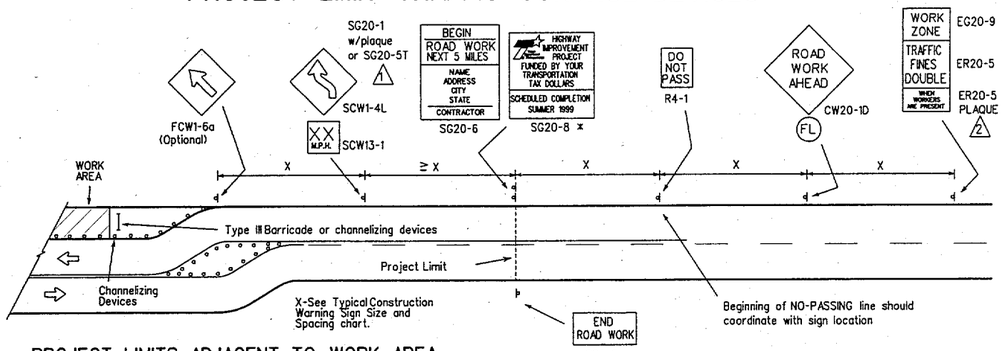
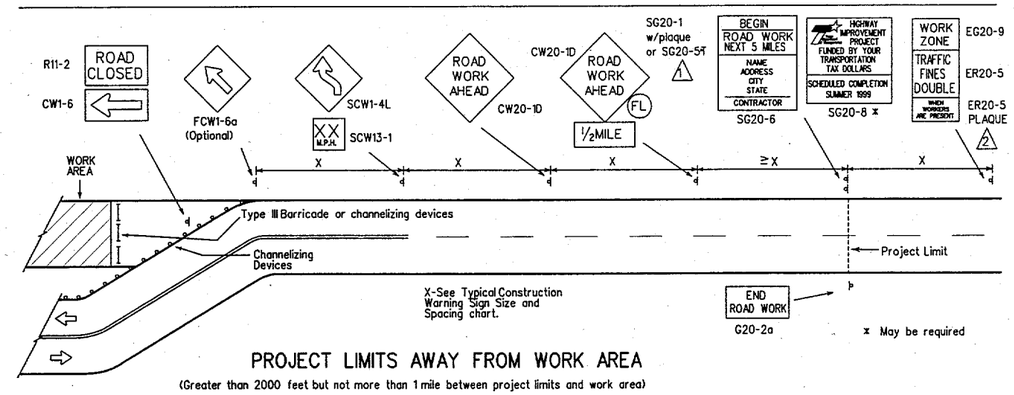
PROJECT LIMIT TRAFFIC CONTROL DEVICES



PROJECT LIMITS ADJACENT TO WORK AREA

(Less than 2000 feet between project limits and work area)



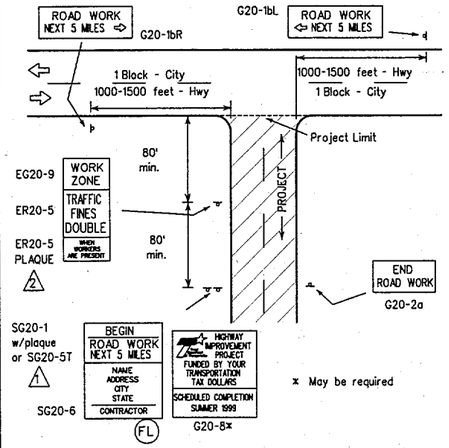
PROJECT LIMITS AWAY FROM WORK AREA

(Greater than 2000 feet but not more than 1 mile between project limits and work area)

PROJECT LIMIT GENERAL NOTES

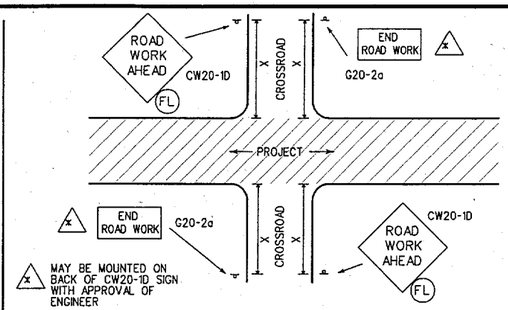
SIGNS AND WARNING LIGHTS

1. When specified on this sheet or other sheets in the plans, warning lights for a sign shall be installed and maintained by the contractor. Warning lights shall be attached to the sign support using a 1/2" bolt (minimum) of sufficient length for three washers, lock washer and a nut.
2. Warning lights shall be maintained as directed by the Engineer.
3. Appropriate standard traffic control devices shall be used as required by the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the contractor's responsible person.
4. As a general rule, additional traffic control devices in advance of the project limits should only be used in those cases where a work area, a detour, or a potentially hazardous location is less than 2000 feet inside the project limits.
5. The traffic control devices used in the above illustrations are examples only. Field conditions and engineering judgement should dictate the most appropriate traffic control devices to be used. Any variation in the plans shall be documented by written agreement between the Engineer and the contractor's responsible person.
6. As detailed above, the BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the project limits and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the project limits. These signs should be adjusted to provide adequate spacing to other signs. The OBSERVE WARNING SIGNS STATE LAW sign shall be installed when required elsewhere in the plans.
7. With the agreement of an adjacent project Engineer, the Engineer(s) may allow the omission of END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the contractor will erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
8. Duplicate construction warning signs should be erected on the median side of divided highways where median width will permit and traffic volumes justifies the signing.
9. Except for devices required by Note 6, traffic control devices should be in place only while work is actually in progress or a definite need exists.
10. Sign size should be based on the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" (TMUTCD).
11. The Special Public Information sign (SG20-8) shall be installed at the project limits when required elsewhere in the plans. Refer to SMD Standards for approved mounting details.

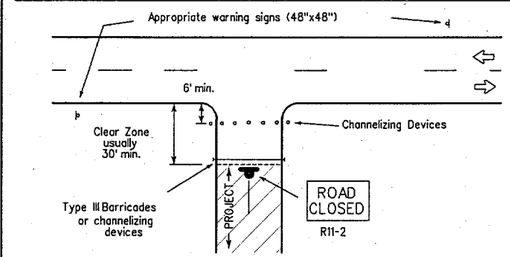


PROJECT LIMITS AT T-INTERSECTION

1. The ROAD WORK NEXT X MILES sign should be erected on the intersected highway as detailed above.
2. On the intersected roadway, additional traffic control devices, such as a flagger and accompanying signs or other signs, should be used when work is being performed at or near the intersection.

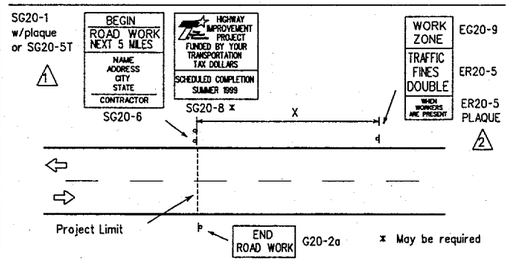


CROSSROAD SIGNING AND BARRICADING



PROJECT LIMITS FOR CLOSED ROADWAY

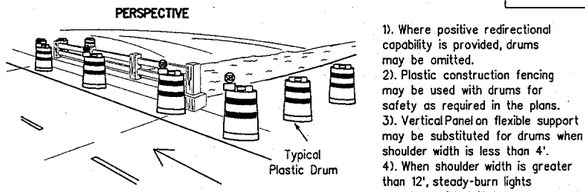
Barricades or channelizing devices shall be erected completely across roadway.
Channelizing Devices may be drums, vertical panels or cones as specified in the plans.



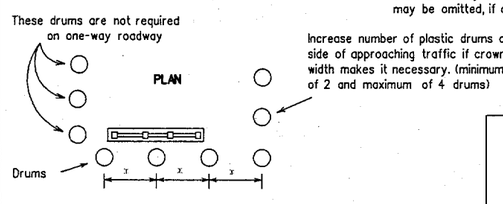
PROJECT LIMITS AWAY FROM WORK AREA

(Greater than 1 mile between project limits and work area)

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



1). Where positive redirectional capability is provided, drums may be omitted.
2). Plastic construction fencing may be used with drums for safety as required in the plans.
3). Vertical Panel on flexible support may be substituted for drums when shoulder width is less than 4'.
4). When shoulder width is greater than 12', steady-burn lights may be omitted, if drums are used.



CROSSROAD SIGNING AND BARRICADING

1. Except as noted elsewhere in plans, the usual minimum signing on a cross-road approach should be one CW20-1D ROAD WORK AHEAD sign and G20-2a END ROAD WORK sign. Where speeds and volumes are relatively low, a smaller ROAD WORK AHEAD sign may be used.

When approved by the Engineer, on low volume crossroads, advance warning signs may be the reduced size 36" x 36" ROAD WORK AHEAD (MCW20-1D) sign mounted back to back with the reduced size 36" x 18" END ROAD WORK (SG20-2a) sign. See the "STANDARD HIGHWAY SIGN DESIGNS for TEXAS" manual and BC(9) thru BC(9C) for sign design details. On low volume crossroads, advance signing may be omitted if approved by the Engineer.

Additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs may be required. When additional signs are required, such signs will be considered part of the minimum requirements.

2. The G20-1a sign shall be required on major crossroads to advise motorists of the length of construction in either direction from the intersection.
3. On higher volume crossroads additional traffic control devices may be noted elsewhere in the plans.
4. When work occurs in the intersection area, appropriate traffic control devices shall be in place.

WARNING LIGHTS

Warning lights shall meet the requirements of the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways."

Warning lights shall NOT be installed on barricades.

Type A-Low Intensity Flashing Warning Lights are commonly used with signs. They are intended to warn of an approaching potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation " FL ".

Type-C Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation " SB ".

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

1.5.6

Roadway Classification	Posted Speed	Sign Spacing "X" Δ	Long-term Or Intermediate-term Stationary Approach Warning Signs CW20 Series And CW22-1 Sign		Short-term Stationary Or Short Duration Approach Warning Signs CW21 Series		Other Warning Signs
	MPH	Feet (Apprx.)	Standard inches	Minimum [4] inches	Standard [7] inches	Minimum [4] [7] inches	Standard [7] inches
Conven.	30	120	48 x 48	36 x 36	30 x 30 or 36 x 36	24 x 24 or 30 x 30	30 x 30 or 36 x 36
	35	160					
	40	240					
	45	320		Use Standard Size		Use Standard Size	
	50	400					
	55	500 [2]					
	60	600 [2]			48 x 48		48 x 48
	65	700 [2]					
	70	800 [2]					
Exp or Frwy	x	x [3]			x x	x x	x x

x For typical sign spacings on expressways and freeways, see TMUTCD typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to 1st Advance Warning sign and/or distance between each additional sign.

x x Smaller sign sizes may be used where sign designs have been included in the "Standard Highway Sign Designs for Texas" manual.

General Notes:
1. Special or larger size signs may be used as may be necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have ½ mile or more advance warning.
4. For use only on secondary roads or city streets where speeds are low.
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in TMUTCD, Appendix A for complete list of all available sign design sizes.
7. Where two sizes are listed, see sign size listing in TMUTCD, Appendix A for proper size.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:
Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3120
Fax (512) 416-3101
E-mail TRF-STANDARDS@mailgw.dot.state.tx.us

10/99 Revision

1 Added "BEGIN" to "ROADWORK NEXT XX MILES" sign

2 Added "WHEN WORKERS ARE PRESENT" plaque

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

ADVANCE SIGNING
CROSSROAD SIGNING
WARNING LIGHTS

BC(1)-99

DN: LR	CK: DTN	DW: DN	CK: GB	REC NO.

REVISIONS 10-99	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
		6		24
	COUNTY	CONTROL	SECTION	JOB	HIGHWAY

DN:	CK:	DW:	CK:

LEVELS ASSIGNED	DATE:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	ACC:
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	FILE: