NOTES:
① THE MAXIMUM WEIGHT OF THIS ASSEMBLY IS 250 POUNDS (115 kg).
② USE A 14" (355) WHEEL AND TIRE.
③ AUTOMOTIVE AND EQUIPMENT AXLE ASSEMBLIES MAY NOT BE USED FOR TRAILER MOUNTED SIGN SUPPORTS.
④ OTHER NCHRP 350 OR MASH CRASH TESTED ASSEMBLIES ARE ACCEPTABLE.

2000 LB. (900 kg)
CAPACITY SPINDLE AND HUB (EACH END)

2" x 2" x 3/16" x 36" [51 x 51 x 4.8 x 900] L

2" x 2" x 3/16" x 16 1/2" [51 x 51 x 4.8 x 412.5] L

3/8" (9.5) DIA. [1 TYP. 1]

2 1/2" x 1/8" x 90° [64 x 3.2 x 2290] SQUARE TUBE

2" x 2" x 1/8" x 9" [51 x 51 x 3.2 x 230] L

TUBES
1/4" (6)

3" x 3/8" x 12" [76 x 3.2 x 305] SQUARE TUBE

1 1/2" x 1/4" x 12" [40 x 6.4 x 305] PL.

1" (25) DIA. x 3" (75) PIPE AT 10° OFFSET

TUBES
1/4" (6)

3" x 1/8" x 12" [76 x 3.2 x 305] SQUARE TUBE

3/4" (19.1) DIA.

OUTSIDE EDGES OF ANGLES [1 TYP. 1]

TOP
TRAILER

CHANNEL, ONE SIDE
1/4" (6)

1 1/2" (345)

3" x 1/8" x 30" [76 x 3.2 x 760] L

3" x 1/8" x 71" [76 x 3.2 x 1805] SQUARE TUBE

3/4" (19.1) DIA.

CHANNEL
1/4" (6)

UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.
PORTABLE BARRICADES

1. All work zones are at least 15' (4.6 m) wide for barricades 8' (0.9 m) or greater in length. For barricades 8' (0.9 m) in length, 4' (1.2 m) of stakes may be used.

2. The material color for other barricade components is white. Galvanized metal or aluminum components may be used.

3. Where work zones are to face traffic from two directions, risers in both the front and rear zones are required.

4. Use materials for barricade framework, assembly, attachment, and marking of sign attachment that meet NCHRP 350 and/or with requirements for work zone devices.

5. Use general material as per the contract.

PORTABLE BARRICADE NOTES:

- Signs up to 10 ft. (3.0 m) in height must be bolted to the top rail.

- Signs over 10 ft. (3.0 m) must be bolted to the rails and both upright supports.

- Signs may be mounted above the barricade on a separate NCHRP 350 and/or with approved sign supports.

- Use retro-reflective sheathing as per the contract.

- Use standard of sufficient weight to hold the barricade in place. Waterproof sheathing during periods of freezing weather.

RAIL STRIPES

WHERE BARRICADES EXTEND ENTIRELY ACROSS THE ROADWAY, POSITION BARRICADES TO THE STRIPES SLOPE DOWN IN THE DIRECTION TOWARD WHICH THE ROAD USERS WOULD TURN.

WHERE BOTH LEFT AND RIGHT TURNS ARE PERMITTED, POSITION BARRICADES TO THE STRIPES SLOPE DOWN IN THE DIRECTION TOWARDS THE CENTER OF THE BARRIACDE OR BARRICADES.

GENERAL NOTES:

- See the manual on Uniform Traffic Control Devices, Volume 1, Part 6 for additional information.

- Units shown in brackets [ ] are metric and are in millimeters. Inch units are shown unless other units are shown.

- Referenced: MTC-318-03

- Interagency, 2016

- Department of Transportation
NOTES:

1. THIS SIGN LAYOUT IS INTENDED TO BE A PERMANENT INSTALLATION FOR THE DURATION OF THE CONSTRUCTION PROJECT, AS APPROVED BY THE PROJECT MANAGER. COVER OR REMOVE ANY SIGNS WHEN NOT IN USE, INCLUDING SPEED LIMIT SIGNS NOT WARRANTED. REMOVE ANY SIGN SUPPORTS IF THEY WILL NOT BE NEEDED WITHIN 90 DAYS.

2. POST THE END OF WORK ZONE SPEED LIMIT CONSISTING OF ONE SIGN WHEN THE NORMAL POSTED SPEED LIMIT FOR ALL VEHICLES IS THE SAME. USE TWO SIGNS WHEN CAR, TRUCK AND NIGHTTIME SPEED LIMITS ARE DIFFERENT.

3. INCLUDE REGULATORY SIGNING ONLY IF A WORK ZONE OR ROADWAY HAS CONDITIONS THAT WARRANT SPEED RESTRICTIONS. MODIFY REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.

4. IN ADDITION TO THE SIGNS SHOWN, Include THE APPROPRIATE TWO-LANE WORK AREA SIGNS (DLT. DWG. 618-08) WHEN A WORK AREA IS LOCATED AT THE BEGINNING OR END OF THE WORK ZONE.

5. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION.

6. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
WORK ZONE SIGNING (SEE DTL. DWG. 618-04)

NOTES:

1. THESE SIGN LAYOUTS ALSO USED IN CONJUNCTION WITH THE PERMANENT LAYOUT ILLUSTRATED ON DTL. DWG. 618-04 FOR WORK AREAS LOCATED AT THE BEGIN AND END OF THE WORK ZONES.

2. XX = SPEED DETERMINED BY THE PROJECT MANAGER.

3. INCLUDE REGULATORY SIGNING ONLY IF THERE IS REASON TO RESTRICT SPEED WITHIN THE WORK ZONE. REMOVE OR COVER EXISTING REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.

4. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION. COMBINE SUCCESSIVE WORK AREAS WHEN LESS THAN 1.0 MILE (1.6 KM) APART.

5. THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.

6. PROVIDE A SECOND FLAGGER WHEN REQUIRED PER SECTION 618.

7. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.

8. ENSURE THE AMBER LED FLASHERS MEET REQUIREMENTS OF STANDARD SPECIFICATION T15 AND DTL. DWG. 618-01.

9. INCLUDE THESE SIGNS WITH ALL FLAGGERS. INCLUDE THESE SIGNS WITHIN WORK ZONES WHEN STEP DOWN IS 20 M.P.H. OR GREATER.

10. DENOTES SIGNS THAT ARE UNIQUED TO MONTANA.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE DWG. NO.
STANDARD SPEC. SECTION 618, 715
TWO-LANE WORK AREAS

--REVISED--
EFFECTIVE SEPTEMBER 2014

Montana Department of Transportation
EXISTING NORMAL POSTED SPEED LIMIT SIGNS:

SPEED LIMIT

R2-1
48" x 60"
(1200 x 1500)

END ROAD WORK

G20-2
48" x 24"
(1200 x 600)

END OF PROJECT

LOOSE GRAVEL

W8-T
48" x 48"
(1200 x 1200)

DO NOT PASS

R4-1
36" x 48"
(900 x 1200)
SEE NOTE 5

SPEED LIMIT

R2-1
36" x 48"
(900 x 1200)

NOTES:

1. THIS SIGN LAYOUT USED IN CONJUNCTION WITH THE PERMANENT LAYOUT ILLUSTRATED ON DTL. DWG. 618-04. COVER OR REMOVE SIGNS WHEN NOT IN USE, INCLUDING SPEED LIMIT SIGNS NOT WARRANTED.

2. INCLUDE REGULATORY SIGNING ONLY IF THERE IS REASON TO RESTRICT SPEED WITHIN THE WORK ZONE. REMOVE OR COVER REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.

3. FOR SEAL COAT WORK ZONE ACTIVITIES, USE THE FLAGGER APPLICATION OF THE WORK AREA LAYOUT FROM DTL. DWG. 618-08.

4. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION.

5. PLACE THE W8-T, THE R4-1, AND R2-1 SIGNS AT 2.0 MILE (3.2 KM) INTERVALS WITHIN THE WORK AREA FOR EACH DIRECTION OF TRAVEL ACCORDING TO STANDARD SPECIFICATION 618.03.1.A.

6. POST THE END OF WORK ZONE SPEED LIMIT CONSISTING OF ONE SIGN WHEN THE NORMAL POSTED SPEED LIMIT FOR ALL VEHICLES IS THE SAME. USE TWO SIGNS WHEN CAR, TRUCK AND NIGHTTIME SPEED LIMITS ARE DIFFERENT.

7. MINIMUM REGULATORY SIGN SIZE IS 24" x 30" (600 x 750) ON TWO-LANE ROADS.

8. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

UNITS SHOWN IN BRACKETS () ARE METRIC AND ARE IN MILLIETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING

REFERENCE DWG. NO.
STANDARD SPEC.
SECTION 618

TWO-LANE WORK ZONE
SEAL COAT

-REVISED- SEPTEMBER 2014

MDT® MONTANA DEPARTMENT OF TRANSPORTATION

OCTOBER 2017
NOTES:
1. MODIFY REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.
2. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION.
3. THE BUFFER SPACE MAY BE INCREASED FOR DEGRADATION AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.
4. PROVIDE A SECOND FLAGGER WHEN REQUIRED BY SECTION 618.03.14.
5. XX = SPEED DETERMINED BY THE PROJECT MANAGER.
6. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.
7. ENSURE THE AMBER LED FLASHERS MEET REQUIREMENTS OF STANDARD SPECIFICATION T15 AND DLW. DWG. 618-01.
8. INCLUDE THESE SIGNS WITH ALL FLAGGERS. INCLUDE THESE SIGNS WITHIN WORK ZONES WHEN STEP DOWN IS 30 M.P.H. OR GREATER.
* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
NOTES:

1. USE THIS SIGN LAYOUT WHEN APPROPRIATE. OTHERWISE REFER TO STL. DWG. 618-16 WHEN A FLAGGER IS NEEDED.

2. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION, AS NEEDED.

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
NOTES:

1. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION, AS NEEDED.
2. THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.
3. XX = SPEED DETERMINED BY THE PROJECT MANAGER.
4. WHEN THIS OCCURS OUTSIDE OF A CONSTRUCTION PROJECT, INCLUDE THE W20-1 AND R2-15 SIGNS.
5. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.
6. WHEN OUTSIDE OF A CONSTRUCTION PROJECT, POST THE SPEED LIMIT CONSISTING OF ONE SIGN WHEN THE NORMAL POSTED SPEED LIMIT FOR ALL VEHICLES IS THE SAME. USE TWO SIGNS WHEN CAR, TRUCK AND NIGHTTIME SPEED LIMITS ARE DIFFERENT.
7. ENSURE THE AMBER LED FLASHERS MEET REQUIREMENTS OF SECTION 715 AND DIL. DWG. 618-01.
8. INCLUDE THESE SIGNS WITH ALL FLAGGERS. INCLUDE THESE SIGNS WITHIN WORK ZONES WHEN STEP DOWN IS 20 M.P.H. OR GREATER.

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING REFERENCE DWG. NO. STANDARD SPEC. 618-16
SECTION 618, 715

TWO-LANE EQUIPMENT ENTRANCES

-MDT- MONTANA DEPARTMENT OF TRANSPORTATION

REVISED: SEPTEMBER 2014
EFFECTIVE: SEPTEMBER 2014
OCTOBER 2017
NOTES:

1. THIS SIGN LAYOUT IS INTENDED TO BE A PERMANENT INSTALLATION FOR THE DURATION OF THE CONSTRUCTION PROJECT, AS APPROVED BY THE PROJECT MANAGER. COVER OR REMOVE SIGNS WHEN NOT IN USE, INCLUDING SPEED LIMIT SIGNS NOT WARRANTED. REMOVE ANY SIGN SUPPORTS IF THEY WILL NOT BE NEEDED WITHIN 90 DAYS.

2. POST THE END OF WORK ZONE SPEED LIMIT CONSISTING OF ONE LIMIT WHEN THE NORMAL POSTED SPEED LIMIT FOR ALL VEHICLES IS THE SAME. WHEN CAR AND TRUCK SPEED LIMITS DIFFER, POST BOTH LIMITS ON A SINGLE SIGN.

3. INCLUDE REGULATORY SIGNING ONLY IF A WORK ZONE OR ROADWAY HAS CONDITIONS THAT WARRANT SPEED RESTRICTIONS. MODIFY REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.

4. SET UP THIS SIGN LAYOUT IN EACH TRAFFIC DIRECTION.

5. IN ADDITION TO THE SIGNS SHOWN, INCLUDE THE APPROPRIATE FOUR-LANE WORK ZONE SIGNS 10'x10'. DWG, 618-241 WHEN A WORK AREA FALLS AT THE BEGIN OR END OF THE WORK ZONE.

6. DIVIDED FOUR-LANE IS SHOWN. FOR UN-DIVIDED FOUR-LANE, PLACE SIGNS ON RIGHT SIDE ONLY.

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
**Temporary Two-Lane to Four-Lane Median Crossover**

- **Temporary Postings:**
  - Speed Limit: 150 km/h
  - Speed Limit: 130 km/h
  - Speed Limit: 120 km/h

- **Details:**
  - Plastic Drum Signage
  - Temporary Pavement Markings
  - Road Closure

**NOTES:**
- Include regulatory signing only as required. Rounding or other regulatory signs may match adjacent regulations.

**Construction:**
- The work zone is described in the construction project where work is actually taking place.

- **Speed Limit:**
  - XX = Speed determined by the median crossover design speed or the project manager.

- **Special Devices:**
  - Space Channelizing Devices

- **Markings:**
  - 1 Mile (1.6 km) internal points

**Units:**
- All units are in feet unless otherwise noted.
NOTES:

1. THESE SIGN LAYOUTS USED IN CONJUNCTION WITH THE LAYOUT ILLUSTRATED ON DTL. DWG. 618-28.
2. INCLUDE REGULATORY SIGNING ONLY AS REQUIRED. REMOVE OR COVER REGULATORY SIGNS TO MATCH ADJACENT REGULATIONS.
3. XX = SPEED DETERMINED BY THE PROJECT MANAGER.
4. SPACE CHANNELIZING DEVICES ON TANGENTS AT INTERVALS IN FEET (METERS) OF NO MORE THAN TWO (0.6) TIMES THE SPEED LIMIT IN M.P.H. AND ON ALL TAPER SECTIONS AT INTERVALS IN FEET (METERS) OF NO MORE THAN ONE (0.3) TIMES THE SPEED LIMIT IN M.P.H. FOR SPEED LIMITS LESS THAN 35 M.P.H., SPACE CHANNELIZING DEVICES AS DIRECTED BY THE PROJECT MANAGER.
5. SPACE FLEXIBLE GLUE-DOWN GUIDE POSTS USED FOR LANE SHIFT TAPER AT INTERVALS IN FEET (METERS) OF NO MORE THAN 1⁄2 (0.2) TIMES THE SPEED IN M.P.H.
6. THE LANE SHIFT TAPER LENGTH ASSUMES AN 8" (200MM) LANE SHIFT OFFSET AND AN 80 M.P.H. APPROACH SPEED. CONTACT THE PROJECT MANAGER IF CONDITIONS VARY.
7. TEMPORARY POSITIVE PROTECTION BARRIER CAN TERMINATE AT THE CENTER OF THE CLOSED LANE FOR ACCESS PURPOSES IF AN APPROVED TEMPORARY IMPACT ATTENUATOR IS USED.
8. PLACE REFLECTIVE MARKERS ALONG THE TOP OF TEMPORARY BARRIER AND ENSURE REFLECTORS ON EXISTING BARRIER ARE INTACT.
9. POST THE SPEED LIMIT APPROPRIATE FOR ALL VEHICLES FOR THE REMAINDER OF THE WORK ZONE BEFORE RESUMING TO NORMAL POSTED SPEED LIMITS AT THE END OF THE WORK ZONE.
10. OBLITERATE CONFLICTING PAVEMENT MARKINGS BEGINNING AT THE SHIFTING TAPER AND CONTINUING THROUGH THE WORK AREA.
* DEMOTES SIGNS THAT ARE UNIQUE TO MONTANA.

LEGEND

- OBLITERATE CONFLICTING PAVEMENT MARKINGS
- PLASTIC DRUMS (SEE NOTES FOR SPACING)
- FLEXIBLE GLUE-DOWN GUIDE POSTS (SEE NOTES FOR SPACING)
- FLEXIBLE GUIDE POSTS

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE DWG. NO. STANDARD SPEC. SECTION 618
DIVIDED FOUR-LANE SINGLE LANE CLOSURE LANE SHIFT

- REVISED -
EFFECTIVE: JULY 2016
OCTOBER 2017
MTD MONTANA DEPARTMENT OF TRANSPORTATION
NOTES:

1. SHORT DURATION ACTIVITIES ARE DEFINED AS THOSE LASTING UP TO ONE HOUR.
   SHORT-TERM STATIONARY ACTIVITIES ARE DEFINED AS THOSE LASTING GREATER THAN ONE HOUR, UP TO A FULL SHIFT.

2. THE WORK ZONE REFERS TO THE GENERAL AREA THAT REQUIRE TEMPORARY WORK ZONE TRAFFIC CONTROL. IT SHOULD NOT EXCEED 3 MILES (4.8 KM) IN LENGTH.

3. THE REGULATORY SPEED SIGNS MUST MOVE AS NEEDED WITHIN THE WORK ZONE TO REMAIN WITHIN 500 FEET (150 m) OF THE WORK AREA.

4. SIGN BOTH TRAFFIC DIRECTIONS ON TWO-LANE, TWO-WAY ROADWAYS OR BOTH SHOULDERS ON TWO-LANE, ONE-WAY ROADWAYS.

5. PROVIDE AT LEAST THE DISTANCE SHOWN FOR DELINERATOR MOUNTED SIGNS.

6. USE REFLECTIVE DEVICES.

7. XX = NORMAL POSTED SPEED LIMIT(S),
   * DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE DWG. NO. STANDARD SPEC. 618-34
SECTION 618

SHORT DURATION OR SHORT-TERM STATIONARY CREW SIGNING

--REVISED--
EFFECTIVE: SEPTEMBER 2014

MDT® MONTANA DEPARTMENT OF TRANSPORTATION
OCTOBER 2017
NOTES:

1. Minimum regulatory sign size is 24" x 30" (600 x 750) on two-lane roads.

2. On roadways with high traffic volumes or visibility restrictions, a 500' (150 m) spacing for all signs is recommended.

3. Space channelizing devices at intervals in feet (meters) equal to twice the speed limit in M.P.H. through the buffer and work area.

4. If a need arises to increase vehicle storage, add an additional W20-7o "flagger ahead" sign between the R2-1 and W3-4 signs and/or consider an additional advance flagger.

5. A mirror image of this sign sequence is required for traffic from the opposite direction.

6. For more information or clarification contact the district traffic engineer. For example, if work zone is close to a horizontal curve, a vertical curve, a bridge, interchange, poor sight distance, or other special condition.

7. Cover any conflicting signs in the work zone.

8. Short-term work zone signing is not required to be post mounted.

9. The buffer space can be lateral and longitudinal and may be increased for downhill or other conditions that affect stopping distance.

10. Typically, 2 miles (3.2 km) is the max. work area. However, when sight distance, buffer zones or accomplishment rates for equipment are considered, some minor adjustments to this max. may be considered.

11. XX = Normal posted speed limit(s).

* Denotes signs that are unique to Montana.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE: DWG. NO.
STANDARD SPEC.
SECTION 618

MAINTENANCE GUIDELINE
FOR SHORT-TERM TWO-LANE CRACK SEALING WORK ZONE

- REVISED -
OCTOBER 2017
EFFECTIVE: SEPTEMBER 2014

MONTANA DEPARTMENT OF TRANSPORTATION
NOTES:

1. USE A MINIMUM 320' (100 m) SHOULDER TAPER.
2. USE THIRTEEN APPROVED CHANNELIZING DEVICES FOR A 12' (3.6 m) LANE CLOSURE TAPER (80 M.P.H., SPACED AT 80' (25 m).) ASSURE THAT THE TAPER IS A MINIMUM LENGTH OF 960' (300 m).
3. SPACE CHANNELIZING DEVICES AT INTERVALS IN FEET EQUAL TO TWICE THE SPEED LIMIT IN M.P.H. THROUGH THE BUFFER AND WORK AREA.
4. PLACE THE ARROW BOARD ON THE SHOULDER AT THE START OF THE TRAVEL LANE CLOSURE TAPER.
5. THE BUFFER SPACE CAN BE LATERAL AND LONGITUDINAL. KEEP THE BUFFER SPACE CLEAR OF EQUIPMENT AND PERSONNEL.
6. FOR MORE INFORMATION OR CLARIFICATION CONTACT THE DISTRICT TRAFFIC ENGINEER. FOR EXAMPLE, IF WORK AREA IS CLOSE TO A HORIZONTAL CURVE, A VERTICAL CURVE, A BRIDGE, INTERCHANGE, POOR SIGHT DISTANCE OR OTHER SPECIAL CONDITION.
7. COVER ANY CONFLICTING SIGNS IN THE WORK AREA.
8. SHORT-TERM WORK ZONE SIGNING IS NOT REQUIRED TO BE POST MOUNTED.
9. WHEN THE WORK AREA CHANGES WITHIN THE WORK ZONE, THESE SIGNS SHOULD BE MOVED TO REFLECT THE ACTUAL WORK AREA.
10. TYPICALLY 2 MILES (3.2 km) IS THE MAX. WORK AREA. HOWEVER, WHEN SIGHT DISTANCE, BUFFER ZONES OR ACCOMPLISHMENT RATES FOR EQUIPMENT ARE CONSIDERED, SOME MINOR ADJUSTMENTS TO THIS MAX. MAY BE CONSIDERED.

XX = NORMAL POSTED SPEED LIMIT (S).

* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
MOBILE OPERATIONS ON MULTIPLE ROAD

NOTES:
1. PLACE APPROPRIATE LANE CLOSURE SIGN ON SHADOW VEHICLE 2 SO AS NOT TO OBSCURE THE ARROW BOARD.
2. FOLLOW THE WORK OPERATIONS WITH SHADOW VEHICLE 2 SO AS TO PROVIDE ADEQUATE SIGHT DISTANCE FOR VEHICULAR TRAFFIC APPROACHING FROM THE REAR.
3. COVER OR TURN THE SIGN LEGENDS ON VEHICLE-MOUNTED SIGNS FROM VIEW WHEN WORK IS NOT IN PROGRESS.
4. WHEN THE WORK VEHICLE OCCUPIES AN INTERIOR LANE OF A DIRECTIONAL ROADWAY HAVING A RIGHT TRAFFIC POUR ESSENTIAL WORK IS TAKING PLACE IN THE INTERIOR LANE.
5. ON HIGH-SPEED ROADWAYS, A THIRD SHADOW VEHICLE MAY BE USED WITH SHADOW VEHICLE 1 IN THE CLOSED LANE, WORK VEHICLE 3 IN THE SLOW LANE, AND ARROW VEHICLE 1 IN THE SLOW LANE, WHERE ACCIDENTAL SHEETED WIDTH IS NOT AVAILABLE. SHADOW VEHICLE 3 MAY ALSO STAND IN THE SLOW LANE.
6. THE MINIMUM ARROW BOARD SIZE IS 60 INCHES X 30 INCHES (1500 X 750).
7. VAR: THE DISTANCE BETWEEN THE WORK LOCATION AND SHADOW VEHICLE 2 TO PROVIDE ADEQUATE SIGHT DISTANCE FOR VEHICULAR TRAFFIC APPROACHING FROM THE REAR.
8. MAINTAIN A MAXIMUM SPACING BETWEEN THE WORK VEHICLE AND SHADOW VEHICLES, AND BETWEEN EACH SHADOW VEHICLE TO DELIVER WORK UNTIL A LENGTH IN BE WEL.

MOBILE OPERATIONS ON TWO-LANE ROAD

NOTES:
1. TRUCK MOUNTED ATTENUATOR IS REQUIRED FOR SHADOW VEHICLE.
2. COVER THE SIGN LEGENDS ON VEHICLE-MOUNTED SIGNS FROM VIEW WHEN WORK IS NOT IN PROGRESS.
3. COVER OR TURN THE SIGN LEGENDS ON VEHICLE-MOUNTED SIGNS FROM VIEW WHEN WORK IS NOT IN PROGRESS.
4. MAINTAIN A MINIMUM DISTANCE BETWEEN THE WORK VEHICLE AND SHADOW VEHICLE.
5. SLOW DOWN THE SHADOW VEHICLE IN ADVANCE OF CURVE OF HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (MM) UNLESS OTHER UNITS ARE SHOWN.
**POSTED SPEED LIMIT FOR WORK ZONE**  
<table>
<thead>
<tr>
<th>SPEED LIMIT (M.P.H.)</th>
<th>SIGN SPACING (A)</th>
<th>SPACING OF CHANNELIZING DEVICES (MAX. I) (B)</th>
<th>BUFFER SPACE (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(25)</td>
<td>(100) (30)</td>
<td>(25) (8)</td>
<td>(100) (30)</td>
</tr>
<tr>
<td>(35)</td>
<td>(100) (30)</td>
<td>(35) (12)</td>
<td>(100) (30)</td>
</tr>
</tbody>
</table>

**SPACE ALL CHANNELIZING DEVICES AT "C" UNLESS OTHERWISE NOTED.**

**NOTES:**
1. USE THIS SIGN LAYOUT IN URBAN APPLICATIONS ONLY. USE THE RURAL, OPEN ROADWAY SIGNING DETAILS WHEN HIGHER SPEED LIMITS ARE USED.
2. INCLUDE SPEED LIMIT SIGNS ONLY IF THERE IS A REASON TO RESTRICT SPEED. COVER CONFLICTING EXISTING SPEED LIMIT SIGNS.
3. THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT aFFECT STOPPING DISTANCE.
4. LARGER SIGN SIZES MAY BE APPROVED BY THE PROJECT MANAGER.
5. PLACE END ROADWORK SIGN AT END OF PROJECT LIMITS.
6. POST EXISTING SPEED LIMIT IF CHANGED BY WORK ZONE.
7. ENSURE THE AMBER LED FLASHERS MEET REQUIREMENTS OF SECTION T15 AND DTL. DWG. 618-01.

**LEGEND**
- FLEXIBLE GUIDE POSTS
- PLASTIC DRUMS
- DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
- SPEED DETERMINED BY THE PROJECT MANAGER. (25 M.P.H. OR 35 M.P.H.)

**UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.**

**DETAILS DRAWING**
REFERENCE DWG. NO. STANDARD SPEC. 618-U01
SECTION 618
LANE CLOSURE-FLAGGER CONTROLLED (URBAN TWO LANE, TWO WAY ROAD)

---REVISED---
EFFECTIVE: SEPTEMBER 2014
OCTOBER 2017
MT Montana Department of Transportation
NOTES:

1. USE THIS SIGN LAYOUT IN URBAN APPLICATIONS ONLY. USE THE RURAL, OPEN ROADWAY SIGNING DETAILS WHEN HIGHER SPEED LIMITS ARE USED.

2. INCLUDE SPEED LIMIT SIGNS ONLY IF THERE IS A REASON TO RESTRICT SPEED. COVER CONFLICTING EXISTING SPEED LIMIT SIGNS.

3. THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.

4. THIS LAYOUT SHOULD ONLY BE USED WHEN THERE IS AT LEAST 10' (3 m) IN WIDTH BETWEEN THE CHANNELIZING DEVICES AND THE EDGE OF PAVEMENT. PROVIDE NO PARKING SIGNS WHEN APPROPRIATE.

5. LARGER SIGNS MAY BE APPROVED BY THE PROJECT MANAGER.

6. PLACE END ROAD WORK SIGNS AT END OF PROJECT LIMITS.

7. POST EXISTING SPEED LIMIT IF CHANGED BY WORK ZONE.

8. SEE DTL. DWG. 608-03.

LEGEND

- FLEXIBLE GUIDE POSTS
- PLASTIC DRUMS
- DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

XX - SPEED DETERMINED BY THE PROJECT MANAGER. (25 M.P.H. OR 35 M.P.H.)

UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING

REFERENCE DWG. NO.
STANDARD SPEC.
SECTION 618

WORK ZONE IN CENTER OF ROAD (URBAN TWO-LANE, TWO-WAY ROAD)

--REVISED--
EFFECTIVE: SEPTEMBER 2014

MDT MONTANA DEPARTMENT OF TRANSPORTATION

OCTOBER 2017
1. Minimal traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use the appropriate parking lane closure when needed.

2. Do not direct pedestrians into a lane of moving traffic.

3. Where speeds exceed 25 M.P.H., physical barriers should be used to separate the temporary walkway from vehicular traffic. Flexible guide posts with detectable edging is the minimum requirement for separation. Provide larger physical barriers, as determined by the project manager, on a case by case basis.

4. See OTL. Dwg. 618-03.

5. Provide a physical barrier, with a minimum 6 inch [150 mm] height detectable edging. Between the pedestrian detour walkway and the work area, provide larger physical barriers to protect pedestrians from hazards in the work area, as determined by the project manager.

6. Ensure that entire walkway meets ADA requirements. Provide a minimum walkway width of 5 feet (1525 mm) and a firm, stable, slip resistant walking surface along entire walkway.

7. Provide temporary ramps and detectable edging (minimum 6 inch height [150 mm] on both sides of walkway) along temporary pedestrian detour route. See notes for additional guidance.

8. Place R9-11 on sign posts (as shown below) if business access is required. Place type I barricade on sidewalk with R9-11 sign if business access is not required.

9. Place type I barricade on sidewalk with R9-9 sign.

---

**Legend**

- Flexible guide posts

**Units Shown in Brackets**

- Metric and are in millimeters (mm) unless other units are shown.
NOTES:

1. COVER PEDESTRIAN TRAFFIC SIGNAL DISPLAYS CONTROLLING CLOSED CROSSWALKS.
2. ONLY TRAFFIC CONTROL DEVICES CONTROLLING PEDESTRIAN FLOWS ARE SHOWN. OTHER DEVICES MAY BE NEEDED TO CONTROL TRAFFIC ON THE STREETS.
3. SEE DETL. DWG. 618-03.
4. WHEN POSSIBLE, USE THE EXISTING INTERSECTION CROSSWALKS FOR PEDESTRIAN DETOURS. AS A LAST OPTION, USE THE MID-BLOCK TEMPORARY PEDESTRIAN CROSSING SHOWN BELOW. FOR LONG-TERM STATIONARY WORK, THE DOUBLE YELLOW CENTERLINE AND/OR LANE LINES ARE REMOVED BETWEEN CROSSWALK LINES. PROVIDE A MINIMUM WORKWAY WIDTH OF 5 FEET PLUS 1525 mm AND A FIRM, STABLE, SLIP RESISTANT WALKING SURFACE ACROSS BOULEVARDS AND OTHER AREAS ALONG THE TEMPORARY PEDESTRIAN WORKWAY. PROVIDE YIELD PAVEMENT MARKINGS AS SHOWN BELOW.

5. PLACE R9-9 AND R9-10 SIGNS ON TYPE I BARRICADES ON SIDEWALK.
6. PROVIDE TEMPORARY RAMPS FOR PEDESTRIAN CROSSWALK WHEN REQUIRED.
7. PLACE R9-11 AND R9-11a ON SIGN POSTS (AS SHOWN BELOW) IF BUSINESS ACCESS IS REQUIRED. PLACE TYPE I BARRICADE ON SIDEWALK WITH R9-11 OR R9-11a SIGN IF BUSINESS ACCESS IS NOT REQUIRED.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE DWG. NO.
STANDARD SPEC. 618-U10
SECTION 618
CROSSWALK CLOSURES AND PEDESTRIAN DETOURS

--REVISED--
EFFECTIVE: SEPTEMBER 2014
OCTOBER 2017

MONTANA DEPARTMENT OF TRANSPORTATION
**NOTES:**

1. *USE THIS SIGN LAYOUT IN URBAN APPLICATIONS ONLY. USE THE RURAL, OPEN ROADWAY SIGNING DETAILS WHEN HIGHER SPEED LIMITS ARE USED.*

2. *INCLUDE SPEED LIMIT SIGNS ONLY IF THERE IS A REASON TO RESTRICT SPEED, COVER OR REMOVE CONFLICTING EXISTING SPEED LIMIT SIGNS.*

3. *THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.*

4. *LARGER SIGN SIZES MAY BE APPROVED BY THE PROJECT MANAGER.*

5. *PLACE END ROAD WORK SIGNS AT END OF PROJECT LIMITS.*

6. *POST EXISTING SPEED LIMIT IF CHANGED BY WORK ZONE.*

7. *SEE DTL. DWG. 618-03.*

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**LEGEND:**

- Flexible Guide Posts
- Plastic Drums
- Denotes signs that are unique to Montana.

**XX** - Speed determined by the project manager. (25 M.P.H. or 35 M.P.H.)

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**UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.**

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**DETAILED DRAWING**

**REFERENCE DWG. NO.** 618-U16

**SECTION 618**

**TURN LANE CLOSURE (URBAN TWO-LANE, TWO-WAY ROAD WITH TWO-WAY LEFT TURN LANE)**

**EFFECTIVE SEPTEMBER 2014**

**OCTOBER 2017**

**MONTANA DEPARTMENT OF TRANSPORTATION**
<table>
<thead>
<tr>
<th>POSTED SPEED LIMIT FOR WORK ZONE</th>
<th>SIGN SPACING (A)</th>
<th>TAPER LENGTH (L)</th>
<th>SPACING OF CHANNELIZING DEVICES (MAX. 1) (G) **</th>
<th>BUFFER SPACE (B)</th>
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</thead>
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<td>1 M.P.H. 1</td>
<td>FEET [m]</td>
<td>FEET [m]</td>
<td>FEET [m]</td>
<td>FEET [m]</td>
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<td>245 (84)</td>
<td>35 (12)</td>
<td>100 (30)</td>
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</table>

** SPACE ALL CHANNELIZING DEVICES AT "G" UNLESS OTHERWISE NOTED.

** NOTES:**

1. Use this sign layout in urban applications only. Use the rural, open roadway signing details when higher speed limits are used.

2. Include speed limit signs only if there is a reason to restrict speed; cover or remove conflicting existing speed limit signs.

3. The buffer space may be increased for downgrades and other conditions that affect stopping distance.

4. The shoulder taper may be omitted when paved shoulder is less than 8' (2.4 m) in width.

5. Larger sign sizes may be approved by the project manager.

6. Place end road work signs at end of project limits.

7. Post existing speed limit if changed by work zone.

8. See DTL DWG. 618-05.

---

** LEGEND **

- FLEXIBLE GUIDE POSTS
- PLASTIC DRUMS
- ** DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.

XX = SPEED DETERMINED BY THE PROJECT MANAGER, (25 M.P.H., OR 35 M.P.H. 1)

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** DETAILED DRAWING **

REFERENCE DWG. NO. 618-U20

RIGHT LANE CLOSURE (URBAN MULTI-LANE, UNDIVIDED ROAD)

- REVISED - EFFECTIVE SEPTEMBER 2014

OCTOBER 2017

MONTANA DEPARTMENT OF TRANSPORTATION
<table>
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<tr>
<th>POSTED SPEED LIMIT FOR WORK ZONE</th>
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<th>SPACING OF CHANNELIZING DEVICES (MAX.) (G) **</th>
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</tr>
</tbody>
</table>

** SPACE ALL CHANNELIZING DEVICES AT "G" UNLESS OTHERWISE NOTED.

NOTES:
(1) USE THIS SIGN LAYOUT IN URBAN APPLICATIONS ONLY. USE THE RURAL, OPEN ROADWAY SIGNING DETAILS WHEN HIGHER SPEED LIMITS ARE USED.
(2) INCLUDE SPEED LIMIT SIGNS ONLY IF THERE IS A REASON TO RESTRICT SPEED. COVER OR REMOVE CONFLICTING EXISTING SPEED LIMIT SIGNS.
(3) THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.
(4) LARGER SIGN SIZES MAY BE APPROVED BY THE PROJECT MANAGER.
(5) PLACE END ROAD WORK SIGN AT END OF PROJECT LIMITS.
(6) POST EXISTING SPEED LIMIT IF CHANGED BY WORK ZONE.

LEGEND
- - FLEXIBLE GUIDE POSTS
● - PLASTIC DRUMS
★ - DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
XX - SPEED DETERMINED BY THE PROJECT MANAGER (25 M.P.H. OR 35 M.P.H.)

UNITS SHOWN IN BRACKETS [()] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING
REFERENCE: DWG. NO. 618-U25
SECTION 618
LEFT LANE CLOSURE (LOW SPEED URBAN MULTI-LANE, UNDIVIDED ROAD)

EFFECTIVE: SEPTEMBER 2014
REvised: OCTOBER 2017
MONTANA DEPARTMENT OF TRANSPORTATION
NOTES:

1. USE THIS SIGN LAYOUT IN URBAN APPLICATIONS ONLY. USE THE RURAL, OPEN ROADWAY SIGNING DETAILS WHEN HIGHER SPEED LIMITS ARE USED.

2. INCLUDE SPEED LIMIT SIGNS ONLY IF THERE IS A REASON TO RESTRICT SPEED. COVER OR REMOVE CONFLICTING EXISTING SPEED LIMIT SIGNS.

3. IF PEDESTRIAN TRAFFIC IS IMPACTED, SEE NOTE⑦.

4. LEFT TURNING MOVEMENTS MAY BE PROHIBITED TO MAINTAIN CAPACITY FOR THROUGH VEHICLE TRAFFIC (UNLESS CONTROLLED BY TRAFFIC SIGNAL).

5. INCLUDE A SHOULDER TAPER WHEN PAVED SHOULDER IS 8" (200 M) OR GREATER IN WIDTH OR WHEN A PARKING LANE IS PRESENT.

6. IF LIMITED SIGHT DISTANCE FROM THIS APPROACH, CONSIDER RIGHT TURN ONLY OR CLOSING THE APPROACH.

7. LARGER SIGN SIZES MAY BE APPROVED BY THE PROJECT MANAGER.

8. PLACE END ROAD WORK SIGNS AT END OF PROJECT LIMITS.

9. POST EXISTING SPEED LIMIT IF CHANGED BY WORK ZONE.

10. SEE DTL, DWG. 618-U40.

11. THE BUFFER SPACE MAY BE INCREASED FOR DOWNGRADES AND OTHER CONDITIONS THAT AFFECT STOPPING DISTANCE.

LEGEND

- FLEXIBLE GUIDE POSTS
- PLASTIC DRUMS
* DENOTES SIGNS THAT ARE UNIQUE TO MONTANA.
XX - SPEED DETERMINED BY THE PROJECT MANAGER. (25 M.P.H. OR 35 M.P.H.)

UNITS SHOWN IN BRACKETS ( ) ARE METRIC AND ARE IN MILLIMETERS (MM) UNLESS OTHER UNITS ARE SHOWN.
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<tr>
<th>POSTED SPEED LIMIT FOR WORK ZONE (M.P.H.)</th>
<th>SIGN SPACING (A)</th>
<th>TAPER LENGTH (L)</th>
<th>SPACING OF CHANNELIZING DEVICES (MAX.)</th>
<th>BUFFER SPACE (B)</th>
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</thead>
<tbody>
<tr>
<td>FEET (m)</td>
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**NOTES:**

1. Use this sign layout in urban applications only. Use the rural, open roadway signing details when higher speed limits are used.
2. Include speed limit signs only if there is a reason to restrict speed, cover or remove conflicting speed limit signs.
3. The buffer space may be increased for downgrades and other conditions that affect stopping distance.
4. Larger sign sizes may be approved by the project manager.
5. Place end road work signs at end of project limits.
6. Post existing speed limit if changed by work zone.
7. See OTL. DWG. 618-03.

**Legend:**

- **Flexible Guide Posts**
- **Plastic Drums**
- **Denotes signs that are unique to Montana.**
- **XX = Speed determined by the project manager. (25 M.P.H. or 35 M.P.H.)**

**Detailed Drawing**

**Reference DWG. No.** 618-U60

**Section 618**

**Effective September 2014**

**October 2017**

**MTD MONTANA DEPARTMENT OF TRANSPORTATION**