

## GENERAL NOTES

- MINOR OPERATION is defined as those activities that will require traffic control devices to warn or direct traffic during daytime conditions. At the end of each work day, all traffic control devices should be removed from the view of motorists and no unusual conditions or potential hazards should exist that require advance warning.
- MAJOR OPERATION is defined as those activities that may affect traffic during daytime and nighttime conditions. Work activities on high speed, high volume roadways may also be considered a major operation.
- Additional details may be provided in the plans concerning sign size, type of channelization devices, sequence of work details, and required measures needed to control traffic during changes in the sequence of work.
- All distance and spacing shown on the TCP Standards are approximate.
- All traffic control devices used during nighttime shall be reflectorized, illuminated from within or externally illuminated.
- Additional information for fabrication, erection and usage of the following traffic control devices is found in the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and Barricade and Construction (BC) Standards:

BARRICADES	BC(2) and BC(3)
CONES	BC(3)
DELINEATION	WZ (80)
DRUMS	BC(3)
PAVEMENT MARKINGS	BC(8) and BC(9)
SIGNS	WZ (STPM) or TCP(7-1) if applicable BC(4), BC(5), BC(6), BC(7)

## SIGNS

- Selection of sign size should be based on Table I.
- Flashing warning lights, channelizing devices and/or flags may be required to call attention to the advance warning signs.
- The words UTILITY, SIGNAL, BRIDGE, LIGHTING, SIGN, STREET or RAMP may be substituted for ROAD in all signs where applicable.
- Advisory speed plaques, if used in conjunction with warning signs, speeds shall be determined in the field by the Engineer.
- Regulatory signs shall be mounted at 5 foot minimum mounting height for rural areas and 7 foot minimum mounting height for urban areas.
- Warning signs may be mounted on three types of supports at the minimum mounting heights as stated on BC(4):

Portable	(1 foot)
Temporary	(3 feet)
Fixed	(5 feet rural, 7 feet urban)

The illustrated sign spacing (X) and distance message (500 FT, 1000 FT, 1500 FT) are based on 55 mph 85th percentile speed with distance rounded to the nearest 500 feet. For slower speeds or minor operations, the word 'AHEAD' may be used in lieu of the distance message.

## CHANNELIZING DEVICES

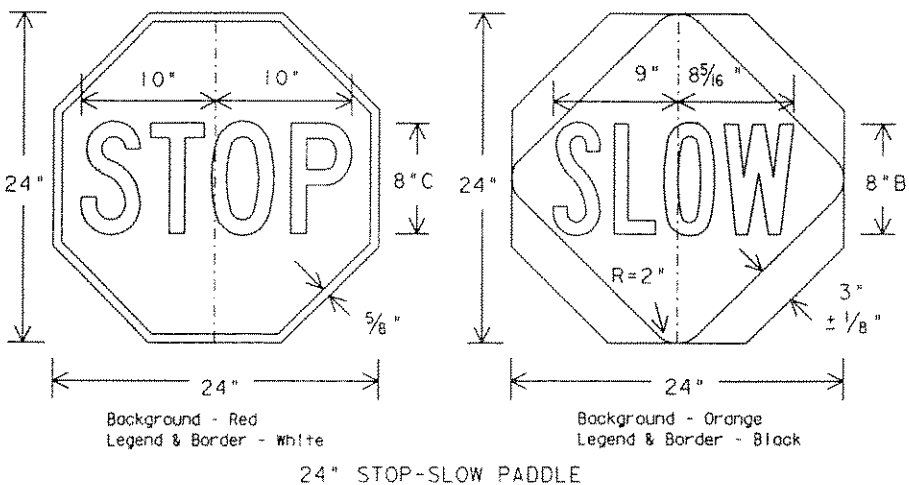
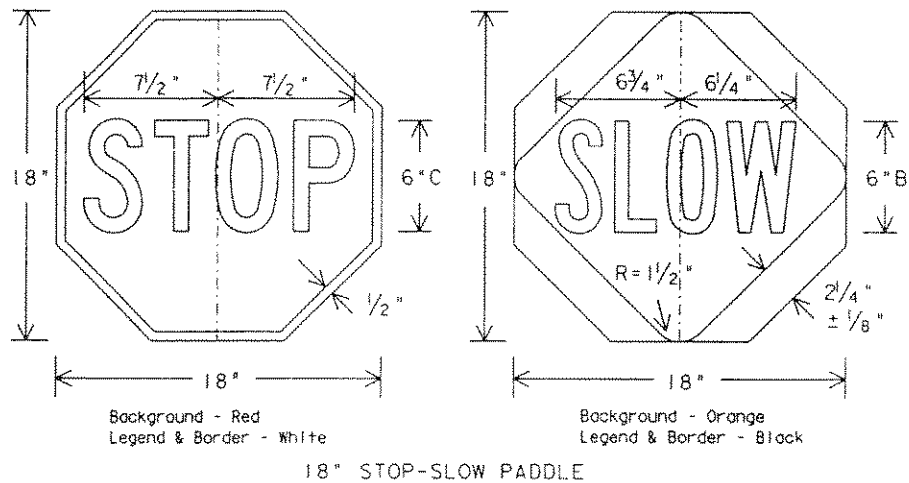
- The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit (S).
- When channelizing devices are used to direct traffic across existing lane line or edge lines the spacing between channelizing devices shall be reduced by as much as 50%.
- Channelizing device spacing should be reduced when placed on curves, hills or next to potential hazards. At least three channelizing devices should be in view at all times.
- Lane closure taper length is equal to 'L'. Shifting taper length is equal to '1/2 L'. Shoulder closure taper length is equal to '1/2 L'.
- Tapers downstream from the work area are optional and when used should be 50'-100' long.
- Tapers shall be 50 feet minimum length when placed downstream of a flagger. YIELD sign or STOP sign.
- The selection of channelizing devices should be based on degree of hazard associated with the work area. The selection priority of channelizing devices, in the order of increasing hazard recognition are:

- portable mounted delineators
- 28" cones
- 36" or more tubular cones
- portable mounted vertical panels
- 36" cones
- Type I Barricade
- Type II Barricade
- plastic drums
- MBSF, fixed or barrel mounted
- concrete traffic barrier

- Flashing arrow panels used on two-way, two-lane roadways should flash in the caution mode.

## FLAGGER CONTROL

- Flagger shall wear orange safety vests. Flaggers should wear safety hats to provide a professional image to the motorist and to protect the head from flying objects.
- STOP/SLOW paddles shall be used as the primary method to control traffic by flaggers. The STOP/SLOW paddle minimum size is 18" x 18". Paddles may be attached to a 60 inch staff for easier handling. The larger size (24" x 24") should be attached to a 60 inch staff.
- Flags are only used to control traffic for emergency situations and the STOP/SLOW paddles are not available.
- Flaggers may carry hand held air horns to alert workers of an emergency condition.
- For one lane two-way traffic control, one or more flaggers should be used where traffic density, road conditions or motorists' sight distance justify their use. If flaggers are used, the taper should be reduced to 50 feet minimum. When flaggers are used to control traffic, the FLAGGER symbol sign (FCW20-7a) shall be used. When flaggers are used, the BE PREPARED TO STOP sign (FCW21-8) should be used. Proper spacing between signs should be maintained.
- When flaggers are used to draw attention to traffic control devices, the FLAGGER symbol sign should be used. Proper spacing should be maintained.
- When more than one flagger is used, a chief flagger should be assigned the responsibility of making decisions concerning traffic control.



## WORKER SAFETY

- Workers exposed to traffic should wear orange safety vests.
- Work vehicles within 30 feet of the traveled way should have strobe lights or rotating beacons in use.
- When work vehicles are used to shadow the work area, the vehicle should be parked 30 feet or more from the work area, transmission in gear (or set in PARK) emergency brake set on, and front wheels turned away from work area.
- Inactive work vehicles, including workers' private vehicles, should be parked away from the work area and as close to the right-of-way line as possible.

Table I

TYPICAL CONSTRUCTION WARNING SIGN SIZE<sup>1,5,6</sup> AND SPACING

Roadway Classification	Posted Speed	Sign Spacing <sup>▲</sup>	Major Construction Or Major Maintenance Approach Warning Signs		Minor Construction Or Minor Maintenance Approach Warning Signs		Other Warning Signs
			Standard Inches	Minimum <sup>4</sup> Inches	Standard Inches <sup>7</sup>	Minimum <sup>4</sup> Inches <sup>7</sup>	
Conven.	30	80	48x48	36x36	30x30 or 36x36	24x24 or 30x30	30x30 or 36x36
	35	120	Use Standard Size	Use Standard Size	Use Standard Size	Use Standard Size	Use Standard Size
	40	160					
	45	240					
	50	320					
	55	500 <sup>2</sup>	48x48*	48x48*	48x48*		
Exp or Frwy	55	500 <sup>3</sup>					
	65	750 <sup>3</sup>					

▲ Minimum distance from work area to First Advance Warning sign and/or distance between each additional sign.

\* Smaller sign sizes may be used where sign designs have not been included in the 'Standard Highway Sign Design for Texas' publication.

### General Notes:

- Special or larger size signs may be used as may be necessary.
- Distance between signs should be increased as required to have 1500' advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- For use only on secondary roads or city streets where speeds are low.
- Only diamond shaped warning signs are indicated.
- See sign listing in TMUTCD, Appendix A for complete list of all available sign design sizes.
- Where two sizes are listed, see sign listing in TMUTCD, Appendix A for proper size.

STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP NOTES-95

ORIG DRAW DATE:	FEB, 1994	DW- LR/MT/CR:	DW- DN	CR- MT	RES NO.:
REVISIONS		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
8-95		18	6	STP 96(B70)MM	81
		COUNTY	CONTROL SECTION	JOB	ROADWAY
		ROCKWALL	1014 03	041 FM 740	