Traffic Control
### Traffic Control

#### Two-Lane and Multi-Lane Roadways

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-1</td>
<td>10-15-19</td>
<td>Work Not Affecting Traffic (Two-Lane or Multi-Lane)</td>
</tr>
<tr>
<td>TC-61</td>
<td>04-21-20</td>
<td>Two-Lane, Two-way Operation</td>
</tr>
<tr>
<td>TC-62</td>
<td>04-21-20</td>
<td>Permanent Two-Lane to Four-Lane Divided Transition</td>
</tr>
<tr>
<td>TC-63</td>
<td>10-16-18</td>
<td>Lane Closure at Two-Lane to Four-Lane Transition.</td>
</tr>
<tr>
<td>TC-64</td>
<td>10-16-18</td>
<td>Lane Closure at Two-Lane to Four-Lane Transition with Flagger</td>
</tr>
<tr>
<td>TC-81</td>
<td>10-15-19</td>
<td>Restricted Width Signing (Less Than 14.5 Feet)</td>
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#### Two-Lane Roadways

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>TC-202</td>
<td>04-21-15</td>
<td>Work Within 15 ft of Traveled Way</td>
</tr>
<tr>
<td>TC-203</td>
<td>10-15-19</td>
<td>Aerial Seeding Operations</td>
</tr>
<tr>
<td>TC-211</td>
<td>10-15-19</td>
<td>Lane Closure on Low Volume Roadway</td>
</tr>
<tr>
<td>TC-212</td>
<td>04-21-20</td>
<td>Spot Location Lane Closure with Flaggers</td>
</tr>
<tr>
<td>TC-213</td>
<td>10-15-19</td>
<td>Lane Closure with Flaggers</td>
</tr>
<tr>
<td>TC-214</td>
<td>04-21-20</td>
<td>Lane Closure with Flaggers for use with Pilot Car</td>
</tr>
<tr>
<td>TC-215</td>
<td>10-15-19</td>
<td>Lane Closure with Signals (Up to Three Days)</td>
</tr>
<tr>
<td>TC-216</td>
<td>10-18-16</td>
<td>Lane Closure with Signals</td>
</tr>
<tr>
<td>TC-217</td>
<td>10-18-16</td>
<td>Lane Closure with Signals and TBR</td>
</tr>
<tr>
<td>TC-218</td>
<td>04-21-20</td>
<td>Lane Closure with Pilot Car and Flagger Operated Signals</td>
</tr>
<tr>
<td>TC-228</td>
<td>10-16-18</td>
<td>Lane Closure Involving TWLTL</td>
</tr>
<tr>
<td>TC-231</td>
<td>10-15-19</td>
<td>Slow Moving Vehicle Operating in the Traffic Lane</td>
</tr>
<tr>
<td>TC-232</td>
<td>10-21-14</td>
<td>Shoulder Rumble Strip Operations</td>
</tr>
<tr>
<td>TC-233</td>
<td>10-17-17</td>
<td>Pavement Marking Operations Two-Lane</td>
</tr>
<tr>
<td>TC-234</td>
<td>10-17-17</td>
<td>Strip Sealing Operations</td>
</tr>
<tr>
<td>TC-235</td>
<td>10-15-19</td>
<td>Edge Rut Repair</td>
</tr>
<tr>
<td>TC-251</td>
<td>10-15-19</td>
<td>Temporary Road Closure</td>
</tr>
<tr>
<td>TC-252</td>
<td>04-21-20</td>
<td>Routes Closed to Traffic</td>
</tr>
</tbody>
</table>

04/21/20
<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>TC-253</td>
<td>10-18-16</td>
<td>Paved On-Site Detour</td>
</tr>
<tr>
<td>TC-271</td>
<td>10-18-16</td>
<td>Signalized Equipment Crossing</td>
</tr>
<tr>
<td>TC-272</td>
<td>10-18-16</td>
<td>Unsignalized Equipment Crossing</td>
</tr>
<tr>
<td>TC-273</td>
<td>10-15-19</td>
<td>Construction Site Entrance</td>
</tr>
<tr>
<td>TC-282</td>
<td>10-15-19</td>
<td>Uneven Lanes</td>
</tr>
<tr>
<td>TC-283</td>
<td>10-15-19</td>
<td>Surveying Operations</td>
</tr>
<tr>
<td>TC-284</td>
<td>10-15-19</td>
<td>No Centerline Markings on Non-Primary Roadways</td>
</tr>
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</table>

**Multi-Lane Roadways**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-402</td>
<td>04-21-15</td>
<td>Work Within 15 ft of Traveled Way</td>
</tr>
<tr>
<td>TC-403</td>
<td>10-15-19</td>
<td>Aerial Seeding Operations</td>
</tr>
<tr>
<td>TC-415</td>
<td>04-21-20</td>
<td>Short Term Lane Closure with TMA</td>
</tr>
<tr>
<td>TC-416</td>
<td>10-15-19</td>
<td>Partial Lane Closure on Ramps</td>
</tr>
<tr>
<td>TC-417</td>
<td>04-21-20</td>
<td>Ramp Closure</td>
</tr>
<tr>
<td>TC-418</td>
<td>04-21-20</td>
<td>Lane Closure on Divided Highway</td>
</tr>
<tr>
<td>TC-419</td>
<td>10-16-18</td>
<td>Lane Closure on Undivided Highway</td>
</tr>
<tr>
<td>TC-420</td>
<td>10-16-18</td>
<td>Lane Closure at Ramps</td>
</tr>
<tr>
<td>TC-421</td>
<td>04-21-20</td>
<td>Lane Closure with TBR</td>
</tr>
<tr>
<td>TC-422</td>
<td>04-21-20</td>
<td>Closure of Two Adjacent Lanes on Divided Highway</td>
</tr>
<tr>
<td>TC-423</td>
<td>04-21-20</td>
<td>Closure of Two Adjacent Lanes on Undivided Highway</td>
</tr>
<tr>
<td>TC-429</td>
<td>10-16-18</td>
<td>Closure of Continuous Two-Way Left Turn Lane and Adjacent Lane</td>
</tr>
<tr>
<td>TC-431</td>
<td>10-17-17</td>
<td>Slow Moving Vehicle Operating in the Traffic Lane</td>
</tr>
<tr>
<td>TC-432</td>
<td>10-17-17</td>
<td>Shoulder Rumble Strip Operations</td>
</tr>
<tr>
<td>TC-433</td>
<td>10-17-17</td>
<td>Pavement Marking Operations</td>
</tr>
<tr>
<td>TC-451</td>
<td>04-21-15</td>
<td>Temporary Road Closure on Divided Highway</td>
</tr>
<tr>
<td>TC-454</td>
<td>10-17-17</td>
<td>Temporary Detour Using Ramps on Divided Highway</td>
</tr>
<tr>
<td>TC-482</td>
<td>10-15-19</td>
<td>Uneven Lanes</td>
</tr>
<tr>
<td>NO.</td>
<td>DATE</td>
<td>TITLE</td>
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<tr>
<td>------</td>
<td>----------</td>
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</tr>
<tr>
<td>TC-601</td>
<td>10-15-19</td>
<td>Pedestrian Detour</td>
</tr>
<tr>
<td>TC-602</td>
<td>10-15-19</td>
<td>Sidewalk Diversion</td>
</tr>
</tbody>
</table>
Traffic Control

Possible Contract Item:

1. TC-402

SLOW-MOVING OPERATION

VEHICLE STOPPED ON SHOULDER FOR LESS THAN ONE HOUR

Do not allow work to interfere with the flow of traffic.

When parked, locate vehicles as far from the open traffic lane as possible. Entrances and driveways should be used whenever appropriate.

Equip all vehicles with an amber revolving light or amber strobe light.

For work lasting longer than one hour, refer to TC-202 or TC-403.

LEGEND

Traffic Sign

Direction of Traffic

WORK NOT AFFECTING TRAFFIC
(TWO-LANE OR MULTI-LANE)
OVERVIEW OF Crossover

Place Two-Way Traffic symbol and DO NOT PASS signs alternately on both sides of the roadway at a maximum of one half mile intervals for both directions of travel. Always have signs in sight of motorists.

When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-5) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Possible Contract Items:
- Painted Symbols and Legends
- Temporary Barrier Rail
- Temporary Crash Cushions
- Temporary Floodlighting
- Temporary Lane Separator System
- Traffic Control

Possible Tabulations:
**Removal Limits**

**Pavement Marking Removal Limits**

**Crash Cushion**

SI-881 for sign details. Refer to PM-111 for arrow details. Refer to SI-881 for approved sand barrel layouts.

**Temporary Crash Cushion**

Refer to BA-500 for approved sand barrel layouts.

**Temporary Lane Separator System**

See sheet 4 for supplemental drawings.

1. Refer to SI-881 for sign details.
2. Refer to PM-111 for arrow details.
3. Source Speed Limit signs at one-mile intervals.
4. Install an additional supplemental plaque with the message NEXT X MILES on the Two-Way Traffic symbol sign assembly on the right side of the roadway to inform motorists of the remaining length of two-lane traffic. Round X to the nearest whole-mile increment.
5. Temporary Crash Cushion. Refer to BA-500 for approved sand barrel layouts.
6. Use a 4 foot wide Type III Barricade.
7. For roadways with a posted speed limit of 60 mph or greater before road work:
   - Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 or 70 beyond the work area as shown.
   - Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.
   - Place Speed Feedback Sign at the end of the merge taper.

**SHEET 2 of 5**

APPROVED BY DESIGN METHODS ENGINEER

REVISION 04-21-20

STANDARD ROAD PLAN

TC-61

REVISIONS: Renumbered circle notes 8 to 11 and added circle note 12.
See sheet 4 for supplemental drawings.

1. Refer to SI-881 for sign details.
2. Refer to PM-111 for arrow details.
3. Space Speed Limit signs at one-mile intervals.
4. Install an additional supplemental plaque with the message NEXT X MILES on the Two-Way Traffic symbol sign assembly on the right side of the roadway to inform motorists of the remaining length of two-lane traffic. Round X to the nearest whole-mile increment.
5. For roadways with a posted speed limit of 60 mph or greater before road work:
   - Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 or 70 beyond the work area as shown.
   - Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.
   - Place Speed Feedback Sign at the end of the merge taper.
SUPPLEMENTAL CrossoVERS DRAwINGS

LEGEND

- Drum
- 42" Channelizer
- Crash Cushion
- Work Area
- Direction of Traffic
- Detour Pavement
- Safety Closure
(Refer to TC-252)
- Temporary Lane Separator System

1. Temporary Crash Cushion. Refer to BA-500 for approved sand barrel layouts.
2. Number of TBR sections varies based on dimensions of Detour Pavement. Refer to BA-401 and 108-33 for TBR information.
3. Details shown herein are intended to provide additional information to the requirements shown on sheets 2 and 3.
LEGEND

Traffic Sign
Temporary Lane Separator System
48" Channelizer
Drum
Channelizer Marker
Tubular Marker
Temporary Floodlighting
Work Area
Detour Pavement
Direction of Traffic
Safety Closure
(Rear to TC-252)

PLACEMENT OF DOUBLE YELLOW CENTER LINE

Refer to SI-881 for sign details.
Add below R11-2 already included in Safety Closure.
Place Ti.SS from start of ramp gore to end of temporary ramp crossover.
Place Ti.SS from start of full width decel lane to end of ramp gore.

TWO-LANE, TWO WAY OPERATION
Place Type III barricades complying with Section 3F.01 of the MUTCD.

Place yellow warning signs with black legend and symbols.

Possible Contract Items:
- Pavement Marking Items
- Permanent Road Closure
- Delineators

Possible Tabulations: 102-4, 108-22

REVISIONS:
- Modified W6-1 sign in bottom drawing on Sheet 1 to W6-2.
LEGEND

\[ \begin{array}{|c|c|c|c|c|c|}
\hline
& \text{Traffic Sign} & \text{42" Channelizer} & \text{Drum} & \text{Work Area} & \text{Direction of Traffic} \\
\hline
\text{SPEED LIMIT} & A & C & D & E & S \\
\text{25 or less} & 100' & 40' & 20' & 0' - 200' & 120' \\
\text{25 - 35} & 250' & 40' & 30' & 0' - 200' & 120' \\
\text{40 - 45} & 350' & 90' & 40' & 0' - 400' & 282' \\
\text{50 - 55} & 600' & 100' & 50' & 200' - 400' & 350' \\
\hline
\end{array} \]

\[ \text{Spacing = C} \]

\[ \text{Spacing = D} \]

\[ \text{Spacing = E} \]

\[ \text{Possible Contract Item:} \]

\[ \text{Traffic Control} \]

\[ \text{Referring to TC-419 for lane closure details.} \]

\[ \text{For lanes closed to service, place two drums every 1000 feet. For full} \]
\[ \text{depth excavations in a closed lane, place two drums in front of each} \]
\[ \text{location. Additional drums need not be placed for full depth} \]
\[ \text{excavations spaced closer than 150 feet.} \]

\[ \text{For lanes closed to traffic, place two drums every 1000 feet. For full} \]
\[ \text{depth excavations in a closed lane, place two drums in front of each} \]
\[ \text{location. Additional drums need not be placed for full depth} \]
\[ \text{excavations spaced closer than 150 feet.} \]
For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.

Lane closure details.

Refer to TC-419 for lane closure details.
Possible Contract Item:
Traffic Control

Coordinate signing in conjunction with other traffic control in the area.

Exact sign locations will be as approved by the Engineer.

For multi-lane divided roadways, use larger sign sizes. For two-lane highways, use small sign sizes.

See SI-882 for sign details.

1. Place after ROAD WORK AHEAD sign.
2. For divided highways, install two signs at each location: One each on right and left shoulders.
3. When this paved road intersection has an interchange, measure the distance from the beginning of the exit ramp taper.
4. Dimension on G20-58/58A panel equals 1 foot less than narrowest measurement.

WHERE AN INTERCHANGE IS LOCATED AT THE LAST PUBLIC ROAD
PRIOR TO AREA OF RESTRICTED WIDTH

WHERE AN AT-GRADE INTERSECTION IS LOCATED AT THE LAST PUBLIC ROAD
PRIOR TO AREA OF RESTRICTED WIDTH

LEGEND
- Area of Restricted Width
- Traffic Sign

New logo.
When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.L2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

- When the length of a pavement edge drop-off is 1000 feet or less, the temporary fill requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.
- For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

Possible Contract Item:
Traffic Control
Possible Contract Item:
Traffic Control

1. Place AERIAL SEEDING signs along the mainline at a maximum spacing of 3 miles.
2. Refer to SI-881 for sign details.

LEGEND

- Traffic Sign
- Work Area
- Direction of Traffic

SPEED LIMIT (mph) | ▲
--- | ---
35 or less | 300' 
40 - 45 | 362' 
50 or greater | 500'
Do not use this layout when ADT exceeds 2000 vehicles.

Locate this layout at least 2,500 feet from any other work site layout.

Full-depth openings during non-working hours will not be allowed. Temporary plating, paving or filling may be necessary. Vehicles, unattended equipment, materials or stock-piled waste are not permitted between the shoulder lines during non-working hours. 

For bridge deck overlay projects: The night before overlay operations begin, a bridge deck finishing machine and necessary materials may be placed on the roadway.

Do not use this layout if a No Passing Zone for the closed lane is located within this area.

Possible Contract Item:
Traffic Control
### Legend
- **Traffic Sign**
- **Flagger**
- **Work Area**
- **Type III Barricade**
- **Direction of Traffic**

### Possible Contract Items:
- Flaggers
- Traffic Control

### Speed Limit

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A</th>
<th>F and G</th>
<th>F + G Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>250</td>
<td>250'-3250'</td>
<td>3500'</td>
</tr>
<tr>
<td>40 - 45</td>
<td>350</td>
<td>350'-3350'</td>
<td>3700'</td>
</tr>
<tr>
<td>50 or greater</td>
<td>500</td>
<td>500'-3500'</td>
<td>4000'</td>
</tr>
</tbody>
</table>

Use only during daylight hours. Typical applications include:
- Pavement repair
- Bridge repair when signals are not required
- Guardrail connections at bridge
- Secondary road intersections with Primary road
- Sawing for ful depth patch
- Joint sealing
- PR joints
- Surface patching
- Crack sealing

No parking on opposite shoulder within 500 feet of work area.

Ensure traffic in the open lane flows freely. Stop the first vehicle in the closed lane from the position shown, then cross the traffic lane to stop other vehicles.

1. A vehicle with an amber revolving light or amber strobe light may be substituted for the Type III barricade.
2. Provide a second flagger if:
   - The flagger's view of approaching traffic in the open lane is less than 1/2 mile or the work site is in an area of restricted sight distance, such as a No Passing zone, or
   - Excessive traffic delays are encountered.
3. F and G distances are to remain as near minimum values as work permits. However, to be able to move the work area without moving the advance signing, F and G distances may be varied within the limits of the table. Maximum movement can be achieved by setting one F or G value at the minimum and the other value at its maximum.
Possible Contract Items:

- Flaggers
- Traffic Control

- Keep F and G distances as near to minimum values as work permits. However, to allow advancement of the work area without moving signs, F and G distances may be varied within the limits of the table. Maximum movement can be achieved by setting one F or G value at the minimum and the other value at its maximum.

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A</th>
<th>C</th>
<th>F</th>
<th>F + G Max.</th>
<th>H Max.</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>250’</td>
<td>40’</td>
<td>0’-200’</td>
<td>500’-3000’</td>
<td>3500’</td>
<td>2000’</td>
</tr>
<tr>
<td>45 - 48</td>
<td>360’</td>
<td>80’</td>
<td>0’-200’</td>
<td>700’-3000’</td>
<td>3700’</td>
<td>2000’</td>
</tr>
<tr>
<td>50 or greater</td>
<td>500’</td>
<td>100’</td>
<td>200’-300’</td>
<td>1000’-3000’</td>
<td>4300’</td>
<td>2000’</td>
</tr>
</tbody>
</table>

If length of work area exceeds 1/4 mile, use TC-214.
LEGEND

- Traffic Sign
- Flagger
- 42'' Channelizer
- Work Area
- Direction of Traffic
- Portable Rumble Strip Panel

Possible Contract Items:

- Flagger
- Pilot Car
- Traffic Control

### TABLE: SPEED LIMITS AND LANE CLOSURE DISTANCES

<table>
<thead>
<tr>
<th>ADT</th>
<th>A</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>H max.</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 2,500</td>
<td>250'</td>
<td>42''</td>
<td>0'-200'</td>
<td>500'</td>
<td>2.5 mi.</td>
<td>50'</td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>250'</td>
<td>42''</td>
<td>0'-200'</td>
<td>500'</td>
<td>2.0 mi.</td>
<td>50'</td>
</tr>
<tr>
<td>more than 5,000</td>
<td>250'</td>
<td>42''</td>
<td>0'-200'</td>
<td>1000'</td>
<td>1.5 mi.</td>
<td>50'</td>
</tr>
<tr>
<td>up to 2,500</td>
<td>300'</td>
<td>60'</td>
<td>0'-200'</td>
<td>500'</td>
<td>2.5 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>300'</td>
<td>60'</td>
<td>0'-200'</td>
<td>700'</td>
<td>2.0 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>more than 5,000</td>
<td>300'</td>
<td>60'</td>
<td>0'-200'</td>
<td>1400'</td>
<td>1.5 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>up to 2,500</td>
<td>350'</td>
<td>80'</td>
<td>0'-200'</td>
<td>500'</td>
<td>2.5 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>350'</td>
<td>80'</td>
<td>0'-200'</td>
<td>700'</td>
<td>2.0 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>more than 5,000</td>
<td>350'</td>
<td>80'</td>
<td>0'-200'</td>
<td>1400'</td>
<td>1.5 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>up to 2,500</td>
<td>400'</td>
<td>100'</td>
<td>200-300'</td>
<td>1000'</td>
<td>2.5 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>400'</td>
<td>100'</td>
<td>200-300'</td>
<td>1000'</td>
<td>2.0 mi.</td>
<td>100'</td>
</tr>
<tr>
<td>more than 5,000</td>
<td>400'</td>
<td>100'</td>
<td>200-300'</td>
<td>2000'</td>
<td>1.5 mi.</td>
<td>100'</td>
</tr>
</tbody>
</table>

1. Sign optional for ADT less than 5,000.
2. In rural areas, as work activity nears the downstream limits of dimension H, the lane closure may be extended up to 1.0 mile beyond the maximum distance, H, shown in the table. After the traffic control devices have been placed to extend the closure and after work activity has progressed, the advanced signing and devices at the beginning of the traffic control zone should be moved downstream so that the H distance is once again within the limits shown in the table. This one-mile extension will not be allowed during any peak traffic hours listed in the contract documents.
3. Refer to SI-881 for sign details.
4. For traffic control zones lasting more than 2 hours, place temporary Portable Rumble Strip Panel.
This layout is for conditions lasting up to three calendar days. For situations lasting longer than three days refer to TC-216.

1. For Temporary Traffic Signals, meet the requirements of Section 2528.03 of the Standard Specifications except for the following:
   - In lieu of a trailer or span-wire mounted system, signal heads may be located on the shoulders, one on each side of the roadway. Mount shoulder signal heads a minimum of 6 feet from the bottom of the signal head to the top of the ground surface.

2. 24-inch stop lines required during nighttime operation.
**Temporary Traffic Signal**

**Direction of Traffic**

**Vehicle Detection Area**

**Flashing Warning Light**

Type 'B' High-Intensity

**Pavement Marking Removal Limits**

170'

20.4-35.7

1050'

50 or greater

20' Device Spacing

**Recommended Settings, secs.**

- Yellow = 5.0
- All Red = (see table)

**Distance Between Stop Lines**

- 850' - 14-23
- 750' - 15-27
- 650' - 17-30
- 550' - 19-32

**Stop Lines**

- Maximum Green = 45.0
- Initial = 12.0
- Extension = 2.5

**Speed Limit**

<table>
<thead>
<tr>
<th>Speed Limit (mph)</th>
<th>A</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>250</td>
<td>0-50</td>
</tr>
<tr>
<td>40-45</td>
<td>350</td>
<td>0-100</td>
</tr>
<tr>
<td>50 or greater</td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

* Range of values are based on operating speeds between 20 and 35 mph

**Possible Contract Items:**
- Pavement Marking Items
- Pavement Marking Removed
- Temporary Traffic Signals
- Traffic Control

**Possible Tabulations:**
- 108-22
- 108-28

**Location of signal heads:**

Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

**No drop-offs greater than pavement depth will be allowed during non-working hours.**

**No vehicles, unattended equipment, materials or stock-piled waste are permitted between the shoulder lines during non-working hours.**
SPEED LIMIT (mph) | ADT | A  | H  |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 2,500</td>
<td>500</td>
<td>2.5 mi</td>
<td></td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>500</td>
<td>3.0 mi</td>
<td></td>
</tr>
<tr>
<td>more than 5,000</td>
<td>1000</td>
<td>3.5 mi</td>
<td></td>
</tr>
</tbody>
</table>

No detection area required.

Timing for Push-button Actuated Signals
- Initial Green = 15 sec.
- Green Ext. = 2.5 sec.
- Yellow = 4.0 sec.

Install push-button actuated traffic signals. Program signals to rest in RED.

GREEN and GREEN EXTENSION only are initiated by flagger.

1. For Temporary Traffic Signals, meet the requirements of Section 2528.03 of the Standard Specifications except for the following:
   - In lieu of a trailer or span-wire mounted system, signal heads may be located on the shoulders, one on each side of the roadway. Mount shoulder signal heads a minimum of 8 feet from the bottom of the signal head to the top of the ground surface.
   - If a trailer or span-wire mounted system is not used, place signal heads at least 100 feet from the end of the work zone.

2. Locate signal heads 70 to 100 feet beyond "STOP HERE ON RED" sign. Adjust location of signal heads as field conditions warrant.

3. For traffic control zones lasting more than 2 hours, place temporary Portable Rumble Strip Panel.

Possible Contract Items:
- Flagger
- Pilot Car
- Temporary Traffic Signal
- Traffic Control

Possible Tabulations:
- 108-27
- 108-28
Possible Contract Item:

Traffic Control

LEGEND

Spacing = C

Spacing = D for drums placed in tapers.

For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
AREAS OF RESTRICTED SIGHT
(Typically a "No-Passing" Zone)

- **Shoulder Line**
- **No Passing Zone Line**
- **W20-4**
- **48" x 48"**
- **W20-7B**
- **48" x 48"**
- **150' Desirable**
- **200' Maximum**
- **150'-1000'**

**AREAS OF UNRESTRICTED SIGHT**

- **Shoulder Line**
- **W20-4**
- **48" x 48"**

This layout is intended for use with slow-moving operations or with operations involving stops not to exceed 15 minutes. For stops exceeding 15 minutes or in heavy traffic situations, use TC-213.

- Equip all vehicles with an amber revolving light or an amber strobe light.
- **Flaggers**
- **Traffic Control**

**Possible Contract Items:**
- Traffic Control
- Flaggers

**LEGEND**

- **Direction of Traffic**
- **Flagger**
- **Traffic Sign**
- **Work Area**
- **Work Vehicle**

<table>
<thead>
<tr>
<th>Speed Limit (mph)</th>
<th>A</th>
<th>min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 or less</td>
<td>200'</td>
<td></td>
</tr>
<tr>
<td>30-35</td>
<td>300'</td>
<td></td>
</tr>
<tr>
<td>40-45</td>
<td>500'</td>
<td></td>
</tr>
<tr>
<td>50 or greater</td>
<td>1000'</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. When a stop is made in an area of restricted sight distance, use a flagger to hold traffic in the closed lane and allow traffic to pass when conditions are safe.
2. When a stop is made or work proceeds in an area where sight distance is restricted from either direction and is anticipated to be more than 5 minutes, a second flagger and ONE LANE ROAD AHEAD sign is required.
3. This vehicle and sign may be used in lieu of a flagger for Falling Weight Deflectometer tests.
4. Refer to SI-881 for sign details.

**REV/SIGN**
STANDARD ROAD PLAN
TC-231
SHEET 1 of 1
When fog sealing the milled rumble strips, place a 48" X 49" FRESH OIL sign (W21-2) at the beginning of the work area. Place additional FRESH OIL signs after each intersection and periodically through the work area so that signs are no more than 2 miles apart.

Operators should adjust their spacing, as necessary, to keep adjacent vehicles within view.

Equip all vehicles with an amber revolving light or amber strobe light.
This layout may be used when painting edge line or centerline markings.

Equip all vehicles with an amber revolving light or amber strobe light.

Use this sign when painting centerline markings.

Optional Fluorescent Yellow Green (FYG) sign background may be used.

This arrow board may be operated in a four-corner caution mode.

Move this vehicle to the shoulder to accommodate passing traffic.

A vehicle mounted Portable Dynamic Message Sign (PDMS) may be used in lieu of this sign.

Refer to SI-881 for sign details.

TMA required for speed limits of 55 mph or greater and ADT greater than 3,000.

**LEGEND**
- Direction of Traffic
- Truck-Mounted Attenuator (TMA)
Use this sign when painting centerline markings.

Optional Fluorescent Yellow Green (FYG) sign background may be used.

This arrow board may be operated in a four-corner caution mode.

Move this vehicle to the shoulder to accommodate passing traffic.

A vehicle mounted Portable Dynamic Message Sign (PDMS) may be used in lieu of this sign.

Refer to SI-881 for sign details.

TMA required for speed limits of 55 mph or greater and ADT greater than 3,000.
**Traffic Control**

Possible Contract Item:

- **48" x 24" W1-6**
- **100' - 300'**
- **200' - 500'**

**Shoulder line**

**Strobes**

- **Flashers or Yellow**

**Direction of Traffic**

**Truck-Mounted Attenuator (TMA)**

**VEHICLES NOT STRADDLING CENTERLINE**

Equip all vehicles with an amber revolving light or amber strobe light.

- **Optional Fluorescent Yellow Green (FYG) sign background may be used.**
- **This arrow display may be operated in a four-corner caution mode.**
- **Move this vehicle to the shoulder to accommodate passing traffic.**
- **A vehicle-mounted Portable Dynamic Message Sign (PDMS) may be used in lieu of this sign.**
- **Refer to SI-881 for sign details.**
- **TMA required for speed limits of 65 mph or greater and ADT greater than 3,000.**

**LEGEND**

- **Direction of Traffic**
- **Truck-Mounted Attenuator (TMA)**

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 or less</td>
<td>200'</td>
</tr>
<tr>
<td>30 - 35</td>
<td>300'</td>
</tr>
<tr>
<td>40 - 45</td>
<td>600'</td>
</tr>
<tr>
<td>50 or greater</td>
<td>1000'</td>
</tr>
</tbody>
</table>

**SIGNs FACING TRAFFIC APPROACHING FROM THE REAR**

**SIGNs FACING OPPOSING TRAFFIC**
VENUE STRADDLING CENTERLINE

1. Optional Fluorescent Yellow Green (FYG) sign background may be used.
2. This arrow display may be operated in a four-corner caution mode.
3. Move this vehicle to the shoulder to accommodate passing traffic.
4. A vehicle mounted Portable Dynamic Message Sign (PDMS) may be used in lieu of this sign.
5. Refer to SI-881 for sign details.
6. TMA required for speed limits of 65 mph or greater and ADT greater than 3,000.
AREAS OF RESTRICTED SIGHT
(Typically a "No-Passing" Zone)

AREAS OF UNRESTRICTED SIGHT

For stops exceeding 15 minutes or in heavy traffic situations, use TC-213.
Equip all vehicles with an amber revolving light or an amber strobe light.

1. When a stop is made in an area of restricted sight distance, use a flagger to hold traffic in the closed lane and allow to pass when conditions are safe.
2. This vehicle and sign may be used in lieu of a flagger.
3. Refer to SI-881 for sign details.
This layout is intended for a preplanned closure of 20 minutes or less.

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>40 - 45</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>50 or greater</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

The Engineer will determine the storage length, B, necessary to accommodate stopped traffic during the closure.
SIGN PLACEMENT ON
TYPE III BARRICADES

Typical Sign Placement

Sign Placement with Supplementary Sign

Possible Contract Items:
- Traffic Control
- Safety Closures
- Portable Dynamic Message Sign

Possible Tabulation:
- 108-13A
In situation 1, if the intersection is the point of detour these signs and barricade will become the responsibility of the contracting authority and may be modified by the contracting authority to fit detour signing.

When possible, a 100' buffer is desirable.

When L is less than 300 feet, omit the ROAD CLOSED AHEAD sign.

Place for 7 calendar days prior to closure. The Engineer will determine the message to display. Remove when road is closed. Use of Portable Dynamic Message Sign is optional on non-primary roadways.
**STANDARD ROAD PLAN**

**TC-252**

**SITUATION 2**
Public cross-traffic maintained.
No access to project.

**SITUATION 3**
No access to project.
(Applicable to T-intersections)

**SITUATION 4**
Public cross-traffic maintained.
No access to project.

**SITUATION 5**
Public cross-traffic maintained.
No access to project.

**SITUATION 6**
No public access. Contractor and resident access.
(Applicable to T-intersections)

---

**During suspension of work, (such as over winter):**
- Use Situation 2 on two-lane to four-lane projects.
- Situation 5 is preferred where cross-traffic is maintained.

---

**When the distance between the last public road intersection and the ROAD CLOSED or ROAD CLOSED TO THRU TRAFFIC barricade is less than 1,000 feet, omit the ROAD CLOSED 500 FT sign.**

---

**LEGEND**

- Traffic Sign
- Type III Barricade
- Work Area
- Road Closure

<table>
<thead>
<tr>
<th>Location</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>200</td>
</tr>
<tr>
<td>Rural</td>
<td>500</td>
</tr>
</tbody>
</table>

**IOWA DOT**

**REVISION**

**04-21-20**

**SHEET 3 of 3**

**APPROVED BY DESIGN METHODS ENGINEER**
The Engineer may change the advisory speed. If reduced below 35 mph, the Reverse Curve signs (W1-4L and W1-4R) change to Reverse Turn signs (W1-4L and W1-4R).

Add below ROAD CLOSED (R11-2) sign already included in Safety Closure.
No detection area required.

Set signal timing as follows: For traffic from all directions, set the yellow indication at approximately 5 seconds and the all-red clearance interval at approximately 2 seconds. Set the minimum green interval on the main road at 20 seconds. Set the green interval for haul road traffic at 12 seconds but may be extended up to a maximum of 30 seconds.

1. Locate the stop bars 70 feet in advance of each lane's nearest signal head.
2. Required only if haul road is used during nighttime hours.
3. When the equipment crossing is not in use, place Type III Barricades as shown, and cover SIGNAL AHEAD and STOP HERE ON RED signs.
4. 25' 
5. 30' 
6. 50' 
7. 60' 

Possible Contract Items:
- Pavement Marking Items
- Pavement Marking Items
- Traffic Control
- Temporary Floodlighting
- Temporary Traffic Signals

Possible Tabulations:
108-22
106-27
106-28

LEGEND

Traffic Sign
Type III Barricade
Temporary Floodlighting
Type B Warning Light
Temporary Traffic Signal
Direction of Traffic

SPEED LIMIT

35 or less
40-45
50 or greater

A

25'
30'
50'

TC-271
STANDARD ROAD PLAN
SHEET 1 of 1
REVISION
01-19-16
APPROVED BY
REVISIONS:
Changed No Passing Zone sign size from 48" x 60" x 60" to 48" x 64" x 64"
Possible Contract Items:
Traffic Control
Flaggers

During nighttime hours or when the haul road is not in use, Type III Barricades shall be placed as shown and DO NOT PASS, NO PASSING ZONE and Flagger Symbol signs shall be covered or removed.

LEGEND

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Speed Limit (mph)</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traffic Sign</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type III Barricade</td>
<td>35 or less</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Flagger</td>
<td>40 - 45</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>Direction of Traffic</td>
<td>50 or greater</td>
<td>500</td>
</tr>
</tbody>
</table>

TC-272
STANDARD ROAD PLAN
UNSIGNALIZED EQUIPMENT CROSSING
Construction traffic shall yield the right-of-way to mainline traffic.

Refer to SI-881 for details.
Possible Contract Items:
- Pavement Marking Items
- Traffic Control

Possible Tabulation:
108-22

LEGEND

← Direction of Traffic
\[\rightarrow\] Traffic Sign

1. Shoulder Fillet: Refer to Section 1107 of the Standard Specifications and Safety Edge specifications.

2. Centerline fillet may be notched wedge, Safety Edge, or a temporary 3:1 HMA fillet.
"No-Passing" zones shall not exceed 2.5 miles for ADT less than 2500 vpd or 2.0 miles for ADT from 2500 to 5000 vpd.

1. Shoulder Fillet: Refer to Section 1107 of the Standard Specifications and Safety Edge specifications.
2. Typical 1:1 taper.
3. Spacing = 40 feet where horizontal curve radius is less than 1000 feet.
EXISTING PAVEMENT

LEGEND

Surface Course

Intermediate Course

PAVEMENT MARKING SEQUENCE

INITIAL PAVEMENT MARKINGS

SECOND PAVEMENT MARKING

THIRD PAVEMENT MARKINGS

FOURTH PAVEMENT MARKINGS

Possible Granular Shoulder Fillet

Shoulder Material

PAVEMENT MARKING SEQUENCE


2. Centerline fillet may be notched wedge, Safety Edge, or a temporary 3:1 HMA fillet.

TC-282

STANDARD ROAD PLAN

UNEVEN LANES
Traffic Control
Flaggers
Possible Contract Items:
- accommodate traffic.
  - necessary unless the traffic lane can be vacated to (e.g. for a survey target), a separate signing setup may be necessary unless the traffic lane can be vacated to accommodate traffic.
- When another person is required outside of the signing setup (e.g. for a survey target), a separate signing setup may be necessary unless the traffic lane can be vacated to accommodate traffic.
- Keep F and G distances as near to minimum values as work permits. However, to be able to move the work area without moving the advance signing, F and G values may be varied within the limits of the table. Maximum movement can be achieved by setting one F or G value at the minimum and the other value at its maximum.
- Use a second flagger if:
  - The flagger’s view of approaching traffic in the open lane is less than a quarter mile or the work site is in an area of restricted sight distance (such as a “No-Passing” zone); or
  - Excessive traffic delays are encountered.
Possible Contract Item:
Traffic Control

1. Place "NO CENTERLINE" (W8-12) signs at intersections where the speed limit is 35 mph or greater.
2. Place additional "PASS WITH CARE" (R4-2) signs at the downstream end of No Passing Zones.
3. Place additional "NO CENTERLINE" (W8-12) signs at 2 mile intervals.

TC-284
STANDARD ROAD PLAN
NO CENTERLINE MARKINGS
ON NON-PRIMARY ROADWAYS
When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.L2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

1. When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.

2. For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.
LEGEND

Traffic Sign

Work Area

Direction of Traffic

SPEED LIMIT (mph) | A
---|---
35 or less | 250'
40 - 45 | 500'
50 or greater | 500'

1. Place AERIAL SEEDING signs along the mainline at a maximum spacing of 3 miles.
2. Refer to SI-881 for sign details.

Possible Contract Item:
Traffic Control
When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-5) on both sides of the roadway 4 miles beyond the lane closure, respectively, as appropriate.

Remove or cover all existing signs that conflict with the lane closure as shown.

For roadways with a posted speed limit of 60 mph or greater before road work:

Place SPEED LIMIT 55 signs prior to the lane closure as shown.

Equip all vehicles with an amber revolving light or amber strobe light.

This arrow board may be operated in a four-corner caution mode.

For traffic control zones lasting more than 4 hours, a Speed Feedback Sign may be placed at the end of the merge taper.

Refer to SI-881 for sign details.

### Possible Contract Item:

Traffic Control

### Table: Speed Feedback Sign

<table>
<thead>
<tr>
<th>Speed Limit (mph)</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>M</th>
<th>T</th>
<th>A1</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>25</td>
<td>40</td>
<td>35</td>
<td>0.200</td>
<td>245</td>
<td>50</td>
<td>250</td>
<td>100</td>
</tr>
<tr>
<td>40</td>
<td>300</td>
<td>80</td>
<td>40</td>
<td>0.200</td>
<td>320</td>
<td>50</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>45</td>
<td>300</td>
<td>80</td>
<td>40</td>
<td>0.200</td>
<td>320</td>
<td>100</td>
<td>700</td>
<td>125</td>
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<tr>
<td>50</td>
<td>300</td>
<td>80</td>
<td>40</td>
<td>0.200</td>
<td>320</td>
<td>100</td>
<td>700</td>
<td>125</td>
</tr>
<tr>
<td>55 - 60</td>
<td>1000</td>
<td>100</td>
<td>55</td>
<td>600</td>
<td>770</td>
<td>100</td>
<td>2000</td>
<td>175</td>
</tr>
<tr>
<td>65 - 70</td>
<td>1000</td>
<td>100</td>
<td>55</td>
<td>700</td>
<td>950</td>
<td>100</td>
<td>2000</td>
<td>175</td>
</tr>
</tbody>
</table>

### Diagram:

1. **Direction Of Traffic**: Drums
2. **Traffic Sign**: Work Area
3. **42" Channelizer**: Truck-Mounted Attenuator (TMA)
4. **Speed Feedback Sign**: Arrow Board
5. **Work Area**: possible contract item: traffic control
Possible Contract Item:
Traffic Control

SI-881
for sign details.

Traffic Control

42" Channelizer

Direction of Traffic

Work Area

LEGEND

Refer to SI-881 for sign details.
Refer to SI-881 for sign details.
Refer to SI-881 for sign details.
Refer to SI-881 for sign details.

Temporary EXIT sign, mounted so that bottom of sign is a minimum of 3 feet above pavement surface. If in place for more than one day, mount an Exit Number Panel with the proper exit number above the temporary EXIT sign.
40' Device Spacing

500'

1000'

48" x 36"

E5-2a

EXI

TCLOSED

ROAD WORK AHEAD

W20-1

48" x 48"

ES-2a

48" x 36"

RAMP CLOSURE

R11-2

48" x 30"

Possible Contract Items:
- Safety Closure
- Traffic Control
- Portable Dynamic Message Sign

Possible Tabulation:
- Portable Dynamic Message Sign

108-13A

A vehicle with an amber revolving light or amber strobe light may be substituted for the Type III barricade.

Place Portable Dynamic Message Sign 3 calendar days prior to ramp closure. Leave in place until ramp is re-opened. The Engineer will determine the message to display.

LEGEND
- Type III Barricade
- Traffic Sign
- 42" Channelizer
- Direction of Traffic
- Work Area
- Portable Dynamic Message Sign

PRECEEDING RAMP

EXIT CLOSED

RAMP CLOSURE

Possible Tabulation:
- Portable Dynamic Message Sign

REVISIONS:
- Added Portable Dynamic Message Signs and new note 2.
- Retitled Standard.

APPROVED BY DESIGN METHODS ENGINEER

STANDARD ROAD PLAN

EXIT RAMP CLOSURE
A vehicle with an amber revolving light or amber strobe light may be substituted for the Type III barricade.

Place Portable Dynamic Message Sign 3 calendar days prior to ramp closure. Leave in place until ramp is re-opened. The Engineer will determine the message to display.

Portable Dynamic Message Sign
Place Portable Dynamic Message Sign 3 calendar days prior to ramp closure. Leave in place until ramp is re-opened. The Engineer will determine the message to display.

- Cover existing EXIT sign

**LEGEND**

- Road Closure
- Traffic Sign
  - 42" Channelizer
- Direction of Traffic
- Portable Dynamic Message Sign
When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-6) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-6) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

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When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-6) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-6) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

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Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

1. Place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
2. Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
3. When there is no shoulder, place arrow board within the closed lane behind the drums and as close to the beginning of the taper as practical.
4. For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations, in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
For lanes closed to traffic, place two drums every 1000 feet. For full-depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full-depth excavations spaced closer than 150 feet.
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Temporary EXIT sign, mounted so that bottom of sign is a minimum of 3 feet above pavement surface. If in place for more than one day, mount an Exit Number Panel with the proper exit number above the temporary EXIT sign. See SI-881 for details.
For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 100 feet.
LANE CLOSURE AT EXIT RAMP

For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
LANE CLOSURE AT EXIT RAMP

LEGEND
- Drum
- Traffic Sign
- Channelizer
- Direction of Traffic
- Work Area

For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 100 feet.
When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT LANE CLOSED 4 MILES and RIGHT LANE CLOSED 2 MILES signs (W20-6) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively.

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

For roadways with a posted speed limit of 60 mph or greater before road work:

Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 or 70 beyond the work area as shown.

For traffic control zones lasting more than 4 hours, place a Speed Feedback Sign at the end of the merge taper.

Refer to SI-881 for sign details.

For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 100 feet.
For roadways with a posted speed limit of 60 mph or greater before road work:

Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 or 70 beyond the work area as shown.

For traffic control zones lasting more than 4 hours, place a Speed Feedback Sign at the end of the merge taper.

Refer to SI-881 for sign details.

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Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Lane line drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

1. Refer to SI-881 for sign details.
2. For roadways with a posted speed limit of 60 mph or greater before road work:
   - Place SPEED LIMIT 55 signs prior to the lane closure as shown.
   - When the length of closure is greater than 1 mile, install SPEED LIMIT 55 signs in the closed lane at 1-mile intervals.
   - Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.
   - For traffic control zones lasting more than 4 hours, place a Speed Feedback Sign at the end of the merge taper.
3. For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
For traffic control zones in place for 3 calendar days or less, place arrow boards, devices and signs as shown. For traffic control zones in place for 4 calendar days or more, also remove permanent pavement markings and place temporary pavement markings as shown.

When this layout is used during nighttime hours and the width of existing traffic lanes is 11 feet or less, use tubular markers to separate two-way two-lane traffic.

Possible Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Traffic Control
- Temporary Lane Separator System

Possible Tabulation:
108-22

1. Spacing = D for drums placed in tapers.
2. For lanes closed to traffic, place two drums every 1000 feet. For full-depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full-depth excavations spaced closer than 150 feet.
3. For work zones in place more than 3 calendar days, use TLSS. For work zones in place for 3 calendar days or less, 42" channelizers may be substituted for TLSS.
LEGEND
- 42" Channelizer
- Drum
- Traffic Sign
- Work Area
- Direction of Traffic
- Arrow Board

Possible Contract Item:
Traffic Control

For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>M</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 or less</td>
<td>250</td>
<td>40</td>
<td>30</td>
<td>300</td>
<td>240</td>
<td>50</td>
</tr>
<tr>
<td>40</td>
<td>500</td>
<td>80</td>
<td>40</td>
<td>300</td>
<td>320</td>
<td>50</td>
</tr>
<tr>
<td>45</td>
<td>700</td>
<td>80</td>
<td>45</td>
<td>2-400</td>
<td>630</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td>700</td>
<td>80</td>
<td>45</td>
<td>630</td>
<td>630</td>
<td>100</td>
</tr>
<tr>
<td>55 - 90</td>
<td>1000</td>
<td>100</td>
<td>50</td>
<td>600</td>
<td>770</td>
<td>100</td>
</tr>
</tbody>
</table>

TC-429 48" x 24"
ROAD WORK AHEAD

LEGEND
42" Channelizer
Drum
Traffic Sign
Work Area
Direction of Traffic
Arrow Board

TC-429 48" x 48"
ROAD WORK AHEAD

Possible Contract Item:
Traffic Control
Traffic Sign  
Work Area  
Arrow Board  
Left Lane Closure Ahead  
Right Lane Closure Ahead  
W20-5 48" x 48"  
TMA (Optional)  
TMA (Optional)  
LEGEND  
A  
LIMIT  
SPEED  
LEFT LANE CLOSURE  
RIGHT LANE CLOSURE  
Possible Contract Item: Traffic Control  
SLOW MOVING VEHICLE OPERATING IN THE TRAFFIC LANE  
SHEET 1 of 1  
TC-431  
REVISION 7  
10-17-17  
REVISIONS:  
1  
STANDARD ROAD PLAN  
10-17-17  
Approved by Design Methods Engineer  
1. TMA required for speed limits of 55 mph or greater.  
2. Use TC-418 or TC-419.  
3. Stops not to exceed 30 minutes. For stops exceeding 30 minutes, use TC-418 or TC-419.  
4. Equip all vehicles with an amber revolving light or amber strobe light.  
5. This layout is intended for use with slow-moving operations involving stops not to exceed 30 minutes. For stops exceeding 30 minutes, use TC-418 or TC-419.
When fog sealing the milled rumble strips, place a 48" x 48" FRESH OIL sign (W21-2) at the beginning of the work area. Place additional FRESH OIL signs after each intersection and periodically through the work area so that signs are no more than 2 miles apart.

Operators should adjust their spacing, as necessary, to keep adjacent vehicles within view.

1. TMA required for speed limits of 55 mph or greater.
OUTSIDE EDGELINE OR LANELINE - DIVIDED OR UNDIVIDED

Equip all vehicles with an amber revolving light or amber strobe light.

1. Optional Fluorescent Yellow Green (FYG) sign background may be used.
2. This arrow board may be operated in a four-corner caution mode.
3. A vehicle mounted Portable Dynamic Message Sign (POMS) may be used in lieu of this sign.
4. Refer to SI-881 for sign details.
5. TMA required for speed limits of 55 mph or greater.

Possible Contract Item:
Traffic Control

LEGEND

Direction of Traffic

Truck-Mounted Attenuator (TMA)
Optional Fluorescent Yellow Green (FYG) sign background may be used.

2. This arrow board may be operated in a four-corner caution mode.

3. A vehicle mounted Portable Dynamic Message Sign (PDMS) may be used in lieu of this sign.

4. Refer to SI-881 for sign details.

5. TMA required for speed limits of 55 mph or greater.
Possible Contract Items:
- Flaggers
- Portable Dynamic Message Sign
- Traffic Control

This layout is intended for a preplanned closure of 20 minutes or less.

1. A vehicle with an amber revolving light or amber strobe light may be substituted for leading law enforcement vehicle.
2. This distance may be increased to provide adequate storage for stopped vehicles.
3. Optional for speed limits less than 55 mph.

<table>
<thead>
<tr>
<th>SPEED LIMIT (mph)</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or less</td>
<td>250'</td>
<td>250'</td>
</tr>
<tr>
<td>40 - 45</td>
<td>350'</td>
<td>350'</td>
</tr>
<tr>
<td>50 or greater</td>
<td>1000'</td>
<td>2500'</td>
</tr>
</tbody>
</table>

AHEAD
CLOSED ROAD

LEGEND
- Traffic Sign
- Law Enforcement Vehicle
- Flagger
- Portable Dynamic Message Sign
- Work Area
- Direction of Traffic
**Possible Contract Items:**

- Flaggers
- Traffic Control

**Legend**

- Drum
- Traffic Sign
- 42" Channelizer
- Law Enforcement Vehicle
- Arrow Board
- Flagger
- Work Area
- Direction of Traffic

**Standard Road Plan TC-454**

**Temporary Detour Using Ramps on Divided Highway**

**REVISION**

10-17-17

**STANDARD ROAD PLAN**

TC-454

**REVISIONS:** Added Designer Info button and updated DOT logo.

**APPROVED BY:** Design Methods Engineer

**DESIGNER INFO**
Possible Contract Items:
- Pavement Marking Items
- Traffic Control

Possible Tabulation:
108-22

Refer to SI-881 for sign details.
LEGEND

- Surface Course
- Intermediate Course

PAVEMENT MARKING SEQUENCE

1. Shoulder Fillet: Refer to Section 1107 of the Standard Specifications and Safety Edge specifications.
2. Centerline fillet may be notched wedge, Safety Edge, or a temporary 3:1 HMA fillet.
Omit "SIDEWALK CLOSED AHEAD CROSS HERE" (R9-11) sign when closure is at sidewalk intersection as shown in layout 1.

Possible Contract Item:
Traffic Control
Possible Tabulation:
113-2
CLOSURE AT INTERSECTION

LEGEND

- Roadway
- Sidewalk
- Sign
- Pedestrian Path Closure
- Work Area

SIGNAL MARK CLOSER AREAS
CROSS HERE

24" x 18"

PEDESTRIAN DETOUR
Acceptable materials and construction method for Pedestrian Channelizer will be defined in the contract documents. When Temporary Barrier Rail is specified as the Pedestrian Channelizer, Section 2528 of the Standard Specifications applies. For other types of Pedestrian Channelizers, the length of Pedestrian Channelizer installed will be measured in feet. Payment will be at the contract price per linear foot.

Possible Contract Items:
- Pedestrian Channelizer
- Temporary Barrier Rail
- Maintenance of Pedestrian Traffic

Possible Tabulation:
113-3

LEGEND
- Sidewalk
- Direction of Traffic
- Work Area
- Type III Barricade
- Pedestrian Channelizer