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Appendix A: Typical Temporary Traffic Control Plans (CCTV/Cleaning and CIPP Lining)
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INTRODUCTION

The Metropolitan District (MDC) has created the following document which provides particular design guidelines for the purpose of maintenance and protection of traffic (MPT) during construction operations. The design guidelines are based on the Manual of Uniform Traffic Control Devices (MUTCD 2009), The Connecticut Department of Transportation (CTDOT), and specific MDC requirements. If work is on a state road, please use CDOT Construction Traffic Control plans found at: http://www.ct.gov/dot/cwp/view.asp?a=3199&q=259402 (0971991A – Traffic Control Plans and Typical Materials) or reference Appendix B of this document.

The purpose of these Design Guidelines is to provide the necessary information to assist in the design of temporary traffic control plans to meet the requirements of the MDC. The intent of any temporary traffic control plan is to provide a safe and effective travel environment for vehicular and pedestrian traffic in and around the construction work zone. A correctly established work zone and traffic pattern is of importance to the surrounding public as well as the construction personnel performing the work.

This document provides the following Maintenance and Protection of Traffic design information:

- Notes for Traffic Control Plans
- Component Parts of a Temporary Traffic Control Zone
- Type of Tapers and Buffer Spaces
- Traffic Control Details
- Traffic Control Signs
- Typical Temporary Traffic Control Plans (general construction)
- Typical Temporary Traffic Control Plans (CCTV/Cleaning and CIPP Lining)

The MPT Design Guidelines are also available in an AutoCAD format by request. The information contained herein should not be considered a final design for a construction project, but should be used as a guideline to develop the temporary traffic control plans.

USING TYPICAL TRAFFIC CONTROL DETAILS IN DESIGN

When using the typical traffic control (TTC) details during design for any construction project’s traffic management, the final designer shall assign a number to the detail used and develop a table for the contractor to reference as to what detail is required for use by construction activity location.

If any portion of the construction cannot be completed using a typical traffic control detail, a site specific plan is required as part of the design in addition to the standard traffic control sheets.

See the example table below for format:

<table>
<thead>
<tr>
<th>Street</th>
<th>Construction Activity</th>
<th>Approximate Station</th>
<th>TTC Detail #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street 1</td>
<td>Install water main</td>
<td>00+00 to 1+00</td>
<td>1</td>
</tr>
<tr>
<td>Street 2</td>
<td>Install water main</td>
<td>1+00 to 5+00</td>
<td>1</td>
</tr>
<tr>
<td>Street 3</td>
<td>Install water service</td>
<td>2+50</td>
<td>Site specific – see sheet X</td>
</tr>
<tr>
<td>Street 4</td>
<td>CIPP Lining (sewer)</td>
<td>5+00 to 6+50</td>
<td>3</td>
</tr>
<tr>
<td>Street 5</td>
<td>Trench restoration</td>
<td>6+50 to 7+50</td>
<td>4</td>
</tr>
<tr>
<td>Street 6</td>
<td>Milling</td>
<td>00+00 to 7+50</td>
<td>5</td>
</tr>
<tr>
<td>Street 7</td>
<td>Paving</td>
<td>00+00 to 7+50</td>
<td>5</td>
</tr>
</tbody>
</table>
**TEMPORARY TRAFFIC CONTROL PLANS — GENERAL INFORMATION**

**MPC DESIGN GUIDELINE NOTES**

1. TEMPORARY TRAFFIC CONTROL ON STATE ROADWAYS SHALL CONFORM WITH CTCDT CONSTRUCTION TRAFFIC CONTROL PLANS.
2. TRAFFIC CONTROL (POLICE) OFFICERS ARE REQUIRED FOR WORK ON STATE ROADWAYS.
3. UNIFORMED TRAFFIC CONTROL PERSONNEL SHOWN ON THE TYPICAL TEMPORARY TRAFFIC CONTROL PLANS ARE APPROXIMATE IN LOCATION AND QUANTITY. THE USE OF TRAFFIC CONTROL PERSONNEL SHALL BE DETERMINED BY THE FIE AND SHOWN ACCORDINGLY ON THE CONTRACT DOCUMENTS. CONSIDERATIONS TO SITE LINE, TRAFFIC VOLUMES AND OTHER FIELD CONDITIONS SHALL BE MADE WHEN DETERMINING THE USE OF TRAFFIC CONTROL PERSONNEL.
4. SIGN IDENTIFICATION SHALL BE IN ACCORDANCE WITH MDC TEMPORARY TRAFFIC CONTROL PLAN GUIDELINES.
5. PROVIDE RAMP IF NEEDED TO ACCOMMODATE ACCESS OR TRAFFIC FLOW OVER BY-PASS HOSES.
6. PROVIDE "BUMP" SIGNS WHEN RAMPS ARE USED.
7. MAINTAIN BUSINESS AND LOCAL ACCESS AT ALL TIMES.
8. MAINTAIN BUS STOPS AT ALL TIMES.
9. TRAFFIC DRUMS SHALL BE USED FOR NIGHT TIME WORK ZONES.
10. BUFFER SPACE IS OPTIONAL, HOWEVER, IT IS DESIRABLE TO PROVIDE BUFFER SPACE AT WORK ZONES TO PROVIDE RECOVERY SPACE FOR AN ERRANT VEHICLE AND A SAFER WORKING ENVIRONMENT FOR WORKERS. SEE TABLE 5 FOR BUFFER SPACE.
11. LANE WIDTH OF TRAVEL LANE SHALL BE A MINIMUM OF 11' MEASURED TO THE FACE OF THE CHANNELIZING DEVICE. 10' MINIMUM MAY BE ACCEPTED WITH APPROVAL OF OWNER (MDC) ON A CASE-BY-CASE BASIS.
12. IN GENERAL, 36" SIGNS SHALL BE USED ON LOCAL ROADWAYS, AND 48" SIGNS SHALL BE USED ON STATE ROADWAYS UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
13. CONTRACTOR SHALL COORDINATE THE NEED FOR TEMPORARY "NO PARKING SIGNS" THROUGH OR ADJACENT TO THE WORK ZONE WITH THE APPROPRIATE TOWN/CITY/STATE OFFICIALS. THE FINAL DESIGN ENGINEER SHALL INDICATE THE "NO PARKING" AREA(S) ON THE TRAFFIC CONTROL PLAN WHERE APPLICABLE.
14. AS A MINIMUM REQUIREMENT, THE FOLLOWING INFORMATION SHALL BE SHOWN IN THE PLANS.
   - NORTH ARROW
   - POSTED/REGULATORY SPEED
   - EXISTING AND PROPOSED LANE CONFIGURATION
   - EXISTING AND PROPOSED ROADWAY/TRAFFIC WAY WIDTH
   - WORK ZONE LIMITS
   - STREET NAMES (MAIN AND SIDE STREETS)
   - SIGN INVENTORY
   - LEGEND WHEN UTILIZING TRAFFIC CONTROL SIGNS AND/OR DEVICES THAT ARE NOT SHOWN IN MDC TRAFFIC CONTROL PLANS.
   - SCALE WITH SCALE BAR (INDICATE "N.T.S." FOR PLANS THAT ARE NOT TO SCALE)
   - SIDEWALKS/CROSSWALKS

**TABLE 1: TAPER LENGTH TRAVEL LANE CLOSURE OR MERGE**

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>67</td>
<td>74</td>
<td>90</td>
</tr>
<tr>
<td>25</td>
<td>105</td>
<td>115</td>
<td>125</td>
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<tr>
<td>30</td>
<td>156</td>
<td>165</td>
<td>180</td>
</tr>
<tr>
<td>35</td>
<td>205</td>
<td>225</td>
<td>245</td>
</tr>
<tr>
<td>40</td>
<td>267</td>
<td>284</td>
<td>320</td>
</tr>
<tr>
<td>45</td>
<td>330</td>
<td>350</td>
<td>340</td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE, TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

**TABLE 2: TAPER LENGTH TRAVEL LANE SHIFT**

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>25</td>
<td>63</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>30</td>
<td>103</td>
<td>113</td>
<td>123</td>
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<tr>
<td>35</td>
<td>144</td>
<td>155</td>
<td>165</td>
</tr>
<tr>
<td>40</td>
<td>225</td>
<td>245</td>
<td>275</td>
</tr>
<tr>
<td>45</td>
<td>300</td>
<td>320</td>
<td>350</td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

**TABLE 3: TAPER LENGTH SHOULDER CLOSURE**

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>6'</th>
<th>8'</th>
<th>10'</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>9</td>
<td>18</td>
<td>23</td>
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<tr>
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<td>20</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>35</td>
<td>26</td>
<td>55</td>
<td>66</td>
</tr>
<tr>
<td>40</td>
<td>32</td>
<td>72</td>
<td>90</td>
</tr>
<tr>
<td>45</td>
<td>38</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

L = LENGTH OF SHOULD LANE (FT)
W = TOTAL SHOULDER WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

**TABLE 4: DISTANCE BETWEEN SIGNS**

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt;45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (45-60 MPH)</td>
<td>150</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

**TABLE 5: LONGBITONAL BUFFER SPACE**

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
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<tr>
<td>25</td>
</tr>
<tr>
<td>30</td>
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<tr>
<td>35</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
</tr>
<tr>
<td>120</td>
</tr>
<tr>
<td>125</td>
</tr>
<tr>
<td>130</td>
</tr>
<tr>
<td>130</td>
</tr>
<tr>
<td>140</td>
</tr>
</tbody>
</table>

**TABLE 6: CLEAR ZONE WIDTHS**

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

**SYMBOLS**

- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICE
- TRAFFIC CONTROL PERSON (POLICE OR FLAGGER = APPROX. LOCATION AND NUMBER, REFERENCE NOTE 3 ABOVE)
- WORK VEHICLE
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE IN BARRICADE

**SOURCE:** MUTCD 2009 EDITION AND MDC.
FIGURE 2: TYPES OF TAPERS & BUFFER SPACES

Legend
- Direction of travel
- Channelizing device
- Work space
- Sign

Merging Taper

Longitudinal Buffer Space (optional)

Shifting Taper 1/2 L

Lateral Buffer Space (optional)

Downstream Taper (optional)

Longitudinal Buffer Space (optional)

Shifting Taper 1/2 L

45 ft

* = speed in mph

SOURCE: MUTCD 2009 EDITION.
CONSTRUCTION SIGNS

** Sign with orange flags shall be required at the owner’s discretion.

NOTES FOR PORTABLE SIGN SUPPORTS:

1. Signs and their portable supports shall conform to the requirements of NCHRP Report 350 (TL-3) and the latest edition of the MUTCD.
2. Mounting height of signs shall be a minimum of 12" and a maximum of 24". Signs shall be mounted higher as needed to meet field conditions or as directed by the owner.
3. The MDC reserves the right to reject any support deemed unsuitable for the purpose intended.
4. Portable sign supports shall be stabilized in a manner that will not affect their compliance with NCHRP Report 350 (TL-3). Signs need to be stabilized as needed, which may include sand bags or other weighted devices.
5. Roll-up signs are permitted for short duration work zones (less than 1 hour).
6. Use 48" signs on arterial roadways when feasible.

BARRECADE WARNING LIGHTS (AS REQ'D)

Are to be mounted behind sign so that only illuminated portion is exposed to high mount on edge of sign nearest traffic lane. Can also be used on drums and type II barricades (Typ)

PLACEMENT OF CONSTRUCTION SIGNS

TYPICAL LONG TERM INSTALLATION

NOTES:

1. Supports shall be metal sign posts and have break-away features.

SOURCE: MUTCD 2009 EDITION AND MDC.
NOTES:
1. CONSTRUCTION BARRICADES SHALL CONFORM TO THE REQUIREMENTS OF NCHRP REPORT 350 (TL-3) AND THE LATEST EDITION OF THE MUTCD.
2. MARKINGS FOR BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE STRIPES. those DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS. 8" WIDE STRIPES SHALL BE USED.
3. THE MDC RESERVES THE RIGHT TO REJECT ANY BARRICADE DEEMED UNSUITABLE FOR THE PURPOSE INTENDED.
4. CORNERS OF BARRICADE RAILS SHALL BE ROUNDED.
5. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE RETROREFLECTIVE SHEETING AS REQUIRED IN THE SPECIFICATIONS.

NOTE: MUTCD 2009 EDITION AND MDC.

TRAFFIC CONE BAR
(HOOK ON TOP OF 42" CONE)

TRAFFIC DRUM

NOTES:
1. TRAFFIC DRUM SHALL CONFORM TO THE REQUIREMENTS OF NCHRP REPORT 350 (TL-3) AND THE LATEST EDITION OF THE MUTCD.
2. THE MDC RESERVES THE RIGHT TO REJECT ANY DRUM DEEMED UNSUITABLE FOR THE PURPOSE INTENDED.
3. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE RETROREFLECTIVE SHEETING AS REQUIRED IN THE SPECIFICATIONS.
4. THE SECTIONS OF DRUMS NOT COVERED WITH RETROREFLECTIVE STRIPES SHALL BE ORANGE.
DELINEATORS DE-7, DE-7A, DE-7B, DE-7C
FOR INSTALLATION ON TEMPORARY PRECAST CONCRETE BARRIER CURB AND TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE)

SPACING FOR TEMPORARY BARRIER CURB DELINEATORS:
ON THE LEADING TAPERED SECTION - EVERY 20' (6.2m),
ON THE FIRST 100' (30m) OF THE PARALLEL
SECTIONS - EVERY 20' (6.2m),
OF 2 IF LESS THAN 100' (30m),
ON THE REMAINING LENGTH - EVERY 100' (30m), MINIMUM
ALTERNATING ONE WAY TRAFFIC - EVERY 20' (6.2m),
ALL OTHER ROADWAYS SHALL BE DELINEATED IN
ACCORDANCE WITH MUTCD.

TYPE V OR BRIGHT WIDE ANGLE RETROREFLECTIVE SHEETING

DELINEATORS DE-7, DE-7A, DE-7B, DE-7C
TO BE PAID FOR UNDER SECTION 12.05 DELINEATORS.

<table>
<thead>
<tr>
<th>SPEED</th>
<th>FLARE RATE (X : 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥30mph(48KPH)</td>
<td>4 : 1</td>
</tr>
<tr>
<td>&gt;30mph(48KPH) &lt;45mph(72KPH)</td>
<td>6 : 1</td>
</tr>
<tr>
<td>&gt;45mph(72KPH)</td>
<td>8 : 1</td>
</tr>
</tbody>
</table>

ALL LIMITED ACCESS HIGHWAYS
10 : 1

* DESIGN SPEED THROUGH THE WORK AREA.

**TABLE A**

DELINEATORS DE-7, DE-7A, DE-7B, DE-7C
TO BE PAID FOR UNDER SECTION 12.05 DELINEATORS.

GENERAL NOTES:
1. ALTERNATE DESIGNS FOR LIFTING KEYS, HOLES OR OTHER HANDLING
   DEVICES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. EXPECTED PERMANENT DYNAMIC DEFLECTION IS 3'-6" (1148)
   BASED ON TL-3 CRASH TESTS WITH 240'/73152' OF TPCBC.

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
OVERLAP SAWED SLOTS TO SLOTS TO INSURE EQUAL DEPTH AT CORNERS. (TYP INSIDE CORNERS)
FULL DEPTH OF SAWCUT.

DETECTOR LOOP CORNERS, CHISEL INSIDE OF HANDHOLE.

#8 AWG BONDING WIRE 48" (1200) MAX SLACK - ONLY ENOUGH TO MAKE SPLICE OUTSIDE OF HANDHOLE.

NOTE:
CONTRACTOR TO COORDINATE REPLACEMENT OF LOOP DETECTOR WITH LOCAL MUNICIPALITY AND/OR CTDOT.
**Legend as shown on traffic control signal plans:**

- POLYESTER SEALANT
  - Full sealant flush with pavement. Squeegee excess sealant away from sawcut.
- SAWCUT LOOP & HOME RUN DEPTH TO ENSURE MIN. 1" (25) SEALANT COVERAGE.
- WHEN MACHINE OR CAULK GUN IS USED, INSERT NOZZLE INTO SAWCUT.
- FULLY ENCAPSULATE LOOP WIRE AND WEDGE WITH SEALANT.

**NOTES:**

- REFER TO STANDARD SPECIFICATIONS, SECTION 11-11.
- ONLY USE POLYESTER COMPOUND AS SEALANT, UNLESS OTHER TYPE IS APPROVED BY ENGINEER.
- WET SAW CUT ONLY. DRY SAW CUT NOT PERMITTED.
- RECOMMENDED SAW BLADE: 14" x 3/8" (350 x 10) PRODUCES 7/16" (11) SLOT.
- SAW CUT LOOP & HOME RUN DEPTH TO ENSURE MIN. 1" (25) SEALANT COVERAGE.
- NOT ACCEPTABLE SAW CUT
  - DO NOT OVERLAP MORE THAN TWO SAWCUTS.

**TYPICAL WINDING SEGMENTED LOOPS, 3 TURNS EACH**

To create a uniform magnetic field, wind adjacent loops in opposite directions.

**DETAIL "K"**

**DETAIL "L"**

**EXAMPLE A**

**EXAMPLE B**

SEE TRAFFIC SIGNAL PLAN FOR ACTUAL LOOP PLACEMENT, NUMBERS, ETC...

LOOPS SEGMENTS ON SAME AMPLIFIERS MAY SHARE HOME RUN SAWCUT. SPLICE SEGMENTS IN SERIES.

LOOPS SEGMENTS ON DIFFERENT AMPLIFIERS MUST BE IN SEPARATE HOME RUN SAWCUT.

SOURCE: CTDOT 4/2014
The Metropolitan District
Hartford, Connecticut

TYPICAL TEMPORARY TRAFFIC CONTROL SIGNS

SOURCE: CTDOT, MUTCD AND MDC.

DATE: 7/20/2016

THE METROPOLITAN DISTRICT
HARTFORD, CONNECTICUT

TEMPORARY TRAFFIC CONTROL PLAN
GENERAL INFORMATION
### TYPICAL TEMPORARY TRAFFIC CONTROL SIGNS

<table>
<thead>
<tr>
<th>BB</th>
<th>W16-8P</th>
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</thead>
<tbody>
<tr>
<td>1)</td>
<td>STREET NAME</td>
</tr>
<tr>
<td>2)</td>
<td>KEEP AHEAD</td>
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</table>

<table>
<thead>
<tr>
<th>CC</th>
<th>R4-7A</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEEP RIGHT</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DD</th>
<th>R4-8A</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEEP LEFT</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EE</th>
<th>B/O</th>
</tr>
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<tbody>
<tr>
<td>RAISED STRUCTURES</td>
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<table>
<thead>
<tr>
<th>FF</th>
<th>W8-8</th>
</tr>
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<tbody>
<tr>
<td>ROUGH ROAD</td>
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</table>

<table>
<thead>
<tr>
<th>GG</th>
<th>R6-1L</th>
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<tbody>
<tr>
<td>ONE-WAY</td>
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<table>
<thead>
<tr>
<th>HH</th>
<th>R5-1R</th>
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<tr>
<td>X-N-WAY</td>
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<table>
<thead>
<tr>
<th>II</th>
<th>R3-7L</th>
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<tbody>
<tr>
<td>LEFT LANE MUST TURN LEFT</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>JJ</th>
<th>R3-7R</th>
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<tbody>
<tr>
<td>RIGHT LANE MUST TURN RIGHT</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>KK</th>
<th>W3-1</th>
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<tbody>
<tr>
<td>NORTH</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LL</th>
<th>M3-2</th>
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<tbody>
<tr>
<td>EAST</td>
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<table>
<thead>
<tr>
<th>MM</th>
<th>M3-3</th>
</tr>
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<tbody>
<tr>
<td>SOUTH</td>
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<table>
<thead>
<tr>
<th>NN</th>
<th>M3-4</th>
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<tbody>
<tr>
<td>WEST</td>
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<table>
<thead>
<tr>
<th>OO</th>
<th>W21-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHEAD</td>
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</table>

<table>
<thead>
<tr>
<th>PP</th>
<th>W16-8P</th>
</tr>
</thead>
<tbody>
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<td>AHEAD</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>QQ</th>
<th>W9-3</th>
</tr>
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<tr>
<td>CENTER LANE CLOSED AHEAD</td>
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<table>
<thead>
<tr>
<th>RR</th>
<th>W8-24</th>
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<tbody>
<tr>
<td>STEEL PLATE AHEAD</td>
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<table>
<thead>
<tr>
<th>SS</th>
<th>W12-1</th>
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<tbody>
<tr>
<td>SHOULDER CLOSED</td>
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<table>
<thead>
<tr>
<th>TT</th>
<th>W21-5a</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROOVED PAVEMENT</td>
<td></td>
</tr>
</tbody>
</table>

### NOTES:

1. THIS IS NOT A COMPREHENSIVE LIST OF ROADWAY SIGNS. REFER TO MUTCD AND/OR PROVIDE SPECIAL SIGNS AS NEEDED.
2. SPECIAL (PROJECT SPECIFIC) SIGNS SHALL BE ADDED ON A NEW PLAN SHEET T-1A; TO BE CREATED AND INSERTED BY THE FDE AFTER STANDARD MDC SHEET T-1.

### SIGN COLOR LEGEND

- **B/O** = BLACK/ORANGE
- **RB/W** = RED BLACK/WHITE
- **B/W** = BLACK/WHITE
- **WR/W** = WHITE RED/WHITE
- **R/W** = RED/WHITE
- **BLUE/W** = BLUE/WHITE

### SOURCE: CTDOT, MUTCD AND MDC.

---

**The Metropolitan District**

**Hartford, Connecticut**

**TEMPORARY TRAFFIC CONTROL PLAN**

**GENERAL INFORMATION**
TWO LANE HIGHWAY
WORK IN TRAVEL LANE AND SHOULDER
ALTERNATING ONE-WAY TRAFFIC OPERATION

LEGEND:
- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")
- TRAFFIC CONTROL PERSON (POLICE OR FLAGGER — APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1)
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (&gt; 45 MPH)</td>
<td>300</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

SOURCE: MUTCD 2009 EDITION AND MDC.
TWO LANE HIGHWAY
WORK IN TRAVEL LANE AND SHOULDNER

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (≥45 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>RURAL</td>
<td>100</td>
</tr>
</tbody>
</table>

TABLE I: TAPER LENGTH
SHOULDER CLOSURE

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN. TAPER LENGTH (FT)</th>
<th>SHOULDER LANE WIDTH (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>9</td>
<td>18</td>
<td>L = WS/2</td>
</tr>
<tr>
<td>30</td>
<td>20</td>
<td>20</td>
<td>L = WS</td>
</tr>
<tr>
<td>35</td>
<td>28</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>36</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>40</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

L = LENGTH OF SHOULDER TAPER (FT)
W = TOTAL SHOULDER WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

TABLE II: TAPER LENGTH
TRAVEL LANE WIDTH REDUCTION

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN. TAPER LENGTH L (FT)</th>
<th>TRAVEL LANE WIDTH REDUCTION (W)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10</td>
<td>13</td>
<td>L = WS/2</td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>25</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>30</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>35</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>40</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TRAVEL LANE WIDTH REDUCTION (FT)
S = POSTED OR REGULATORY SPEED (MPH)

LEGEND:
- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20')
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut
The Metropolitan District
Hartford, Connecticut

TWO LANE HIGHWAY
WORK IN BI-DIRECTIONAL TURN LANE

CENTER LANE CLOSED AHEAD

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

BUFFER SPACE (OPTIONAL)

TABLE I: TAPER LENGTH
TRAVEL LANE CLOSURE OR MERGE

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>MIN. TAPER LENGTH (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10' 11' 12'</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>14' 16' 18'</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>16' 18' 20'</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>20' 22' 24'</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>23' 25' 28'</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>25' 30' 35'</td>
<td></td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (≥ 45 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>RURAL</td>
<td>5000</td>
</tr>
</tbody>
</table>

LEGEND:

WORK AREA
WORK ZONE SIGN
CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20')
LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

SOURCE: MUTCD 2009 EDITION AND MDC.

TEMPORARY TRAFFIC CONTROL PLAN
TWO-LANE, TWO-WAY
WORK BI-DIRECTIONAL TURN LANE
Note: In design, consider closing one street express.
The Metropolitan District
Hartford, Connecticut

TWO LANE HIGHWAY
WORK IN TRAVEL LANE
ALTERNATING ONE-WAY TRAFFIC OPERATION AT INTERSECTION

LEGEND:

WORK AREA
WORK ZONE SIGN
CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")
TRAFFIC CONTROL PERSON (POLICE OR FLAGGER = APPRX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1)
LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>150</td>
</tr>
<tr>
<td>URBAN (&gt; 45 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

SOURCE: MUTCD 2009 EDITION AND MDC.
The Metropolitan District
Hartford, Connecticut

TWO LANE HIGHWAY
WORK IN TRAVEL LANE AT INTERSECTION
NOTE: PLAN TO BE SUPPLEMENTED WITH DETOUR PLAN.

LEGEND:
- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE III BARRICADE

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (45-65 MPH)</td>
<td>200</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

SOURCE: MUTCD 2009 EDITION AND MDC.

TEMPORARY TRAFFIC CONTROL PLAN
TWO-LANE, TWO-WAY
WORK IN INTERSECTION
TWO LANE HIGHWAY
WORK IN SHOULDER

SHOULDER CLOSED

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 35 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (≥45 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

TABLE I: TAPER LENGTH
SHOULDER CLOSURE

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN. TAPER LENGTH (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>9, 10, 12, 13</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>14, 20, 24, 28</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>28, 30, 35</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>36, 40, 45</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>67, 72, 80</td>
<td></td>
</tr>
</tbody>
</table>

L = W squared / 60
L = W S

\( \frac{L}{S} = \text{LENGTH OF SHOULDER TAPER (FT)} \)
W = TOTAL SHOULDER WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

SHOULDER TAPER LENGTH (SEE TABLE I)

CAN REPLACE "GO" WITH "TT" WITH APPROVAL OF OWNER

LEGEND:

- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20')
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

SOURCE: MUTCD 2009 EDITION AND MDC.
MULTILANE UNDIVIDED HIGHWAY
WORK IN RIGHT TRAVEL LANE

TABLE I: TAPER LENGTH
TRAVEL LANE CLOSURE OR MERGE

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN. TAPER LENGTH (FT)</th>
<th>MAX. TAPER LENGTH (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>67 74 80</td>
<td>25 30 35</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>80 85 90</td>
<td>30 35 40</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>90 95 100</td>
<td>40 45 50</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>100 105 110</td>
<td>50 55 60</td>
<td></td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (45-65 MPH)</td>
<td>300</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

LEGEND:

- Work Area
- Work Zone Sign
- Channelizing Devices (Drums or 42" Cones spacing at 20")
- Lane Identification and Direction of Traffic

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
MULTILANE WORK IN TRAVEL LANE

DATE: 7/20/2016 FILE: c:\wam\k\desktop\mdc\atstandard traffic plans and drawings\2018 mpt guidelines\2016 mpt guidelines (7-20-18).dwp PAGE 21
MULTIPLE UNDIVIDED HIGHWAY
WORK IN LEFT TRAVEL LANE

TABLE 1: TAPER LENGTH

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN TAPER LENGTH L (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>43 11 10</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>101 115 125</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>150 165 180</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>200 225 250</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>250 275 300</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>300 325 350</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>350 375 400</td>
<td></td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (≤ 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (≥45 MPH)</td>
<td>300</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

LEGEND:

- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut
ROAD WORK AHEAD

MAY BE OMITTED AT MDC'S DIRECTION

(MAY BE OMITTED AT MDC'S DIRECTION)

(OMIT WHEN SIGN IS UTILIZED ON APPROACHING DIRECTION)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

TRAVEL LANE TAPER LENGTH (SEE TABLE I)

THE METROPOLITAN DISTRICT
Hartford, Connecticut

MULTILANE UNDIVIDED HIGHWAY
WORK IN BOTH TRAVEL LANES

TABLE I. TAPER LENGTH

<table>
<thead>
<tr>
<th>POSTED SPEED (MPH)</th>
<th>MIN. TAPER LENGTH L (FT)</th>
<th>MIN. TAPER LENGTH W (FT)</th>
<th>MIN. TAPER LENGTH S (FT)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>87</td>
<td>75</td>
<td>62</td>
<td>L = W^2/60</td>
</tr>
<tr>
<td>25</td>
<td>102</td>
<td>95</td>
<td>73</td>
<td>L = W</td>
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<tr>
<td>30</td>
<td>115</td>
<td>115</td>
<td>80</td>
<td>L = W</td>
</tr>
<tr>
<td>40</td>
<td>205</td>
<td>205</td>
<td>145</td>
<td>L = W</td>
</tr>
<tr>
<td>50</td>
<td>300</td>
<td>300</td>
<td>250</td>
<td>L = W</td>
</tr>
</tbody>
</table>

L = LENGTH OF TRAVEL LANE TAPER (FT)
W = TOTAL TRAVEL LANE WIDTH (FT)
S = POSTED OR REGULATORY SPEED (MPH)

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (&gt; 45 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

LEGEND:

WORK AREA
WORK ZONE SIGN
CHANNELIZING DEVICES (DRUMS OR 42° CONES SPACING AT 20')
LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

MDC
The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
MULTILANE WORK IN TRAVEL LANE

SOURCE: MUTCD 2009 EDITION AND MDC.
The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
MULTILANE WORK IN TRAVEL LANE

DATE: 7/20/2016 FILE: c:\\wmsr\\idm\\standard traffic signs and drawings\2018 mtc guidelines\2016 mtc guidelines (7-20-18).dwp

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The Metropolitan District
Hartford, Connecticut

ROAD CLOSURE
LOCAL STREET
WITHOUT DETOUR

ROAD CLOSED
AHEAD

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (≤ 45 MPH)</td>
<td>A</td>
</tr>
<tr>
<td>URBAN (≥ 45 MPH)</td>
<td>500</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

LEGEND:
- WORK AREA
- WORK ZONE SIGN
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE III BARRICADE

SOURCE: MUTCD 2009 EDITION AND MDC.

TEMPORARY TRAFFIC CONTROL PLAN
ROAD CLOSURE

DATE: 7/20/2016 FILE: c:\mrana3\edman\desktop\mdc\standard traffic signs and drawings\2018 mut guidelines\2016 mut guidelines (7-20-18).dwp
ROAD CLOSURE
LOCAL STREET WITH DETOUR

(MAY REPLACE WITH SIGNS X AND Y)

(MAY REPLACE WITH SIGNS X AND Y)

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

LEGEND:

WORK AREA

WORK ZONE SIGN

CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")

LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

TYPE III BARRICADE

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (≥ 45 MPH)</td>
<td>500</td>
</tr>
<tr>
<td>RURAL</td>
<td>500</td>
</tr>
</tbody>
</table>

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
ROAD CLOSURE
MIDBLOCK SIDEWALK CLOSURE

IF A PEDESTRIAN DIVERSION ALONGSIDE THE WORK ZONE IS REQUIRED, A SITE SPECIFIC PLAN SHALL BE DESIGNED BY THE FINAL DESIGN ENGINEER.

* Consider use of Type III Barricade

LEGEND:

- WORK AREA
- WORK ZONE SIGN
- CHANNELIZING DEVICES (DRUMS OR 42" CONES SPACING AT 20")
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC

SOURCE: MUTCD 2009 EDITION AND MDC.
MILLED ROADWAY SURFACE
LOCAL STREET (NON STATE ROAD)
OVERNIGHT

DISTANCE BETWEEN SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (&lt; 45 MPH)</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (&gt; 45 MPH)</td>
<td>200</td>
</tr>
<tr>
<td>URBAN NORMAL</td>
<td>500</td>
</tr>
</tbody>
</table>

NOTES:
1. SIGN SPACING AND ADDITIONAL SIGNS TO BE FIELD ADJUSTED/DETERMINED.
2. PLACE CONES AND DRUMS ON RAISED BASINS AND/OR MANHOLEAS AS NEEDED.
3. PAINT ALL RAISED STRUCTURES INCLUDING GATES, ETC.
4. USE "RAISED STRUCTURE" SIGNS IF NEEDED.
5. "BUMP" SIGNS MAY BE USED IN PLACE OF "BUMP AHEAD" SIGNS WITH
   OWNER'S APPROVAL. IF "BUMP" SIGN IS USED, SWITCH LOCATION WITH THE
   "GROOVED PAVEMENT" SIGN.

SOURCE: MUTCD 2009 EDITION AND MDC.
Appendix A:

Typical Temporary Traffic Control Plans:

- CIPP Lining
- CCTV/Cleaning
- Point Repairs

THE FOLLOWING TYPICAL TRAFFIC CONTROL DETAILS ARE INCLUDED ON MDC STANDARD 24"x36" TRAFFIC CONTROL SHEETS (T-4 THROUGH T-8) FOR ANY SEWER REHABILITATION / CIPP LINING CONTRACT.
Appendix A
Temporary Traffic Control Plans
Point Repairs, CCTV, Cleaning and CIPP Lining

PURPOSE

As part of the overall “Maintenance and Protection of Traffic Design Guidelines”, Appendix A has been created to highlight the temporary traffic control plans typically used for work such as point repairs, CCTV and cleaning of pipes, and CIPP lining on local roadways with speeds less than 45MPH. The design guidelines are based on the Manual of Uniform Traffic Control Devices (MUTCD 2009), The Connecticut Department of Transportation (CTDOT), and specific MDC requirements. If work is on a state road, please use CTDOT Construction Traffic Control plans found at: http://www.ct.gov/dot/cwp/view.asp?a=3199&q=259402 (0971991A – Traffic Control Plans and Typical Materials) or reference Appendix B of this document.

The purpose of these Design Guidelines is to provide the necessary information to assist in the design of temporary traffic control plans to meet the requirements of the MDC for the type of work activities stated above. The MDC has created these Design Guidelines with temporary traffic control designs used on previously completed similar construction activities in mind.

The intent of any temporary traffic control plan is to provide a safe and effective travel environment for vehicular and pedestrian traffic in and around the construction work zone. A correctly established work zone and traffic pattern is of importance to the surrounding public as well as the construction personnel performing the work.

<table>
<thead>
<tr>
<th>DETAIL</th>
<th>DETAIL TITLE</th>
<th>TRAFFIC PATTERN</th>
<th>ROAD TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>TYPICAL WORK ZONE ADJACENT TO &quot;T&quot; INTERSECTION</td>
<td>ALTERNATING ONE WAY TRAFFIC</td>
<td>LOCAL/COLLECTOR</td>
</tr>
<tr>
<td>B</td>
<td>TYPICAL WORK ZONE MID BLOCK</td>
<td>ALTERNATING ONE WAY TRAFFIC</td>
<td>LOCAL/COLLECTOR</td>
</tr>
<tr>
<td>C</td>
<td>TYPICAL WORK ZONE AT A &quot;T&quot; INTERSECTION WITH ROAD CLOSURE</td>
<td>ALTERNATING ONE WAY AND ROAD CLOSURE</td>
<td>LOCAL/COLLECTOR</td>
</tr>
<tr>
<td>D</td>
<td>TYPICAL WORK ZONE AT 4-WAY INTERSECTION</td>
<td>SHIFTED TWO WAY TRAFFIC (2-LANE ROAD) WITH LOCAL ROAD CLOSURE</td>
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</tr>
<tr>
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<td>SHIFTED TWO WAY TRAFFIC (4-LANE ROAD) WITH LOCAL ROAD CLOSURE</td>
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<td>TYPICAL WORK ZONE AT 4-WAY INTERSECTION (ALTERNATING ONE WAY TRAFFIC)</td>
<td>ALTERNATING ONE WAY TRAFFIC WITH A LOCAL ROAD CLOSURE</td>
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<td>ALTERNATING ONE WAY TRAFFIC</td>
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<td>H</td>
<td>TYPICAL CIPP LINING ADJACENT TO &quot;T&quot; INTERSECTION (2)</td>
<td>ALTERNATING ONE WAY TRAFFIC</td>
<td>LOCAL</td>
</tr>
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<td>I</td>
<td>TYPICAL CCTV AND CLEANING WORK IN TRAVEL LANE ACROSS FROM &quot;T&quot; INTERSECTION</td>
<td>ALTERNATING ONE WAY TRAFFIC</td>
<td>LOCAL</td>
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<td>ALTERNATING ONE WAY TRAFFIC IN BOTH DIRECTIONS</td>
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<td>WORK IN CENTER OF ROADWAY/BI-DIRECTIONAL TRAFFIC WITH RAMP SETUP AND ALTERNATING ONE WAY TRAFFIC</td>
<td>LOCAL</td>
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<tr>
<td>L</td>
<td>TYPICAL CCTV AND CIPP LINING ON LOCAL ROAD MID BLOCK</td>
<td>ONE LANE TRAFFIC WITH DETOUR</td>
<td>LOCAL</td>
</tr>
<tr>
<td>M</td>
<td>TYPICAL CIPP LINING AT TWO &quot;T&quot; INTERSECTIONS</td>
<td>ALTERNATING ONE WAY TRAFFIC AT EACH INTERSECTION WITH BYPASS RAMP SETUP</td>
<td>LOCAL</td>
</tr>
<tr>
<td>N</td>
<td>TYPICAL CIPP LINING ON COLLECTOR ROAD NEAR INTERSECTION WITH DETOUR</td>
<td>ALTERNATING ONE WAY TRAFFIC WITH DETOUR</td>
<td>LOCAL/COLLECTOR</td>
</tr>
<tr>
<td>O</td>
<td>TYPICAL CORNER SIDEWALK CLOSURE</td>
<td>SIDEWALK CLOSURE AT A CORNER OF AN INTERSECTION</td>
<td>STATE/COLLECTOR/ARTERIAL/LOCAL</td>
</tr>
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DETAIL A: TYPICAL WORK ZONE ADJACENT TO "T" INTERSECTION

LEGEND:
- DRUMS/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TRAFFIC CONTROL PERSON (POLICE OR FLAGGER) - APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF 40-55 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

THE METROPOLITAN DISTRICT
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL WORK ZONE
ADJACENT TO "T" INTERSECTION
The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL WORK ZONE MID BLOCK

NOTE:
THIS PLAN IS ONLY INTENDED
FOR USE ON STREETS WITH A
SPEED LIMIT OF < 45 MPH. A
TEMPORARY TRAFFIC CONTROL
PLAN WILL NEED TO BE DESIGNED
FOR GREATER SPEEDS.

LEGEND:
● DRUMS/42" CONES AT 20' O.C.
□ WORK ZONE SIGNS
□ WORK AREA
← LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
★ TRAFFIC CONTROL PERSON (POLICE OR FLAGGER) = APPROX. LOCATION AND NUMBER. REFERENCE NOTE #3 ON PAGE 1

SOURCE: MUTCD 2009 EDITION AND MDC.

DATE: 7/20/2016 FILE: c:\wms\hastman\desktop\mdc\standard traffic plans and drawings\2018 mpt guidelines\2016 mpt guidelines (7-20-18).dwg
DETAIL C: TYPICAL WORK ZONE AT "T" INTERSECTION W/ ROAD CLOSURE

SOURCE: MUTCD 2009 EDITION AND MDC.

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
- DRUMS/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1
- TYPE III BARRICADE

The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL WORK ZONE
AT "T" INTERSECTION
DETAIL D: TYPICAL WORK ZONE
AT 4-WAY INTERSECTION (SHIFTED TRAFFIC – 2 LANE)

SIGN "GL" AND "GR" ARE OPTIONAL
BASED ON WORK ZONE DURATION (TO BE DETERMINED BY ENGINEER)

USE SIGN (M) WHEN TANGENT LENGTH BETWEEN REVERSE CURVES IS LESS THAN 600' \\

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
- DRUMS/42" CONES AT 26' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE III BARRICADE

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL WORK ZONE
AT 4-WAY INTERSECTION (SHIFTED TRAFFIC)
DETAIL E: TYPICAL WORK ZONE
AT 4-WAY INTERSECTION (SHIFTED TRAFFIC 4 - LANE)

NOTES:
1. THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.
2. DETOUR SIGNING MAY BE NEEDED FOR LOCAL ROAD CLOSURE.

LEGEND:
- DRUMS/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE III BARRICADE

SOURCE: MUTCD 2009 EDITION AND MDC.
DETAIL F: TYPICAL WORK ZONE
AT 4-WAY INTERSECTION (ALTERNATING ONE WAY TRAFFIC)

NOTES:
1) THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

2) NO LEFT/RIGHT TURN SIGNS MAY BE NEEDED IF THERE IS SIGNIFICANT DRIVEWAY VOLUME

LEGEND:
- DRUM/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TRAFFIC CONTROL PERSON (POLICE OR FLAGGER) APPROX. LOCATION AND NUMBER: REFERENCE NOTE #3 ON PAGE 1
- TYPE III BARRICADE

SOURCES: MUTCD 2009 EDITION AND MDC.
The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL CCTV AND CLEANING WORK IN TRAVEL LANE ACROSS FROM "T" INTERSECTION

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
• DRUMS/42" CONES AT 20' O.C.
■ WORK ZONE SIGNS
→ LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
★ TRAFFIC CONTROL PERSON (POLICE OR FLAGGER — APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1

SOURCE: MUTCD 2009 EDITION AND MDC.
NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
• DRUMS/42” CONES AT 20’ O.C.
• WORK ZONE SIGNS
• WORK AREA
• LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
• TRAFFIC CONTROL PERSON (POLICE OR FLAGGER – APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1)

SOURCE: MUTCD 2009 EDITION AND MDC.
The Metropolitan District
Hartford, Connecticut

DETAIL K: TYPICAL CIPP LINING AT TWO 4-WAY INTERSECTIONS

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
A DRUMS/42" CONES AT 20' O.C.
B WORK ZONE SIGNS
C WORK AREA
D LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
E TRAFFIC CONTROL PERSON (POLICE OR FLAGGER) — APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3 ON PAGE 1

SOURCE: MUTCD 2009 EDITION AND MDC.
DETAIL L: TYPICAL CIPP LINING ON LOCAL ROAD NEAR INTERSECTION WITH DETOUR

NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREETS WITH A SPEED LIMIT OF <45 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

SOURCE: MUTCD 2009 EDITION AND MDC.

LEGEND:
- DRUMS/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TYPE III BARRICADE

The Metropolitan District
Hartford, Connecticut
TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL CIPP LINING ON LOCAL ROAD NEAR INTERSECTION WITH DETOUR

DATE: 7/20/2016  FILE: c:\wma\bld\desktop\mdc\standard traffic plans and drawings\2018 mpt guidelines\2016 mpt guidelines (7-20-18).dwg
NOTE:
THIS PLAN IS ONLY INTENDED FOR USE ON STREET WITH A SPEED LIMIT OF LESS THAN 35 MPH. A TEMPORARY TRAFFIC CONTROL PLAN WILL NEED TO BE DESIGNED FOR GREATER SPEEDS.

LEGEND:
- DRUMS/42" CONES AT 20' O.C.
- WORK ZONE SIGNS
- WORK AREA
- LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- TRAFFIC CONTROL PERSON (POLICE OR FLAGGER — APPROX. LOCATION AND NUMBER; REFERENCE NOTE #3 ON PAGE 1)

SOURCE: MUTCD 2009 EDITION AND MDC.
NOTE:
THIS PLAN IS ONLY INTENDED
FOR USE ON STREETS WITH A
SPEED LIMIT OF <45 MPH. A
TEMPORARY TRAFFIC CONTROL
PLAN WILL NEED TO BE DESIGNED
FOR GREATER SPEEDS.

LEGEND:
● DRUMS/42” CONES AT 20’ O.C.
□ WORK ZONE SIGNS
■ WORK AREA
→ LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
☆ TRAFFIC CONTROL PERSON (POLICE OR FLAGGER –
APPROX. LOCATION AND NUMBER, REFERENCE NOTE #3
ON PAGE 1
△ TYPE III BARRICADE

SOURCE: MUTCD 2009 EDITION AND MDC.

The Metropolitan District
Hartford, Connecticut

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL CIPP LINING ON COLLECTOR ROAD
NEAR INTERSECTION WITH DETOUR

DATE: 7/20/2016 FILE: c:\\user\\fiddman\\desktop\\mdc\\standard traffic signs and drawings\\2018 mpt guidelines\\2016 mpt guidelines (7-20-18).dwl

PAGE A-13
Appendix B:

CTDOT CONSTRUCTION TRAFFIC CONTROL PLANS

SOURCE: CTDOT JUNE 2012
TYPICAL RAMP TREATMENTS FOR MAINLINE LANE CLOSURE - MULTILANE HIGHWAY

SIGN FACE
SQ. FT VARIES

ON-RAMP TREATMENT

OFF-RAMP TREATMENT

USE TRAFFIC CONTROL PLAN 1 TO CLOSE THE RIGHT LANE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 8
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9, 10

ITEM #971001A
WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

DENOTES APPROXIMATE LOCATION OF
UNIFORMED FLAGGER, TRAFFIC PERSON
OTHER THAN POLICE OFFICERS SHALL
USE SIGN 80-9950 MOUNTED ON A 6'
MIN. STAFF.

FROM THE MUTCD
(2009 EDITION)
Table 5E-1: Stopping Sight Distance
as a Function of Speed

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<th>Speed (mph)</th>
<th>Distance (ft)</th>
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</table>

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 1 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED
Charles E. Harlow
02/04/05 11:55:05-3/4/05
PRINCIPAL ENGINEER
WORK IN TRAVEL LANE AND SHOULDER 
TWO LANE HIGHWAY 
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.

B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.

C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.
MOVING OPERATION ON RIGHT SHOULDER MULTILANE HIGHWAY & SECONDARY ROADWAYS

WORK VEHICLE(S)

SIGN MOUNTED ON TRUCK 1

DEPARTMENT APPROVED ARROW BOARD
(FLASHING YELLOW MODE)

TRAFFIC CONTROL PLAN
PLAN 19

REV'D: 1-02

APPROVED: J. McCall
PRINCIPAL ENGINEER
DATE: 1-30-02

ITEM #971001A
MOVING OPERATION IN LEFT LANE AND INSIDE SHOULDER AT THE SAME TIME MULTILANE HIGHWAY

SIGN MOUNTED ON VEHICLE 5

END ROAD WORK
80-9612

SIGN MOUNTED ON VEHICLE 2

ROAD WORK AHEAD FINES DOUBLED
31-1906

SIGN MOUNTED ON TRUCKS 2, 3, & 4

DEPARTMENT APPROVED ARROW BOARD

SIGNS MOUNTED ON VEHICLE 1

80-9815
THIS SIGN SHOULD BE COVERED WHEN NOT IN USE.

80-9914
USE APPROPRIATE MESSAGE FOR OPERATION.

WHEN THE LEFT SHOULDER WIDTH CANNOT ACCOMMODATE A VEHICLE, THEN ADVANCE WARNING VEHICLE MAY DRIVE PARTIALLY IN THE LANE.

CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 21

SCALE NONE

APPROVED John D. McCullough PRINCIPAL ENGINEER DATE 1-30-02

REV'D I-02
MOVING OPERATION IN CENTER LANE
MULTILANE HIGHWAY

WHEN THE LEFT SHOULDER WIDTH CANNOT ACCOMMODATE A VEHICLE, THEN
ADVANCE WARNING VEHICLE MAY DRIVE PARTIALLY IN THE LANE.
MOWING OPERATION - MULTILANE HIGHWAY

FOR EQUIPMENT ON THE ROADWAY, ROADSIDE
OR ON THE MEDIAN COMPLETELY OFF THE ROADWAY

MOWING IN MEDIAN
INSTALL "MOWING" SIGNS ON OPPOSITE
TRAVELWAY MEDIAN SHOULDER AS SHOWN ABOVE.

MOWING RIGHT OF TRAVELWAY

ERECT "MOWING" SIGNS AT 1 MILE
INTERVAL AND IMMEDIATELY
BEYOND THE ENTRANCE RAMP.

WHEN MOWING FROM A TRAVEL LANE, USE BACK UP VEHICLES 1, 2 & 3 AS SHOWN
ON PLANS 20 & 21 TO PROTECT MOWING OPERATIONS. WHEN MOWING EQUIPMENT
MUST USE THE TRAVELWAY TO GET AROUND AN OBSTACLE, USE BACKUP VEHICLES
2 & 3 ONLY. THE BACKUP VEHICLES MUST REMAIN OFF THE ROADWAY UNTIL
MOWING EQUIPMENT IS READY TO GET OUT ONTO THE TRAVELWAY. THE DISTANCE
BETWEEN VEHICLE 3 AND THE MOWING EQUIPMENT IS TO BE 200 FEET.

ITEM #971001A
WORK IN LEFT SHOULDER OF RESTRICTED LANE
(STATIONARY CLOSURE)

SIGN FACE
94 SQ. FT (MIN.)

TERMINATION AREA

WORK AREA

ACTIVITY AREA

RUFFER AREA

SHOULDER TAPER

INSTALL TRAFFIC DRUMS/CONES @ 80' SPACING

200' INSTALL 5 TRAFFIC DRUMS @ 40' SPACING

END ROAD WORK

SHOULDER CLOSED

SHOULDER CLOSED AHEAD

ROAD WORK AHEAD

ROAD WORK AHEAD
FINES DOUBLED

CONSTRUCTION TRAFFIC CONTROL PLAN
H.O.V. PLAN 3
SEE NOTES 1, 2, 4, 8

ITEM #971001A