NOTES:

1/2" [13] EXPANSION JOINTS ARE SHOWN AS DARK SOLID LINES FOR VISUAL PURPOSES.

BOND BREAKER IS SHOWN AS DARK DASHED LINES FOR VISUAL PURPOSES.

PRIVATE SIDEWALK 6" [152] SIDEWALK
4" [102] SIDEWALK
CONCRETE APRON LAYDOWN CURB
LAYDOWN CURB
PRIVATE SIDEWALK
CONCRETE APRON
FLARED SIDE
GUTTER
CURB
BUFFER AREA

CONSTRUCTION:

FLOOR LINE ELEV + 8" [203]
APPROACH GRADE AS NEEDED (10% MAXIMUM)

SLOPE 1.5% [1.667] TOWARD ROADWAY

4" OR 6" [102 OR 152]

2 1/2" [64] CRUSHED AGGREGATE COURSE

SECTION A-A

NOTE:

CRUSHED AGGREGATE COURSE OMITTED FOR CLARITY.

SECTION B-B

NOTE:

CRUSHED AGGREGATE COURSE OMITTED FOR CLARITY.

* THE MAXIMUM CONSTRUCTED CROSS SLOPE OF THE SIDEWALK IS 2% [1.00].

** 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.

TYPICAL SIDEWALK SECTION

NOTES:

1. INSTALL PREFORMED EXPANSION JOINT FILLER, PER SECTION 707, AT ALL EXPANSION JOINTS, FOR THE FULL THICKNESS OF THE SIDEWALK AND USE AT ALL JOINTS BETWEEN NEW CONCRETE SIDEWALK AND STRUCTURES IN PLACE.

2. INSTALL A BOND BREAKER FOR THE FULL THICKNESS OF THE SIDEWALK AT LOCATIONS SPECIFIED ON THIS DETAIL. USE A 15 OR 30 POUND [6.8 OR 13.6 kg] ROOFING FELT MATERIAL, OR OTHER PRODUCT AS APPROVED BY THE PROJECT MANAGER, FOR THE BOND BREAKER. DO NOT USE EXPANSION JOINT MATERIAL AS A BOND BREAKER.

3. CONSTRUCT ALL JOINTS STRAIGHT AND PERPENDICULAR TO THE CENTERLINE AND THE SURFACE OF THE SIDEWALK. USE JOINTS TO OUTLINE ALL PANELS IN THE SIDEWALK, WHICH ARE TO BE, AS FAR AS POSSIBLE, SQUARE. THE LENGTHS OF THE PANELS ARE DETERMINED BY THE WIDTH OF THE SIDEWALK.


5. WHERE FACTORS SUCH AS LIMITED RIGHT-OF-WAY Dictate THE INSTALLATION OF A NEW SIDEWALK LESS THAN 5 FEET [1525] IN WIDTH THE NEW SIDEWALK MUST HAVE PASSING AREAS AT A MAXIMUM SPACING OF 200 FEET [61 m]. A PASSING AREA IS A MINIMUM OF 5 FEET BY 5 FEET [1524 BY 1524] IN SIZE.


7. LOCATE EXPANSION JOINTS EVERY 100 FEET (± 30 FT) [30 m (± 10 m)] AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL.

8. USE A LONGITUDINAL CONTRACTION JOINT IN THE CENTERLINE OF ALL SIDEWALKS 8 FEET [2438] WIDE AND WIDER.

CONCRETE SIDEWALK

MONTANA DEPARTMENT OF TRANSPORTATION
**Curb Ramp Types**

**General Notes:**

1. Use curb ramps in the following order of preference:
   - A. Perpendicular curb ramp
   - B. Combined (parallel/orthogonal) curb ramp
   - C. Parallel curb ramp

2. Existing conditions such as R/W, sidewalk width, and type of sidewalk (curb-tight or buffer area) usually determine the type of curb ramp to use.

3. A single curb ramp or blended transition corners serving two street crossing directions are not allowed in new construction and not recommended when altering existing facilities.

4. When altering existing facilities, meet new construction requirements for curb ramps to the maximum extent feasible. Document with an ADA statement of technical infeasibility form when ADA standards can be achieved.

5. If possible, do not place drainage structures in conflict with curb ramps. Location of curb ramps takes precedence over location of drainage structures except where existing drainage structures are being utilized. If a drainage structure must be placed in the pedestrian access route, an ADA compliant grate, having slot openings 1/2” (13) or less in one direction, must be used.

**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.

**Detailed Drawing**

- Reference: DWG. NO. 608-15
- Standard Spec. Section: 608

- New Construction Curb Ramps

- Transition panels as required to match existing noncomplying cross slopes

- Units shown in brackets: 1 foot = 0.3048 meters and 1 inch = 25.4 millimeters unless other units are shown.
CONSTRUCTION REQUIREMENTS:

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 5 FEET [1524] OR WIDER. THE MINIMUM WIDTH ("W") IS 4 FEET [1219].


3. THE DESIRABLE RUNNING SLOPE FOR THE CURB RAMP IS BETWEEN 5% (1:20) AND 7.1% (1:14). THE MAXIMUM CONSTRUCTED 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 CONSTRUCTED FLARED SIDE SLOPE IS 10% (1:10).

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

6. THE RUNNING SLOPE OF THE SIDEWALK IS EQUAL TO THE STREET GRADE OR FLATTER.

7. PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2 FEET [610] OF EACH RAMP AS SHOWN ABOVE. SEE DETAIL DWG. NO. 608-40 FOR DETECTABLE WARNING DEVICES DETAILS.

8. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE. DOCUMENT WITH AN ADA STATEMENT OF TECHNICAL INFEASIBILITY FORM WHEN ADA STANDARDS CANNOT BE ACHIEVED.

GENERAL NOTES:

1. WHERE THE RIGHT-OF-WAY WILL NOT ACCOMMODATE A PERPENDICULAR CURB RAMP AND LANDING, CONSIDER USING A COMBINED (PARALLEL/PERPENDICULAR) CURB RAMP. COMBINED (PARALLEL/PERPENDICULAR) CURB RAMPS ARE TO MEET THE CRITERIA FOR BOTH THE PARALLEL AND PERPENDICULAR CURB RAMPS. (SEE DETAIL DWG. NO. 608-30 AND THIS DRAWING.)

2. THERE IS NO TOLERANCE FOR EXCEEDING MAXIMUM STANDARDS.

3. THE COST OF RETAINING WALLS IS INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK.

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

DETAIL DWG. NO. 608-25

PERPENDICULAR CURB RAMPS

MONTANA DEPARTMENT OF TRANSPORTATION
CONSTRUCTION REQUIREMENTS

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

1. THE DESIRABLE LENGTH OF THE LANDING (DIMENSION "C" ABOVE) IS 5 FEET (1.524). THE MINIMUM LANDING LENGTH IS 4 FEET (1.219).


3. THE DESIRABLE SLOPE FOR THE CURB RAMPS IS 5\% (1:20) TO 7.1\% (1:14). THE MAXIMUM CONSTRUCTED CURB RAMP SLOPE IS 8.3\% (1:12).

4. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK, RAMPS ON LANDING IS 3.5\% (1:28.6) OR LESS. THE MAXIMUM CONSTRUCTED CROSS SLOPE OF THE SIDEWALK, RAMPS OR LANDING IS 2\% (1:50).

5. PROVIDE DETECTABLE WARNING DEVICES AT THE BACK OF CURB ON EACH LANDING AS SHOWN ABOVE. SEE DETAILED DRAWING NUMBER 608-40 FOR DETECTABLE WARNING DEVICES.

6. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE AND DOCUMENT WITH AN ADA STATEMENT OF TECHNICAL INFEASIBILITY FORM WHEN ADA STANDARDS CAN'T BE ACHIEVED.

GENERAL NOTES:

1. THE COST OF RETAINING WALLS IS INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK.

2. THERE IS NO TOLERANCE FOR EXCEEDING MAXIMUM STANDARDS.
Curb Ramp Options for Private Approach or Side Streets with Curb Returns but Without Sidewalk

Section A-A

Section B-B

Section C-C

Section D-D

Section E-E

Requirements for New Construction and Alterations to Existing Facilities:

1. The desirable width of the curb ramp is 5 feet (1.5m) or more.
2. The maximum width of the landing is 6 feet (1.8m).
3. The landing is 5 feet (1.5m) or less.
4. The maximum landing slope is 1:12.
5. The desirable landing is 2 feet (0.6m) or more.
6. The maximum landing slope is 1:12.
7. The desirable ramp slope is 1:12.
8. The maximum ramp slope is 1:12.

General Notes:

1. Where the landing area is provided with a permeable surface, the landing shall be constructed of concrete or a suitable permeable material.
2. Existing curb ramps on private approaches shall be 3 feet (0.9m) wide.
3. The cost of retaining walls is included in the unit price.
4. There is no tolerance for exceeding maximum standards.

Detailed Drawing Reference: CURB RAMP DESIGN OPTIONS FOR CURB-TIGHT SIDEWALKS
CONSTRUCTION REQUIREMENTS:

1. Install detectable warning devices that extend the full width of the ramp, 2 feet [610] in depth.
2. Install the detectable warning devices adjacent to the back of curb unless otherwise shown in the plans.
3. Embed the detectable warning devices directly into the concrete, so the top of the base plate is flush with the concrete and the domes protrude above the adjacent concrete surface.
4. Use cast iron detectable warning devices from the department's qualified products list (QPL).
5. Ensure a uniform grade on the detectable warning devices free of sags and irregular edges.
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 devices base plate.