SECTION 6-C
CONSTRUCTION SIGNS & BARRICADES

CITY OF SACHSE, TEXAS DEPARTMENT OF ENGINEERING		
STANDARD CONSTRUCTION DETAILS MISCELLANEOUS DETAILS		
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CONSTRUCTION SIGN NOTES

1. ALL SIGN, SIGN COLOR, SIGN LETTERING AND SIGN REFLECTORIZATION SHALL CONFORM WITH THE *TEXAS MANUAL ON TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS*. THE CONTRACTOR SHALL MAINTAIN EACH SIGN IN A CLEAN AND GOOD CONDITION.

2. CONSTRUCTION SIGNS SHALL BE MADE FROM WOOD OR METAL. THE DESIGNATION OF METAL AND WOOD AS PRIMARY MATERIALS FOR SIGNS SHALL NOT BE INTERPRETED TO EXCLUDE OTHER SUITABLE RIGID MATERIALS NOW OR HERE-AFTER AVAILABLE.

3. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK. INDIVIDUAL WARNING SIGNS SHALL BE REMOVED, TURNED AWAY FROM THE VIEW OF TRAFFIC, OR COVERED WHENEVER THE SPECIFIC DANGER OF WHICH THE PARTICULAR SIGN WARNS HAS CEASED TO EXIST, EITHER PERMANENTLY OR TEMPORARILY. THE SIGN MUST BE PROMPTLY REPLACED, TURNED INTO VIEW, OR UNCOVERED WHEN THE SITUATION AGAIN BECOMES A POTENTIAL DANGER.

4. SIGNS ERECTED ON PORTABLE SUPPORTS FOR USE ON CONSTRUCTION PROJECTS NORMALLY MEAN SIGNS WHICH ARE USED DURING THE DAY TO WARN OR GUIDE TRAFFIC THROUGH AND OR AROUND THE ACTUAL CONSTRUCTION AREA, BUT AT THE END OF THE WORKDAY SUCH SIGNS ARE EITHER REMOVED OR TURNED AWAY FROM THE VIEW OF TRAFFIC. PORTABLE SUPPORTS SHALL BE AS SHOWN OR AS APPROVED BY THE ENGINEER. THE BOTTOM OF THE SIGN SHALL BE A MINIMUM OF ONE (1) FOOT ABOVE THE PAVEMENT EDGE. SIGNS REQUIRED FOR NIGHT TIME USAGE SHOULD NOT NORMALLY BE MOUNTED ON PORTABLE SUPPORTS EXCEPT WHEN APPROVED BY THE ENGINEER.

5. SIGNS ERECTED ON FIXED SUPPORTS FOR USE ON CONSTRUCTION PROJECTS NORMALLY MEAN SIGNS THAT ARE TO REMAIN IN PLACE FOR BOTH DAY AND NIGHT USAGE TO REGULATE, WARN AND GUIDE TRAFFIC IN ADVANCE OF AND WITHIN THE LIMITS OF THE PROJECT INCLUDING THE CROSSROAD APPROACHES. HOWEVER, UNDER CERTAIN CONDITIONS, SUCH AS WHERE A SIGN MAY BE REQUIRED FOR A FEW DAYS DURATION AND THEN IS NO LONGER NEEDED, OR WHERE A SIGN IS MOVED FROM LOCATION TO LOCATION EVERY FEW DAYS OR WHERE IT IS NOT PRACTICAL OR DESIRABLE TO PROVIDE A FIXED MOUNTING, SUCH SIGNS MAY BE ERECTED ON A TEMPORARY TYPE OF SUPPORT. TEMPORARY SUPPORTS SHALL BE AS SHOWN OR AS APPROVED BY THE ENGINEER. SIGNS ERECTED ON TEMPORARY SUPPORTS SHOULD BE AT A MINIMUM HEIGHT OF 3 FEET. SIGNS ERECTED ON FIXED SUPPORTS SHOULD BE AT A MINIMUM OF SEVEN (7) FEET, REGARDLESS OF THE TYPE OF SUPPORT USED. REGULATORY SIGNS SHOULD NOT BE ERECTED AT A HEIGHT LESS THAN SEVEN (7) FOOT MINIMUM SPECIFIED ABOVE UNLESS A LOWER HEIGHT IS APPROVED BY THE ENGINEER. POSTS FOR FIXED SUPPORTS SHOULD BE SET IN THE GROUND WITHOUT CONCRETE FOOTINGS.

6. WHERE PORTABLE OR TEMPORARY SUPPORTS REQUIRE THE USE OF WEIGHTS TO KEEP A SIGN OR BARRICADE FROM TURNING OVER, THE USE OF SOME TYPE OF SANDBAG IS RECOMMENDED. THE USE OF PIECES OF CONCRETE, ROCKS, IRON, STEEL OR OTHER SOLID OBJECTS WILL NOT BE PERMITTED.

CONSTRUCTION PAVEMENT MARKINGS

1. WHEN REQUIRED ELSEWHERE IN THE PLANS, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING PAVEMENT MARKINGS ON ALL ROADWAYS THAT ARE OPEN TO TRAFFIC WITHIN THE LIMITS OF THE PROJECT. ON PROJECTS INVOLVING ROADWAY SURFACING WHICH WILL REQUIRE PAVEMENT MARKING FOR CONTROL OF TRAFFIC DURING CONSTRUCTION. THE MARKINGS MAY INCLUDE BOTH STANDARD AND ABBREVIATED MARKINGS AS DEFINED BELOW:

   A. STANDARD PAVEMENT MARKINGS - STANDARD MARKINGS PLACED IN CONFORMANCE WITH THE REQUIREMENTS OF THE *TEXAS MUTCD*. SUCH MARKINGS SHOULD BE PLACED ON ALL ROADWAYS OPEN TO TRAFFIC DURING CONSTRUCTION, INCLUDING NEW PAVEMENT, RESURFACING, DETOURS OR OTHER ROADWAYS WHERE CONSTRUCTION ACTIVITIES MAY HAVE COVERED OR OBLITERATED EXISTING MARKINGS. STANDARD MARKINGS SHOULD BE PLACED AS SOON AS POSSIBLE AND PRACTICAL. WHEN IT IS NOT PRACTICAL OR POSSIBLE TO PLACE STANDARD MARKINGS AT THE END OF EACH DAYS WORK, ABBREVIATED MARKINGS MAY BE UTILIZED FOR SHORT PERIODS UNTIL STANDARD MARKINGS CAN BE PLACED.

   B. ABBREVIATED PAVEMENT MARKINGS - ABBREVIATED PAVEMENT MARKINGS ARE SHORTER IN LENGTH THAN STANDARD MARKINGS. ABBREVIATED PAVEMENT MARKINGS MAY BE USED TO DELINEATE LANE CONTINUITY ONLY UNTIL SUCH TIME AS STANDARD MARKINGS CAN BE PLACED. THEY ARE NOT INTENDED TO SUBSTITUTE FOR STANDARD MARKINGS FOR PERIODS GREATER THAN TWO (2) WEEKS. TO SEPARATE TRAFFIC FLOWS IN OPPOSING DIRECTIONS, THE PAVEMENT MARKINGS SHALL BE YELLOW. WHITE PAVEMENT MARKINGS SHALL BE USED TO DELINEATE THE SEPARATION OF TRAFFIC FLOWS IN THE SAME DIRECTION.

   C. PAVEMENT MARKING MATERIALS - TEMPORARY PAVEMENT MARKING MAY BE ACCOMPLISHED BY USE OF STANDARD TRAFFIC PAVEMENT MARKING PAINT OR BY PAVEMENT MARKING TAPE (SCOTCHLANE OR STAMARK BRAND OR AS APPROVED BY THE ENGINEER). TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER APPLICABLE.

2. WHEN ABBREVIATED PAVEMENT MARKINGS ARE USED, A DO NOT PASS SIGN SHALL BE USED TO MARK MARKINGS USED TO TRANSITION TRAFFIC INTO THE DETOUR WHICH MAY CREATE CONFUSION OR DIRECT A MOTORIST INTO THE DISCONTINUED DETOUR SHALL LIKEWISE BE REMOVED OR OBLITERATED. THE ABOVE SHALL NOT APPLY TO DETOURS OF A SHORT TIME DURATION OF A FEW HOURS WHERE FLAGMEN OR SUFFICIENT CHANNELING DEVICES ARE USED TO OUTLINE THE DETOUR ROUTE AND THE DETOUR IS NOT TO BE MAINTAINED OVERNIGHT.

3. THE REMOVAL OF PAVEMENT MARKINGS SHALL BE AN INTEGRAL PART OF ESTABLISHING THE DETOUR. DETOURS SHALL BE PLANNED AND SCHEDULED WELL ENOUGH IN ADVANCE TO ALLOW ADEQUATE TIME TO COMPLETE ALL PHASES OF THE OPERATION PRIOR TO DARKNESS. IF INCLEMENT WEATHER OR DARKNESS BECOMES A FACTOR, IT WILL BE THE CONTRACTORS DECISION TO CONTINUE WITH THE DETOUR OPERATION OR RETAIN THE EXISTING TRAVELWAY OPEN TO TRAFFIC WHEN ANY OR ALL OF THE REQUIREMENTS OF THE DETOUR CANNOT BE ACCOMPLISHED.

4. PAVEMENT MARKINGS SHALL BE REMOVED TO THE FULLEST EXTENT POSSIBLE, SO AS NOT TO LEAVE A DISCERNIBLE MARKING., BY ANY METHOD THAT DOES NOT MATERIALLY DAMAGE THE SURFACE OR TEXTURE OF THE PAVEMENT. SUBJECT TO THE APPROVAL OF THE ENGINEER, ANY METHOD THAT PROVES TO BE SUCCESSFUL ON A PARTICULAR TYPE PAVEMENT MAY BE USED. OVERPAINTING OF THE MARKING WILL NOT BE PERMITTED. REMOVAL OF RAISED PAVEMENT MARKINGS SHALL BE AS DIRECTED BY THE ENGINEER.

5. WHERE MECHANICAL MEANS OF MARKING REMOVAL HAVE BEEN EMPLOYED TO COMPLETELY REMOVE THE MARKING AND ITS REFLECTIVITY, PAINT OF A COLOR MATCHING PAVEMENT SURFACE OR USED CRANKCASE OIL MAY BE EMPLOYED IF NECESSARY, AS A MEANS OF COVERING CONTRASTING PAVEMENT TEXTURE. NIGHTTIME INSPECTIONS ARE NEEDED TO VERIFY THE CONTINUED EFFECTIVENESS OF THE CHANGE.

6. PAVEMENT MARKINGS TO BE REMOVED SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. REMOVAL OF PAVEMENT MARKINGS WILL BE CONSIDERED SUBSIDIARY TO THE ITEM, BARRICADES, SIGNS AND TRAFFIC HANDLING.

NOTE: DETAILS SHOWN ON THESE SHEET ARE MINIMUM REQUIREMENTS.

REFERENCE ONLY

THIS STANDARD CONSTRUCTION DETAIL IS INCLUDED FOR INFORMATION PURPOSES ONLY. REVISIONS BY OTHERS MAY OCCUR.

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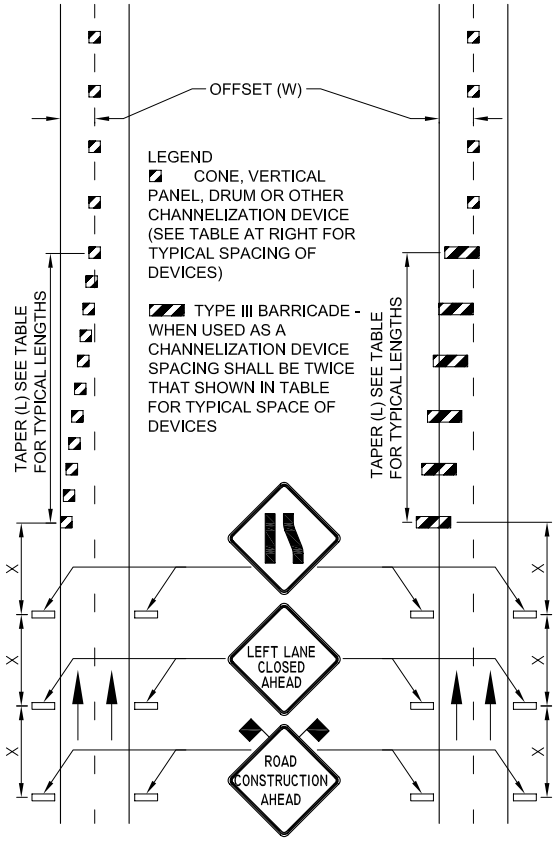
MINIMUM CONSTRUCTION WARNING SIGN SPACING

POSTED SPEED OR 85% SPEED	30 OR LESS	35	40	45	50	55*
X MINIMUM DISTANCE (FT)	80	120	160	240	320	500

* FOR ROADS WITH A 55 MPH POSTED SPEED LIMIT, ADVANCE WARNING SIGNS SHOULD BE PLACED APPROXIMATELY 1,500 FEET IN ADVANCE OF THE CONDITION TO WHICH THEY ARE CALLING ATTENTION. WHERE A SERIES OF ADVANCE WARNING SIGNS ARE USED, THE WARNING SIGN NEAREST THE WORK SITE SHOULD BE PLACED APPROXIMATELY 500 FEET FROM THE POINT OF RESTRICTION WITH THE ADDITIONAL SIGN AT APPROXIMATELY 500-1000 FOOT INTERVALS.



TYPICAL TRANSITION LENGTHS AND SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES

		MAXIMUM DESIRABLE TAPER LENGTH **			SUGGESTED MAXIMUM SPACES OF DEVICE	
POSTED SPEED *	FORMULA	10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30	60' - 75'
35		205'	225'	245'	35	70' - 90'
40		265'	295'	320'	40	90' - 100'
45	L = WS	450'	495'	540'	45	90' - 110'
50		500'	550'	600'	50	100' - 125'
55		550'	605'	660'	55	110' - 140'
60		600'	660'	720'	60	120' - 150'

* 85TH PERCENTILE SPEED MAY BE USED ON ROADS WHERE TRAFFIC SPEEDS NORMALLY EXCEED THE POSTED SPEED LIMIT.
** TAPER LENGTHS HAVE BEEN ROUNDED OFF.
L = LENGTH OF TAPER (FT), W = WIDTH OF OFFSET (FT), S = POSTED SPEED

TYPICAL TRANSITION & SIGNING FOR DIVIDED ROADWAYS

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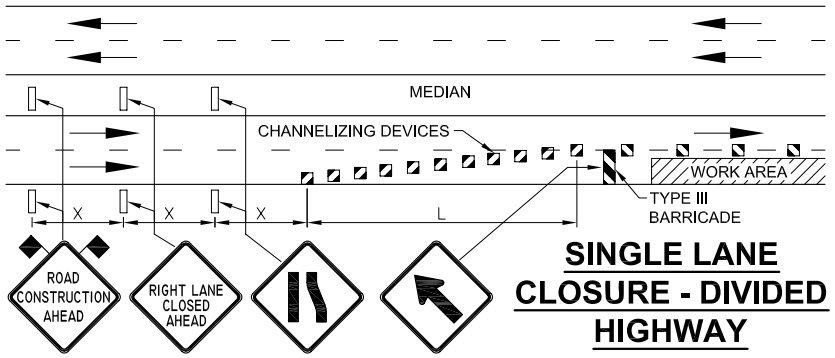
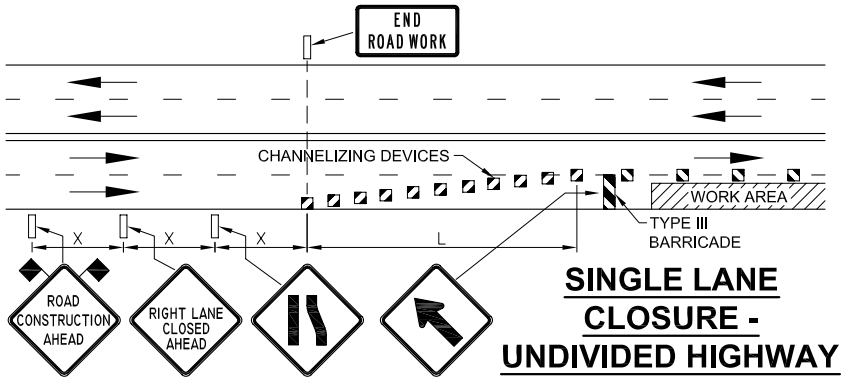
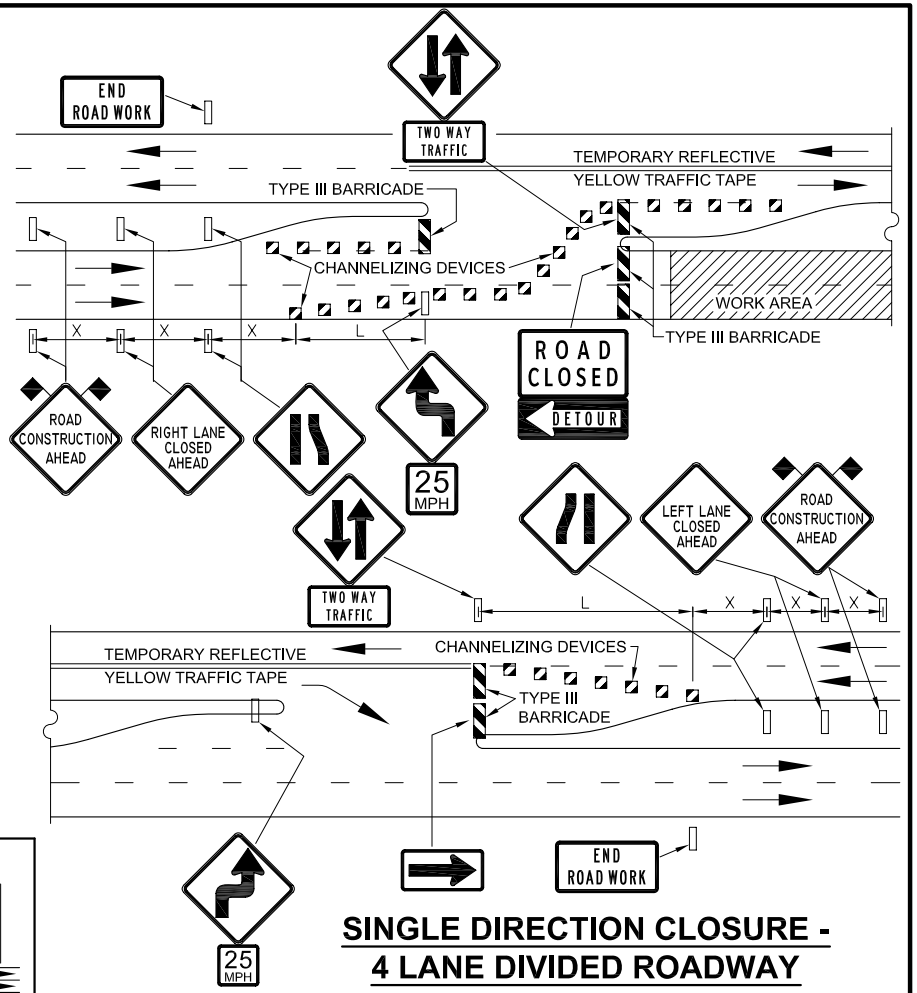


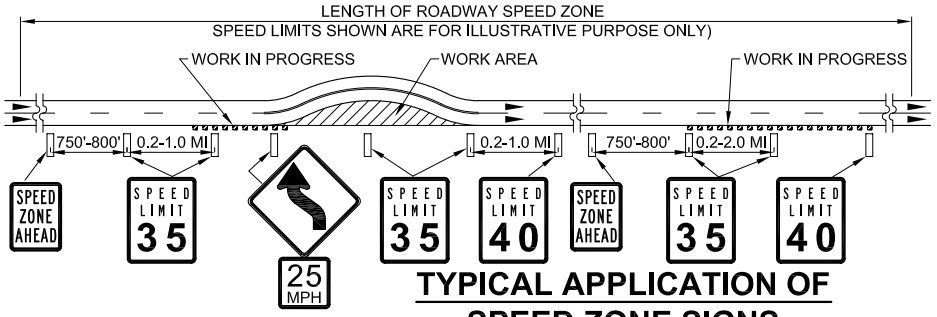
SINGLE LANE CLOSURE - DIVIDED HIGHWAY



SINGLE LANE CLOSURE - UNDIVIDED HIGHWAY



SINGLE DIRECTION CLOSURE - 4 LANE DIVIDED ROADWAY



TYPICAL APPLICATION OF SPEED ZONE SIGNS

NOTES:

1. FREQUENCY OF SPEED SIGNS SHOULD BE EVERY 0.2 TO 2.0 MILES FOR SPEEDS 40 MPH AND ABOVE AND 0.2 TO 1.0 MILES FOR SPEEDS 35 AND BELOW.
2. REDUCE SPEEDS WHEN REQUIRED SHOULD ONLY BE POSTED IN THE VICINITY OF WORK BEING PERFORMED OR OTHER AREAS NEEDED RATHER THAN THROUGHOUT THE ENTIRE PROJECT.
3. SPEED ZONE SIGNS ARE ILLUSTRATED FOR ONE DIRECTION OF TRAVEL ONLY AND ARE NORMALLY POSTED FOR EACH DIRECTION OF TRAVEL.
4. REGULATORY CLASS SPEED ZONE SIGNS SHALL HAVE BLACK LEGEND ON A WHITE REFLECTIVE BACKGROUND.

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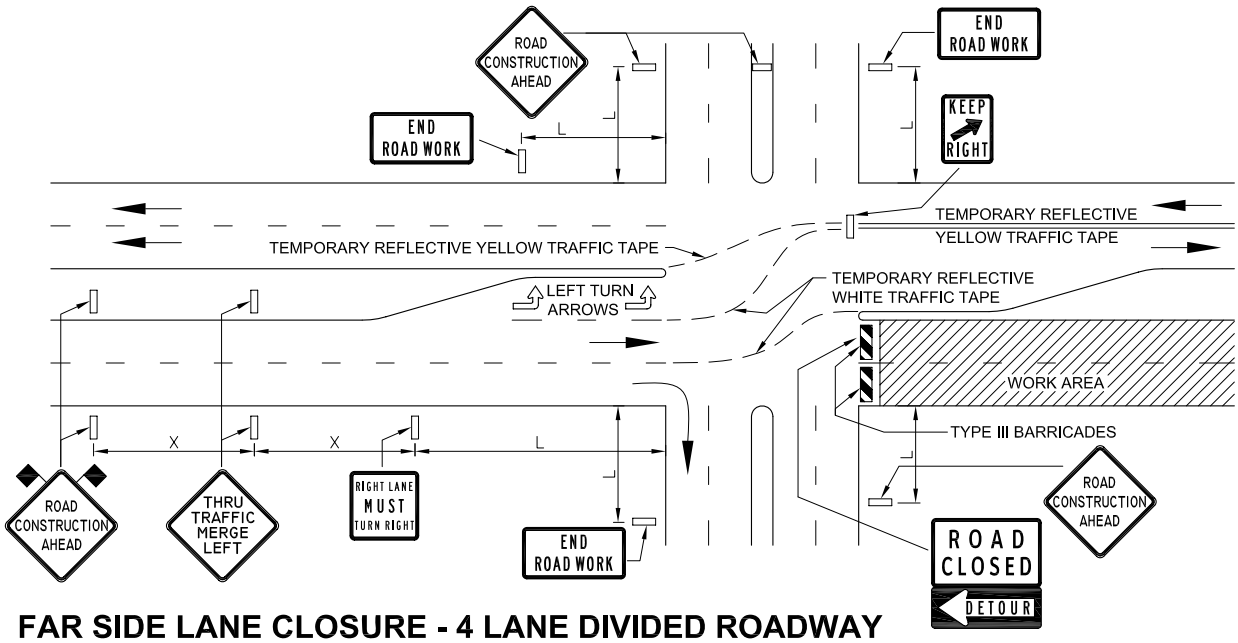
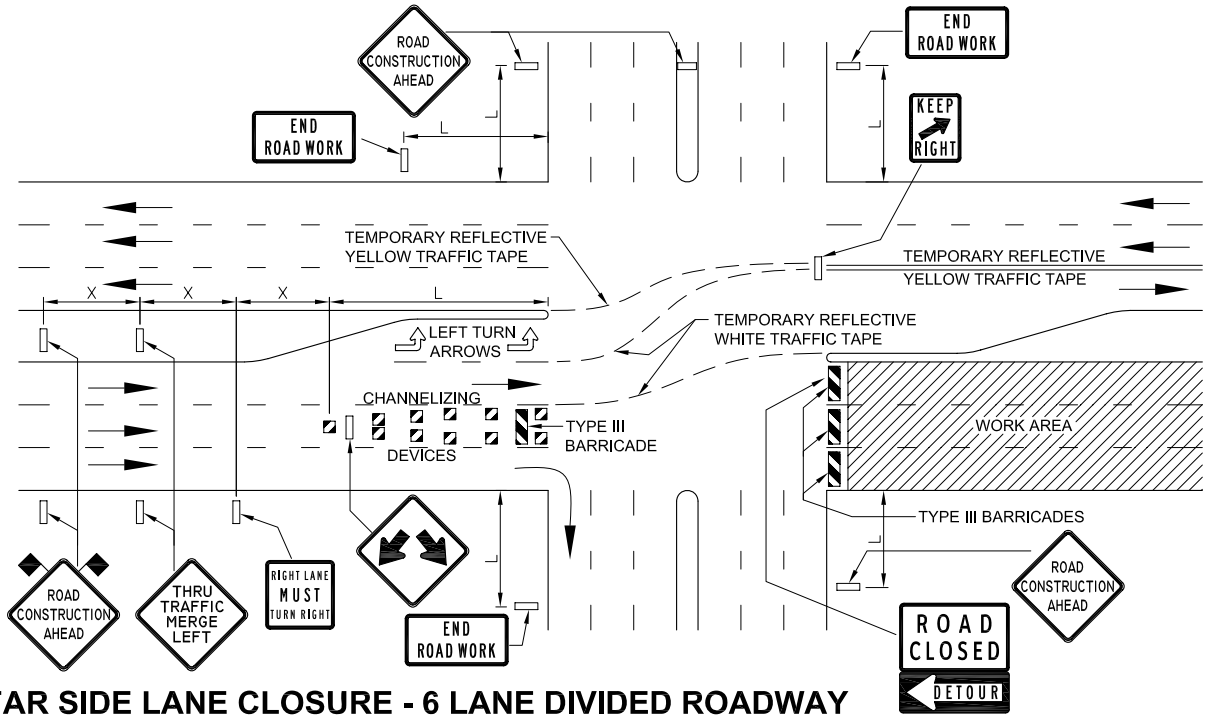


FAR SIDE LANE CLOSURE - 4 LANE DIVIDED ROADWAY



FAR SIDE LANE CLOSURE - 6 LANE DIVIDED ROADWAY

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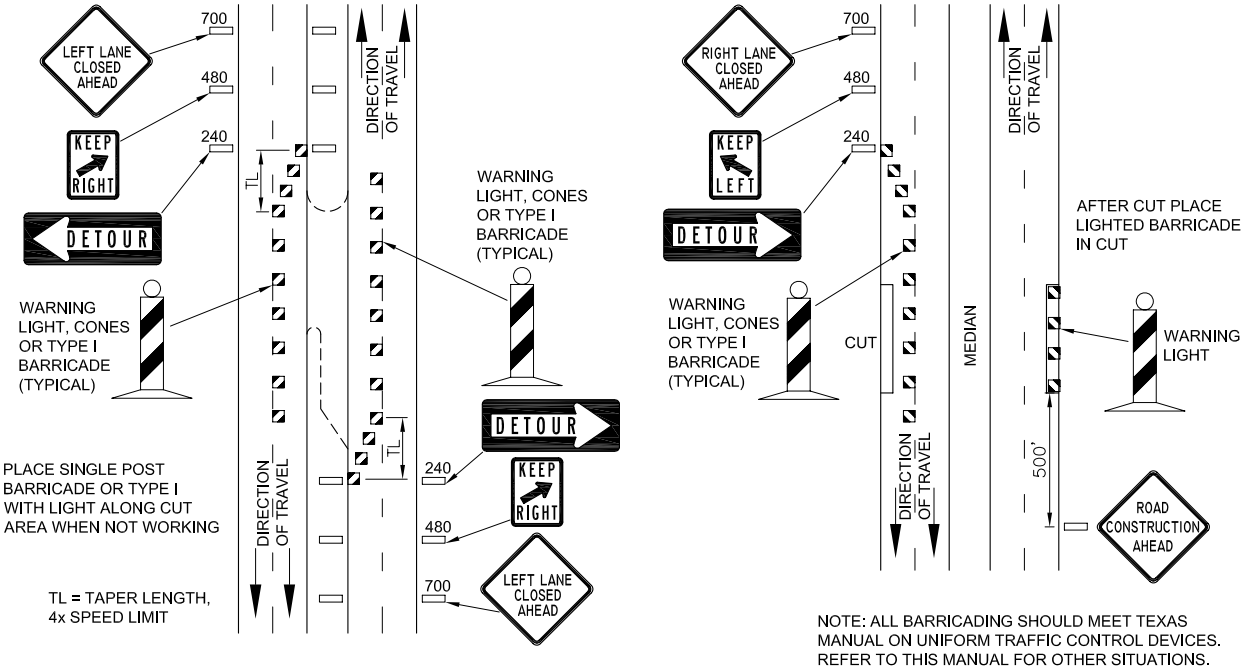

NOTE: ALL BARRICADING SHOULD MEET TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. REFER TO THIS MANUAL FOR OTHER SITUATIONS.

TYPICAL BARRICADING DETAILS

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