



# Temporary Traffic Control Standard Plans

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LADOTD Section 77  
Traffic Engineering Management



# Background Information

- Layouts and notes for designing work zones
  - Above MUTCD minimums
- Originally developed in 2005 as Special Details
  - Promote consistency

- Revised 3 times
  - 2008
  - 2010
  - 2012 (in progress)

**GENERAL PROVISIONS**

- All temporary traffic control (TTC) devices used shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges, the MUTCD, and shall meet the NCHRP Report 350 requirements for Test Level 3 devices.
- Materials used for TTC shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges and, when applicable, the LADOTD OPL.
- No TTC shall be erected without the approval of the Project Engineer and until work is about to begin, unless they are covered.
- No lane closures, lane shifts, diversions, or detours shall occur without the approval of the Project Engineer.
- Responsibility is hereby placed upon the contractor for the installation, maintenance, and operation of all TTC devices used for in these plans or required by the Project Engineer for the protection of the traveling public, as well as the workers and construction personnel.
- The contractor shall also be responsible for the maintenance of all permanent signs, pavement markings, and traffic signs left in place as essential to the safe movement and guidance of traffic within the project limits.
- The DTDE shall serve as a technical advisor to the Project Engineer for all traffic control matters.
- The Chief Construction Engineer or his appointed designee shall approve all signs and situations not addressed in the plans based on the Project Engineer's and the DTDE's recommendations. All changes shall be noted in all project traffic control diaries.
- Any additional signs shown in the MUTCD and required by the Project Engineer shall be installed under item 713-01-0000.
- Neither work activity nor storage of equipment, vehicles, or materials shall occur within the buffer space.
- When a work area has been established on one side of the roadway only, there shall be no conflicting operations or parking on the opposite shoulder within 500 feet of the work area.
- A lighting plan shall be submitted to the Project Engineer 30 days prior to night work for approval. (See section 100.20 of the Louisiana Standard Specifications for Roads and Bridges.)
- Parking of vehicles or unattended equipment, or storage of materials, within the clear zone shall not be permitted unless protected by guardrail or barriers. If the clear zone is not defined on the plan sheets, the project engineer shall verify. See typical sections.
- Immediately upon removal of existing guardrail, the contractor shall install and maintain an NCHRP Report 350 or MASH approved device to protect the blunt end of the bridge or column until new guardrail is installed. After removal of the existing guardrail, new guardrail should be installed within seven (7) days. On non-NHS routes with shoulders less than 16 feet wide if an NCHRP Report 350 Test Level 3 device is required but the field conditions of the roadway cannot support a Test Level 3 device, then a Test Level 2 device can be substituted in its place upon approval by the Engineer and the Bridge Design Engineer. All costs associated with guardrail removal and crash devices are to be included in item 713-01-0000.

**PAVEMENT MARKINGS (see OPL)**

- All pavement markings within the limits of the project that are in conflict with the project signing or the required traffic movements shall be removed from the pavement by blast cleaning or grinding. Existing stripings shall not be painted over with black paint or covered with tape.
- If special pavement markings are needed, they shall be reflectorized, removable, and accompanied by the proper signage.
- Temporary Raised Pavement Markers may be added to supplement temporary striping in areas of transition, in tapers, in diversions, and in other areas of need as shown in the plans or as directed by the Project Engineer.
- Materials and placement of temporary pavement markings shall conform to Section 713 of the Louisiana Standard Specifications for Roads and Bridges. If no pay item exists for temporary markings they shall be installed under item 713-01-0000.
- Temporary markings installed in the permanent configuration shall comply with DOTD standard plan PM-01, MUTCD, and/or the permanent striping plans.

**TRAFFIC MESSAGE SIGNS (DMS)**

- DMS shall be used on all Interstate Highways and on all other roadways where space is available with an ADT greater than 20,000 (DMS shall be paid per each under item NS-713-0000).
- When lane shifts or closures of a lane closure or a lane shift, the DMS should be placed on the right hand side of the road a minimum distance of 2 times the advance of the taper for interstates and to be determined by the Project Engineer on other highways.
- For interstates and multi-lane highways, if vehicles are queuing beyond the 2 mile DMS, an additional DMS should be placed on the right hand side of the roadway a minimum 5 miles in advance of the taper or at the end of the taper, whichever is greater.
- DMS messages shall be approved by the DTDE. Messages shall be no more than 3 lines and 2 screens.
- DMS should be placed as far from the traveled lane as possible. They shall be shielded by guardrail or barriers. If this is not possible they shall be shielded with one drum at each taper.
- When the DMS is not displaying a work zone appropriate message pertaining to the ongoing construction project it shall be shielded by guardrail or barriers, or removed from the clear zone.

**ABBREVIATIONS**

- LADOTD.....Louisiana Department of Transportation and Development
- MUTCD.....Manual on Uniform Traffic Control Devices
- NCHRP.....National Cooperative Highway Research Program
- OPL.....Qualified Products List
- DTDE.....District Traffic Operations Engineer
- DMS.....Dynamic Message Sign
- ADT.....Average Daily Traffic
- TTC Details.....Traffic Control Details
- TTC.....Temporary Traffic Control
- TMC.....Traffic Management Center
- ANSI.....American National Standards Institute
- AGC.....Associated General Contractors of America
- NTSS.....American Traffic Safety Services Association
- B.O.P.....Beginning of Project
- E.O.P.....End of Project
- NHS.....National Highway System
- MASH.....MASH Manual for Assessing Safety Hardware

**GENERAL NOTES**

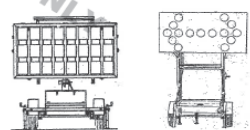
- All TTC Details show minimum construction signing.
- All situations shall be reviewed and/or designed by the Engineer.
- Contractors are responsible for complying with all TTC Details.

**SPEED LIMITS**

- The Project Engineer may approve a 10 mph drop in the speed limit for posted speeds of 45 mph or greater and for any construction, maintenance, or utility operation that requires one or more of the following:
  - The condition of the traveled way is degraded due to initial surfaces or uneven travel lane lines greater than 1.5 inches.
  - Work is in progress in the immediate vicinity of the travel way requiring lane closures or lane width reductions less than 11 feet.
  - Workers present on the shoulder within 2 feet of the edge of the traveled way without barrier protection.
- The reduced speed zone shall only apply to those portions of the project limits affected. The Project Engineer may allow SPEED LIMIT WHEN FLASHING signs to supplement reduced speed zones.
- If the speed limit is reduced, speed limit signs shall be placed:
  - beyond major intersections
  - at one mile intervals in rural areas
  - at half mile intervals in urban areas.
- At the end of the reduced speed zone, a speed limit sign displaying the original speed limit prior to construction shall be installed.
- For all other speed limit reductions not listed above the Project Engineer and the DTDE shall recommend the speed reduction to be approved.
- If the speed limit is reduced more than 10 mph, placement of the signs shall be re-evaluated according to the MUTCD.

**FLASHING ARROW PANELS**

- All Flashing Arrow Panels shall be 4 feet by 8 feet and Type-C.
- Flashing Arrow Panels should be placed on the shoulder. When there is no shoulder or median area, the arrow panel shall be placed within the closed lane behind the channelizing devices or as close to the beginning of the taper as practical.
- Flashing arrow panels shall be delineated with retroreflective TTC devices.
- At all times shall the arrow panel enclose in the traveled way, when Flashing Arrow Panel signs are not being used, they shall be shielded by guard rail or barriers, or removed.
- Arrow panels shall only be used for slow reduction tapers and shall not be used for lane shifts.



# *TTC Standard Plans*

- Implement LADOTD standards
- Provide guidance
- Encourage accountability
- Communicate with contractor

# *Standard Plans vs. Special Details*

- Special Details
  - Job-specific
  - Stamped by an engineer
  - Committee approval not needed
- Standard Plans
  - For all applicable job
  - Signed by the Chief Engineer
  - Approved by Standard Plan committee

# Why change... again?

- Work zone deficiencies
  - Misplaced flaggers, misused arrow boards, unnecessary speed drops, inadequate tapers, etc.



# Why change... again?

- Questions from TTC plan designers
  - Moving operations, signalized intersections, drop-offs, etc.
- New 2009 MUTCD (Chapter 6)
  - New signs, new terminology
- Convert to Standard Plans
- Updated EDSM's
  - VI.2.1.10 – PCMS Approved Construction Message Policy
  - VI.1.1.4 – Queue Analysis for Interstate Lane Closures

# All Revisions

- <http://www.dotd.la.gov/highways/traffic/>
- Work Zones tab

The screenshot displays the Louisiana Department of Transportation and Development (La DOTD) website. The header includes the La DOTD logo and the slogan "DOTD BUILDS the WAY". Below the header, the navigation menu shows "La DOTD", "Transportation", and "Traffic Engineering". A search bar is located on the right side of the header. The main content area features a "Traffic Engineering" section with a sub-menu containing "Home", "Access Connections", "Design Development", "Interstate Signing", "Publications", "Roundabouts", "Traffic Simulation", "Traffic Control", and "Work Zones". The "Work Zones" tab is highlighted with a red circle. Below the "Work Zones" tab, there is a link titled "Policy on the Use of Police Officers in Work Zones" with a small icon of a police officer.

# MASH Requirements

## TTC-00(A)

### GENERAL PROVISIONS

- All temporary traffic control (TTC) devices used shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges, the MUTCD, and shall meet the NCHRP Report 350 or MASH requirements for Test Level 3 devices where applicable. Materials used for TTC shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges and, when applicable, the LADOTD QPL.
- No TTC shall be erected without the approval of the Engineer and until work is about to begin, unless they are covered.
- No lane closures, lane shifts, diversions, or detours shall occur without the approval of the Engineer.
- Responsibility is hereby placed upon the contractor for the installation, maintenance, and operation of all TTC devices called for in these plans or required by the Engineer for the protection of the traveling public as well as all LADOTD and construction personnel.
- The contractor shall also be responsible for the maintenance of all permanent signs, pavement markings, and traffic signals left in place as essential to the safe movement and guidance of traffic within the project limits unless noted in the plans.
- The DTOE shall serve as a technical advisor to the Engineer for all traffic control matters.
- The Chief Construction Engineer or his appointed designee shall approve all signs and situations not addressed in the plans based on the recommendations of the Project Engineer and the DTOE. All changes shall be noted in all project traffic control diaries.
- The Chief Construction Engineer or his appointed designee shall approve all design speeds of diversions or shifts less than the posted speed based on the recommendations of the Project Engineer and the DTOE. All temporary traffic control plans shall comply with the Transportation Management Plan.
- Any additional signs shown in the MUTCD and required by the Engineer shall be installed under Item 713-01-00100.
- Neither work activity nor storage of equipment, vehicles, TMAs, or materials shall occur within the buffer space.
- When a work area has been established on one side of the roadway only, there shall be no conflicting operations or parking on the opposite shoulder within 500 feet of the work area.
- A lighting plan shall be submitted to the Engineer 30 days prior to night work for approval. (See section 105.20 of the Louisiana Standard Specifications for Roads and Bridges.)
- Parking of vehicles or unattended equipment, or storage of materials, within the clear zone shall not be permitted unless protected by guardrail or barriers. If the clear zone is not defined on the plan sheets, the Engineer shall verify.
- Immediately upon removal of existing guard rail, the contractor shall install and maintain an NCHRP Report 350 or MASH approved device to protect the blunt end of the bridge or column until new guard rail is installed. After removal of the existing guard rail, new guard rail should be installed within seven (7) days. On non-NHS routes with shoulders less than 8 feet wide: if an NCHRP 350 Report Test Level 3 or MASH device is required but the field conditions of the roadway cannot support a Test Level 3 device, then a Test Level 2 device can be substituted in its place upon approval by the Engineer.
- All costs associated with crash devices are to be included in Item 713-01-00100

### PAVEMENT MARKINGS (see QPL)

- All pavement markings within the limits of the project that are in conflict with the project signing or the required traffic movements shall be removed from the pavement by blast cleaning or grinding. (Existing striping shall not be painted over with black paint or covered with tape.)
- If special pavement markings are needed, they shall be reflectorized, removable, and accompanied by the proper signage.
- Temporary Raised Pavement Markers may be added to supplement temporary striping in areas of transition, in tapers, in diversions, and in other areas of need as shown in the plans or as directed by the Engineer.
- Materials and placement of temporary pavement markings shall conform to Section 713 of the Louisiana Standard Specifications for Roads and Bridges. If no pay item exists for temporary markings they shall be installed under item 713-01-00100.
- Temporary markings installed in the permanent configuration shall comply with LADOTD pavement marking standard plans, MUTCD, and/or the permanent striping plans.

### PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

- PCMS shall be used on all Interstate Highways and on all other roadways (where space is available) with an ADT greater than 20,000.
- When used in advance of a lane closure or a lane shift, the PCMS should be placed on the right hand side of the road a minimum distance of 2 miles in advance of the taper for interstates and to be determined by the Engineer on other highways.
- For interstates and multi-lane highways, if vehicles are queuing beyond the 2 mile PCMS, an additional PCMS should be placed on the right hand side of the road approximately 5 miles in advance of the taper or at the end of the queue, whichever is greater.
- PCMS messages shall conform to EDSM VI.2.1.10 or shall be approved by the DTOE. Messages shall be no more than 3 lines and 2 screens.
- PCMS should be placed as far from the traveled lane as possible. They shall be shielded by guardrail or barriers. If this is not possible they shall be delineated with one drum at each corner.
- If the PCMS has to be placed on the shoulder then the contractor shall install a shoulder closure.
- When the PCMS is not displaying a work zone appropriate message pertaining to the ongoing construction project it shall be shielded by guardrail or barriers, or removed from the clear zone.

### ABBREVIATIONS

AASHTO	.....American Association of State Highway and Transportation
ADT	.....Average Daily Traffic
AGCI	.....Associated General Contractors of America
ANSI	.....American National Standards Institute
ATSSA	.....American Traffic Safety Services Association
B.O.P.	.....Beginning of Project
DTOE	.....District Traffic Operations Engineer
E.O.P.	.....End of Project
LADOTD	.....Louisiana Department of Transportation and Development
MASH	.....AASHTO Manual for Assessing Safety Hardware
MUTCD	.....Manual Uniform Traffic Control Devices
NCHRP	.....National Cooperative Highway Research Program
NHS	.....National Highway System



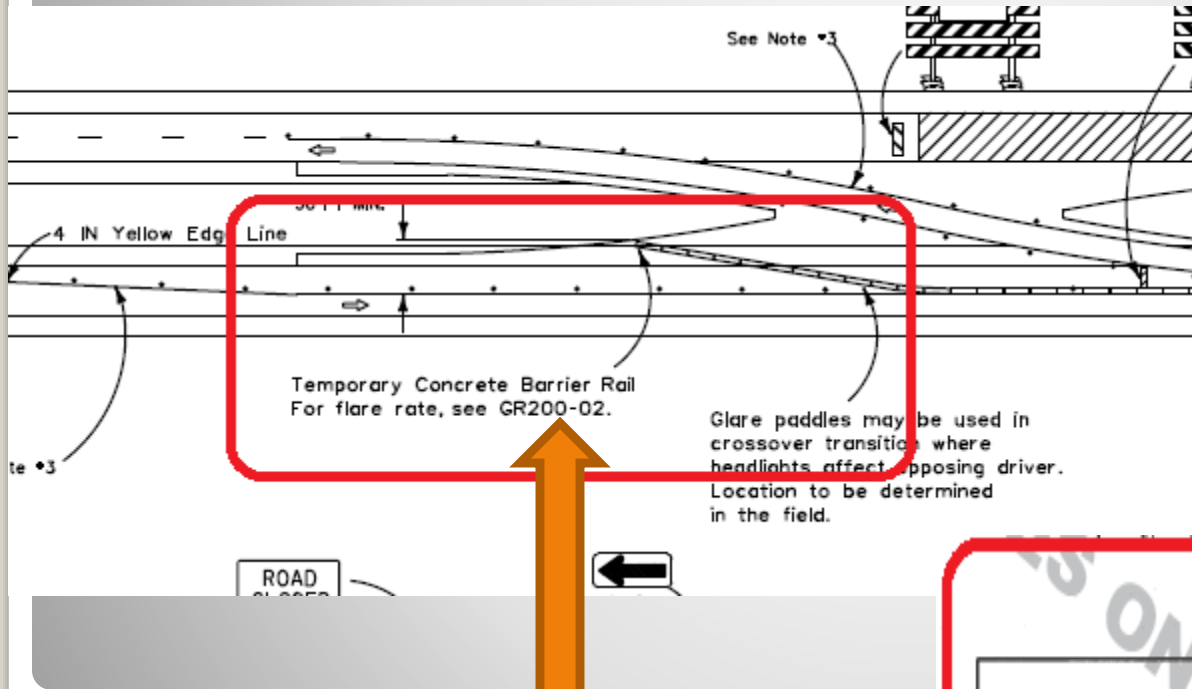
# Design Speed

TTC-00(A)

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- No lane closures, lane shifts, diversions, or detours shall occur without the approval of the Engineer.
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- The Chief Construction Engineer or his appointed designee shall approve all signs and situations not addressed in the plans based on the recommendations of the Project Engineer and the DTOE. All changes shall be noted in all project traffic control diaries.
- The Chief Construction Engineer or his appointed designee shall approve all design speeds of diversions or shifts less than the posted speed based on the recommendations of the Project Engineer and the DTOE. All temporary traffic control plans shall comply with the Transportation Management Plan.
- Any additional signs shown in the MUTCD and required by the Engineer shall be installed under Item 713-01-00100.
- Neither work activity nor storage of equipment, vehicles, TMAs, or materials shall occur within the buffer space.
- When a work area has been established on one side of the roadway only, there shall be no conflicting operations or parking on the opposite shoulder within 500 feet of the work area.

# Barrier Flare Rate



TTC-08  
LLC-08

Bridge Design  
Standard Plan  
GR200-02

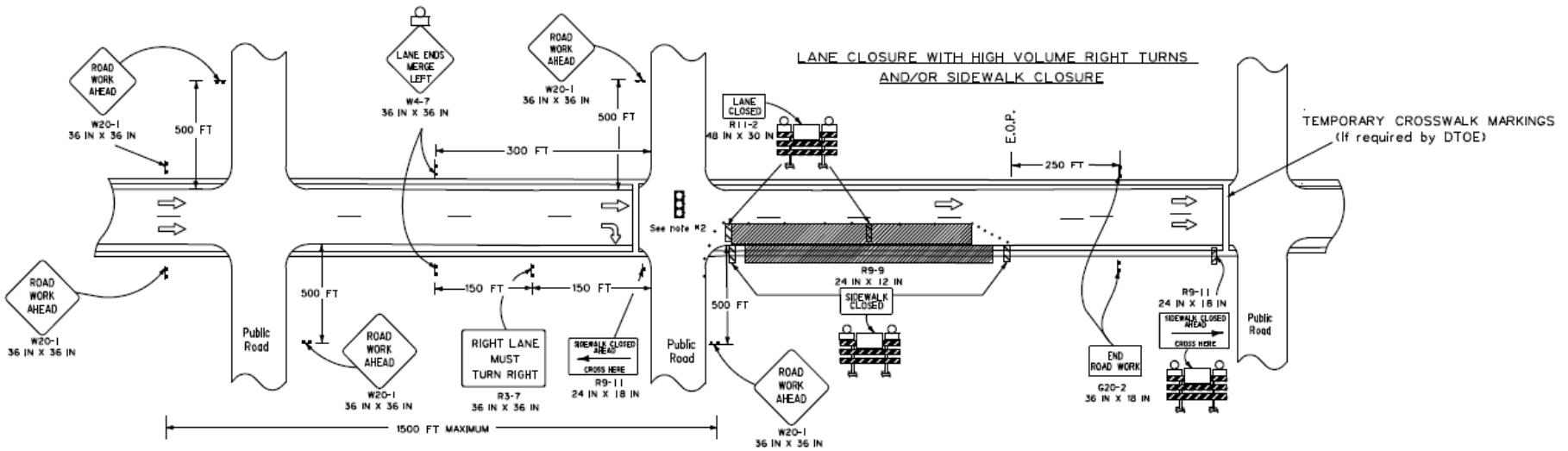
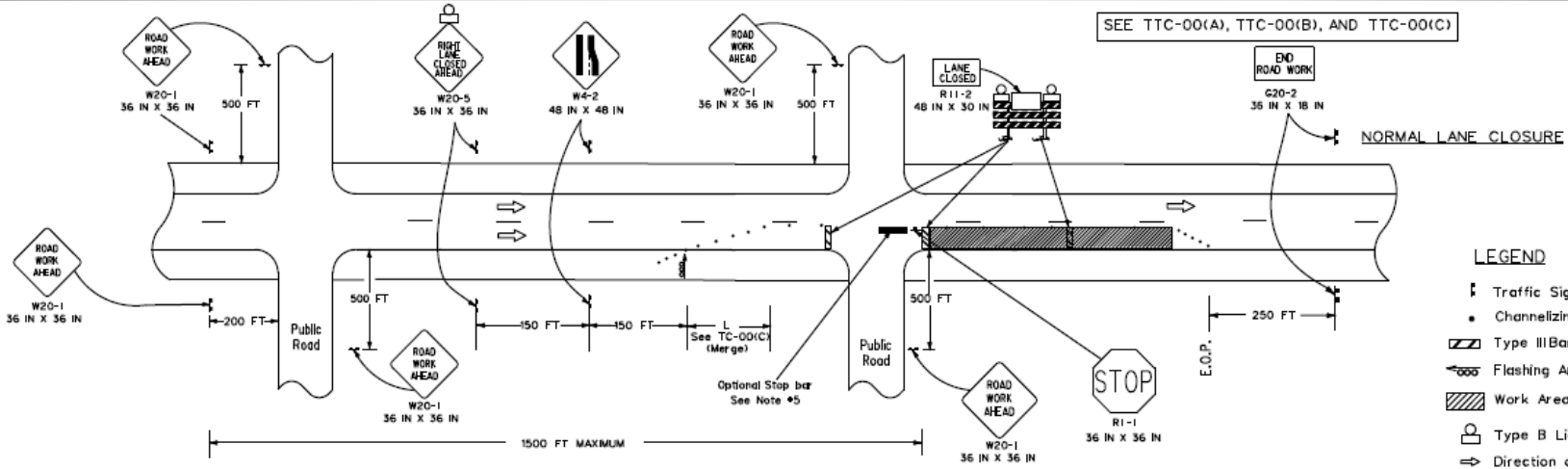
**TABLE 4**  
SHYLINE OFFSET & FLARE RATES

DESIGN SPEED (MPH)	$L_g$ SHYLINE OFFSET (FT.)	MAXIMUM FLARE RATE (a,b) FOR BARRIER INSIDE SHYLINE	MAXIMUM FLARE RATE (a,b) FOR BARRIER BEYOND SHYLINE	
			RIGID BARRIERS <sup>a</sup>	SEMI-RIGID BARRIERS <sup>b</sup>
70	9.2	30:1	20:1	15:1
60	7.9	26:1	18:1	14:1
55	7.2	24:1	16:1	12:1
50	6.6	21:1	14:1	11:1
45	5.6	18:1	12:1	10:1
40	4.6	16:1	10:1	8:1
30	3.6	13:1	8:1	7:1



# New Layouts

TTC-10  
LLC-10



*Animation*

TTC-10 Video

# New Layout

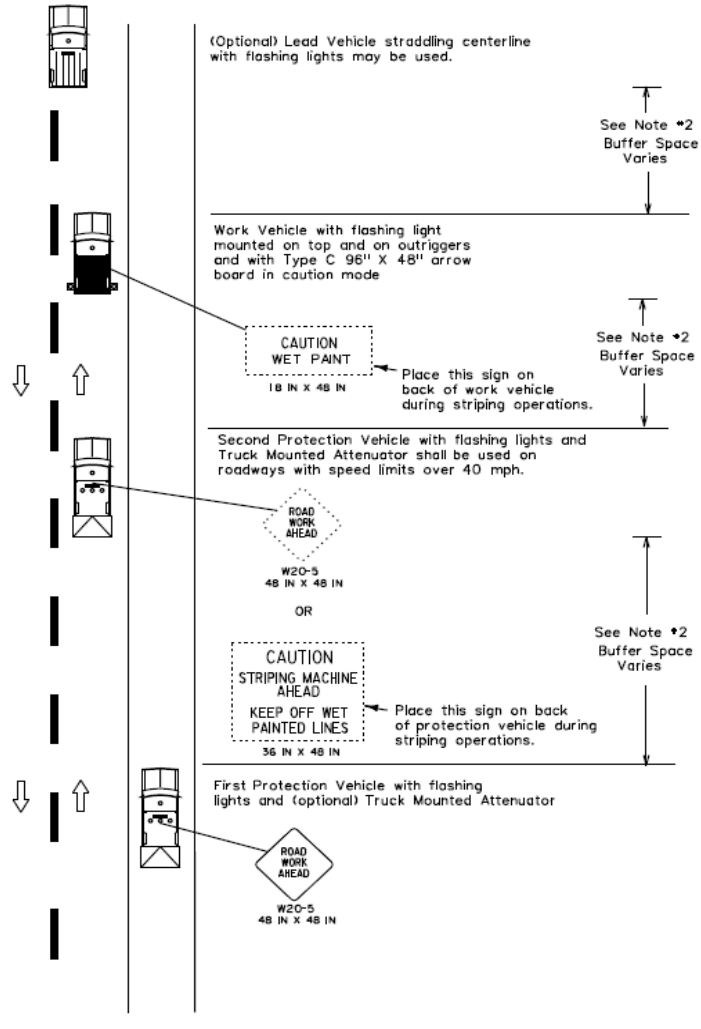
# TTC-18

SEE TTC-00(A), TTC-00(B), AND TTC-00(C)

## NOTES

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TC-00(A), TC-00(B), and TC-00(C).

1. This layout represents the minimum traffic controls required for moving operations on two-lane roads with two-way traffic, such as striping and placement of raised pavement markers.
2. Distances between vehicles may vary and should be adjusted due to drying time and sight obstructions such as overpasses and hills. Vehicles with attenuators shall move with work operations. Buffer space shall not exceed rollahead distance required by the manufacturer plus 100 feet.
3. If a queue greater than 5 minutes (about 1000 feet) exists, the contractor shall cease operations and pull over to the shoulder until the queue dissipates.
4. Flaggers may be used with this layout, if needed. See TC-00(B).



## LEGEND

- ⇒ Direction of Travel
- Work Vehicle
- Lead Vehicle

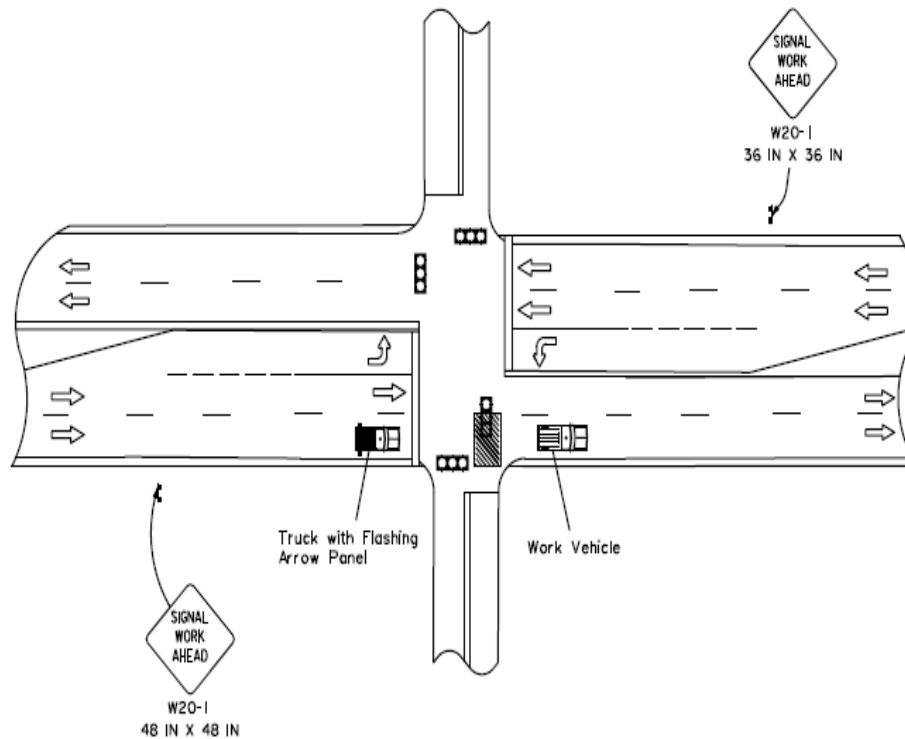
# New Layouts

# TTC-19

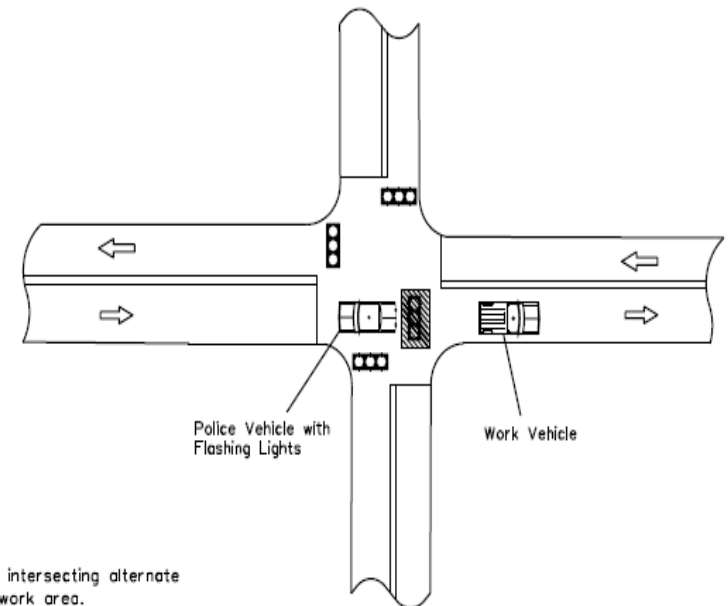
SEE TTC-00(A), TTC-00(B), AND TTC-00(C)

## SIGNAL WORK ON A MULTI-LANE ROADWAY FOR UP TO ONE HOUR

(For signal work > one hour see TTC-09 OR TTC-10)



## SIGNAL WORK ON A TWO-LANE TWO-WAY ROADWAY



### NOTES

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), and TTC-00(C).

1. This layout represents the minimum traffic controls required during signal construction and maintenance.
2. For projects with multiple signals, the contractor shall
3. Place "Road Work Ahead" sign prior to an intersecting alternate route, no more than 1500 feet from the work area.
4. The sign height shall be at least 7 feet in business, commercial.

# Highlights

- Total of 23 sheets
  - 19 layout sheets & 4 general notes
- ProjectWise
  - Standard Plans folder
- [www.dotd.la.gov/highways/standardplans/](http://www.dotd.la.gov/highways/standardplans/)
  - For Informational Purposes Only watermark



For questions about the TTC Standard Plans:

(225) 242-4636  
joy.johnson@la.gov

*Revisions:*

[www.dotd.la.gov/highways/traffic/](http://www.dotd.la.gov/highways/traffic/)

