**PERFORMANCE ACTIVITY 410**

**ROADWAY CLEANING**

<table>
<thead>
<tr>
<th>WORK DESCRIPTION 1</th>
<th>Work Description 2</th>
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</thead>
<tbody>
<tr>
<td>Clean by Hand</td>
<td>Clean by Machine</td>
</tr>
</tbody>
</table>
410  ROADWAY CLEANING

ACTIVITY DESCRIPTION

Clean roadway features such as curb & gutter, pavement edges, paved shoulders, bike paths, sidewalks, gore areas and barrier walls, etc.

WORK DESCRIPTION 1  Clean by Hand

TRAFFIC CONTROL

TWO-LANE TWO-WAY ROADWAYS

Mobilized shoulder operations should be implemented for work activities requiring only one (1) single equipment unit that progress along the roadway at a slow pace and may require equipment or vehicles to encroach upon a travel lane beyond 2 feet and at times may occupy the entire travel lane adjacent to the shoulder in which the work is being conducted.

Utilize a shadow vehicle when the stopping sight distance interval between the work vehicle or road machinery and an approaching motorist is unavailable based upon the posted regulatory speed limit of the work location.

Shoulder closures may be installed for work activities that require pedestrian workers to perform work activities beyond 1 foot but within 15 feet of a travel lane.

Flagging operations may be installed for work activities that require pedestrian workers to encroach upon the travel lane or perform work activities within 1 foot of the adjacent travel lane.

Flagging operations may be installed for work activities that require equipment or any vehicles to encroach upon a travel lane beyond 2 feet and at times may occupy the entire travel lane adjacent to the shoulder in which the work is being conducted.

( Brief periodic encroachments upon the adjacent travel lane for the equipment to relocate or bypass structures such as guardrail locations or bridge structures are acceptable. )

TYPICAL DRAWING APPLICATIONS

FLAGGING OPERATIONS

| DRAWING 405-01-A | FLAGGING OPERATIONS
| MULTIPLE FLAGGERS
| TWO-LANE TWO-WAY ROADWAYS
| PRIMARY & SECONDARY ROUTES |

| DRAWING 405-01-B(1) | FLAGGING OPERATIONS
| MULTIPLE FLAGGERS
| TWO-LANE TWO-WAY ROADWAYS
| PRIMARY & SECONDARY ROUTES
| STOP SIGN CONTROLLED SIDE ROADS |

| DRAWING 405-01-B(2) | FLAGGING OPERATIONS
| MULTIPLE FLAGGERS
| TWO-LANE TWO-WAY ROADWAYS
| PRIMARY & SECONDARY ROUTES
| 4-WAY STOP CONTROLLED INTERSECTION |

| DRAWING 405-01-C(1) | FLAGGING OPERATIONS
| MULTIPLE FLAGGERS
| TWO-LANE TWO-WAY ROADWAYS
| PRIMARY & SECONDARY ROUTES
| TRAFFIC SIGNAL CONTROLLED INTERSECTION
| LAW ENFORCEMENT OFFICER(S) |
DRA WING 405-01-C(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
TRAFFIC SIGNAL CONTROLLED INTERSECTION
FLAGGERS

DRA WING 405-01-D(1) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
BEGINNING at an
INTERSECTION with a
TWO-LANE TWO-WAY ROADWAY
DEPARTURE LANE

DRA WING 405-01-D(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
TERMINATING at an
INTERSECTION with a
TWO-LANE TWO-WAY ROADWAY
APPROACH LANE

DRA WING 405-01-E(1) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
INTERSECTIONS with
LOW SPEED
< / = 35 MPH
MULTILANE ROADWAYS

DRA WING 405-01-E(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
INTERSECTIONS with
INTERMEDIATE SPEED to HIGH SPEED
40 MPH - 60 MPH
MULTILANE ROADWAYS

DRA WING 405-02 - FLAGGING OPERATIONS
SINGLE FLAGGER OPERATION
LOW VOLUME
LOW SPEED TO INTERMEDIATE SPEED
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES

SHOULDER CLOSURES

DRA WING 515-01-A - RIGHT SHOULDER CLOSURE
CASE I / CASE II
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
Mobilized shoulder operations should be implemented for work activities requiring only one (1) single equipment unit that progress along the roadway at a slow pace and may require equipment or vehicles to encroach upon a travel lane beyond 2 feet and at times may occupy the entire travel lane adjacent to the shoulder in which the work is being conducted.

Utilize a shadow vehicle when the stopping sight distance interval between the work vehicle or road machinery and an approaching motorist is unavailable based upon the posted regulatory speed limit of the work location.

Shoulder closures may be installed for work activities that require pedestrian workers to perform work activities beyond 1 foot but within 15 feet of a travel lane.

Lane closures may be installed for work activities that require pedestrian workers to encroach upon the travel lane or perform work activities within 1 foot of the adjacent travel lane.

Lane closures may be installed for work activities that require equipment or any vehicles to encroach upon a travel lane beyond 2 feet and at times may occupy the entire travel lane adjacent to the shoulder in which the work is being conducted.

(Brief periodic encroachments upon the adjacent travel lane for the equipment to relocate or bypass structures such as guardrail locations or bridge structures are acceptable.)

TYPICAL DRAWING APPLICATIONS

LANE CLOSURES

DRAWING 505-01 - LANE CLOSURE
LOW SPEED MULTILANE
<= 35 MPH
PRIMARY & SECONDARY ROUTES

DRAWING 505-03-A - LANE CLOSURE
INTERMEDIATE SPEED TO HIGH SPEED
40 MPH - 60 MPH
MULTILANE
PRIMARY & SECONDARY ROUTES

SHOULDER CLOSURES

DRAWING 515-01-B - RIGHT SHOULDER CLOSURE
CASE I / CASE II
MULTILANE
PRIMARY & SECONDARY ROUTES

DRAWING 515-01-D - LEFT SHOULDER CLOSURE
LOW SPEED
<= 35 MPH
MULTILANE DIVIDED HIGHWAY
w/ GRASSED EARTH MEDIAN
PRIMARY & SECONDARY ROUTES
(MINOR ENCROACHMENT)
Mobilized shoulder operations may be used for work activities that progress along the roadway at a slow pace and require equipment, personnel, materials, or any vehicles to encroach upon the adjacent paved shoulder within the limits specified by the typical drawing applications for interstate mobilized shoulder operations.

Standard shoulder closures should be utilized for work activities that cannot be conducted under the conditions required for mobilized shoulder operations.

( Brief periodic encroachments upon the adjacent travel lane for the equipment to relocate or bypass structures such as guardrail locations or bridge structures are acceptable. )

TYPICAL DRAWING APPLICATIONS

SHOULDER CLOSURES

**DRAWING 520-01** - RIGHT SHOULDER CLOSURE
CASE I / CASE II
INTERSTATE ROUTES

**DRAWING 520-02** - LEFT SHOULDER CLOSURE
CASE I / CASE I
NARROW MEDIAN
INTERSTATE ROUTES

**DRAWING 520-03** - LEFT SHOULDER CLOSURE
CASE I / CASE I
WIDE MEDIAN
INTERSTATE ROUTES

**DRAWING 520-04** - LEFT SHOULDER CLOSURE
CASE I / CASE II
WIDE MEDIAN
INTERSTATE ROUTES

**DRAWING 520-05** - LEFT SHOULDER CLOSURE
CASE II / CASE II
WIDE MEDIAN
INTERSTATE ROUTES
MOBILIZED SHOULDER OPERATIONS

DRAWING 530-02  - MOBILIZED SHOULDER OPERATIONS
                   PEDESTRIAN WORKERS – MINOR ENCROACHMENT
                   UPON PAVED SHOULDER
                   INTERSTATE ROUTES

DRAWING 530-03  - MOBILIZED SHOULDER OPERATIONS
                   PEDESTRIAN WORKERS – MAJOR ENCROACHMENT
                   UPON PAVED SHOULDER
                   ROAD MACHINERY – MAJOR ENCROACHMENT
                   UPON TRAVEL LANE
                   INTERSTATE ROUTES
WORK DESCRIPTION 2  Clean by Machine

TRAFFIC CONTROL

TWO-LANE TWO-WAY ROADWAYS

Utilize intermittent mobile operations for these work activities under the following conditions:

**Condition 1** - The maximum time duration of a stop is 15 minutes if the work vehicle and/or the shadow vehicle encroach upon a travel lane more than 2 feet.

**Condition 2** - The maximum time duration of a stop is 30 minutes if the work vehicle and/or the shadow vehicle encroach upon a travel lane 2 feet or less.

During intermittent mobile operations, utilize a shadow vehicle when the stopping sight distance interval between the work vehicle or road machinery and an approaching motorist is unavailable based upon the posted regulatory speed limit of the work location.

Flagging operations are required for work activities that cannot be conducted under the conditions required for intermittent mobile operations.

TYPICAL DRAWING APPLICATIONS

**FLAGGING OPERATIONS**

**DRAWING 405-01-A**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES

**DRAWING 405-01-B(1)**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
STOP SIGN CONTROLLED SIDE ROADS

**DRAWING 405-01-B(2)**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
4-WAY STOP CONTROLLED INTERSECTION

**DRAWING 405-01-C(1)**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
TRAFFIC SIGNAL CONTROLLED INTERSECTION
LAW ENFORCEMENT OFFICER(S)

**DRAWING 405-01-C(2)**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
TRAFFIC SIGNAL CONTROLLED INTERSECTION
FLAGGERS

**DRAWING 405-01-D(1)**  -  FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
BEGINNING at an INTERSECTION with a TWO-LANE TWO-WAY ROADWAY
DEPARTURE LANE
DRAWING 405-01-D(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
TERMINATING at an
INTERSECTION with a
TWO-LANE TWO-WAY ROADWAY
APPROACH LANE

DRAWING 405-01-E(1) DRAWING 405-01-E(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
INTERSECTIONS with
LOW SPEED
< / = 35 MPH
MULTILANE ROADWAYS

DRAWING 405-01-F(1) DRAWING 405-01-F(2) - FLAGGING OPERATIONS
MULTIPLE FLAGGERS
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES
WORK ACTIVITY AREA
INTERSECTIONS with
INTERMEDIATE SPEED to HIGH SPEED
40 MPH - 60 MPH
MULTILANE ROADWAYS

DRAWING 405-02 - FLAGGING OPERATIONS
SINGLE FLAGGER OPERATION
LOW VOLUME
LOW SPEED TO INTERMEDIATE SPEED
TWO-LANE TWO-WAY ROADWAYS
PRIMARY & SECONDARY ROUTES

MOBILE OPERATIONS - INTERMITTENT

DRAWING 535-01-A - MOBILE OPERATIONS - INTERMITTENT
STOPPING SIGHT DISTANCE
VEHICLE TRAIN REQUIREMENTS
VERTICAL CURVE (HILL)

DRAWING 535-01-B - MOBILE OPERATIONS - INTERMITTENT
STOPPING SIGHT DISTANCE
VEHICLE TRAIN REQUIREMENTS
HORIZONTAL CURVE (CURVE)

DRAWING 535-02-A - MOBILE OPERATIONS - INTERMITTENT
LOW VOLUME
LOW SPEED
PRIMARY & SECONDARY ROUTES

DRAWING 535-02-B - MOBILE OPERATIONS - INTERMITTENT
LOW VOLUME
INTERMEDIATE SPEED TO HIGH SPEED
PRIMARY & SECONDARY ROUTES

DRAWING 535-03-A - MOBILE OPERATIONS - INTERMITTENT
INTERMEDIATE VOLUME
LOW SPEED
PRIMARY & SECONDARY ROUTES
MULTILINE SECONDARY AND PRIMARY ROADWAYS

Utilize intermittent mobile operations for these work activities under the following conditions:

**Condition 1** - The maximum time duration of a stop is 15 minutes if the work vehicle and/or the shadow vehicle encroach upon a travel lane more than 2 feet.

**Condition 2** - The maximum time duration of a stop is 30 minutes if the work vehicle and/or the shadow vehicle encroach upon a travel lane 2 feet or less.

During intermittent mobile operations, utilize a shadow vehicle when the stopping sight distance interval between the work vehicle or road machinery and an approaching motorist is unavailable based upon the posted regulatory speed limit of the work location.

TYPICAL DRAWING APPLICATIONS

MOBILE OPERATIONS - INTERMITTENT

<table>
<thead>
<tr>
<th>Drawing Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>535-01-A</td>
<td>MOBILE OPERATIONS - INTERMITTENT STOPPING SIGHT DISTANCE VEHICLE TRAIN REQUIREMENTS VERTICAL CURVE (HILL)</td>
</tr>
<tr>
<td>535-01-B</td>
<td>MOBILE OPERATIONS - INTERMITTENT STOPPING SIGHT DISTANCE VEHICLE TRAIN REQUIREMENTS HORIZONTAL CURVE (CURVE)</td>
</tr>
<tr>
<td>535-03-A</td>
<td>MOBILE OPERATIONS - INTERMITTENT INTERMEDIATE VOLUME LOW SPEED PRIMARY &amp; SECONDARY ROUTES</td>
</tr>
<tr>
<td>535-03-B</td>
<td>MOBILE OPERATIONS - INTERMITTENT INTERMEDIATE VOLUME INTERMEDIATE SPEED TO HIGH SPEED PRIMARY &amp; SECONDARY ROUTES</td>
</tr>
<tr>
<td>535-04-A</td>
<td>MOBILE OPERATIONS - INTERMITTENT HIGH VOLUME LOW SPEED PRIMARY &amp; SECONDARY ROUTES</td>
</tr>
</tbody>
</table>

INTERSTATE ROADWAYS

Utilize intermittent mobile operations for these work activities under the following conditions:

**Condition 1** - The maximum time duration of a stop is 5 minutes if the work vehicle and/or the shadow vehicle encroach upon an adjacent travel lane due to a shoulder area inadequate to accommodate a vehicle in its entirety due to the presence of a concrete median barrier wall or a bridge parapet wall.

**Condition 2** - The maximum time duration of a stop is 30 minutes if the vehicles remain in the shoulder areas in their entirety with no encroachment upon an adjacent travel lane.

During intermittent mobile operations, utilize a shadow vehicle when the stopping sight distance interval between the work vehicle or road machinery and an approaching motorist is unavailable based upon the posted regulatory speed limit of the work location.

Mobilized shoulder operations may be used for work activities that progress along the roadway at a slow pace and require equipment, personnel, materials, or any vehicles to encroach upon the adjacent paved shoulder within the limits specified by the typical drawing applications for interstate mobilized shoulder operations.

Standard shoulder closures should be utilized for work activities that cannot be conducted under the conditions required for mobilized shoulder operations.

Lane closures are required for work activities that cannot be conducted under the conditions required for intermittent mobile operations, mobilized shoulder operations or standard shoulder closures.

( Brief periodic encroachments upon the adjacent travel lane for the equipment to relocate or bypass structures such as guardrail locations or bridge structures are acceptable. )

**TYPICAL DRAWING APPLICATIONS**

**LANE CLOSURES**

**DRAWING 510-01-A** - LANE CLOSURE INTERSTATE ROUTES

**DRAWING 510-01-B** - LANE CLOSURE EXIT / ENTRANCE RAMPS INTERSTATE ROUTES

**SHOULDER CLOSURES**

**DRAWING 520-01** - RIGHT SHOULDER CLOSURE CASE I / CASE II INTERSTATE ROUTES

**DRAWING 520-02** - LEFT SHOULDER CLOSURE CASE I / CASE I NARROW MEDIAN INTERSTATE ROUTES
DRAWING 520-03 - LEFT SHOULDER CLOSURE
CASE I / CASE I
WIDE MEDIAN
INTERSTATE ROUTES

DRAWING 520-04 - LEFT SHOULDER CLOSURE
CASE I / CASE II
WIDE MEDIAN
INTERSTATE ROUTES

DRAWING 520-05 - LEFT SHOULDER CLOSURE
CASE II / CASE II
WIDE MEDIAN
INTERSTATE ROUTES

MOBILIZED SHOULDER OPERATIONS

DRAWING 530-01 - MOBILIZED SHOULDER OPERATIONS
ROAD MACHINERY – MAJOR ENCROACHMENT
INTERSTATE ROUTES

DRAWING 530-02 - MOBILIZED SHOULDER OPERATIONS
PEDESTRIAN WORKERS – MINOR ENCROACHMENT
UPON PAVED SHOULDER
INTERSTATE ROUTES

DRAWING 530-03 - MOBILIZED SHOULDER OPERATIONS
PEDESTRIAN WORKERS – MAJOR ENCROACHMENT
UPON PAVED SHOULDER
ROAD MACHINERY – MAJOR ENCROACHMENT
UPON TRAVEL LANE
INTERSTATE ROUTES

MOBILE OPERATIONS – INTERMITTENT

DRAWING 535-01-A - MOBILE OPERATIONS – INTERMITTENT
STOPPING SIGHT DISTANCE
VEHICLE TRAIN REQUIREMENTS
VERTICAL CURVE (HILL)

DRAWING 535-01-B - MOBILE OPERATIONS – INTERMITTENT
STOPPING SIGHT DISTANCE
VEHICLE TRAIN REQUIREMENTS
HORIZONTAL CURVE (CURVE)

DRAWING 535-04-D(1) - MOBILE OPERATIONS – INTERMITTENT
HIGH VOLUME
HIGH SPEED
INTERSTATE ROUTES

DRAWING 535-04-E - MOBILE OPERATIONS – INTERMITTENT
HIGH VOLUME
HIGH SPEED
INTERIOR TRAVEL LANE OPERATIONS
INTERSTATE ROUTES