NOTES:
1/2" (12mm) expansion joints are shown as dark solid lines for visual purposes.
Bond breaker is shown as dark dashed lines for visual purposes.

BOULEVARD → CURB
CURB → GUTTER
PRIVATE SIDEWALK
CURB \→ BOULEVARD
CURB \→ GUTTER
CURB \→ PRIVATE SIDEWALK

PLAN
SLOPE 1.5% (1:66.7) TOWARD E OF ROADWAY *
1/4" (63 mm) CRUSHED AGGREGATE COURSE
1 1/2" (60 mm) VARIABLE WIDTH

SECTION OF SIDEWALK
FLOW LINE ELEV. + 6" (200)-
APPROACH GRADE AS NEEDED (10% MAXIMUM)
CUT
FILL
NOTE: CRUSHED AGGREGATE COURSE OMITTED FOR CLARITY.

SECTION A-A
LOCATE EXPANSION JOINTS EVERY 100 FEET (± 30 FEET) [30 m (+ 10 m)] AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL.
LOCATE TRANSLATIONAL CONTRACTION JOINT IN CENTERLINE OF ALL SIDEWALKS WIDER THAN 5 FEET (1525 mm).
MAXIMUM CROSS SLOPE OF THE SIDEWALK IS 2% (1:50).
** THIS DEPTH IS STANDARD IN NEW CONSTRUCTION.
ALTERATIONS TO EXISTING FACILITIES MAY RESULT IN A LARGER DEPTH, WHICH WILL REQUIRE A GREATER RAMP LENGTH.
SEE DTL. DWG. NO. 608-15 AND 608-20 FOR GUIDELINES ON RAMP DESIGN WHEN RAMPS ARE REQUIRED FOR ADA ACCESSIBILITY.

DETAILED DRAWING
REFERENCE DWG. NO. STANDARD SPEC. 608-05 SECTION 608
CONCRETE SIDEWALK

-REvised- EFFECTIVE: SEPTEMBER 2014

MDT MONTANA DEPARTMENT OF TRANSPORTATION
JULY 2016

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

General Notes:
1. In new construction, use public sidewalk curb ramps in the following order of preference:
   A. Perpendicular public sidewalk curb ramp.
   B. Parallel public sidewalk curb ramp.
   C. Combined (parallel/perpendicular) public sidewalk curb ramp.
   D. Diagonal perpendicular public sidewalk curb ramp.
Single diagonal or depressed corner public sidewalk curb ramps serving two streets crossing directions are not recommended in new construction.
2. When altering existing facilities, meet new construction requirements for public sidewalk curb ramps to the maximum extent feasible.

Construction Requirements:
1. Obtain a surface texture on the ramp by coarse brooming, transverse to the ramp slope.
2. Take care during construction to assure uniform ramp grades, free of sags and sharp grade changes.

If possible, do not place drainage structures in conflict with public sidewalk curb ramps. Location of curb ramps takes precedence over location of drainage structures except where existing drainage structures are being utilized.

Use the flattest slopes possible for all curb ramps. Maximum slopes are shown for guidance at difficult sites.

Final field location of the curb ramps will be determined by the project manager.

If R/W does not permit landings for these ramps, use another ramp design.

Pedestrian access points at crosswalks are to be wholly contained within the crosswalk lines.

For additional information consult:
Draft Public Rights-of-Way Accessibility Guidelines (PROWAG)

Detailed Drawing
Reference: DWG. NO.
Standard Spec.
Section 608
New Construction
Public Sidewalk
Curb Ramps
Effective: September 2014

Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.
GENERAL NOTES:

1. WHEN ALTERING EXISTING FACILITIES, USE PUBLIC SIDEWALK CURB RAMPS IN THE FOLLOWING ORDER OF PREFERENCE:
   A. PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
   B. PARALLEL PUBLIC SIDEWALK CURB RAMP
   C. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP
   D. DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
   E. SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

   NOTE: USE DIAGONAL PUBLIC SIDEWALK CURB RAMPS AS THE LAST OPTION AND CONSTRUCT TO COMPLY WITH ALL ADA SLOPE AND CONSTRUCTION CRITERIA TO THE GREATEST EXTENT POSSIBLE.

2. PLACE CURB RAMPS TO AVOID EXISTING DRAINAGE STRUCTURES AND OTHER OBSTRUCTIONS TO THE GREATEST EXTENT POSSIBLE.

3. USE THE FLATTEST SLOPES POSSIBLE FOR ALL CURB RAMPS. MAXIMUM SLOPES ARE SHOWN FOR GUIDANCE AT DIFFICULT SITES AND SHOULD BE AVOIDED IF POSSIBLE.

4. FINAL FIELD LOCATION OF THE CURB RAMPS WILL BE DETERMINED BY THE PROJECT MANAGER.

5. IF R/W DOES NOT PERMIT LANDINGS FOR THESE RAMPS, USE ANOTHER RAMP DESIGN.

6. PEDESTRIAN ACCESS POINTS AT CROSSWALKS ARE TO BE WHOLLY CONTAINED WITHIN THE CROSSWALK LINES.

7. FOR ADDITIONAL INFORMATION CONSULT DRAFT PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).

CONSTRUCTION REQUIREMENTS:

1. OBTAIN A SURFACE TEXTURE ON THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RAMP SLOPE.

2. PROVIDE UNIFORM RAMP GRADES FREE OF SAGS AND GRADE CHANGES.

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

DETAILED DRAWING
REFERENCE DWG. NO.
STANDARD SPEC. 608
SECTION 608 608-20
ALTERATIONS TO EXISTING FACILITIES - PUBLIC SIDEWALK CURB RAMPS
EFFECTIVE SEPTEMBER 2014
NEW CONSTRUCTION REQUIREMENTS:

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 5 FEET (1525 mm) OR WIDER. THE MINIMUM WIDTH ("W") IS 4 FEET (1220 mm).

2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF THE CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET (1525 mm). THE MINIMUM LENGTH ("L") IS 4 FEET (1220 mm). THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.

3. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1:20) OR FLATTER. THE MAXIMUM CURB RAMP SLOPE IS 8.3% (1:12).

4. THE DESIRABLE SLOPE FOR THE FLARED SIDE OF THE CURB RAMP IS 8.3% (1:12) OR FLATTER. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1:10).

5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 1.5% (1:66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1:50).

6. PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2 FEET (610 mm) OF EACH RAMP AS SHOWN ABOVE. SEE DETAILED DRAWING NUMBER 608-40 FOR DETECTABLE WARNING DEVICES DETAILS.

REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:

NOTE: WHEREVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH THE NEW CONSTRUCTION REQUIREMENTS.

1. THE MINIMUM WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 4 FEET (1220 mm).

2. WHERE RIGHT-OF-WAY WIDTH IS INSUFFICIENT TO ACCOMMODATE A TOP LANDING OF 5 FEET (1525 mm), PROVIDE A TOP LANDING OF 4 FEET (1220 mm). THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.

3. THE MAXIMUM CURB RAMP SLOPE IS 10% (1:10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES (150 mm) OR LESS. AN 8.3% (1:12) OR FLATTER SLOPE IS DESIRABLE.

4. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1:10).

5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 1.5% (1:66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1:50).

6. PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2 FEET (610 mm) OF EACH RAMP AS SHOWN ABOVE. SEE DETAILED DRAWING NUMBER 608-40 FOR DETECTABLE WARNING DEVICES DETAILS.

7. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

GENERAL NOTES:

1. WHERE THE RIGHT-OF-WAY WILL NOT ACCOMMODATE A PERPENDICULAR PUBLIC SIDEWALK CURB RAMP AND LANDING, MEET THESE REQUIREMENTS, USE A COMBINED (PARALLEL/PERPENDICULAR) OR PARALLEL PUBLIC SIDEWALK CURB RAMP.

2. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMPS ARE TO MEET THE CRITERIA FOR BOTH THE PARALLEL AND PERPENDICULAR PUBLIC SIDEWALK CURB RAMPS. (SEE DETAILED DRAWING NUMBER 608-30 AND THIS DRAWING.)
NEW CONSTRUCTION REQUIREMENTS:
1. The minimum length of the landing (dimension "L" above) is 5 feet (1525 mm).
2. The desirable slope for the curb ramps is 5% (1:20) or flatter. The maximum curb ramp slope is 8.3% (1:12).
3. The desirable cross slope of the sidewalk, ramp, or landing is 1.5% (1:66.7). The maximum cross slope of the sidewalk, ramp, or landing is 2% (1:50).
4. Provide detectable warning devices on the bottom 2 feet (610 mm) of each landing as shown above. See detail drawing number 608-40 for detectable warning devices details.

REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:
NOTE: Whenever possible, alter existing facilities to comply with the new construction requirements.
1. The desirable length of the landing (dimension "L" above) is 5 feet (1525 mm). The minimum landing length is 4 feet (1220 mm).
2. The maximum curb ramp slope is 10% (1:10), provided the rise (dimension "Y" above) is 6 inches (150 mm) or less. An 8.3% (1:12) or flatter slope is desirable.
3. The desirable cross slope of the sidewalk, ramp, or landing is 1.5% (1:66.7). The maximum cross slope of the sidewalk, ramp, or landing is 2% (1:50).
4. Provide detectable warning devices on the bottom 2 feet (610 mm) of each landing as shown above. See detailed drawing number 608-40 for detectable warning devices details.
5. Where existing site development conditions prohibit the strict and full compliance of all ADA criteria, provide accessibility to the maximum extent feasible.

GENERAL NOTES:
1. The cost of the retaining wall is included in the unit price bid for concrete sidewalk.
2. Combined (parallel/ perpendicular) public sidewalk curb ramps are to meet the criteria for both the parallel and perpendicular public sidewalk curb ramps. (See detailed drawing number 608-25 and this drawing.)

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

1. The desirable width of the curb ramp (dimension "W" above) is 5 feet (1525 mm) or more. The minimum width is 4 feet (1220 mm).
2. The desirable length of the landing at the top of the curb ramp is 5 feet (1525 mm). The minimum length of the landing is 4 feet (1220 mm). The landing width is equal to the ramp width.
3. The desirable slope for the curb ramp is 3% (1:30) or flatter. The maximum curb ramp slope is 6.3% (1:15). The maximum landing slope is 6.3% (1:15).
4. The desirable slope for the flared side of the curb ramp is 6.3% (1:15) or flatter. The maximum flared side slope is 10% (1:10).
5. The desirable cross slope of the sidewalk, ramp, or landing is 1% (1:10). The maximum cross slope of the sidewalk, ramp, or landing is 2% (1:50).
6. Provide detectable warning devices on the bottom 2 feet (600 mm) of each ramp as shown above. See detailed drawing number 609-051 for detectable warning devices detail.

**REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES**

1. Wherever possible, alter existing facilities to comply with the new construction requirements.
2. Provide right of way width is insufficient to accommodate a top landing of 4 feet (1200 mm). Provide a top landing of 4 feet (1200 mm). The landing width is equal to the ramp width.
3. The maximum curb ramp slope is 6.3% (1:15), providing the rise (dimension "t" above) is 6 inches (150 mm). A 1.7% (1:55) or flatter slope is desirable.
4. The maximum flared side slope is 10% (1:10).
5. The desirable cross slope of the sidewalk, ramp, or landing is 1.5% (1:66.7). The maximum cross slope of the sidewalk, ramp, or landing is 2% (1:50).
6. Provide detectable warning devices on the bottom 2 feet (600 mm) of each ramp as shown above. See detailed drawing number 609-051 for detectable warning devices detail.

1. Where existing site development conditions prohibit the street and full compliance of all ADA criteria, provide accessibility to the maximum extent feasible.

**GENERAL NOTES**

1. The right of way shall not accommodate a diagonal perpendicular public sidewalk curb ramp and landing. Meeting these requirements is another ramp option.
2. Trim precast detectable warning devices panels to fit on private approach sidewalk curb ramps as shown above.

**UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (MM). UNLESS OTHER UNITS ARE SHOWN.**
CONSTRUCTION REQUIREMENTS:

1. Install detectable warning devices that extend the full width of the ramp, 2 feet (610 mm) in depth.
2. Install the dome panel adjacent to the back of curb, if the panel is offset, locate the edge of the panel as close as practicable to the back of curb.
3. If the detectable warning device is installed in concrete, install so the top of the panel is flush with the adjacent concrete and the domes will protrude above the adjacent surface.
4. Ensure a uniform space on the detectable warning devices free of gaps and irregular edges.
5. Use detectable warning devices - types for new sidewalk construction. Detectable warning device - type 1 for existing sidewalks where new concrete is not being placed. Detectable warning devices - types 1 and 2 for detectable warning devices - type 1 and for detectable warning devices - type 2.
6. Use detectable warning devices that visually contrast with adjacent walkway surfaces.
7. Ensure the alignment and pattern of the domes is continued across any joints between detectable warning device panels.

UNITS SHOWN IN BRACKETS IS IN MILLIMETERS, UNLESS OTHERWISE SHOWN.

DETAILED DRAWING
REFERENCE
DPW DEPARTMENT OF TRANSPORTATION
DETECTABLE WARNING DEVICES
DEPARTMENT OF TRANSPORTATION MDT
DETERMINATION OF STANDARD SECTIONS 604
DG 60-40
DG 60-40