

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

14H Fort Bend County Engineering Department 301 Jackson Suite 401

301 Jackson Suite 401 Richmond, Texas 77469 281.633.7500 Permits@fortbendcountytx.gov

X Right of Way Permi	
Permit No: 2018-22399	
Applicants Windows Communications 11.0	
Applicant: Windstream Communications, LLC	
Job Location Site: West Airport Boulevard, Richmond, T	X 77407
Bond No Date of Bond:4/13/2018	Amount:\$50,000.00
The above applicant came to make use of certain Fort Bend Co Laying, Construction, Maintenance, and Repair of Buried Cable Roads, Streets, Highways, and Drainage Ditches in Fort Bend Co Commissioners Court of Fort Bend County, Texas," as passed b Texas, of the Minutes of the Commissioners Court of Fort Bend inconsistant with Chapter 181, Vernon's Texas Statutes and Co	s, Conduits, and Pole Lines, In, Under, Across or Along ounty, Texas, Under the Jurisdiction of the y the Commissioners Court of Fort Bend County, d County, Texas, to the extent that such order is not
1	
 Evidence of review by the Commissioners Court must be grounds for job shutdown. Written notices are required: a. 48 hours in advance of construction start to b. When construction is completed and readed Administrator thru MyGovernmentOnline. This permit expires one (1) year from date of permit if conditions to the permit applies to work performed within right-of-work and it is the responsibility of the applicant to acquire all 	up, and y for final inspection, submit notification to Permit org portal. onstruction has not commenced. rays owned and maintained by Fort Bend County only,
On this 13th day of November, 2018, Upon Motion of Commissioner, duly put and carr notice of said above purpose is hereby acknowledged by the C that said notice be placed on record according to the regulation	ied, it is ORDERED, ADJUDGED AND DECREED that said ommissioners Court of Fort Bend County, Texas, and
	sented to Commissioners Court and approved. e Recorded 11-16-2018 Comm. Court No. 14-14
By: Drainage District Engineer/Manager Cler	k of Commissioners Court Deputy Deputy



PERMIT APPLICATION REVIEW FORM FOR CABLE, CONDUIT, AND POLE LINE ACTIVITY IN FORT BEND COUNTY

Fort Bend County Engineering Department 301 Jackson Suite 401

301 Jackson Suite 401 Richmond, Texas 77469 281.633.7500 Permits@fortbendcountytx.gov

The state of the s	X Right of Way	Permit	
[Commercial	Driveway Permit	
	 Permit No: 2018-2	2399	
The following "Notice of Proposed Ca attachments have been reviewed and of Fort Bend County, Texas.			Fort Bend County" and accompanying ulations set by Commissioner's Court
(1) COMPLETE APPLICATION FORM:			
X a. Name of road, stre	et, and/or drainage	ditch affected.	
χ b. Vicinity map showi	ng course of direction	ons	
X c. Plans and specificat	ions		
(2) BOND:			
County Attorney, app applicable.	roval when		
X Perpetual bond current posted.	ntly Bond No	o:	Amount: \$50,000.00
Performance bond su	bmitted. Bond No):	Amount:
Cashier's Check	Check N	o:	Amount:
(3) DRAINAGE DISTRICT APPROV	/AL (WHEN APPLI	CABLE):	
Drainage District Approval		Date	-
We have reviewed this project and	agree it meets mir	nimum requirements.	•
han Eghten	-	_	11/5/2018
Permit Administrator			Date

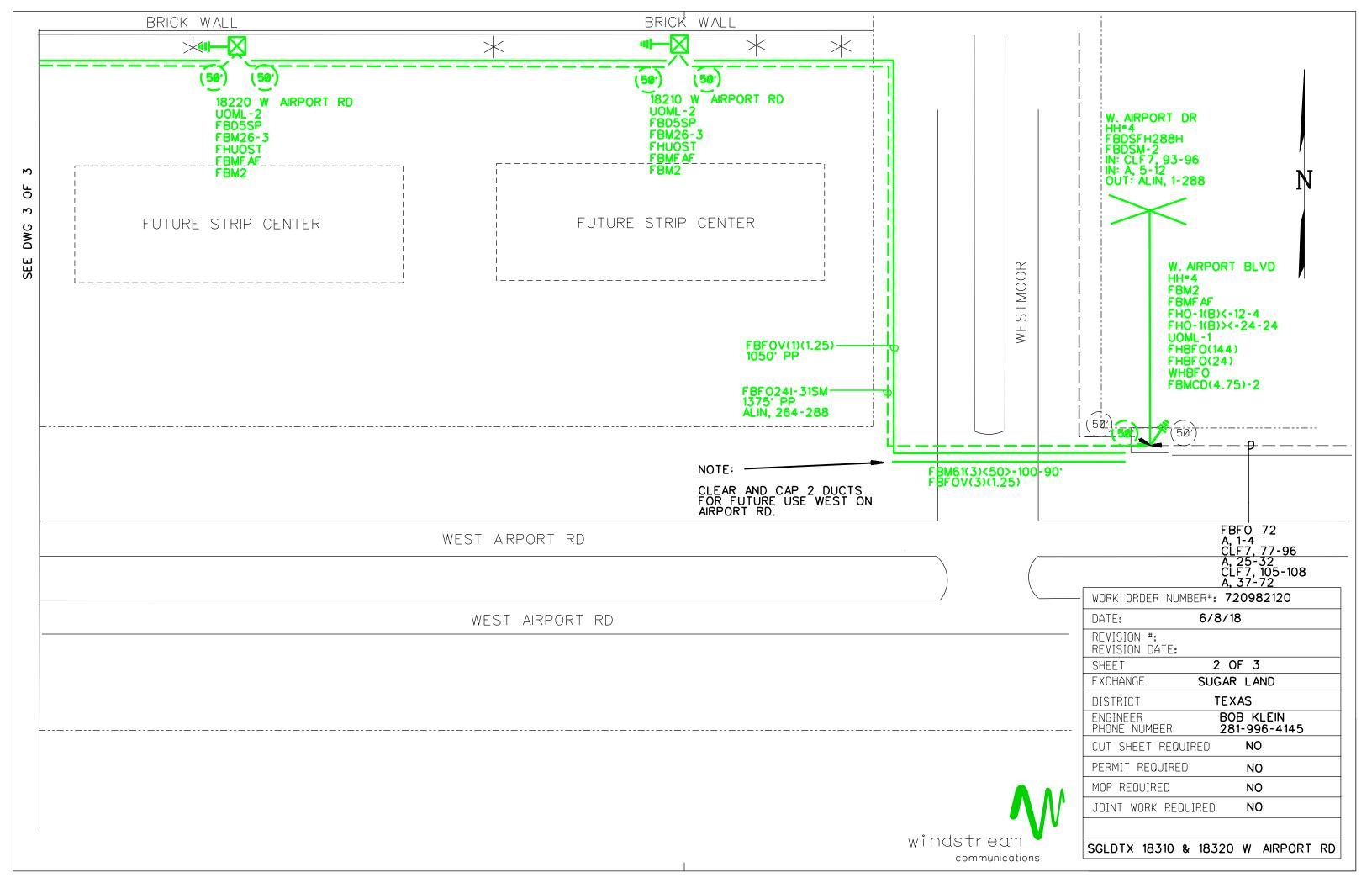


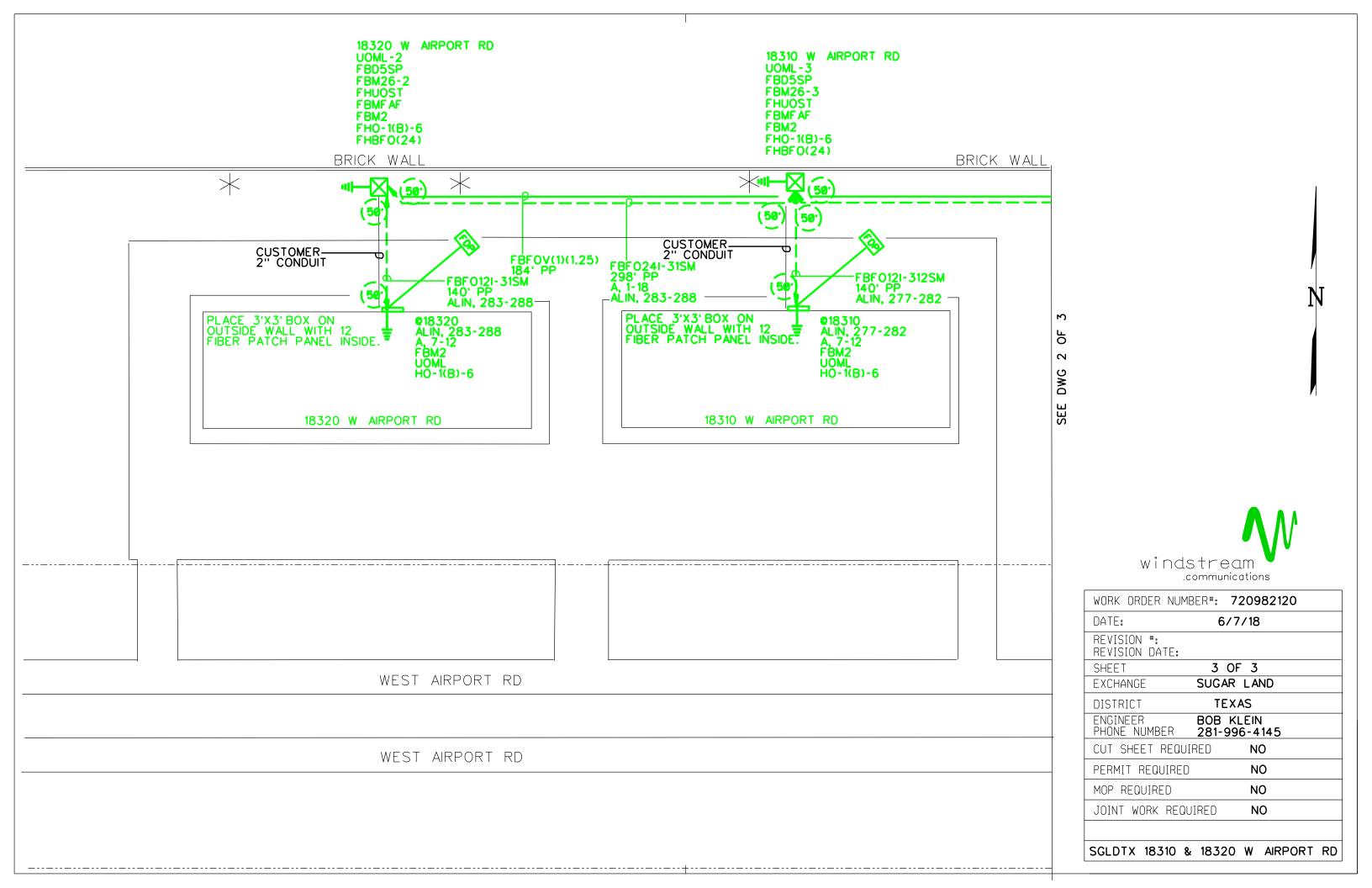
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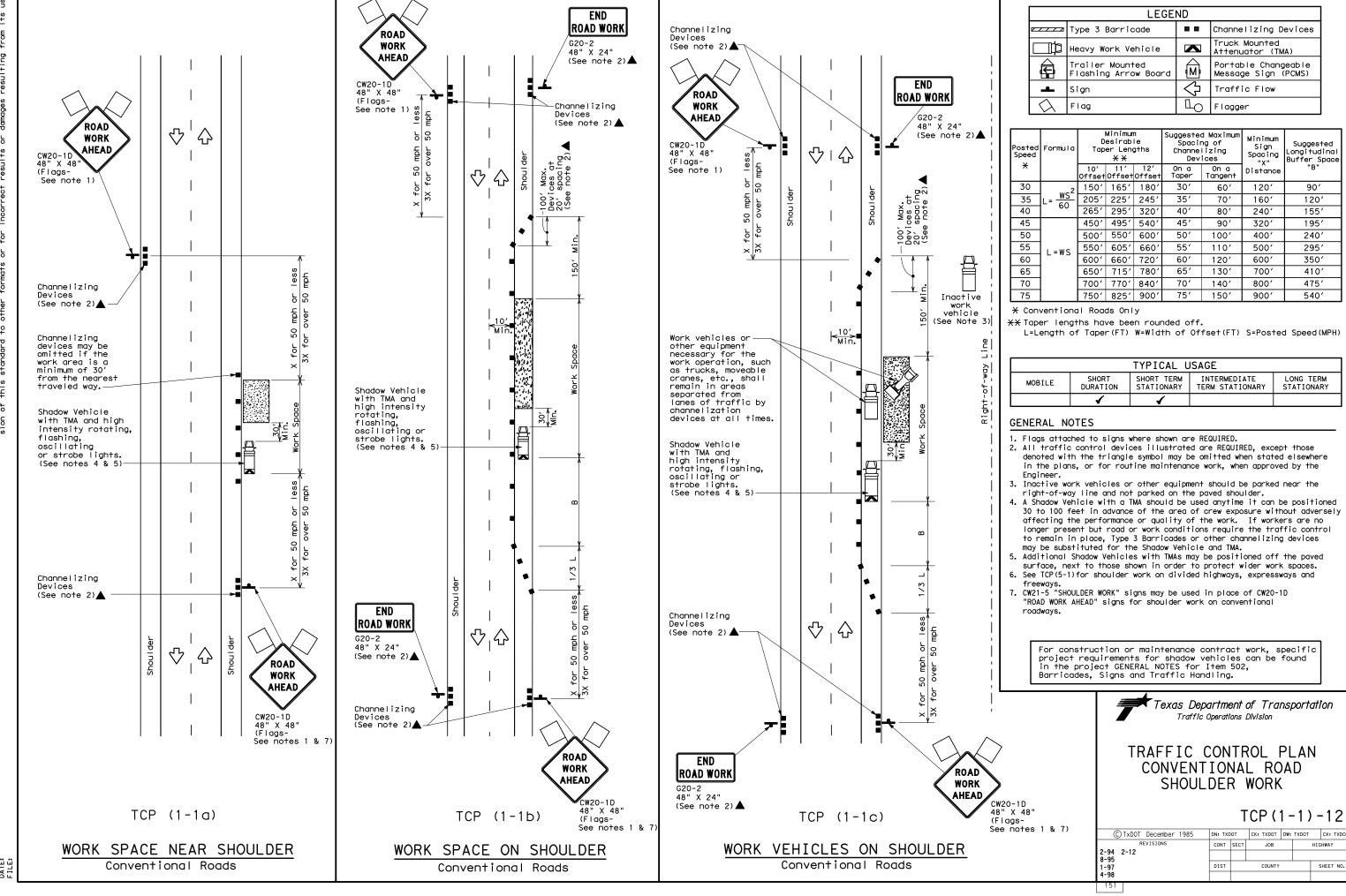


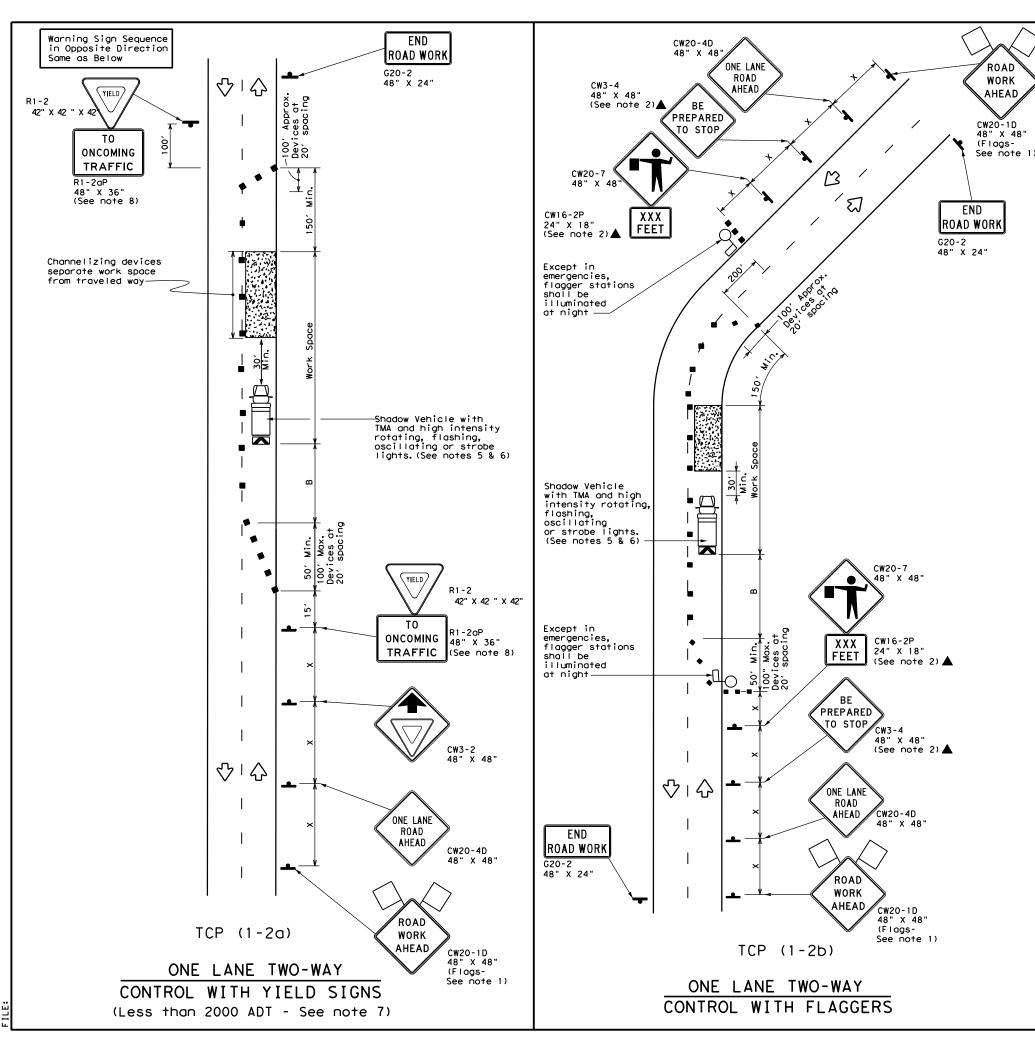
OSP ENGINEERING

10 & 18320 W AIRPORT RD
720982120
GAR LAND
SHEET 1 OF 3
EIN PHONE 281-996-4145
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	LEGEND							
~		Type 3 Barricade	00	Channelizing Devices				
	Þ	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)				
	•	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)				
_	-	Sign	♡	Traffic Flow				
\bigcirc	۸	Flag	ПО	Flagger				

Formula	Desirable			Suggested Maximum Spacing of Channelizing Devices		Sign Spacing		Stopping Sight Distance
	10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"	
2	1501	1651	1801	30′	60′	1201	90,	2001
L = WS	2051	225'	245′	35′	70′	160'	120′	250′
60	2651	2951	3201	40'	80′	240′	155′	3051
	450′	4951	540′	45′	90′	320′	195′	360′
	5001	550'	600'	50′	100′	4001	240′	425′
 = ws	550′	6051	660′	55′	110′	500′	295′	495′
- "3	600'	660′	7201	60′	120′	600′	350′	570′
	650′	715′	780′	65′	130′	700′	410′	645′
	7001	770'	8401	701	140'	800′	475′	730′
	750′	825′	900′	75′	150′	900'	540′	820′
	ws ²	Formula Top 10' 0ffset 150' 205' 265' 450' 500' 550' 600' 650' 700'	Formula $ \begin{array}{c} \text{Desirab} \\ \text{Taper Lent} \\ \text{Noffset} \\ \text{Offset} \\ Offset$	Formula	Formula $ \begin{array}{c} Desirable \\ Taper Lengths \\ \times \times \\ \hline 10' \\ offset Offset Offset Offset Taper Channe Dev Channe Channe Channe Dev Channe Cha$	Formula $ \begin{array}{c} \text{Desirable} \\ \text{Taper Lengths} \\ \text{Not offset offset offset offset offset} \\ \text{Desirable} \\ \text{Desirable} \\ \text{Spacing of Channelizing} \\ \text{Devices} \\ Device$	Formula $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Formula $ \frac{Desirable}{Taper Lengths} = \frac{Spacing}{Channelizing} \frac{of}{Spacing} \frac{Suggested}{Spacing} = \frac{Spacing}{Spacing} \frac{of}{Spacing} \frac{Suggested}{Spacing} = \frac{Suggested}{Suggested} = Sugg$

* Conventional Roads Only

** Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE							
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY			
	1	1					

GENERAL NOTES

- 1. Flags attached to signs where shown are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
- 4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
- 5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

- 7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
- 8. Ri-2 "YIELD" sign with Ri-20P "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

- 9. Flaggers should use two-way radios or other methods of communication to control traffic.
- 10. Length of work space should be based on the ability of flaggers to communicate. 11. If the work space is located near a horizontal or vertical curve, the buffer distances
- should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above). 12. Channelizing devices on the center-line may be omitted when a pilot car is leading
- traffic and approved by the Engineer.
- 3. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

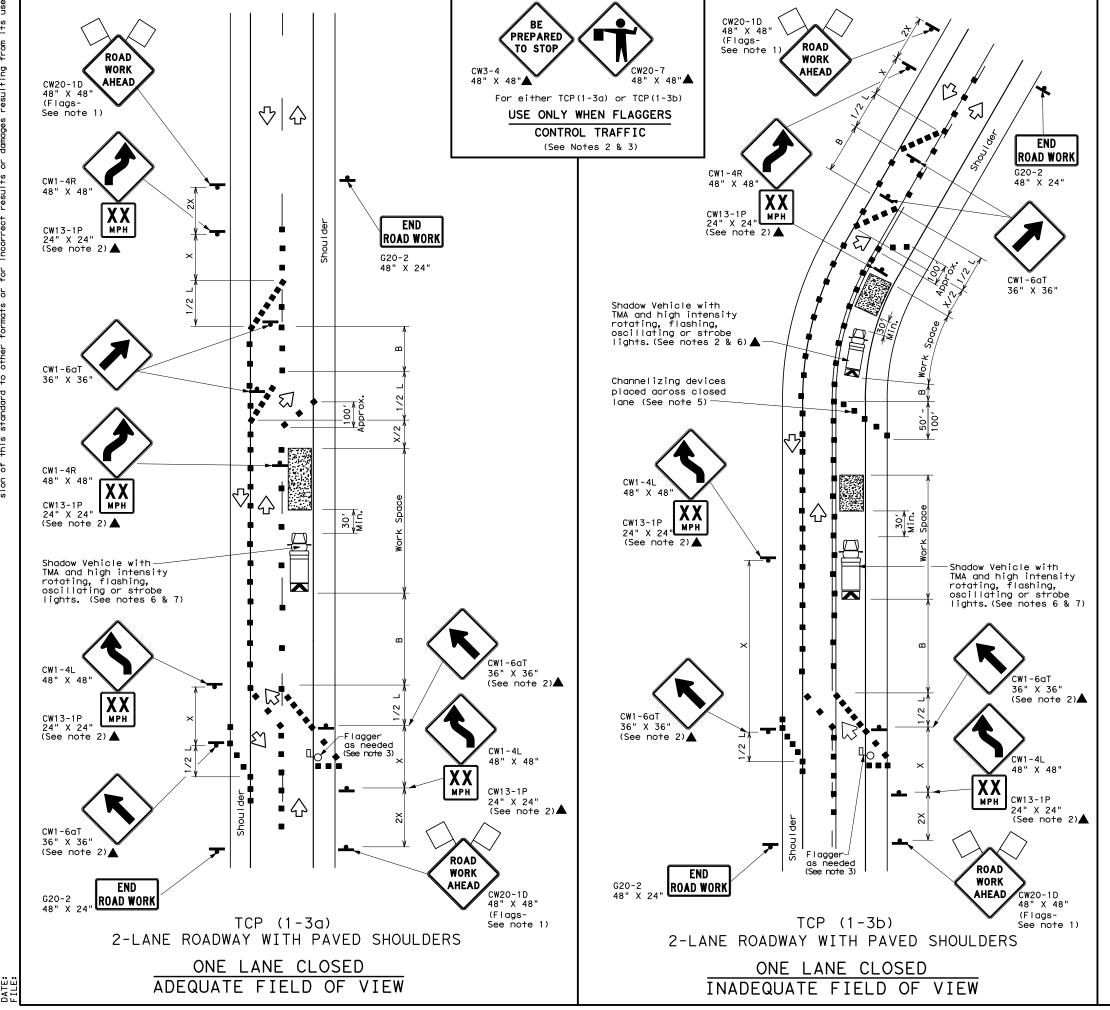
For construction or maintenance contract work, specific project requirements for shadow vehicles can oe found in the projec GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP (1-2)-12

© TxDOT December 1985	DN: TXD	тот	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS 4-90 2-12	CONT	SECT	JOB		HIGHWAY
2-94					
1-97	DIST		COUNTY		SHEET NO.
4-98					



	LEGEND								
	Type 3 Barricade		Channelizing Devices						
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)						
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)						
-	Sign	♡	Traffic Flow						
\triangle	Flag		Flagger						

Posted Speed	Formula	Minimum Desirable Taper Lengths **		Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	ws ²	150′	165′	180′	30′	60′	120′	90′
35	L= WS	205′	225′	245′	35′	70′	160′	120′
40	80	265′	295′	320′	40′	80′	240′	155′
45		450′	495′	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55	L=WS	550′	605′	660′	55′	110′	500′	295′
60] - ""	600′	660′	720′	60′	120′	600′	350′
65		650′	715′	780′	65′	130′	700′	410′
70		700′	770′	840′	70′	140′	800′	475′
75		750′	825′	900′	75′	150′	900′	540′

* Conventional Roads Only

** Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE							
MOBILE SHORT SHORT TERM DURATION STATIONARY		INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY				
	✓	√					

GENERAL NOTES

- 1. Flags attached to signs where shown are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
- 4. DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
- 5. When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
- 6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of $% \left(1\right) =\left(1\right) \left(1\right)$ the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 7. Additional Shadow Vehicles with TMAs may be positioned off the paved
- surface, next to those shown in order to protect wider work spaces. 8. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

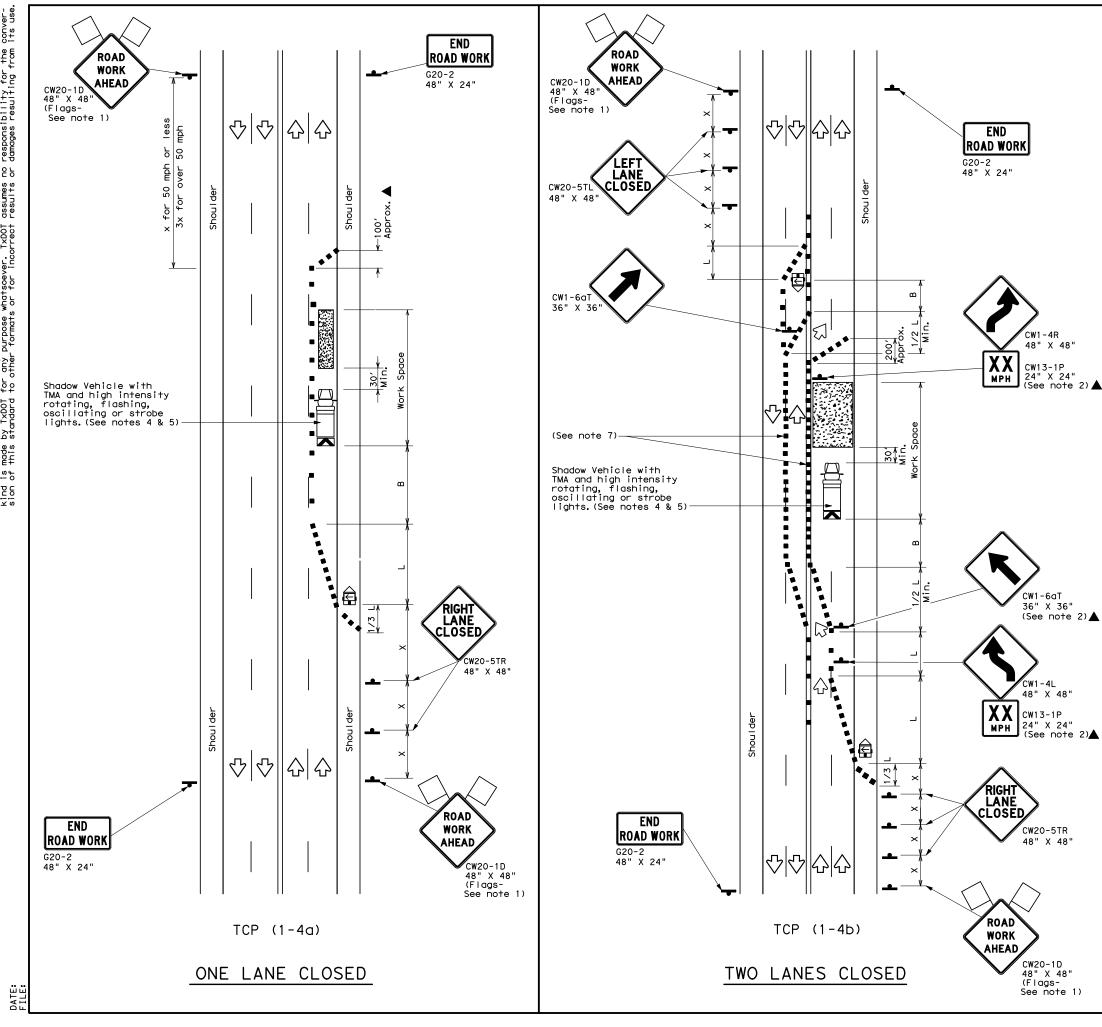
For construction or maintenance contract work specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic



TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO LANE ROADS

TCP(1-3)-12

© TxDOT December 1985	DN: TX	то	CK: TXDOT	DW:	TXDOT	CK:	TXDO
REVISIONS		SECT	JOB		Н	GHWA	Y
2-94 2-12 8-95							
1-97	DIST		COUNTY			SHEE	T NO.
4-98							



LEGEND							
~~~	Type 3 Barricade		Channelizing Devices				
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)				
	Trailer Mounted Flashing Arrow Board	( <u>X</u>	Portable Changeable Message Sign (PCMS)				
-	Sign	∿	Traffic Flow				
$\Diamond$	Flag	Ŋ	Flagger				

Posted Speed	Formula	Minimum Desirable Taper Lengths **			Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
<del>  *</del>		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30		150′	165′	180′	30′	60′	120′	90′
35	L= WS	205′	225′	245′	35′	70′	160′	120′
40	60	265′	295′	320′	40′	80′	240'	155′
45		450′	495′	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55	L=WS	550′	605′	660′	55′	110′	500′	295′
60	L-W5	600′	660′	720′	60′	120′	600′	350′
65		650′	715′	780′	65′	130′	700′	410′
70		700′	770′	840′	70′	140′	800′	475′
75		750′	825′	900′	75′	150′	900′	540′

- * Conventional Roads Only
- ★ Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE							
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY			
	1	1					

#### GENERAL NOTES

- 1. Flags attached to signs where shown are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer. 3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the
- visibility of the work zone is less than 1500 feet.

  4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain i place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

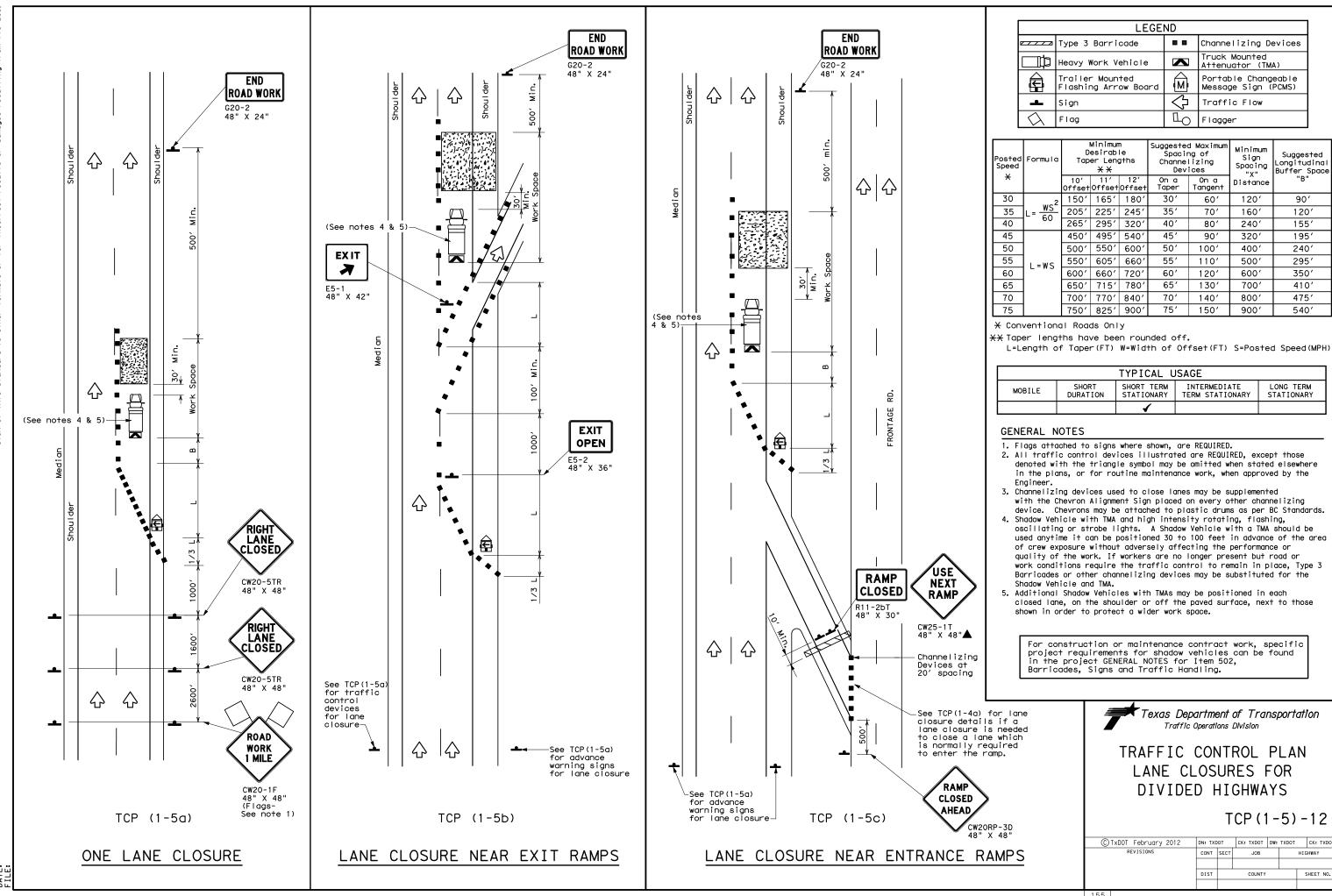
For construction or maintenance contract work. specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

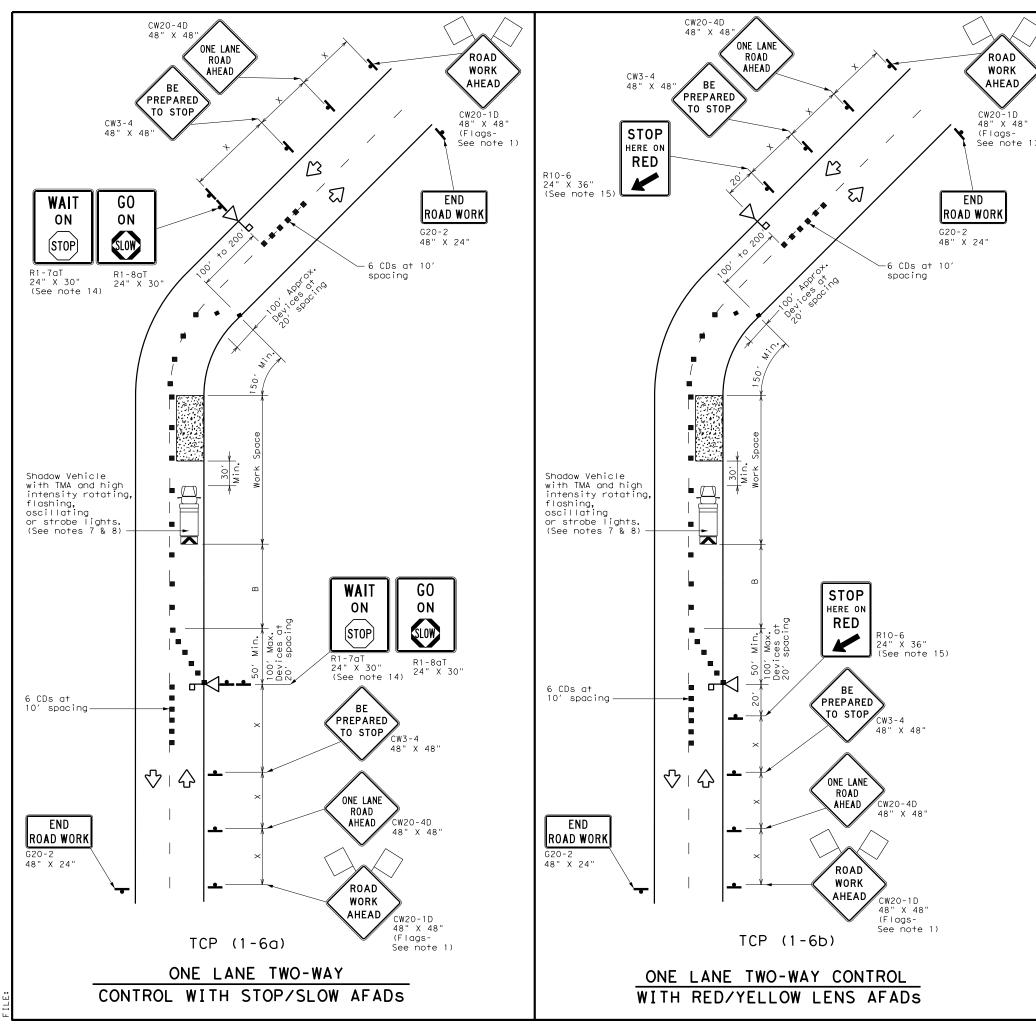


TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP (1-4)-12

ℂTxDOT December 1985	DN: TX	тоот	CK: TXDOT	DW: T	XDOT	CK: TXDOT
REVISIONS	CONT	SECT	JOB		HIG	HWAY
2-94 2-12 8-95						
1-97	DIST		COUNTY			SHEET NO.
4-98						





	LEGEND									
	Type 3 Barricade		Channelizing Devices (CDs)							
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)							
	Automated Flagger Assistance Device (AFAD)	M	Portable Changeable Message Sign (PCMS)							
•	Sign	♡	Traffic Flow							
$\Diamond$	Flag	4	Flagger							

Posted Formula Speed		Minimum Desirable Taper Lengths **			Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	Stopping Sight Distance
*	*		11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"	
30	2	150′	165′	180′	30′	60′	120′	90′	2001
35	$L = \frac{WS^2}{60}$	205′	2251	2451	35′	70′	160′	120′	250′
40	80	265′	295′	320′	40′	80′	240′	155′	305′
45		450′	495′	540′	45′	90′	320′	195′	360′
50		500′	550′	600′	50′	100′	400′	240′	425′
55	L=WS	550′	605′	660′	55′	110′	500′	295′	495′
60	L 113	600′	660′	720′	60′	120′	600′	350′	570′
65		650′	715′	780′	65′	130′	700′	410′	645′
70		700′	770′	840′	70′	140′	800′	475′	730′
75		750′	825′	900′	75′	150′	900′	540′	820′

* Conventional Roads Only

** Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE								
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY				
	1	1						

### GENERAL NOTES

- 1. Flags attached to signs where shown are REQUIRED.
- 2. AFADs shall only be used in situations where there is one lane of approaching traffic in the direction to be controlled.
- 3. Adequate stopping sight distance must be provided to each AFAD location for approaching traffic. (See table above).
- 4. Each AFAD shall be operated by a qualified/certified flagger. Flaggers operating AFADs shall not leave them unattended while they are in use.
- 5. One flagger may operate two AFADs only when the flagger has an unobstructed view of both AFADs and of the approaching traffic in both directions.
- 6. When pilot cars are used, a flagger controlling traffic shall be located on each approach. AFADs shall not be operated by the pilot car operator.
- 7. All AFADs shall be equipped with gate arms with an orange or fluorescent red-orange flag attached to the end of the gate arm. The flag shall be a minimum of 16" square.
- 8. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place. Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA. 9. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to
- those shown in order to protect wider work spaces. 10. Flaggers should use two-way radios or other methods of communication to control traffic.
- 11. Length of work space should be based on the ability of flaggers to communicate.
- 12. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the AFAD.
- 13. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer. 14. The R1-7aT "WAIT ON STOP" sign and the R1-8aT "GO ON SLOW" sign shall
- be installed at the AFAD location on separate supports or they may be fabricated as one 48" x 30" sign. They shall not obscure the face of the STOP/SLOW AFAD. 15. The R10-6 "STOP HERE ON RED" arrow sign shall be offset so as not to obscure
- the lenses of the AFAD.

For construction or work, specific project requirements for shadow vehicles can be found in the projec GENERAL NOTES for Item 502, Barricades, Śigns and Traffic Handling.



TRAFFIC CONTROL PLAN AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADS) TCP (1-6)-12

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