**TRAFFIC CONTROL PLAN**

Instructions:

* Delete instructions/choices in red
* Modify information highlighted in yellow to project-specific information
* Delete sections that are not needed (i.e. Temporary Signals, Barricades, etc.)

**TRAFFIC CONTROL GENERAL**

Typical for every project – always keep:

Except as provided herein, traffic shall be maintained in accordance with the current editions of the Manual on Uniform Traffic Control Devices (MUTCD), Standard Specifications, Supplemental Specifications, and the Standard and Sepia Drawings. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic shall be paid at the lump sum bid price to “Maintain and Control Traffic”.

Typical for every project – always keep:

Contrary to Section 106.01, traffic control devices used on this project may be new, or used in like new condition, at the beginning of the work and maintained in like new condition until completion of the work. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the contractor unless otherwise addressed, when no longer needed.

**PROJECT PHASING & CONSTRUCTION PROCEDURES**

Choose either (1) Maintaining alternating one-way traffic on projects with only two-lane roadways (2) Maintaining traffic on projects with three or more lanes, two lanes, and/or ramps or (3) For specific MOT instructions

1. Maintain alternating one-way traffic during construction:

Maintain alternating one-way traffic during construction. Provide a minimum clear lane width of ? feet (generally use a width that is 1 foot less than the existing typical lane width); however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

1. Maintaining traffic on projects with three or more lanes, two lanes, and/or ramps

At locations with three or more lanes, maintain one lane of traffic in each direction at all times during construction. At locations with two lanes, maintain alternating one-way traffic during construction and provide a minimum clear lane width of ? feet (generally use a width that is 1 foot less than the existing typical lane width). At locations with one lane, such as at exit and entrance ramps, a partial lane closure is permitted during construction, as long as a minimum clear lane width of 10 feet (for ramps we generally want to maintain a minimum lane width of 10 ft since we expect truck traffic) is maintained. NOTE: During any lane closure or partial lane closure (partial lane closures are generally used on one lane ramps that need to remain open during construction…all of the one-lane language within this paragraph can be deleted if there are no one-lane facilities on the project), make provisions for the passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

1. Performing work under full closure – modify the weekdays/weekends as needed

Complete the High Friction Surface Treatment (HFST) work using a full ramp closure. The Contractor shall submit the proposed ramp closure dates and times to the Engineer at least two weeks in advance for approval. Full ramp closure shall only occur on weekend nights during the following times:

Friday, from 9:00 PM, until Saturday, 5:00 AM

Saturday, from 9:00 PM, until Sunday, 5:00 AM

Sunday, from 9:00 PM, until Monday, 5:00 AM

This is not typically needed – only use when we expect a contractor will want to work at night:

The Department will allow night work on this project. Obtain the Engineer’s approval of the method of lighting prior to performing night work.

Take these restrictions into account in submitting bid. The Department will not consider any claims for money or grant contract time extensions for any delays to the Contractor as a result of these restrictions.

1. For specific MOT instructions:

Construction Phasing for describe work, such as Curve Correction between insert special MOT location, such as MP 21.440 – 21.599:

1. Construct the proposed SB lane of the curve correction up to the final base course.
2. Construct tie-ins between existing SB lane and proposed SB lane, while maintaining alternating one-way traffic on the NB lane.
3. Move the existing SB traffic onto the newly constructed SB lane.
4. Construct the proposed NB lane of the curve correction up to the final base course.
5. Construct tie-ins between existing NB lane and proposed NB lane, while maintaining alternating one-way traffic on the newly constructed SB lane.
6. Move the existing NB traffic onto the newly constructed NB lane.
7. Remove existing pavement as indicated on the plans, or as directed by the Engineer.
8. Resurface the curve correction, under traffic, when resurfacing the entire roadway

For all other construction activities, utilize a lane closure, and maintain alternating one-way traffic. This may require part-width construction of certain elements. Provide a minimum clear lane width of 10 feet (generally use a width that is 1 foot less than the existing typical lane width); however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

Typically the same for every project, but may be modified:

Unless otherwise approved by the Engineer, no lane and/or road (delete if there are no road closures) closures will be allowed during the following times:

Update the below dates as needed so that what is shown is the holidays/special events that occur between the letting date and the completion date (NOTE: be sure to ask the Project Team if there are any special events we need to consider, such as festivals or major sporting events):

Memorial Day Weekend 3 pm Friday, May 26, 2023 – 8 pm Monday, May 29, 2023

Independence Day 7 am Saturday, July 1, 2023 – 11 pm Tuesday, July 4, 2023

Labor Day Weekend 3 pm Friday, September 1, 2023 – 8 pm Monday, September 4, 2023

Thanksgiving Holiday 3 pm Wednesday, November 22, 2023 – 8 pm Sunday, November 26, 2023

Christmas Holiday 3 pm Friday, December 22, 2023 – 8 pm Monday, December 25, 2023

New Year’s Day Holiday 7 am Saturday, December 30, 2023 – 8 pm Monday, January 1, 2024

Easter Weekend 3 pm Friday, March 29, 2024 – 8 pm Sunday, March 31, 2024

Memorial Day Weekend 3 pm Friday, May 24, 2024 – 8 pm Monday, May 27, 2024

Independence Day 7 pm Thursday, July 4, 2024 – 8 pm Sunday, July 7, 2024

Labor Day Weekend 3 pm Friday, August 30, 2024 – 8 pm Monday, September 2, 2024

Thanksgiving Holiday 3 pm Wednesday, November 27, 2024 – 8 pm Sunday, December 1, 2024

Christmas Holiday 7 am Tuesday, December 24, 2024 – 8 pm Wednesday, December 25, 2024

New Year’s Day Holiday 7 am Tuesday, December 31, 2024 – 8 pm Wednesday, January 1, 2025

For projects in Jefferson County, we will generally want to include restrictions pertaining to Thunder Over Louisville & Kentucky Derby. The “Run for the Roses” is the first Saturday in May and Opening Day of Derby Week starts the preceding Saturday (last Saturday in April). Generally speaking, we start the restrictions the Friday afternoon before Opening Day and continue until the Monday morning after the “Run for the Roses.” (Be sure to insert the Thunder Over Louisville & Kentucky Derby restrictions in the above dates in the correct order based on the dates.)

Thunder Over Louisville

 & Kentucky Derby 3 pm Friday, April 28, 2023 – 9 am Monday, May 8, 2023

Thunder Over Louisville

 & Kentucky Derby 3 pm Friday, April 26, 2024 – 9 am Monday, May 6, 2024

Use if there are rush hour restrictions, use:

Do NOT erect lane closures, partial lane closures, and/or road closures (partial lane closures are generally used on one lane ramps that need to remain open during construction…this phrase can likely be deleted from most HSIP projects. Also delete road closures if there are no road closures) during the following days and/or hours:

Normal Workday Rush Hours

Monday-Friday 7:00 AM – 9:00 AM, and 3:00 PM – 6:00 PM, daily

Use if we only need morning rush hour restrictions and do not want night work:

Unless otherwise approved by the Engineer, no lane closures shall be allowed before 8:30 AM during weekdays and no lane closures shall be allowed after dusk.

Typical for every project – always keep:

At the discretion of the Engineer, additional days and hours may be specified when lane closures will not be allowed.

Typical for projects with lower traffic volumes and/or where these is not much need for the District Public Information Office to issue Press Releases concerning the project’s MOT:

The Contractor shall submit proposed lane and/or road closure days and times to the Engineer at least 14 calendar days in advance for approval. Liquidated Damages will be assessed for each hour or fraction of an hour that a lane and/or road closure is in place outside of an approved time period. See the Special Notes for Completion Dates & Liquidated Damages for details on the Liquidated Damages amount.

Typical for projects with higher traffic volumes and/or when it IS likely that the District Public Information Office will issue Press Releases concerning the project’s MOT:

The Department will provide public notification regarding lane and/or road (delete if there are no road closures) closures. The Contractor shall submit proposed lane and/or road closure days and times to the Engineer at least 14 calendar days in advance for approval. Liquidated Damages will be assessed for each hour or fraction of an hour that a lane and/or road closure is in place outside of an approved time period. See the Special Notes for Completion Dates & Liquidated Damages for details on the Liquidated Damages amount.

Include the following on any projects that include high friction surface treatment (or any project where loose gravel may be present within a curve for an extended period of time, as this could be a hazard to motorcycles):

NOTE: In addition to the typical work zone signing, two “Loose Gravel” signs (W8-7), one sign for each direction of travel, shall be erected prior to the installation of the HFST and shall remain in place until the final 48-hour vacuum sweep has been completed. These signs shall be installed in accordance with the current edition of Standard Drawing TTD-125.

**AUTOMATED FLAGGER ASSISTANCE DEVICE**

Delete if we are not bidding an Automated Flagger Assistance Device

Two (2) Automated Flagger Assistance Devices (AFAD) have been included in the project for possible use during the placement of the High Friction Surface Treatment (HFST) (edit to match the primary reason for the AFAD). The Contractor and the Engineer should work together to determine the best use of these devices. Each AFAD consists of a portable temporary signal and a gate, one placed at each end of the work zone, that work together to manage traffic through the work zone. If used, the Department will measure each AFAD only once for payment, regardless of how many times the AFAD is set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements of the AFADs if the AFADs becomes damaged or non-functioning, nor if the Engineer directs that the AFAD be replaced due to poor condition or visibility. The Contractor shall retain possession of the AFADs upon completion of construction.

**TEMPORARY SIGNAL 2 PHASE**

Delete if we are not bidding a Temporary Signal 2 Phase

A Temporary Signal 2 Phase has been included in the project for possible use during the reconstruction of the ‘S’ Curve area between STA 100+00 to 128+00 (edit to match the primary reason for the Temporary Signal 2 Phase). This device may be useful for other areas. The Contractor and the Engineer should work together to determine the best use of this device. Each Temporary Signal 2 Phase consists of two portable temporary signals, one placed at each end of the work zone, that work together to manage traffic through the work zone. If used, the Department will measure the Temporary Signal 2 Phase only once for payment, regardless of how many times each pair of temporary signals are set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements of the Temporary Signal 2 Phase if it becomes damaged or non-functioning, nor if the Engineer directs that it be replaced due to poor condition or visibility. The Contractor shall retain possession of the Temporary Signal 2 Phase upon completion of construction.

**TEMPORARY SIGNAL MULTI-PHASE**

Delete if we are not bidding a Temporary Signal Multi Phase; the multiphase is needed when we have more than 2 directions of travel needing to use the same space, one direction at a time, during construction (such as at an intersection).

A Temporary Signal Multi-Phase has been included in the project for possible use during the construction of the roundabouts at the interchange (edit to match the primary reason for the Temporary Signal Multi-Phase). This device may be useful for other areas. The Contractor and the Engineer should work together to determine the best use of this device. Each Temporary Signal Multi-Phase consists of three or more portable temporary signals placed at 3 or more entry points of the work zone that work together to manage traffic through the work zone. If used, the Department will measure the Temporary Signal Multi-Phase only once for payment, regardless of how many times each component is set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements of the Temporary Signal Multi-Phase if it becomes damaged or non-functioning, nor if the Engineer directs that it be replaced due to poor condition or visibility. The Contractor shall retain possession of the Temporary Signal Multi-Phase upon completion of construction.

**LANE CLOSURES**

Choose either (1) Typical for Lane Closures or (2) Special language that may be modified for specific cases

1. Typical for Lane Closures:

Long term lane closures shall not be allowed; therefore, lane closures will not be measured for payment. Do not leave lane closures in place during non-working hours and prohibited periods

1. Special language that may be modified for specific cases:

Do not leave lane closures in place during prohibited periods. Except for the ‘S’ Curve reconstruction area, do not leave lane closures in place during non-working hours, unless otherwise approved by the Engineer. Contrary to Section 112.04.17, long-term lane closures will not be measured for payment, but shall be incidental to Maintain and Control Traffic (the only time HSIP will typically pay for a lane closure is when the lane closure requires the use of temporary barrier wall or when there is some other special aspect to the lane closure).

Here are some special language examples about temp vs long term lane closures that may make sense to utilize on projects near a school. These examples may make sense by themselves or in conjunction with the above language about lane closures (use your judgement when considering utilization of lane closure language). Also, this sort of special language should be discussed at the Final Review Meeting . Keep in mind that this sort of language will not be needed for most HSIP projects, so delete this language if not needed:

Example 1 (delete if not needed)

No long-term lane closures shall be permitted while school is in session; only temporary lane closures shall be permitted. School in session is defined as any day when X County Public Schools are in session with students present. NOTE: most school calendars are published online but may change due to certain circumstances. The Contractor and Engineer should work together to determine the dates when school will be and will not be in session.

Example 2 (delete if not needed)

No temporary lane closures will be permitted on weekdays between the hours of 6:30 AM to 8:30 AM and 2:30 PM to 5:00 PM while school is in session. School in session is defined as any day when X County Public Schools are in session with students present. NOTE: most school calendars are published online but may change due to certain circumstances. The Contractor and Engineer should work together to determine the dates when school will be and will not be in session.

Example language about not leaving a long-term lane closure in place for several days when no work activity is taking place (delete if not needed)

The Contractor shall be required to remove all long-term lane closures after four consecutive calendar days of inactivity on the project (if this language is to be used on a project’s TCP, discuss and determine the # of consecutive calendars of inactivity during the Final Review Meeting), unless approved otherwise by the Engineer. Once notified by the Engineer that a long-term lane closure must be removed due to inactivity, the Contractor shall have 12 hours to remove the long-term lane closure; otherwise, liquidated damages of $1,000 per hour or any fraction of an hour shall apply. The Department will not make any payment to the Contractor for the removal or the reinstallation of a long-term lane closure other than the initial payment of the initial lane closure installation. If the Contractor is required to remove a long-term lane closure, the roadway must be returned to a condition that satisfies the Pavement Edge Drop-Off requirements noted below.

**TRUCK MOUNTED ATTENUATORS**

Consider using this language for projects along high speed (> 45 mph), multilane roadways, especially when the work is anticipated to occur at the same location for more than 3 days. For HFST installations having a relatively “short” duration (3-4 days), with the actual work zone being intermittent over the 3-4 days the contractor is working, use TMAs where the risk of work zone protrusion is higher, such as interstates, parkways, and other multi-lane, higher speed roadways. Otherwise delete. Note: spec book 112.04.13, states when TMAs are listed as a bid item, we’ll measure and pay – so **include a bid item for TMAs**.

When a traffic lane (or lanes) is closed along a roadway with two or more lanes in one direction of travel and a temporary barrier wall is not in place to protect the work zone, use a Truck Mounted Attenuator (TMA). Furnish and install a TMA in advance of a work area when workers will be within 20 feet from traffic. If there is less than 500 feet between nearby work areas, only a single TMA will be required. The TMAs shall be located at the individual work areas and shall be moved as the work zone moves within the project limits. All details of the TMA installations are to follow manufacture recommendations and/or as directed by the Engineer.

Include a TMA bid item and the paragraph below for projects when temporary barriers are not used and where the risk of work zone protrusion is higher, such as interstates, parkways, and other multi-lane, higher speed (> 45 mph) roadways, and interstate/parkway single lane ramps:

* Especially when the work is anticipated to occur at the same location for more than 3 days.
* HFST installations having a relatively “short” duration (3-4 days), with the actual work zone being intermittent over the 3-4 days.

Otherwise delete. Note: spec book 112.04.13, states when TMAs are listed as a bid item, we’ll measure and pay – so **include a bid item for TMAs**.

Furnish and install a TMA in advance of a work area when workers will be within 20 feet from traffic. If there is less than 500 feet between nearby work areas, only a single TMA will be required. The TMAs shall be located at the individual work areas and shall be moved as the work zone moves within the project limits. All details of the TMA installations are to follow manufacture recommendations and/or as directed by the Engineer.

**TEMPORARY SIGNS**

Typical for all projects – always keep:

Temporary signposts and splices shall be compliant with NCHRP 350 or MASH.  Manufacturer’s documentation validating this compliance shall be provided to the Engineer prior to installation.  Temporary signs, including any splices, shall be installed according to manufacturer’s specifications and installation recommendations.  Contrary to section 112.04.02, only long-term temporary signs (temporary signs intended to be continuously in place for more than 3 days) will be measured for payment.  Short-term temporary signs (temporary signs intended to be left in place for 3 days or less) will not be measured for payment but will be incidental to Maintain and Control Traffic.

**CHANGEABLE MESSAGE SIGNS**

Choose either (1) CMSs provided by the Department (if we do not have a bid item for CMSs), or (2) CMSs provided by contractor (if we do have a bid item for CMSs). If we are not bidding CMSs, be sure to delete the last 5 pages under the heading: **USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS**

1. CMSs provided by the Department:

If deemed necessary, Portable Changeable Message Signs will be provided by the Department. The Contractor may be asked to assist in the placement and setup of the portable changeable message signs. The Engineer will determine placement locations and the messages to be displayed.

1. CMSs provided by the Contractor:

Provide changeable message signs in advance of and within the project at locations determined by the Engineer. If work is in progress concurrently in both directions or if more than one lane closure is in place in the same direction of travel, provide additional changeable message signs as directed by the Engineer. Place changeable message signs approximately one mile in advance of the anticipated queue at each lane closure. As the actual queue lengthens and/or shortens, relocate or provide additional changeable message signs so that traffic has warning of slowed or stopped traffic at least one mile but not more than two miles before reaching the end of the actual queue. The Engineer may vary the designated locations as the work progresses. The Engineer will determine the messages to be displayed. In the event of damage or mechanical/electrical failure, repair or replace the Changeable Message Sign. If the damage or mechanical/electrical failure is identified during active work operations, repair or replace the Changeable Message Sign within 6 hours. If the damage or mechanical/electrical failure is identified when there are no active work operations on the project, repair or replace the Changeable Message Sign within 12 hours. The Department will measure for payment the maximum number of Changeable Message Signs in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual Changeable Message Signs only once for payment, regardless of how many times they are set, reset, removed, and/or relocated during the duration of the project. The Department will not measure for payment any replacements for damaged Changeable Message Signs or any changeable message signs the Engineer directs to be replaced due to poor condition or readability. Retain possession of the Changeable Message Signs upon completion of the work.

Use when we have the LAW ENFORCEMENT OFFICER bid item, otherwise delete the LAW ENFORCEMENT OFFICER section:

**LAW ENFORCEMENT OFFICER**

If requested by the Contractor, the Engineer may approve Law Enforcement Officer support to supplement the Contractor’s temporary traffic control. If approved, provide one (1) law enforcement support unit for each lane and/or shoulder closure, each unit consisting of an off-duty law enforcement officer from any police agency having lawful jurisdiction and a police car equipped with externally mounted flashing blue lights. Place the police support unit at a location that is most effective to alert traffic of the work, but safe for the workers, the officer, and the traveling public. The Department will measure and pay for each approved individual law enforcement support unit on a per hour basis for the officer with the police vehicle. If law enforcement support is utilized without prior approval by the Engineer, the Department may deny payment for any invoiced hours prior to the approval date.

**ARROW PANELS**

Use when we have the ARROW PANEL bid item (the arrow panel bid item is a **required** bid item when we have a lane closure on a multi-lane roadway), otherwise delete the Arrow Panel section:

Use arrow panels as shown on the Standard Drawings or as directed by the Engineer. The Department will measure for payment the maximum number of arrow panels in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual Arrow Panels only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure replacements for damaged Arrow Panels or for panels signs the Engineer directs be replaced due to poor condition or readability for payment. Retain possession of the Arrow Panels upon completion of the work.

**BARRICADES**

Choose either (1) If barricades are NOT being measured for payment or (2) If barricades ARE being measured for payment

1. If barricades are NOT being measured for payment:

The Department will not measure barricades used in lieu of barrels and cones for channelization or delineation but shall be incidental to Maintain and Control Traffic according to Section 112.04.01.

1. If barricades ARE being measured for payment:

The Department will measure barricades used for road closures and to protect pavement removal areas in individual units Each. The Department will measure for payment the maximum number of barricades in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual barricades only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure for payment any replacements for damaged barricades, or any barricades the Engineer directs to be replaced due to poor condition or reflectivity. Retain possession of the Barricades upon completion of construction.

**TEMPORARY ENTRANCES**

The following 2 paragraphs are typical for all projects – usually keep, unless there are no entrances within the project limits, then this section can be deleted:

The Engineer will not require the Contractor to provide continuous access to farms, single family, duplex, or triplex residential properties during working hours; however, provide reasonable egress and ingress to each such property when actual operations are not in progress at that location. Limit the time during which a farm or residential entrance is blocked to the minimum length of time required for actual operations, not extended for the Contractor's convenience, and in no case exceeding six (6) hours. Notify all residents twenty-four hours in advance of any driveway or entrance closings and make any accommodations necessary to meet the access needs of disabled residents.

Except as allowed by the Phasing as specified above, maintain direct access to all side streets and roads, schools, churches, commercial properties, and apartments or apartment complexes of four or more units at all times. Access to fire hydrants must also be maintained at all times

If we are not constructing or reworking any entrances, this paragraph can be deleted. If we are constructing/reworking any entrances, ensure the appropriate bid items are included in the estimate

The Department will measure asphalt materials required to construct and maintain any temporary entrances which may be necessary to provide temporary access; however, the Department will not measure aggregates, excavation, and/or embankment, but shall be incidental to Maintain and Control Traffic. The Engineer will determine the type of surfacing material, asphalt or aggregate, to be used at each entrance.

**TRAFFIC SIGNAL LOOPS**

Use this paragraph when traffic signal loops are a bid item; otherwise, delete:

Install traffic signal loops according to the Special Notes for Traffic Signal Loop Replacement. Coordinate the placement of the loops with the Engineer.

**TRAFFIC COUNTING INDUCTANCE LOOPS AND AXLE SENSORS**

Use this paragraph when traffic counting loops are a bid item; otherwise, delete:

Install traffic counting loops and axle sensors according to the Special Notes for Installation of Traffic Counting Inductance Loops and Axle Sensors. Coordinate the placement of the loops and sensors with the Engineer.

**THERMOPLASTIC INTERSECTION MARKINGS**

Use this paragraph when thermo markings at intersections are being bid; otherwise, delete:

Consider the locations listed on the summary and/or shown on the plan sheets as approximate only. Prior to milling and/or resurfacing, locate and document the locations of the existing markings. After final surfacing operations, replace the markings at their approximate existing locations, as shown on the plan sheets, or as directed by the Engineer. Place markings not existing prior to resurfacing as shown on the plan sheets or as directed by the Engineer.

**PAVEMENT MARKINGS**

Use this paragraph for projects that include striping; otherwise delete:

If there is to be a deviation from the existing striping plan, the Engineer will furnish the Contractor a striping plan prior to placement of the final surface course. Install Temporary Striping according to Section 112 with the following exception:

If the Contractor’s operations or phasing requires temporary markings that must subsequently be removed from the final surface course, use an approved removable lane tape; however, the Department will not measure removable lane tape for separate payment, but will measure and pay for removable lane tape as temporary striping.

**UNEVEN LANES AND PAVEMENT EDGE DROP-OFFS**

Typical for all projects – always keep:

Do not allow a pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation with an elevation difference greater than 1½”. In areas with an elevation difference in adjacent travel lanes, UNEVEN LANES (W8-11) signs should be placed in advance of and at 1500 foot intervals throughout the area with uneven lanes. Post signs on the right-hand side of the roadway for relevant directions of travel. For multi-lane divided highways, dual mount signs when the median width is sufficient to maintain the recommended lateral offsets. For all transverse transitions between resurfaced and un-resurfaced areas which traffic may cross, wedge these areas with asphalt mixture for leveling and wedging. Remove the wedges prior to placement of the final surface course.

Use either (1) when there is a MOT Notes page in the plan set or (2) Drop-off conditions specified in these notes

(1) when there is a MOT Notes page in the plan set (for HSIP projects, we generally prefer to NOT have a MOT Notes page in the plan set…we prefer to keep all MOT language in this TCP file):

Refer to plan sheet R14, “Maintenance of Traffic,” for guidance on how to protect pavement edges that traffic is not expected to cross, except accidentally.

(2) Drop-off conditions specified in these notes:

Protect pavement edge drop-offs, as follows:

Less than 2” - No protection required.

2” to 3” - Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, vertical panels, or barricades. Wedge the drop-off with DGA, CSB, or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

Greater than 3” – Place Type III Barricades directly in front of the drop-off facing oncoming traffic in both directions of travel. Maintain an 8-foot minimum offset between the pavement edge drop-off and the adjacent traffic lane. Place plastic drums, vertical panels, or barricades every 25 feet between the adjacent traffic lane and pavement edge drop-off. The Engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades. Install Shoulder Drop Off (W8-17) signs in advance of and at 1,500-foot intervals throughout the drop-off area or as directed by the Engineer. Wedge the drop-off with DGA, CSB, or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

Pedestrians & Bicycles - Protect pedestrian and bicycle traffic as directed by the Engineer.

Include **USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS** if we are bidding Portable Changeable Message Signs; otherwise, delete the last 5 pages under this heading

**USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS**

The following policy is based upon current Changeable Message Signs (CMS) standards and practice from many sources, including the Federal Highway Administration (FHWA), other State Departments of Transportation, and Traffic Safety Associations. It is understood that each CMS installation or use requires individual consideration due to the specific location or purpose. However, there will be elements that are constant in nearly all applications. Accordingly, these recommended guidelines bring a level of uniformity, while still being open to regional experience and engineering judgment.

**Application**

The primary purpose of CMS is to advise the driver of unexpected traffic and routing situations. Examples of applications where CMS can be effective include:

* Closures (road, lane, bridge, ramp, shoulder, interstate)
* Changes in alignment or surface conditions
* Significant delays, congestion
* Construction/maintenance activities (delays, future activities)
* Detours/alternative routes
* Special events with traffic and safety implications
* Crash/incidents
* Vehicle restrictions (width, height, weight, flammable)
* Advance notice of new traffic control devices
* Real-time traffic conditions (must be kept up to date)
* Weather /driving conditions, environmental conditions, Roadway Weather Information Systems
* Emergency Situations
* Referral to Highway Advisory Radio (if available)
* Messages as approved by the County Engineer’s Office

**CMS should not be used for**:

* Replacement of static signs (e.g. road work ahead), regulatory signage (e.g. speed limits), pavement markings, standard traffic control devices, conventional warning or guide signs.
* Replacement of lighted arrow board
* Advertising (Don’t advertise the event unless clarifying “action” to be taken by driver – e.g. Speedway traffic next exit)
* Generic messages
* Test messages (portable signs only)
* Describe recurrent congestion (e.g. rush hour)
* Public service announcements (not traffic related)

**Messages**

Basic principles that are important to providing proper messages and ensuring the proper operation of a CMS are:

* Visible for at least ½ mile under ideal daytime and nighttime conditions
* Legible from all lanes a minimum of 650 feet
* Entire message readable twice while traveling at the posted speed
* No more than two message panels should be used (three panels may be used on roadways where vehicles are traveling less than 45 mph). A panel is the message that fits on the face of the sign without flipping or scrolling.
* Each panel should convey a single thought; short and concise
* Do not use two unrelated panels on a sign
* Do not use the sign for two unrelated messages
* Should not scroll text horizontally or vertically
* Should not contain both the words left and right
* Use standardized abbreviations and messages
* Should be accurate and timely
* Avoid filler/unnecessary words and periods (hazardous, a, an, the)
* Avoid use of speed limits
* Use words (not numbers) for dates

**Placement**

Placement of the CMS is important to ensure that the sign is visible to the driver and provides ample time to take any necessary action. Some of the following principles may only be applicable to controlled access roadways. The basic principles of placement for a CMS are:

* When 2 signs are needed, place on same side of roadway and at least 1,000 feet apart
* Place behind semi-rigid/rigid protection (guardrail, barrier) or outside of the clear zone
* Place 1,000 feet in advance of work zone; at least one mile ahead of decision point
* Normally place on right side of roadway; but should be placed closest to the affected lane so that either side is acceptable
* Signs should not be dual mounted (one on each side of roadway facing same direction)
* Point trailer hitch downstream
* Secure to immovable object to prevent theft (if necessary)
* Do not place in sags or just beyond crest
* Check for reflection of sun to prevent the blinding of motorist
* Should be turned ~3 degrees outward from perpendicular to the edge of pavement
* Bottom of sign should be 7 feet above the elevation of edge of roadway
* Should be removed when not in use

**Standard Abbreviations**

The following is a list of standard abbreviations to be used on CMS:

 **Word** **Abbrev** **Example**

 Access ACCS CRASH AHEAD/ USE ACCS RD NEXT RIGHT

 Alternate ALT CRASH AHEAD/ USE ALT RTE NEXT RIGHT

 Avenue AVE FIFTH AVE CLOSED/ DETOUR NEXT LEFT

 Blocked BLKD FIFTH AVE BLKD/ MERGE LEFT

 Boulevard BLVD MAIN BLVD CLOSED/ USE ALT RTE

 Bridge BRDG SMITH BRDG CLOSED/ USE ALT RTE

 Cardinal Directions N, S, E, W N I75 CLOSED/ DETOUR EXIT 30

 Center CNTR CNTR LANE CLOSED/ MERGE LEFT

 Commercial COMM OVRSZ COMM VEH/ USE I275

 Condition COND ICY COND POSSIBLE

 Congested CONG HVY CONG NEXT 3 MI

 Construction CONST CONST WORK AHEAD/ EXPECT DELAYS

 Downtown DWNTN DWNTN TRAF USE EX 40

 Eastbound E-BND E-BND I64 CLOSED/ DETOUR EXIT 20

 Emergency EMER EMER VEH AHEAD/ PREPARE TO STOP

 Entrance, Enter EX, EXT DWNTN TRAF USE EX 40

 Expressway EXPWY WTRSN EXPWY CLOSED/ DETOUR EXIT 10

 Freeway FRWY, FWY GN SYNDR FWY CLOSED/ DETOUR EXIT 15

 Hazardous Materials HAZMAT HAZMAT IN ROADWAY/ ALL TRAF EXIT 25

 Highway HWY CRASH ON AA HWY/ EXPECT DELAYS

 Hour HR CRASH ON AA HWY/ 2 HR DELAY

 Information INFO TRAF INFO TUNE TO 1240 AM

 Interstate I E-BND I64 CLOSED/ DETOUR EXIT 20

 Lane LN LN CLOSED MERGE LEFT

 Left LFT LANE CLOSED MERGE LFT

 Local LOC LOC TRAF USE ALT RTE

 Maintenance MAINT MAINT WRK ON BRDG/ SLOW

 Major MAJ MAJ DELAYS I75/ USE ALT RTE

 Mile MI CRASH 3 MI AHEAD/ USE ALT RTE

 Minor MNR CRASH 3 MI MNR DELAY

 Minutes MIN CRASH 3 MI/ 30 MIN DELAY

 Northbound N-BND N-BND I75 CLOSED/ DETOUR EXIT 50

 Oversized OVRSZ OVRSZ COMM VEH/ USE I275 NEXT RIGHT

 Parking PKING EVENT PKING NEXT RGT

 Parkway PKWY CUM PKWAY TRAF/ DETOUR EXIT 60

 Prepare PREP CRASH 3 MI/ PREP TO STOP

 Right RGT EVENT PKING NEXT RGT

 Road RD HAZMAT IN RD/ ALL TRAF EXIT 25

 Roadwork RDWK RDWK NEXT 4 MI/ POSSIBLE DELAYS

 Route RTE MAJ DELAYS I75/ USE ALT RTE

 Shoulder SHLDR SHLDR CLOSED NEXT 5 MI

 Slippery SLIP SLIP COND POSSIBLE/ SLOW SPD

 Southbound S-BND S-BND I75 CLOSED/ DETOUR EXIT 50

 Speed SPD SLIP COND POSSIBLE/ SLOW SPD

**Standard Abbreviations** (cont.)

 **Word** **Abbrev** **Example**

 Street ST MAIN ST CLOSED/ USE ALT RTE

 Traffic TRAF CUM PKWAY TRAF/ DETOUR EXIT 60

 Vehicle VEH OVRSZ COMM VEH/ USE I275 NEXT RIGHT

 Westbound W-BND W-BND I64 CLOSED/ DETOUR EXIT 50

 Work WRK CONST WRK 2MI/ POSSIBLE DELAYS

Certain abbreviations are prone to inviting confusion because another word is abbreviated or could be abbreviated in the same way. DO NOT USE THESE ABBREVIATIONS:

 **Abbrev** **Intended Word** **Word Erroneously Given**

 ACC Accident Access (Road)

 CLRS Clears Colors

 DLY Delay Daily

 FDR Feeder Federal

 L Left Lane (merge)

 LOC Local Location

 LT Light (traffic) Left

 PARK Parking Park

 POLL Pollution (index) Poll

 RED Reduce Red

 STAD Stadium Standard

 TEMP Temporary Temperature

 WRNG Warning Wrong

**Typical Messages**

The following is a list of typical messages used on CMS. The list consists of the reason or problem that you want the driver to be aware of and the action that you want the driver to take.

**Reason/Problem** **Action**

CRASH AHEAD ALL TRAFFIC EXIT RT

CRASH/XX MILES AVOID DELAY USE XX

XX ROAD CLOSED CONSIDER ALT ROUTE

XX EXIT CLOSED DETOUR

BRIDGE CLOSED DETOUR XX MILES

BRIDGE/(SLIPPERY, ICE, ETC.) DO NOT PASS

CENTER/LANE/CLOSED EXPECT DELAYS

DELAY(S), MAJOR/DELAYS FOLLOW ALT ROUTE

DEBRIS AHEAD KEEP LEFT

DENSE FOG KEEP RIGHT

DISABLED/VEHICLE MERGE XX MILES

EMER/VEHICLES/ONLY MERGE LEFT

EVENT PARKING MERGE RIGHT

EXIT XX CLOSED ONE-WAY TRAFFIC

FLAGGER XX MILES PASS TO LEFT

**Typical Messages** (cont.)

**Reason/Problem** **Action**

FOG XX MILES PASS TO RIGHT

FREEWAY CLOSED PREPARE TO STOP

FRESH OIL REDUCE SPEED

HAZMAT SPILL SLOW

ICE SLOW DOWN

INCIDENT AHEAD STAY IN LANE

LANES (NARROW, SHIFT, MERGE, ETC.) STOP AHEAD

LEFT LANE CLOSED STOP XX MILES

LEFT LANE NARROWS TUNE RADIO 1610 AM

LEFT 2 LANES CLOSED USE NN ROAD

LEFT SHOULDER CLOSED USE CENTER LANE

LOOSE GRAVEL USE DETOUR ROUTE

MEDIAN WORK XX MILES USE LEFT TURN LANE

MOVING WORK ZONE, WORKERS IN ROADWAY USE NEXT EXIT

NEXT EXIT CLOSED USE RIGHT LANE

NO OVERSIZED LOADS WATCH FOR FLAGGER

NO PASSING

NO SHOULDER

ONE LANE BRIDGE

PEOPLE CROSSING

RAMP CLOSED

RAMP (SLIPPERY, ICE, ETC.)

RIGHT LANE CLOSED

RIGHT LANE NARROWS

RIGHT SHOULDER CLOSED

ROAD CLOSED

ROAD CLOSED XX MILES

ROAD (SLIPPERY, ICE, ETC.)

ROAD WORK

ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)

ROAD WORK XX MILES

SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)

NEW SIGNAL XX MILES

SLOW 1 (OR 2) - WAY TRAFFIC

SOFT SHOULDER

STALLED VEHICLES AHEAD

TRAFFIC BACKUP

TRAFFIC SLOWS

TRUCK CROSSING

TRUCKS ENTERING

TOW TRUCK AHEAD

UNEVEN LANES

WATER ON ROAD

WET PAINT

WORK ZONE XX MILES

WORKERS AHEAD