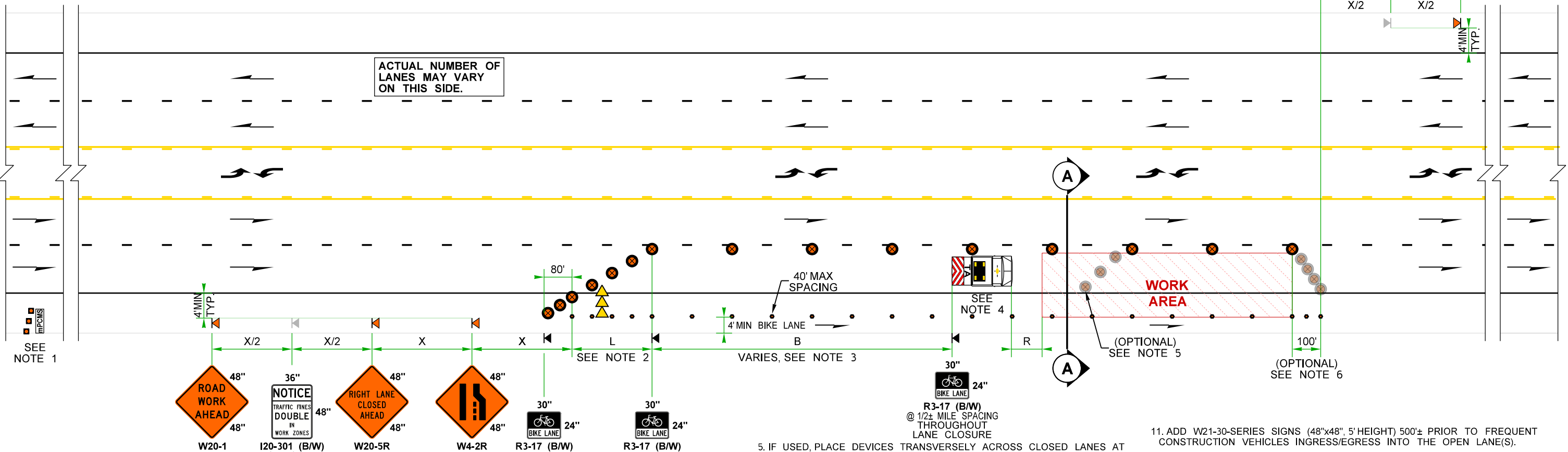
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

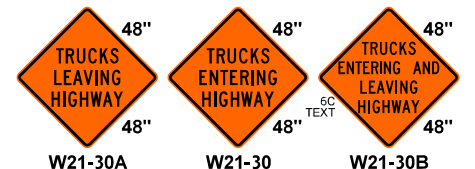
LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.



- LEGEND:**
- ◀ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
 - ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
 - ⊗ TRAFFIC SAFETY DRUM
 - CHANNELIZING DEVICE (SEE NOTE 7)
 - PORTABLE TUBULAR MARKER (SEE NOTE 8)
 - ▶ SEQUENTIAL ARROW SIGN
 - ⊠ TRANSPORTABLE ATTENUATOR (TL-3)
 - mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11'x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
 - IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
 - IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
 - 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
 - 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT Laterally TO PROVIDE 4' MIN BIKE LANE.
 - SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
 - PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.
 - ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
 - PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS: (A) KEEP ADJACENT SIDEWALK OR PATHWAY OPEN. (B) CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK). (C) STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA. (D) ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
 - BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES: (E) PROVIDE TEMP. 4' MIN BIKE LANE ON EDGE OF PAVED SHOULDER THROUGH CLOSURE.



SINGLE RIGHT LANE CLOSURE (45+ MPH MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE)

NOT TO SCALE

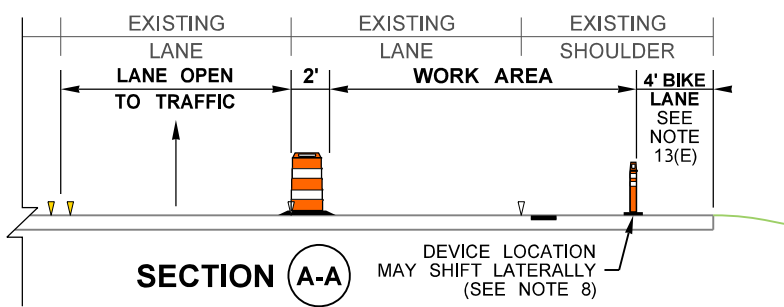
FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		DATE		DATE		Plot 15	
TIME: 10:36:07 AM		10 WASH								PLAN REF NO	
DATE: 9/24/2024										TC361	
PLOTTED BY: LintzF		JOB NUMBER								SHEET	
DESIGNED BY:		CONTRACT NO.		LOCATION NO.						3C	
ENTERED BY:										OF	
CHECKED BY:										4	
PROJ. ENGR.:										SHEETS	
REGIONAL ADM.:		REVISION		DATE		BY		DATE		TYPICAL TRAFFIC CONTROL PLANS	



TYPICAL TRAFFIC CONTROL PLANS

3-MILE QUEUE WARNING SYSTEM MESSAGES					
TRAFFIC SENSORS		PCMS 2		PCMS 1	
B	A	1	2	1	2
TRIGGER	SPEED	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
35+ MPH	35+ MPH	■	■	(Blank)	RIGHT LANE CLOSURE
35+ MPH	< 35 MPH	LANE CLOSURE 3 MILES		TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC
< 35 MPH	< 35 MPH	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	USE ALL LANES	TAKE TURNS AT MERGE

SEE QUEUE WARNING SYSTEM SPECIAL PROVISION OR RFP FOR DETAILS.
 LOCATE PCMSs PER STD. SPEC 1-10.3(3)C. WHEN PCMSs/TRAFFIC SENSORS PLACED BEHIND BARRIER/GUARDRAIL, TRANSVERSE TRAFFIC DRUMS ARE NOT REQUIRED.
 ADJUST QWS COMPONENTS AS NEEDED TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, INTERSECTIONS, OR TO MAINTAIN VISIBILITY OF SEQUENTIAL ARROW SIGN.
 IN THE EVENT OF A SYSTEM FAILURE SEE SPECIAL PROVISIONS OR RFP "QUEUE WARNING SYSTEM FAILURE PROTOCOL".



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

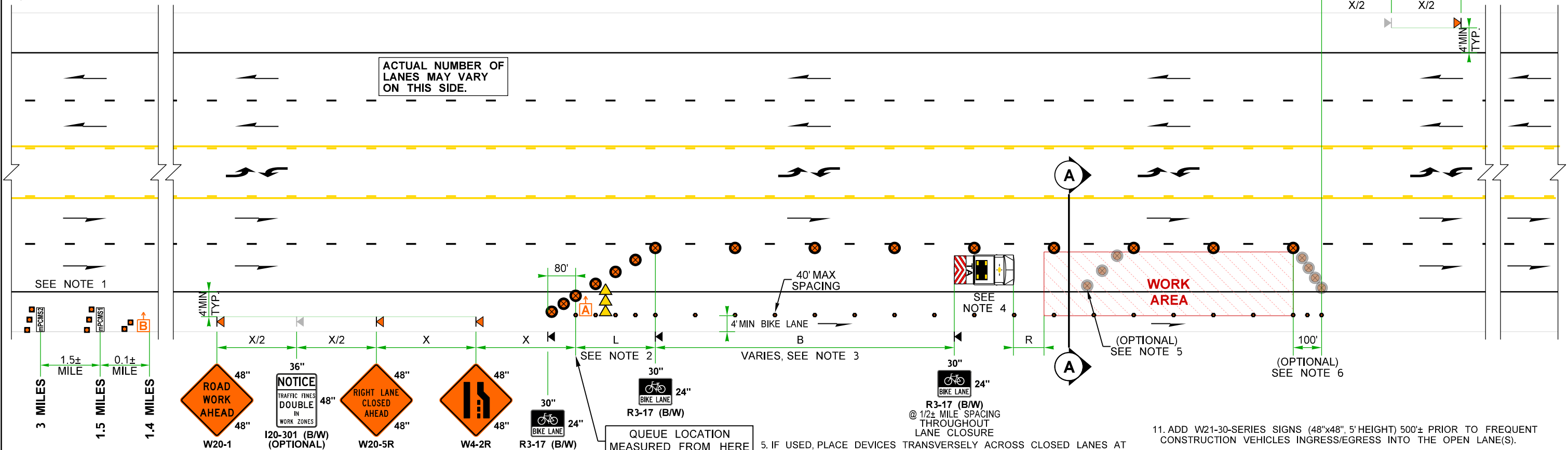
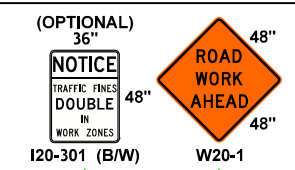
STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	123'	172'
45-55 MPH	60+ MPH	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'	L/3 (feet)	90	120	120	120	160
10'	L/3 (feet)	150	200	200	200	240

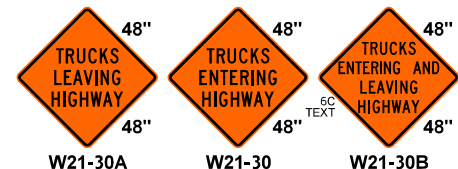


LEGEND:

- ◀ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊙ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- ⊠ QWS TRAFFIC SENSOR
- ▶▶ SEQUENTIAL ARROW SIGN
- ⊠ TRANSPORTABLE ATTENUATOR (TL-3)
- ⊠ mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11' x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
 - IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
 - IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
 - 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
 - 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT LATERALLY TO PROVIDE 4' MIN BIKE LANE.
 - SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
 - PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.

- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - PROVIDE TEMP. 4' MIN BIKE LANE ON EDGE OF PAVED SHOULDER THROUGH CLOSURE.



SINGLE RIGHT LANE CLOSURE + 3-MILE QUEUE WARNING SYSTEM (45+ MPH MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		Plot 16	
TIME: 10:36:07 AM		10	WASH			PLAN REF NO. TC361	
DATE: 9/24/2024							
PLOTTED BY: LintzF							
DESIGNED BY:							
ENTERED BY:							
CHECKED BY:							
PROJ. ENGR.:							
REGIONAL ADM.:	REVISION	DATE	BY	DATE	DATE	TYPICAL TRAFFIC CONTROL PLANS	

NOTES:

14. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 3C OR 3D.

15. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

16. TEMP BIKE LANE ACROSS PARTIAL CLOSURE MAY BE REMOVED. IF SO, ESCORT BICYCLISTS THROUGH WORK AREA AFTER STOPPING WORK OPERATIONS WHEN FEASIBLE.

2-WAY LEFT TURN LANE CLOSURE TAPER LENGTH = L/2

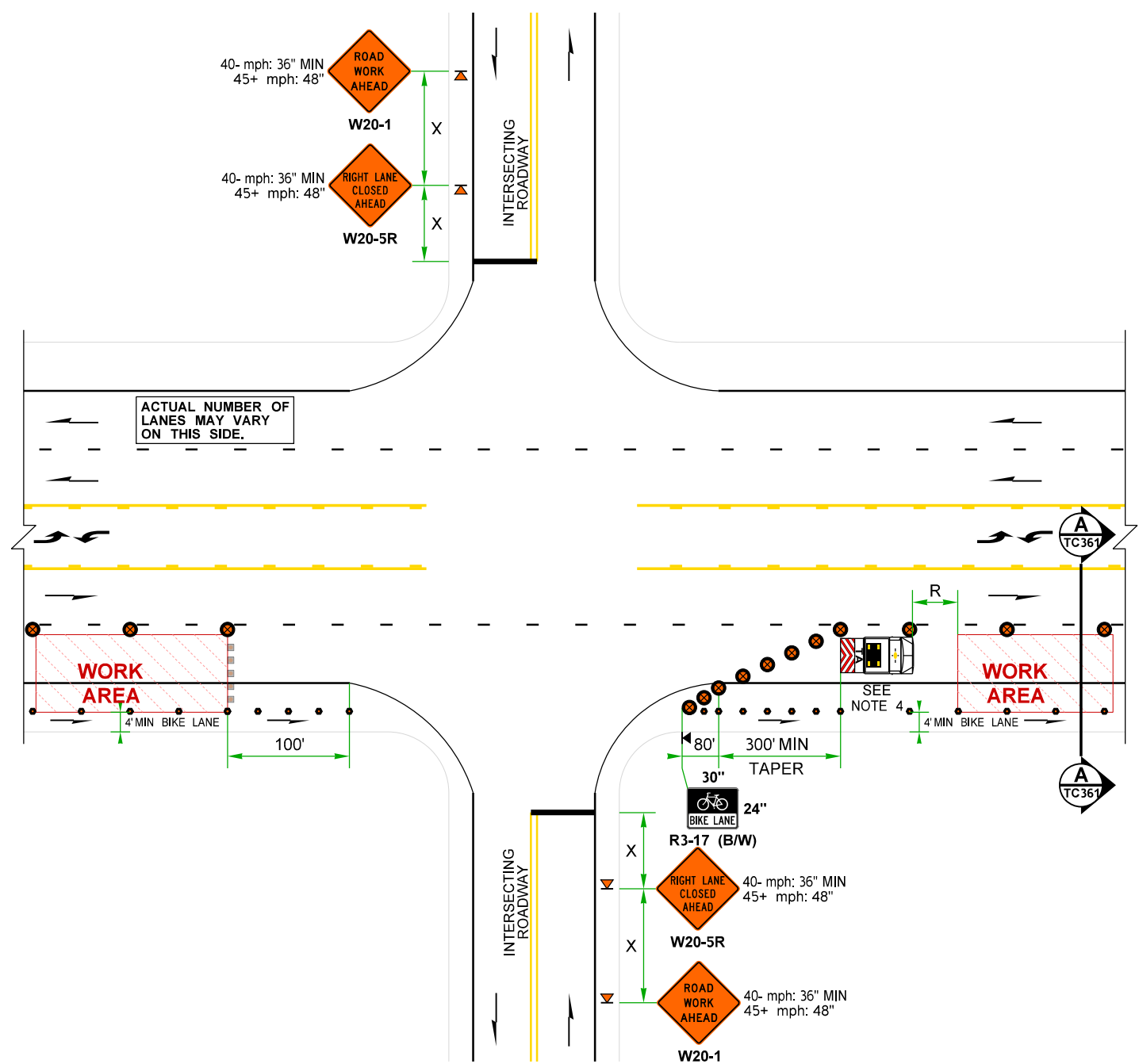
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
10'	L/2 (feet)	240	280	280	320	360
12'		280	320	360	360	400
14'		320	360	400	440	480

Lane shift length may be adjusted based on field conditions.

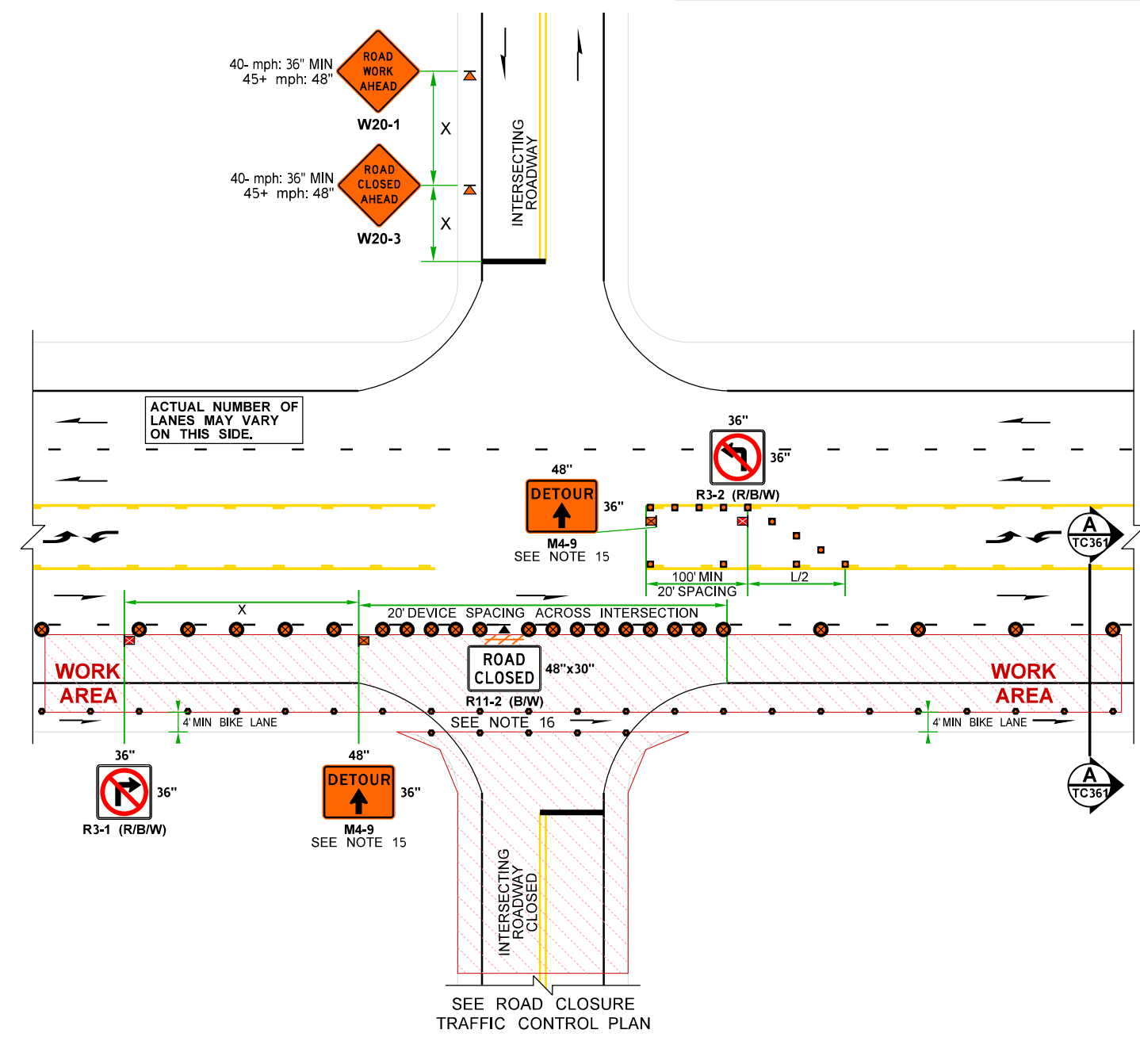
RECOMMENDED SIGN SPACING = X (1)

RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (NO TURN LANES): KEPT OPEN



AT-GRADE INTERSECTION (NO TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Washington State Department of Transportation	Plot 17
TIME	10:36:08 AM										PLAN REF NO
DATE	9/24/2024				REGION NO.	STATE	CONTRACT NO.		LOCATION NO.	SHEET 4C OF 4 SHEETS	
PLOTTED BY	LintzF				10	WASH					
DESIGNED BY					JOB NUMBER					TYPICAL TRAFFIC CONTROL PLANS	
ENTERED BY											
CHECKED BY											
PROJ. ENGR.											
REGIONAL ADM.					REVISION	DATE	BY				

NOTES:

14. FOR LEGEND, TABLES, AND ADDITIONAL NOTES: SEE TC361, SHEET 3C OR 3D.

15. SEE DETOUR PLAN FOR ADDITIONAL ROAD CLOSURE DETOUR SIGNAGE.

16. TEMP BIKE LANE ACROSS PARTIAL CLOSURE MAY BE REMOVED. IF SO, ESCORT BICYCLISTS THROUGH WORK AREA AFTER STOPPING WORK OPERATIONS WHEN FEASIBLE.

2-WAY LEFT TURN LANE CLOSURE TAPER LENGTH = L/2

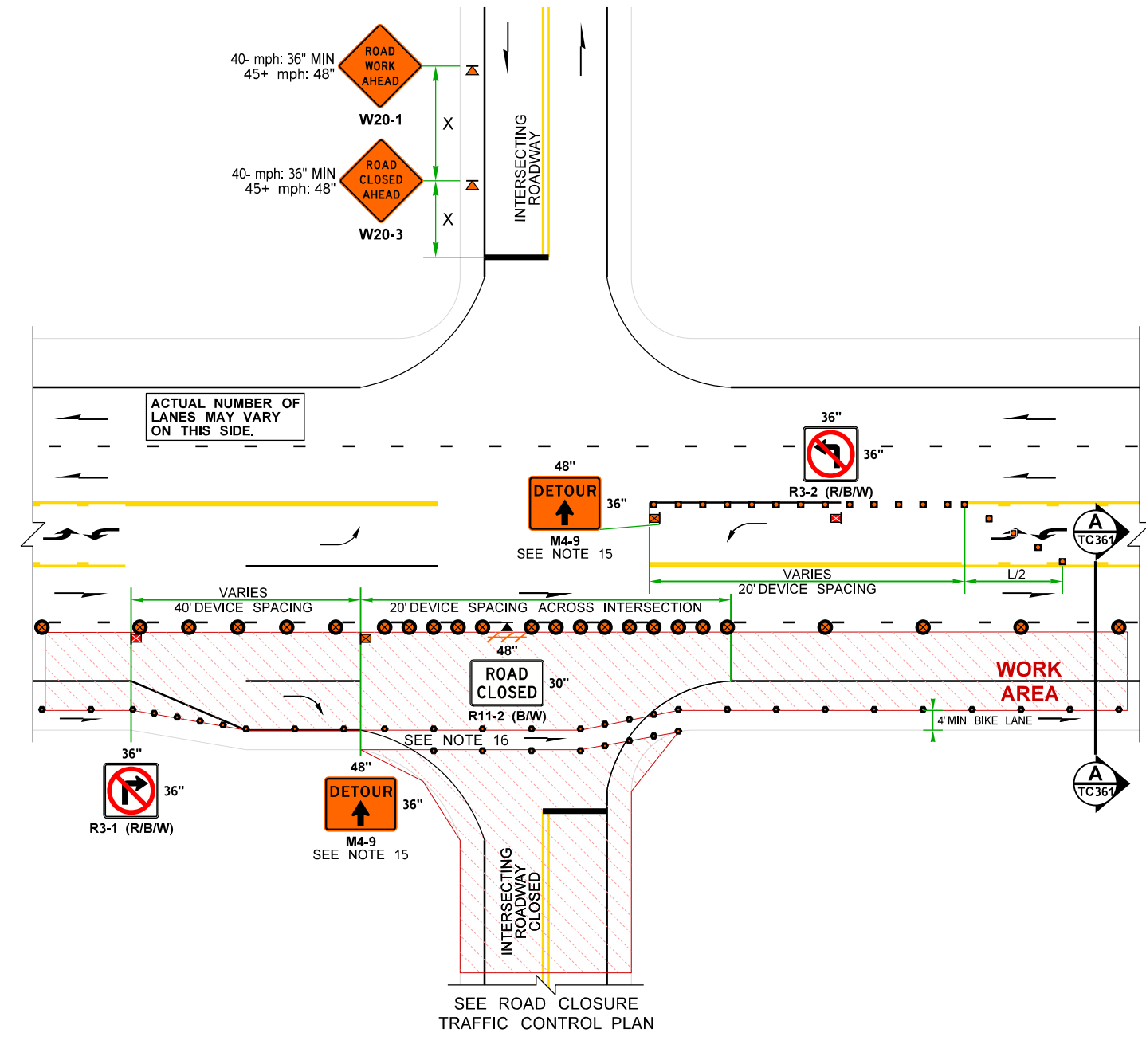
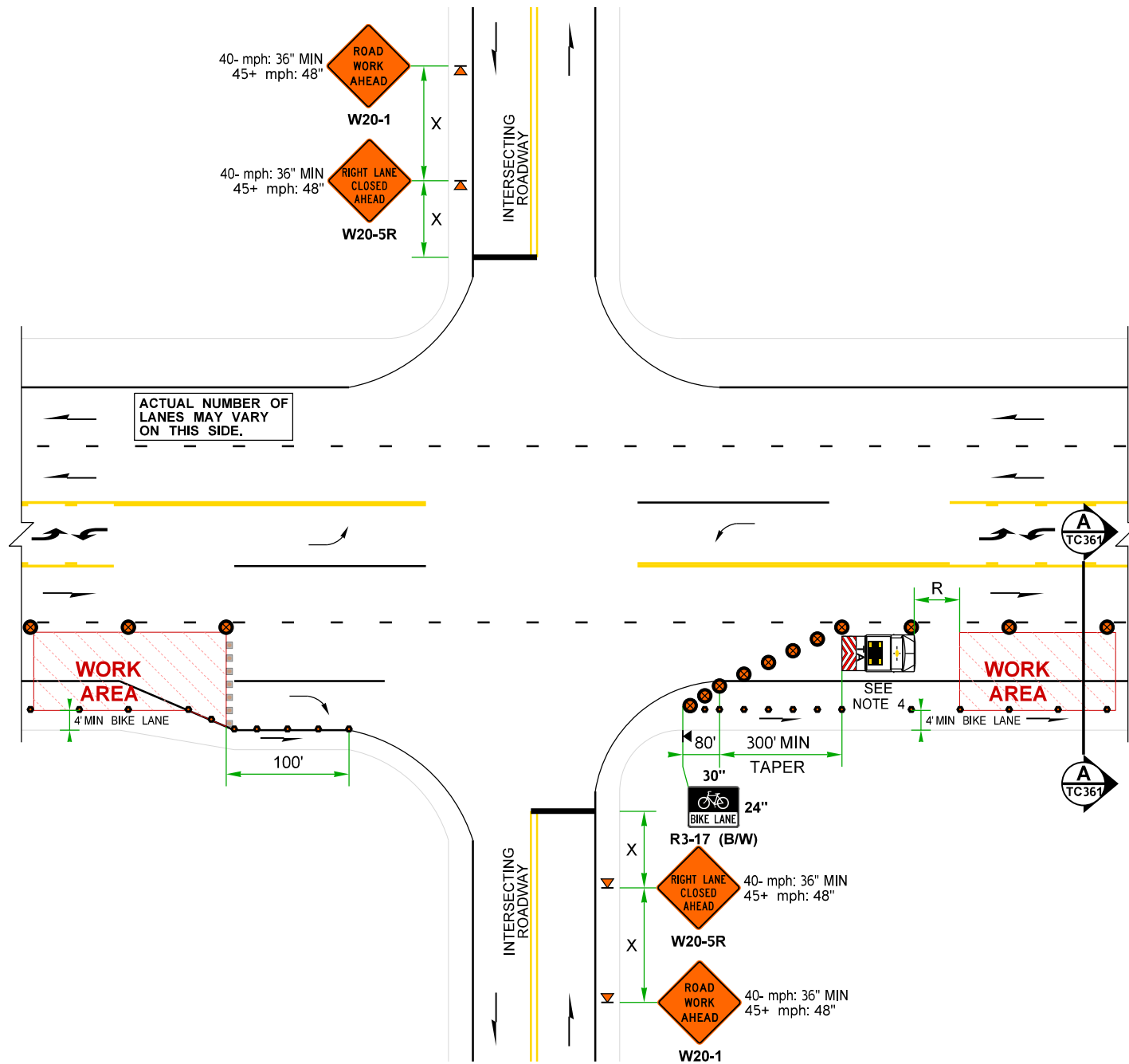
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
10'	L/2 (feet)	240	280	280	320	360
12'		280	320	360	360	400
14'		320	360	400	440	480

Lane shift length may be adjusted based on field conditions.

RECOMMENDED SIGN SPACING = X (1)

RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
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(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



AT-GRADE INTERSECTION (WITH TURN LANES): KEPT OPEN

AT-GRADE INTERSECTION (WITH TURN LANES): PARTIAL CLOSURE

MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn				FED.AID PROJ.NO.	DATE	DATE	<p>Washington State Department of Transportation</p>	Plot 18
TIME	10:36:08 AM	REGION NO.	10	STATE					WASH
DATE	9/24/2024	JOB NUMBER							SHEET 4D OF 4 SHEETS
PLOTTED BY	LintzF	CONTRACT NO.		LOCATION NO.					TYPICAL TRAFFIC CONTROL PLANS
DESIGNED BY									
ENTERED BY									
CHECKED BY									
PROJ. ENGR.									
REGIONAL ADM.		REVISION		DATE	BY				

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

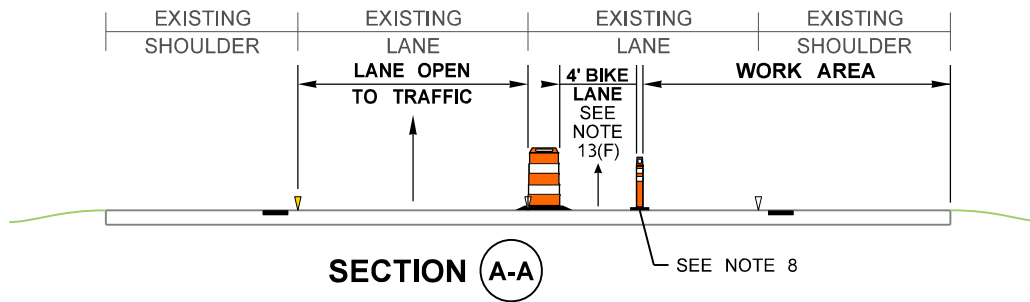
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS - ALT 2		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1± MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STANDARD SPECIFICATION 1-10.3(3)C.



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

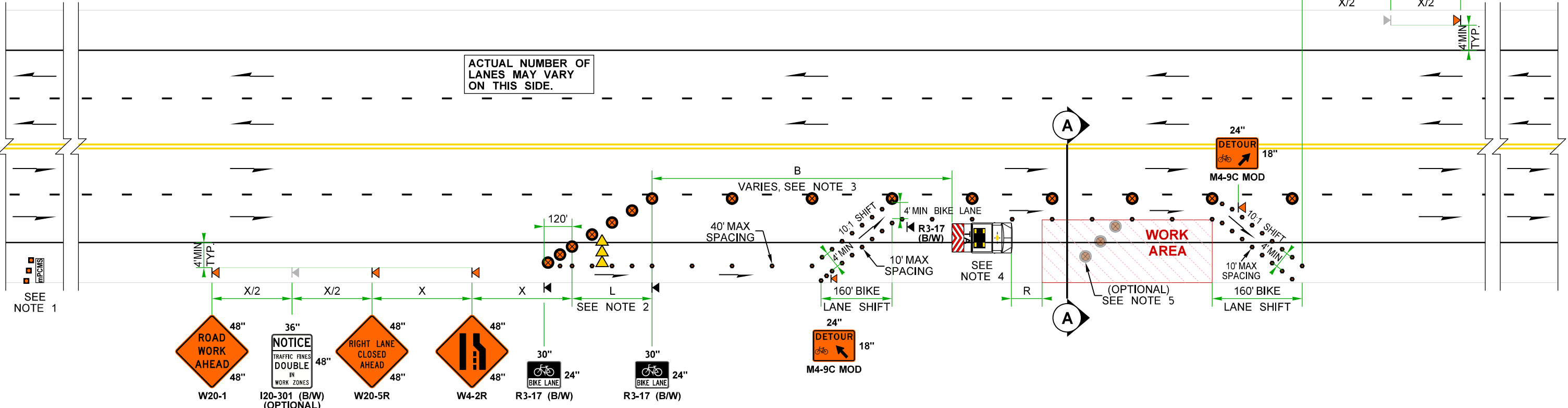
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

AVOID THIS CONFIGURATION AT INTERSECTIONS & RAMPS.



NOTES:

- FULL-SIZE PCMS (11'x 6'DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
- IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
- DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
- RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
- IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
- IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
- 28" TRAFFIC CONES, 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
- 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT LATERALLY TO PROVIDE 4' MIN BIKE LANE.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.
- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS: (A) KEEP ADJACENT SIDEWALK OR PATHWAY OPEN. (B) CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK). (C) STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA. (D) ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES: (F) PROVIDE TEMP. 4' MIN BIKE LANE THROUGH LANE CLOSURE ADJACENT TO VEHICLE TRAFFIC.

LEGEND:

- TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- SEQUENTIAL ARROW SIGN
- TRANSPORTABLE ATTENUATOR (TL-3)
- mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

4-LANE DIVIDED HIGHWAYS: SINGLE RIGHT LANE CLOSURE (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	DATE	DATE	Plot 21
TIME	10:36:09 AM	10	WASH				PLAN REF NO
DATE	9/24/2024						TC361
PLOTTED BY	LintzF						SHEET
DESIGNED BY							1E
ENTERED BY							OF
CHECKED BY							4
PROJ. ENGR.							SHEETS
REGIONAL ADM.		REVISION	DATE	BY	P.E. STAMP BOX	P.E. STAMP BOX	TYPICAL TRAFFIC CONTROL PLANS

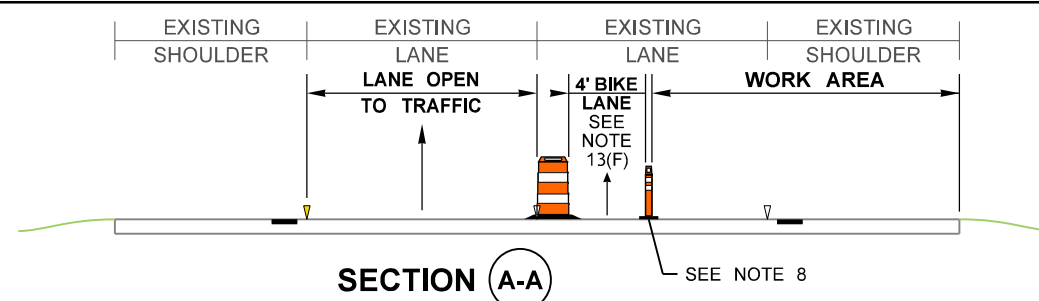
3-MILE QUEUE WARNING SYSTEM MESSAGES					
TRAFFIC SENSORS		PCMS 2		PCMS 1	
B	A	1	2	1	2
TRIGGER	SPEED	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
35+ MPH	35+ MPH	■	(Blank)	RIGHT LANE CLOSURE	1.5 MILES AHEAD
35+ MPH	< 35 MPH	LANE CLOSURE 3 MILES	TRAFFIC BACKUPS PRESENT	SLOW OR STOPPED TRAFFIC	NEXT 1.5 MILES
< 35 MPH	< 35 MPH	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	USE ALL LANES	TAKE TURNS AT MERGE

SEE QUEUE WARNING SYSTEM SPECIAL PROVISION OR RFP FOR DETAILS.

LOCATE PCMSs PER STD. SPEC 1-10.3(3)C. WHEN PCMSs/TRAFFIC SENSORS PLACED BEHIND BARRIER/GUARDRAIL, TRANSVERSE TRAFFIC DRUMS ARE NOT REQUIRED.

ADJUST QWS COMPONENTS AS NEEDED TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, INTERSECTIONS, OR TO MAINTAIN VISIBILITY OF SEQUENTIAL ARROW SIGN.

IN THE EVENT OF A SYSTEM FAILURE, SEE SPECIAL PROVISIONS OR RFP "QUEUE WARNING SYSTEM FAILURE PROTOCOL".



RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

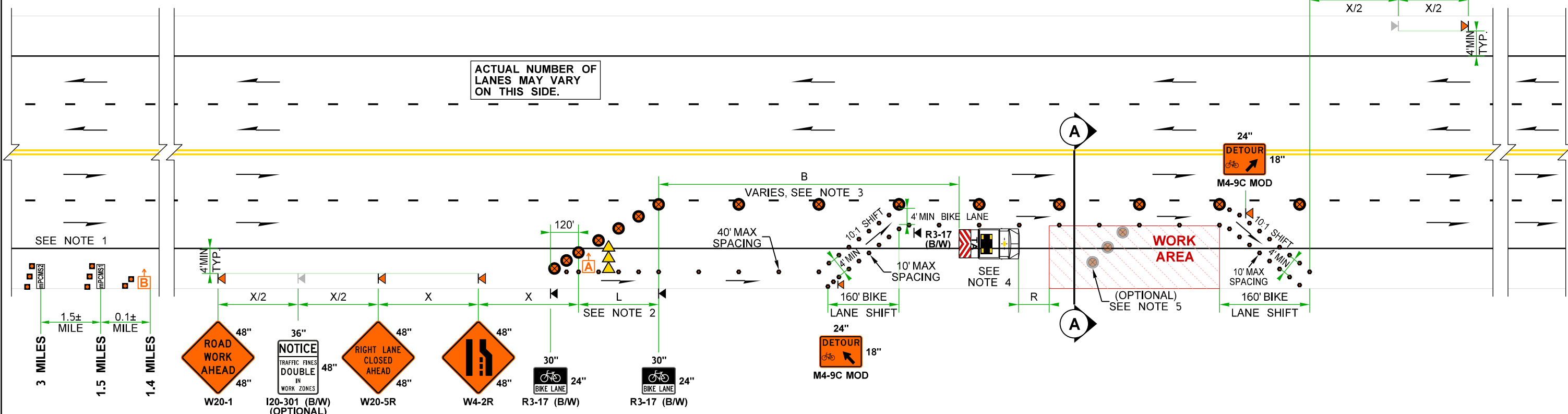
STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

AVOID THIS CONFIGURATION AT INTERSECTIONS & RAMPS.



LEGEND:

- ◀ TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- ⊠ TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- ⊗ TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- ⊕ QWS TRAFFIC SENSOR
- ▶▶▶ SEQUENTIAL ARROW SIGN
- ⊠ TRANSPORTABLE ATTENUATOR (TL-3)
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

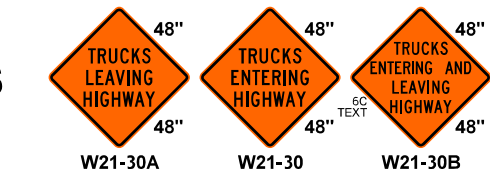
NOTES:

- FULL-SIZE PCMS (11'x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
- IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
- DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
- RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.
- IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
- IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
- 28" TRAFFIC CONES, 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
- 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT LATERALLY TO PROVIDE 4' MIN BIKE LANE.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.

4-LANE DIVIDED HIGHWAYS: SINGLE RIGHT LANE CLOSURE + 3-MILE QWS (45+ MPH, MAINTAIN EXISTING SPEED LIMIT)

NOT TO SCALE

- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - (A) KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - (B) CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - (C) STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - (D) ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - (F) PROVIDE TEMP. 4' MIN BIKE LANE THROUGH LANE CLOSURE ADJACENT TO VEHICLE TRAFFIC.



FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn			REGION NO.	STATE	FED.AID PROJ.NO.	Plot 22
TIME	10:36:10 AM			10	WASH		PLAN REF NO
DATE	9/24/2024						TC361
PLOTTED BY	LintzF			JOB NUMBER			
DESIGNED BY				CONTRACT NO.			
ENTERED BY				LOCATION NO.			
CHECKED BY							
PROJ. ENGR.							
REGIONAL ADM.	REVISION	DATE	BY	P.E. STAMP BOX	DATE	P.E. STAMP BOX	SHEET 1F OF 4 SHEETS

Washington State Department of Transportation

TYPICAL TRAFFIC CONTROL PLANS

mPCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER PER STD. SPEC. 1-10.3(3)C.

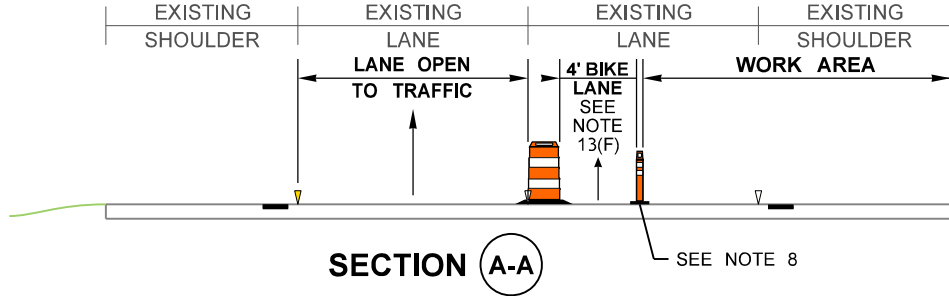
mPCMS - ALT 1		
1	2	3
RIGHT LANE CLOSURE	WATCH FOR SLOW TRAFFIC	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

USE IF TRAFFIC BACKUPS EXPECTED, BUT NOT VERIFIED HOURLY BY TCS.

mPCMS		
1	2	3
RIGHT LANE CLOSURE	SLOW TRAFFIC AHEAD	NEXT # MILES
1.5 SEC	1.5 SEC	1.5 SEC

ONLY USED IF TCS VERIFIES HOURLY THAT TRAFFIC BACKUPS ARE PRESENT.

FIELD LOCATE 1/2 MILE PRIOR TO CLOSURE TAPER OR UPSTREAM OF EXPECTED MAXIMUM TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



AVOID THIS CONFIGURATION AT INTERSECTIONS & RAMPS.

RECOMMENDED SIGN SPACING = X (1)		
RURAL HIGHWAYS	60-65 MPH	800±
RURAL ROADS	45-55 MPH	500±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

LANE CLOSURE TAPER LENGTH = L						
LANE WIDTH	SPEED (MPH)	45	50	55	60	65
12'	L (feet)	540	600	680	720	800

Avoid reducing lane closure length on 45+ mph roadways.

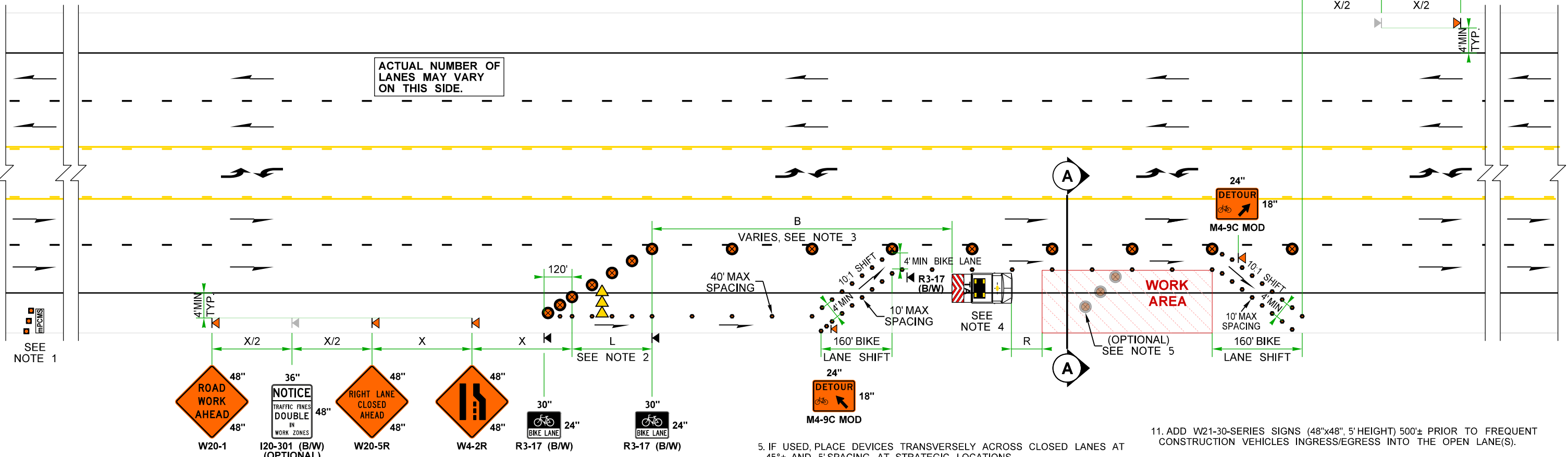
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50 - 65	40	80
45	30	60

SHOULDER CLOSURE TAPER LENGTH = L/3						
SHOULDER WIDTH	SPEED (MPH)	45	50	55	60	65
< 6'	L/3 (feet)	60	80	80	80	80
6'		90	120	120	120	160
10'		150	200	200	200	240

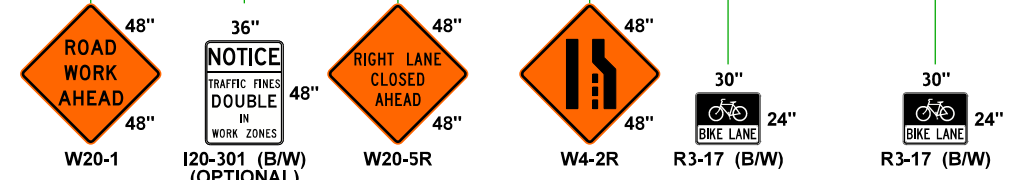
STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT LESS THAN 22,000 lbs.	HOST VEHICLE WEIGHT 22,000+ lbs.		
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	45	50	55	60	65
B (feet)	360	425	495	570	645

Buffer space may be adjusted (±) based on field conditions.

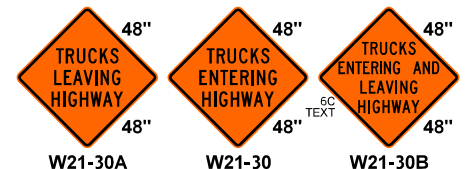


SEE NOTE 1



- IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES AT 45°± AND 5' SPACING AT STRATEGIC LOCATIONS.
- IF USED, DOWNSTREAM TAPER DEVICE SPACING IS 20'.
- 36" TRAFFIC CONES, 42" TALL CHANNELIZING DEVICES, OR TRAFFIC SAFETY DRUMS ALSO OK.
- 28" TRAFFIC CONE, 36" TRAFFIC CONE, 42" TALL CHANNELIZING DEVICE OK. DEVICE MAY SHIFT LATERALLY TO PROVIDE 4' MIN BIKE LANE.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- PLAN IS APPLICABLE TO LANE CLOSURES OF 7 DAYS OR LESS.

- ADD W21-30-SERIES SIGNS (48"x48", 5' HEIGHT) 500± PRIOR TO FREQUENT CONSTRUCTION VEHICLES INGRESS/EGRESS INTO THE OPEN LANE(S).
- PEDESTRIAN ACCOMMODATIONS, WHERE FACILITY OPEN TO PEDESTRIANS:
 - KEEP ADJACENT SIDEWALK OR PATHWAY OPEN.
 - CLOSE ADJACENT SIDEWALK OR PATHWAY. PROVIDE PEDESTRIAN DETOUR, ALTERNATE ROUTE, OR FREE SHUTTLE (WORK TRUCK, VAN, OR BUS OK).
 - STOP WORK OPS. & ESCORT PEDESTRIANS THROUGH WORK AREA.
 - ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES.
- BICYCLIST ACCOMMODATIONS, WHERE FACILITY OPEN TO BICYCLES:
 - PROVIDE TEMP. 4' MIN BIKE LANE THROUGH LANE CLOSURE ADJACENT TO VEHICLE TRAFFIC.



LEGEND:

- TEMPORARY SIGN LOCATION (1' MIN HEIGHT)
- TEMPORARY SIGN LOCATION (5' MIN HEIGHT)
- TRAFFIC SAFETY DRUM
- CHANNELIZING DEVICE (SEE NOTE 7)
- PORTABLE TUBULAR MARKER (SEE NOTE 8)
- SEQUENTIAL ARROW SIGN
- TRANSPORTABLE ATTENUATOR (TL-3)
- mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 1)

- NOTES:**
- FULL-SIZE PCMS (11'x 6' DISPLAY) MAY BE USED IN LIEU OF mPCMS. PCMS MESSAGES MAY BE MODIFIED.
 - IF FEASIBLE, AVOID PLACING LANE CLOSURE TAPER WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL AND VERTICAL CREST CURVES.
 - DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
 - RED/WHITE OR BLACK/YELLOW CHEVRON PATTERN OK. ADDITIONAL TRANSPORTABLE ATTENUATORS MAY BE ADDED BEHIND EACH WORK CREW.

SINGLE RIGHT LANE CLOSURE (45+ MPH MULTILANE HIGHWAYS WITH 2-WAY LEFT TURN LANE)

NOT TO SCALE

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\361MLHwy45+1RtLane.dgn		REGION NO. STATE		FED.AID PROJ.NO.		DATE		DATE		Plot 25	
TIME: 10:36:10 AM		10 WASH								PLAN REF NO	
DATE: 9/24/2024										TC361	
PLOTTED BY: LintzF		JOB NUMBER		LOCATION NO.						SHEET	
DESIGNED BY:										3E	
ENTERED BY:										OF	
CHECKED BY:										4	
PROJ. ENGR.:										SHEETS	
REGIONAL ADM.:		REVISION		DATE		BY		DATE		TYPICAL TRAFFIC CONTROL PLANS	



TYPICAL TRAFFIC CONTROL PLANS

WORK ZONE MICROSTATION CELLS: Updated work zone cells incorporated (September 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 e-mail 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>

PLOT USAGE EXPLANATION:

- Plot 1:** Single right lane closure maintaining existing speed limit on undivided multilane highways using a single PCMS in advance for queue mitigation.
- Plot 2:** Single right lane closure maintaining existing speed limit on undivided multilane highways using 3-Mile Queue Warning System in advance for queue mitigation.
- Plots 3-4:** Details for at-grade intersections on undivided multilane highways, including with and without turn lanes.
- Plot 5:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using a single PCMS in advance for queue mitigation.
- Plot 6:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using 3-Mile Queue Warning System in advance for queue mitigation.
- Plots 7-8:** Details for at-grade intersections on undivided multilane highways with two-way left turn lanes, including with and without turn lanes.
- Plot 11:** Single right lane closure maintaining existing speed limit on undivided multilane highways using a single PCMS in advance for queue mitigation with temporary bike lane at edge of shoulder alternative.
- Plot 12:** Single right lane closure maintaining existing speed limit on undivided multilane highways using 3-Mile Queue Warning System in advance for queue mitigation with temporary bike lane at edge of shoulder alternative.
- Plots 13-14:** Details for at-grade intersections on undivided multilane highways, including with and without turn lanes with temporary bike lane at edge of shoulder alternative.
- Plot 15:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using a single PCMS in advance for queue mitigation with temporary bike lane at edge of shoulder alternative.
- Plot 16:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using 3-Mile Queue Warning System in advance for queue mitigation with temporary bike lane at edge of shoulder alternative.
- Plots 17-18:** Details for at-grade intersections on undivided multilane highways with two-way left turn lanes, including with and without turn lanes with temporary bike lane at edge of shoulder alternative.
- Plot 21:** Single right lane closure maintaining existing speed limit on undivided multilane highways using a single PCMS in advance for queue mitigation with temporary bike lane adjacent to open lane alternative.
- Plot 22:** Single right lane closure maintaining existing speed limit on undivided multilane highways using 3-Mile Queue Warning System in advance for queue mitigation with temporary bike lane adjacent to open lane alternative.
- Plot 25:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using a single PCMS in advance for queue mitigation with temporary bike lane adjacent to open lane alternative.
- Plot 26:** Single right lane closure maintaining existing speed limit on undivided multilane highways with two-way left turn lanes using 3-Mile Queue Warning System in advance for queue mitigation with temporary bike lane adjacent to open lane alternative.

OTHER QUEUE MITIGATION PLANS: Available in Typical Traffic Control Plan Library

(<https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/plan-sheet-library/work-zone-typical-traffic-control-plans-tcp>)

- 6-Mile Queue Warning System:** See TC155. mPCMSs + channelizing devices may be used in lieu of PCMS + traffic safety drums; modify plan as needed.
- 6-Mile Smart Work Zone System:** See TC165. mPCMSs + channelizing devices may be used in lieu of PCMS + traffic safety drums; modify plan as needed.
- 9-Mile Smart Work Zone System:** See TC175. mPCMSs + channelizing devices may be used in lieu of PCMS + traffic safety drums; modify plan as needed.

MULTILANE HIGHWAYS: SINGLE RIGHT LANE CLOSURE (MAINTAIN EXISTING SPEED LIMIT)

DESIGNER NOTES:

- A. Contact Region Transportation Operations to determine if a queuing mitigation system is needed; and if so, which one is appropriate.
- B. Several alternative bicycle traffic control strategies are provided. Contact Region Transportation Operations to determine which is appropriate.
- C. These typical traffic control plans (Typical TCPs) may be modified for project-specific, site-specific situations, and/or WSDOT Region Transportation Operations standard practices. **Typical TCPs are not "Standard Plans"**.
- D. Portable Changeable Message Signs (PCMSs) are optional per MUTCD Section 6F.60 and Section 6H and are used to supplement signage and inform motorists of unexpected situations. Thus, if no work zone congestion or queuing is expected, all PCMSs on Sheet 1A, 1C, 1E, 3A, 3C, or 3E may be deleted (just using the temporary signage in advance of lane closure); it's also acceptable to delete the two PCMS-ALT messages and use the PCMS message if desired.
- E. 48"x48" diamond-shaped work zone signs used on freeway mainlines and ramps. Per MUTCD 6H-33, gating temporary signs on both shoulders is Guidance on divided highways and Optional per MUTCD Section 6F.03 P02. Based on engineering judgement, signs on left shoulders is optional on 2-lane freeways with shoulders less than 6' because it is difficult for work crews to install/remove safely and is less critical to have signs gated than on 3-lane or more freeways. If signs are barrier-mounted separating 2-way traffic or on narrow shoulders, a special rectangular-shaped 24"x48" sign should be used. See MUTCD Table 6F-1 for additional temporary sign size information.
- F. When positioned behind channelizing devices, temporary signs should be mounted at 5' minimum. **Per MUTCD 6H-42 Note 4 (Standard), a temporary "EXIT" sign shall be mounted 7' minimum when located in the temporary gore.**
- G. Work zone traffic control layout is based on the posted speed limit; for split speed limits (SPEED LIMIT 65 TRUCKS 60), use the higher 65 mph.
- H. Traffic safety drums required on 45+ mph multilane roadway lane closure and lane shift tapers and recommended on tangents per Design Manual 1010.07(1). On tangents 42" tall channelizing devices, 36" traffic cones, & 28" traffic cones allowable (vertical panel channelizing devices prohibited). Warning lights on channelizing devices being phased out in Washington. Contact Region Transportation Operations for information regarding their standard practices.
- I. Maximum channelizing device spacing table for tangents is based on WAC 468-95-301 and may ALWAYS be reduced.
- J. Sequential arrow signs (arrow boards) required at each lane closure taper on 45+ mph multilane roadways per Design Manual 1010.07(4).
- K. Longitudinal buffer spaces (B) are optional per MUTCD Section 6C.06 but is desired when practical. Longitudinal buffers are the most adjustable component that may be increased/decreased to move lane closure tapers away from horizontal/vertical curves and from on-ramp merges.
- L. The lateral buffer (transverse distance between open travel lanes and work area) is typically 2 feet on 45+ mph highways but may be reduced based on engineering judgement. Per MUTCD 6C.06, lateral buffer is optional. Actual work area limits may be modified.
- M. Per MUTCD Figure 6C-2, the downstream taper is optional. Eliminating it allows construction vehicles to accelerate out of work area into reopened lane to minimize traffic impacts and increase safety.
- N. The 300' minimum taper downstream of at-grade intersections may be increased to "L" where feasible. A temporary 160' right-turn pocket within the closed right lane may be provided in advance of at-grade intersections where feasible.
- O. 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

INFORMATIONAL USE ONLY

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

DESIGNER GUIDANCE

Plot 9

TC361