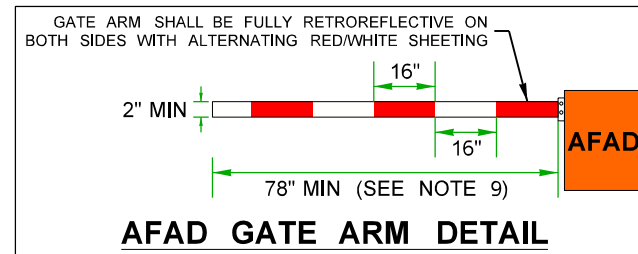
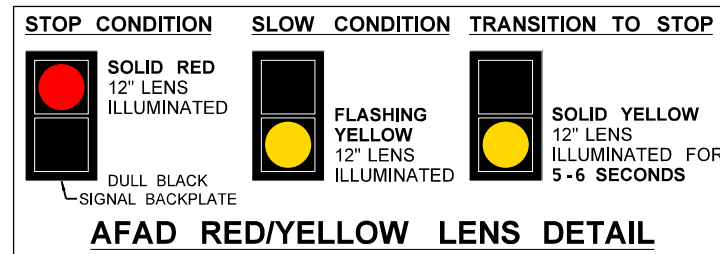


RECOMMENDED SIGN SPACING = X (1)		
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350±
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25-30 MPH	200± (2)
URBAN STREETS	25 MPH OR LESS	100± (2)

(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.

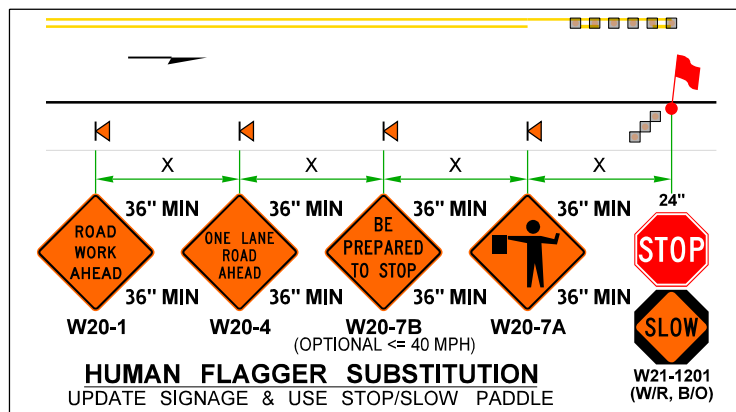
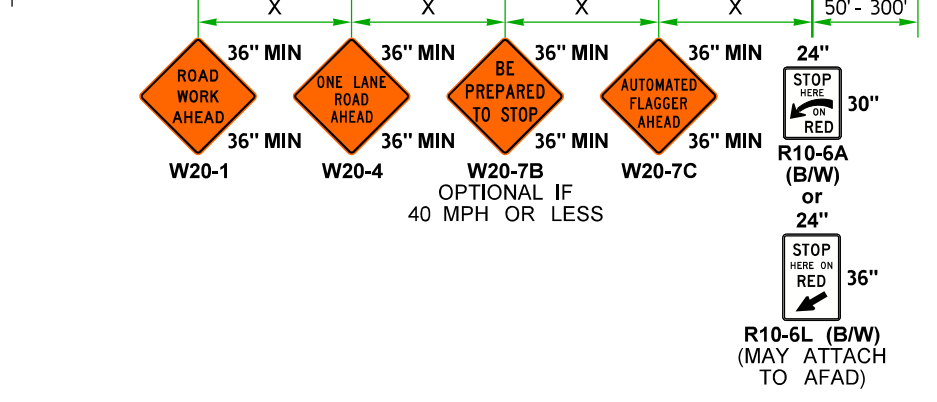
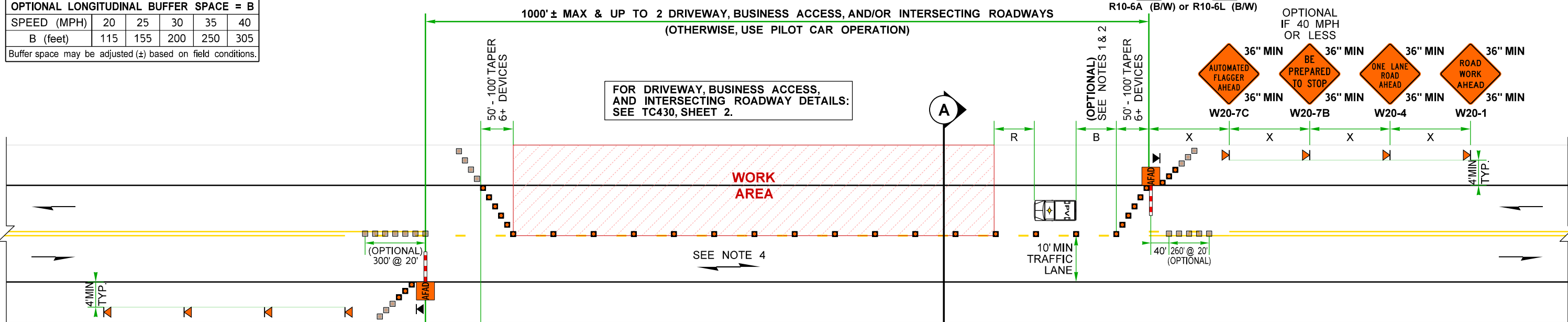
OPTIONAL LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	20	25	30	35	40
B (feet)	115	155	200	250	305

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



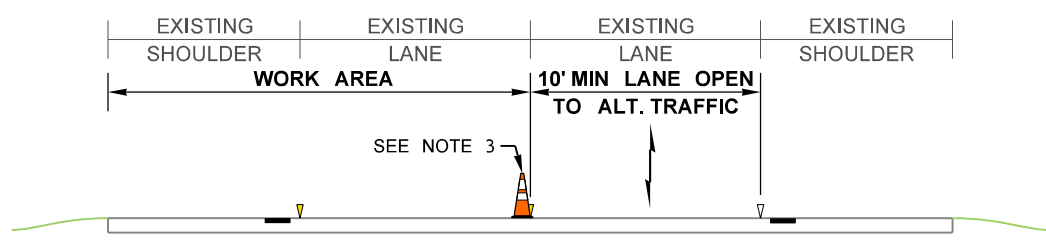
PROTECTIVE VEHICLE ROLL AHEAD DISTANCE = R
STRATEGICALLY POSITION WORK VEHICLE TO PROTECT WORK CREW.
40' - 80' RECOMMENDED.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
35 - 40	10-20	60
20 - 30	10-20	40



- NOTES:**
- AVOID PLACING LANE CLOSURE TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL & VERTICAL CURVES BY ADJUSTING LONGITUDINAL BUFFER SPACE.
 - PROTECTIVE VEHICLE MAY ALWAYS BE USED ON ROADWAYS 40 MPH OR LESS, EVEN IF THE LONGITUDINAL BUFFER SPACE IS REDUCED OR ELIMINATED. ADDITIONAL PVs MAY BE ADDED AT SEPARATE WORK CREWS.
 - MAY SHIFT LATERALLY. 36" TRAFFIC CONES, 42" TALL CHANNELIZATION DEVICES, OR TRAFFIC SAFETY DRUMS OK.
 - PEDESTRIAN & BICYCLIST ACCOMMODATIONS (ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES):
(A) ALLOW PEDESTRIANS TO USE THE PAVED SHOULDER OR ADJACENT PATH OPPOSITE THE WORK AREA
(B) COMBINE BIKES & VEHICULAR TRAFFIC. BIKES TO CLEAR PRIOR TO RELEASING ONCOMING TRAFFIC
(C) PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS MAY BE USED)
 - SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS:
1-07.8(1) HIGH-VISIBILITY APPAREL
1-10.3(1)A AFADs AND NIGHTTIME ILLUMINATION
1-10.3(2)A TRAFFIC CONTROL PROCEDURES
9-35.1 24-INCH STOP/SLOW PADDLE SIZE
 - FOR PROJECT-SPECIFIC REQUIREMENTS, SEE SPECIAL PROVISIONS.
 - SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
 - EACH AFAD OPERATED BY AFAD-TRAINED FLAGGER WHO VISUALLY SEES BOTH AFAD AND APPROACHING TRAFFIC (DIGITAL ALTERNATIVES OK). LEAVING AFAD UNATTENDED WHEN IN OPERATION IS PROHIBITED.
 - AFAD GATE ARM DESCENDS AFTER RED LENS DISPLAYED & SHALL REACH HALFWAY ACROSS THE CONTROLLED LANE AND ASCENDS TO UPRIGHT POSITION ON FLASHING YELLOW LENS DISPLAY.
 - EXISTING PAVEMENT MARKINGS MAY VARY.

- LEGEND:**
- TEMPORARY SIGN LOCATION
 - 28" REFLECTIVE TRAFFIC CONE (SEE NOTE 3)
 - OPTIONAL CHANNELIZATION DEVICE
 - PROTECTIVE VEHICLE (SEE NOTE 2)
 - AFAD - AUTOMATED FLAGGER ASSISTANCE DEVICE (SEE NOTES 8 & 9)
 - FLAGGER (SEE NOTE 8)



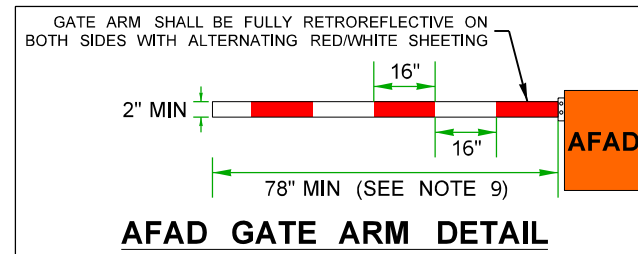
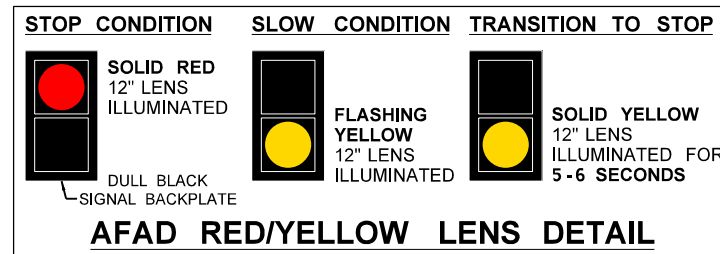
SECTION A-A
ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED
(HIGHWAYS, 40 MPH OR LESS)
NOT TO SCALE

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DATE	4/2/2024							TC430
PLOTTED BY	LintzF				JOB NUMBER			SHEET
DESIGNED BY					CONTRACT NO.	LOCATION NO.		1
ENTERED BY								OF
CHECKED BY								4
PROJ. ENGR.								SHEETS
REGIONAL ADM.		REVISION	DATE	BY				TYPICAL TRAFFIC CONTROL PLANS

RECOMMENDED SIGN SPACING = X (1)		
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)

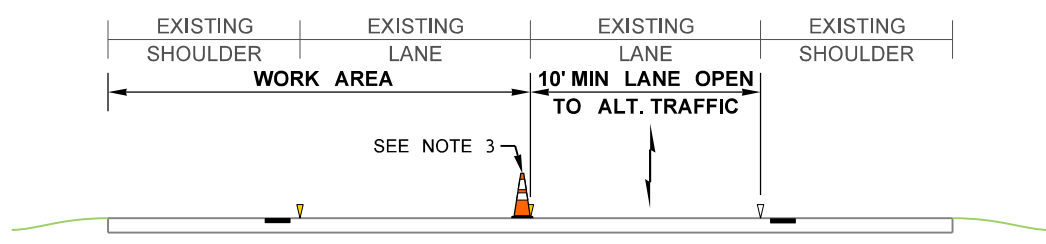
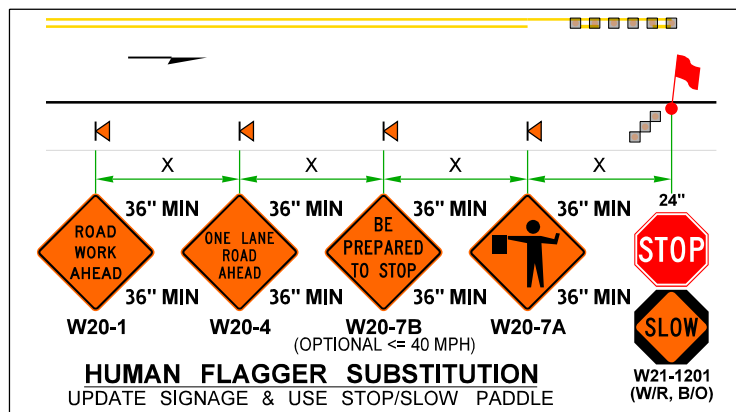
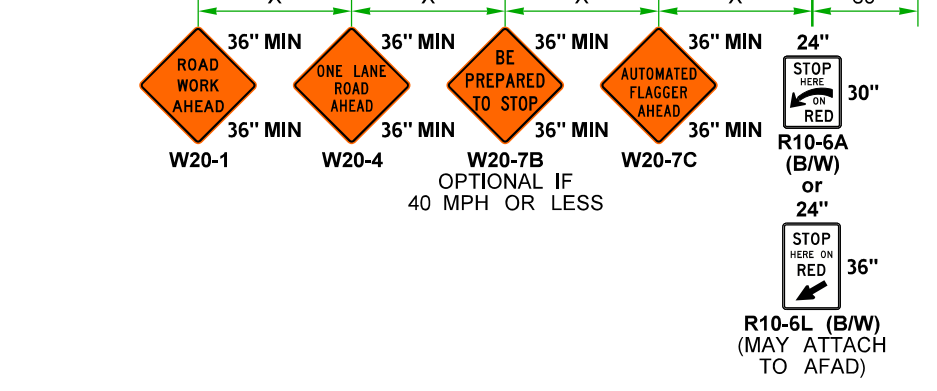
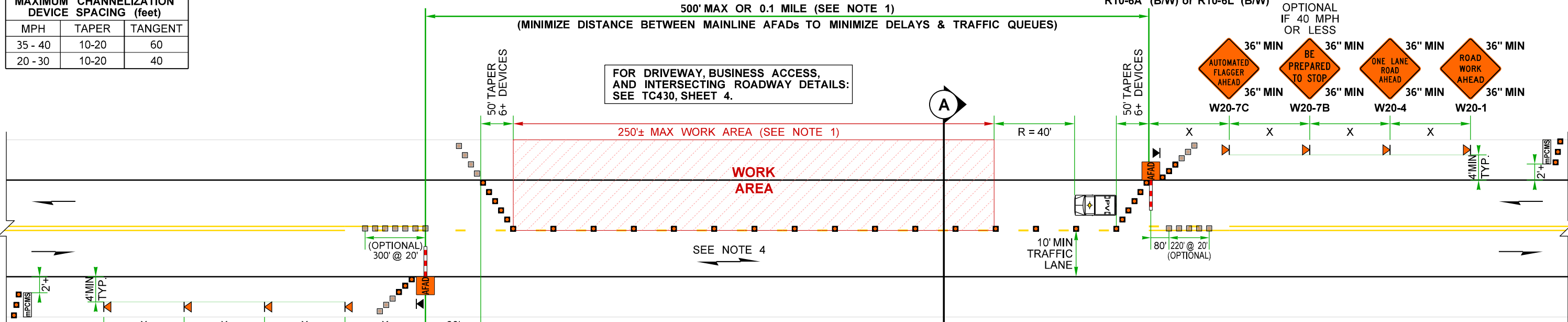
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
35 - 40	10-20	60
20 - 30	10-20	40



mPCMS	
1	2
ROBO-FLAGGER AHEAD	WATCH 4 STOPPED TRAFFIC
2.0 SEC	2.0 SEC

FIELD LOCATE 1/2 ± MILE PRIOR TO AFAD OR PRIOR TO EXPECTED TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



SECTION A-A

ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED
(HIGH VOLUME HIGHWAYS, 40 MPH OR LESS)
NOT TO SCALE

NOTES:

- DISTANCE GREATER THAN 500' BETWEEN MAINLINE AFADs REQUIRES ACCEPTANCE FROM REGION TRANSPORTATION OPERATIONS. THIS ENHANCED PLAN IS APPLICABLE TO HIGH VOLUME HIGHWAYS WITH 800+ VEHICLES/HOUR IN ALL DIRECTIONS. WORK AREA LENGTH ADJUSTS ACCORDINGLY.
- FLAGGERS' GOAL IS TO MAXIMIZE TRAFFIC CAPACITY BY MINIMIZING TRAFFIC GAPS & LOST TIME. STRATEGIES: (A) DON'T WAIT FOR APPROACHING TRAFFIC AFTER QUEUE RELEASED. LET THEM WAIT FOR THE NEXT TURN.
- MAY SHIFT LATERALLY. 36" TRAFFIC CONES, 42" TALL CHANNELIZATION DEVICES, OR TRAFFIC SAFETY DRUMS OK.
- PEDESTRIAN & BICYCLIST ACCOMMODATIONS (ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES): (A) ALLOW PEDESTRIANS TO USE THE PAVED SHOULDER OR ADJACENT PATH OPPOSITE THE WORK AREA (B) COMBINE BIKES & VEHICULAR TRAFFIC. BIKES TO CLEAR PRIOR TO RELEASING ONCOMING TRAFFIC (C) PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS MAY BE USED)
- SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS:
1-07.8(1) HIGH-VISIBILITY APPAREL
1-10.3(1)A AFADs AND NIGHTTIME ILLUMINATION
1-10.3(2)A TRAFFIC CONTROL PROCEDURES
9-35.1 24-INCH STOP/SLOW PADDLE SIZE
- FOR PROJECT-SPECIFIC REQUIREMENTS, SEE SPECIAL PROVISIONS.
- SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
- EACH AFAD OPERATED BY AFAD-TRAINED FLAGGER WHO VISUALLY SEES BOTH AFAD AND APPROACHING TRAFFIC (DIGITAL ALTERNATIVES OK). LEAVING AFAD UNATTENDED WHEN IN OPERATION IS PROHIBITED.
- AFAD GATE ARM DESCENDS AFTER RED LENS DISPLAYED & SHALL REACH HALFWAY ACROSS THE CONTROLLED LANE AND ASCENDS TO UPRIGHT POSITION ON FLASHING YELLOW LENS DISPLAY.
- FULL-SIZE PCMS (11'x 6'DISPLAY) MAY BE USED IN LIEU OF mPCMSs. PCMS MESSAGES MAY BE MODIFIED.
- EXISTING PAVEMENT MARKINGS MAY VARY.

LEGEND:

- TEMPORARY SIGN LOCATION
- 28" REFLECTIVE TRAFFIC CONE (SEE NOTE 3)
- OPTIONAL CHANNELIZATION DEVICE
- PROTECTIVE VEHICLE
- AFAD AUTOMATED FLAGGER ASSISTANCE DEVICE (SEE NOTES 8 & 9)
- FLAGGER (SEE NOTE 8)
- mPCMS mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 10)

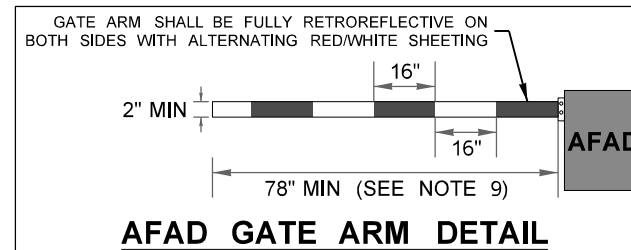
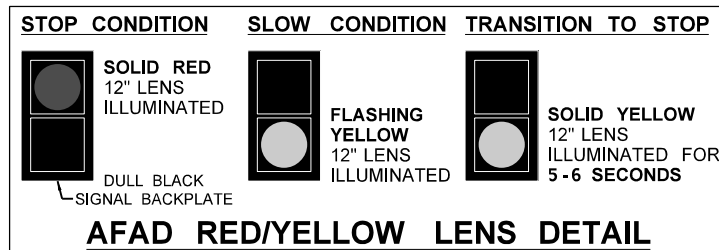
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TIME	2:06:38 PM			10	WASH		PLAN REF NO
DATE	4/2/2024						TC430
PLOTTED BY	LintzF			JOB NUMBER			SHEET
DESIGNED BY				CONTRACT NO.	LOCATION NO.		3
ENTERED BY							OF
CHECKED BY							4
PROJ. ENGR.							SHEETS
REGIONAL ADM.	REVISION	DATE	BY				TYPICAL TRAFFIC CONTROL PLANS



RECOMMENDED SIGN SPACING = X (1)		
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)

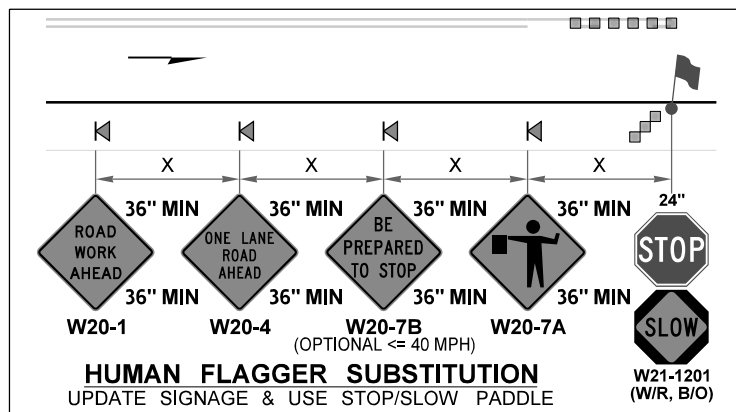
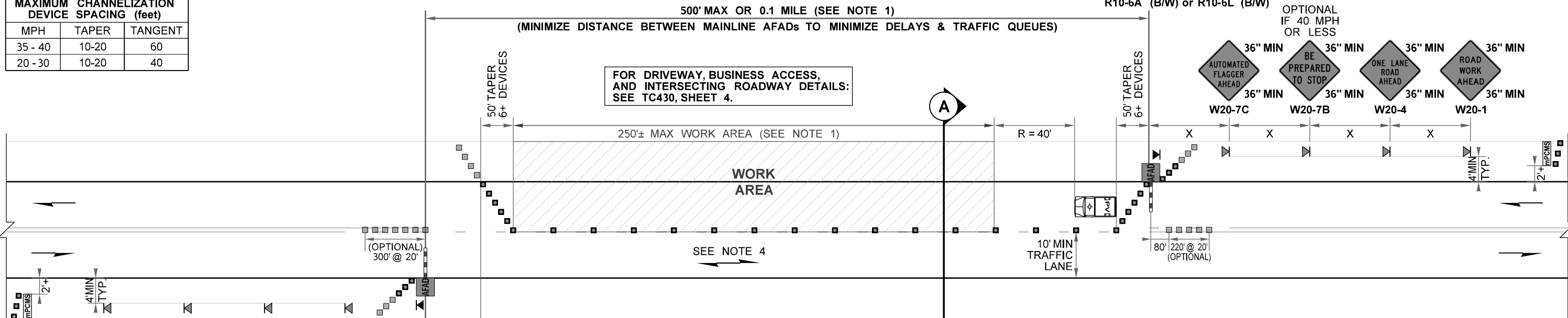
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(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
35 - 40	10-20	60
20 - 30	10-20	40



mPCMS	
1	2
ROBO-FLAGGER AHEAD	WATCH 4 STOPPED TRAFFIC
2.0 SEC	2.0 SEC

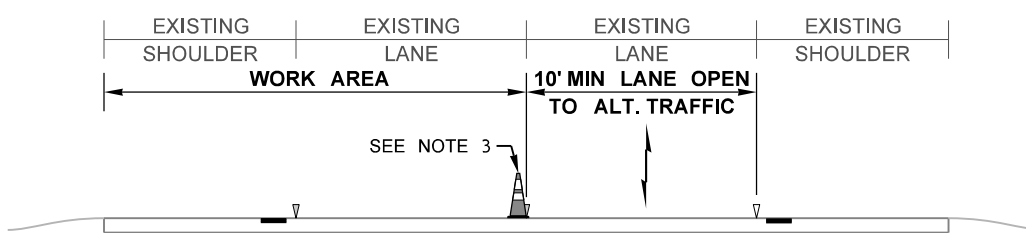
FIELD LOCATE 1/2 ± MILE PRIOR TO AFAD OR PRIOR TO EXPECTED TRAFFIC QUEUE PER STD. SPEC. 1-10.3(3)C.



- NOTES:**
- DISTANCE GREATER THAN 500' BETWEEN MAINLINE AFADS REQUIRES ACCEPTANCE FROM REGION TRANSPORTATION OPERATIONS. THIS ENHANCED PLAN IS APPLICABLE TO HIGH VOLUME HIGHWAYS WITH 800+ VEHICLES/HOUR IN ALL DIRECTIONS. WORK AREA LENGTH ADJUSTS ACCORDINGLY.
 - FLAGGERS' GOAL IS TO MAXIMIZE TRAFFIC CAPACITY BY MINIMIZING TRAFFIC GAPS & LOST TIME. STRATEGIES: (A) DON'T WAIT FOR APPROACHING TRAFFIC AFTER QUEUE RELEASED. LET THEM WAIT FOR THE NEXT TURN.
 - MAY SHIFT LATERALLY. 36" TRAFFIC CONES, 42" TALL CHANNELIZATION DEVICES, OR TRAFFIC SAFETY DRUMS OK.
 - PEDESTRIAN & BICYCLIST ACCOMMODATIONS (ENGINEER TO ACCEPT ANY ALTERNATIVE STRATEGIES): (A) ALLOW PEDESTRIANS TO USE THE PAVED SHOULDER OR ADJACENT PATH OPPOSITE THE WORK AREA (B) COMBINE BIKES & VEHICULAR TRAFFIC. BIKES TO CLEAR PRIOR TO RELEASING ONCOMING TRAFFIC (C) PROVIDE FREE SHUTTLE (WORK TRUCK, VAN, OR BUS MAY BE USED)
 - SEE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS: 1-07.8(1) HIGH-VISIBILITY APPAREL 1-10.3(1)A AFADS AND NIGHTTIME ILLUMINATION 1-10.3(2)A TRAFFIC CONTROL PROCEDURES 9-35.1 24-INCH STOP/SLOW PADDLE SIZE
 - FOR PROJECT-SPECIFIC REQUIREMENTS, SEE SPECIAL PROVISIONS.
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 - FULL-SIZE PCMS (11'x 6'DISPLAY) MAY BE USED IN LIEU OF mPCMSs. PCMS MESSAGES MAY BE MODIFIED.
 - EXISTING PAVEMENT MARKINGS MAY VARY.

LEGEND:

- TEMPORARY SIGN LOCATION
- 28" REFLECTIVE TRAFFIC CONE (SEE NOTE 3)
- OPTIONAL CHANNELIZATION DEVICE
- PROTECTIVE VEHICLE
- AUTOMATED FLAGGER ASSISTANCE DEVICE (SEE NOTES 8 & 9)
- FLAGGER (SEE NOTE 8)
- mini PORTABLE CHANGEABLE MESSAGE SIGN (PCMS OK, SEE NOTE 10)



SECTION A-A
ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED
(HIGH VOLUME HIGHWAYS, 40 MPH OR LESS)
NOT TO SCALE

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\430Hwy40-AltTrafficAFAD.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Plot 3
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DATE	4/2/2024				TC430
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DESIGNED BY		CONTRACT NO.			3
ENTERED BY		LOCATION NO.			OF
CHECKED BY					4
PROJ. ENGR.					SHEETS
REGIONAL ADM.		REVISION	DATE	BY	TYPICAL TRAFFIC CONTROL PLANS

WORK ZONE MICROSTATION CELLS: Updated work zone cells incorporated (April 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>

TYPICAL TCP USAGE EXPLANATION:

Plot 1: AFAD-controlled 1-lane, 2-way alternating traffic on the mainline for 2-lane highways 40 mph or less with a shared bicycle-vehicle lane.

Plot 2: Details for intersecting roadways and driveway/business access for Plot 1.

Plot 3: AFAD-controlled 1-lane, 2-way alternating traffic on the mainline for 2-lane highways 40 mph with a shared bicycle-vehicle lane for high traffic volumes (800+ vehicles/hour in all directions) by minimizing the distance between mainline AFAD/flaggers.

Plot 4: Details for intersecting roadways and driveway/business access for Plot 3.

Other Alternating Traffic TCPs (45+ mph): See 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>)

- * TC320s for flagger-controlled alternating traffic plans
- * TC330s for AFAD-controlled alternating traffic plans
- * TC340s for temporary signal-controlled alternating traffic plans
- * TC350s for traffic holds

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

Other Alternating Traffic TCPs (40 mph or less): See 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>)

- * TC420s for flagger-controlled alternating traffic
- * TC430s for other variations of AFAD-controlled alternating traffic
- * TC440s for temporary signal-controlled alternating traffic plans
- * TC450s for traffic holds

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

DESIGNER NOTES:

- A. Contact Region Transportation Operations to determine which Typical TCP(s) to utilize, as there are several variations available (or soon will be).
- B. These typical traffic control plans may be modified for site specific situations and/or WSDOT Region Transportation Operations standard practices. **Typical TCPs are not "Standard Plans".**
- C. **Do not use intermittent (old: "variable") regulatory work zone speed limit reductions for flagging or AFAD operations.** Instead, maintain the existing speed limit (or continuous regulatory work zone speed limit reduction, if applicable). See WSDOT Traffic Manual Section 5-18 and Executive Order E1060 regulatory speed limit reductions & advisory speed approval policy for work zones thru Region Transportation Operations.
- D. See MUTCD Table 6F-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently.
- E. WAC 468-95-300 modifies MUTCD Table 6-1 "Recommended Advance Warning Sign Minimum Spacing". Sign spacing may be adjusted for field conditions based on engineering judgement. The Sign Spacing table is acceptable to use in Typical TCPs; however, site-specific traffic control plans should include actual sign spacing values (with Å) that have been verified in the field, on SR view, or via Google Maps.
- F. When positioned behind channelizing devices, temporary signs should be mounted at 5' minimum.
- G. For this Typical TCP, the work zone design speed is based on the existing posted speed limit for sign spacing, channelizing device spacing, buffer, and roll ahead distances.
- H. "Flagger tapers" are always 50'-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 "L" for these tapers.
- I. Channelization devices types may be modified (vertical panel channelizing devices prohibited). 28" reflective traffic cones are recommended on flagger-controlled alternating traffic (especially for access delineation to maintain visibility for turning motorists). 36" reflective traffic cones, 42" tall channelizing devices, or traffic safety drums may be used. Warning lights on channelizing devices is being phased out in Washington. Contact Region Transportation Operations for information regarding their standard practices.
- J. Maximum channelizing device spacing table for tangents is based on WAC 468-95-301 and may ALWAYS be reduced.
- K. Sequential arrow boards are prohibited at flagger tapers per WSDOT standard practice and per MUTCD Guidance TA-10.
- L. Per MUTCD Section 6C.06, longitudinal buffer spaces are optional. Using longitudinal buffer spaces listed in MUTCD Table 6C-2 is recommended as best practice when feasible, but may be adjusted based on engineering judgement. The Longitudinal Buffer Space table is acceptable in Typical TCPs; however, site-specific traffic control plans should include actual buffer distances that have been verified in the field, on SR view, or via Google Maps.
- M. The lateral buffer (transverse distance between open travel lanes and work area) is optional. No lateral buffer has been provided in these Typical TCPs due to the low speeds of alternating traffic. Actual work area limits may be modified.
- N. On roadways 40 mph or less, WSDOT best practice is to place a protective vehicle (PV) in the closed lane in advance of the work area with a full longitudinal buffer space to provide errant vehicles an opportunity to stop before impacting the PV. On roadways 40 mph or less, the longitudinal buffer is optional and may be eliminated (still okay to use PV, upgrading to transportable attenuator is not required). Additional PVs (or TAs) may be added prior to multiple work crews within a work area. Contact Region Transportation Operations for their standard practice.
- O. Placing channelizing devices transversely (at 45° and 5-foot spacing) is an optional strategy to stop move errant drivers traveling within the closed lane(s) but is not shown in the Typical TCP.
- P. The downstream taper of 50'-100' is required on 1-lane, 2-way traffic configurations.
- Q. Duration of traffic holds for driveways, business accesses, and/or roadway approaches is listed as 5 minutes (1 minute on high volume highways) in this Typical Traffic Control Plan, but may be adjusted. Contact Region Transportation Operations for additional guidance.
- R. When utilizing AFADs in Contracts, include the three Section 1-10 General Special Provisions for Specification, Measurement, and Payment. <https://wsdot.wa.gov/publications/fulltext/projectdev/gsp/pdf/egsp1.pdf>
 - * 1-10.1(1).OPT1.GR1 (AFAD Materials GSP)
 - * 1-10.3(3).OPT1.GR1 (AFAD Specifications GSP)
 - * 1-10.4(2).OPT2.GR1 (AFAD Measurement GSP)
 - * 1-10.5(2).OPT1.GR1 (AFAD Payment GSP)

ALTERNATING 1-LANE, 2-WAY TRAFFIC: AFAD-CONTROLLED (HIGHWAYS, 40 MPH OR LESS)

INFORMATIONAL USE ONLY

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

DESIGNER GUIDANCE

Plot 5

TC430