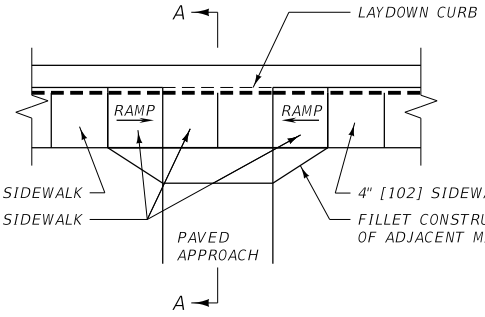
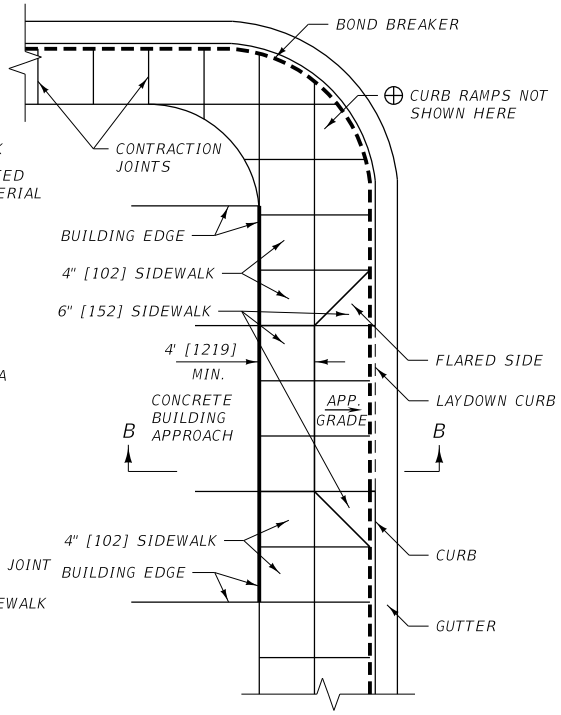
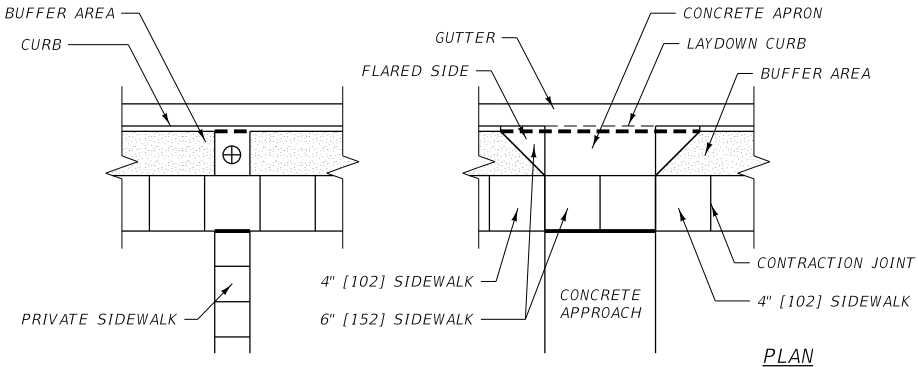
NOTES:

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

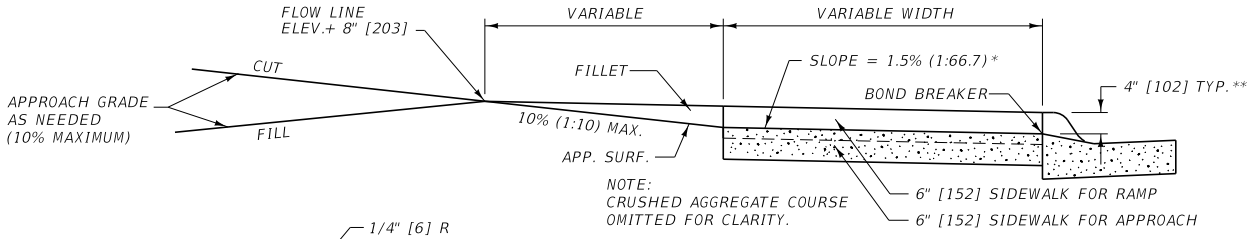
BOND BREAKER IS SHOWN AS DARK DASHED LINES FOR VISUAL PURPOSES.



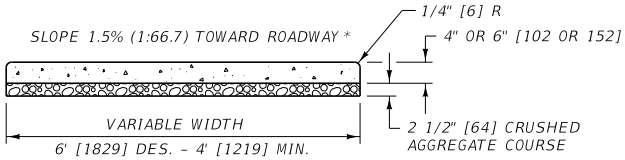




PLAN

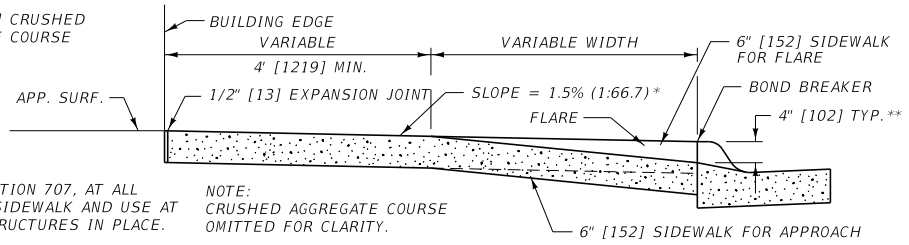


SECTION A-A



TYPICAL SIDEWALK SECTION

NOTE:
SEE DTL. DWG. NO. 609-05 FOR CURB & GUTTER DETAILS.



SECTION B-B

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. WHERE PRACTICAL, ALIGN ALL JOINTS WITH LIKE JOINTS IN ADJOINING WORK. USE JOINTS TO OUTLINE ALL PANELS IN THE SIDEWALK, WHICH ARE TO BE, SO FAR AS POSSIBLE, SQUARE. THE LENGTHS OF THE PANELS ARE DETERMINED BY THE WIDTH OF THE SIDEWALK.

4. THE MINIMUM WIDTH OF NEW SIDEWALK IS 4 FEET [1219]. THE CONTINUOUS CLEAR WIDTH OF PEDESTRIAN ACCESS ROUTES IS 4 FEET [1219] MIN. THE CLEAR WIDTH BETWEEN OBSTRUCTIONS OR AN OBSTRUCTION AND THE EDGE OF SIDEWALK IS 4' [1219] MIN.

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.

6. PROVIDE CONTRACTION JOINTS NO LESS THAN 1/8" [3] WIDE AND NO MORE THAN 1/4" [6] WIDE AND NO LESS THAN 1" [25] IN DEPTH. CONTRACTION JOINTS MAY BE CUT BY A GROOVE FORMING TOOL.

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.

* THE MAXIMUM CONSTRUCTED 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.

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

DETAILED DRAWING

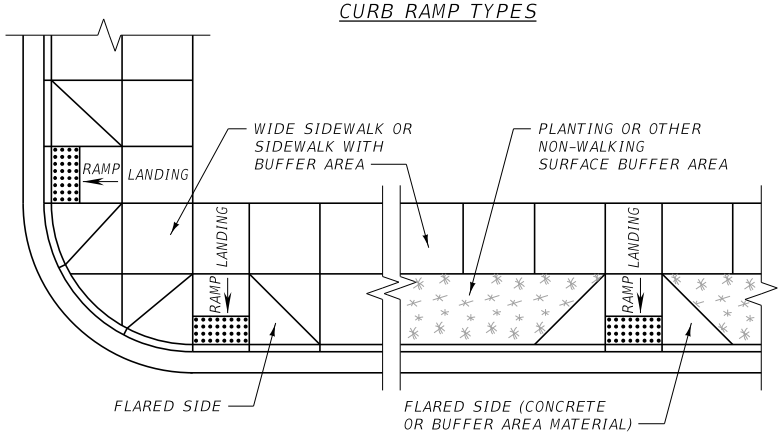
REFERENCE STANDARD SPEC. SECTION 608

DWG. NO. 608-05

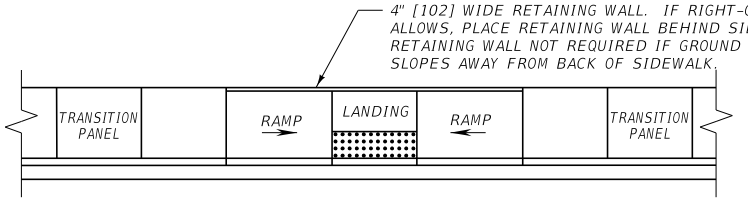
CONCRETE SIDEWALK

MDT MONTANA DEPARTMENT OF TRANSPORTATION

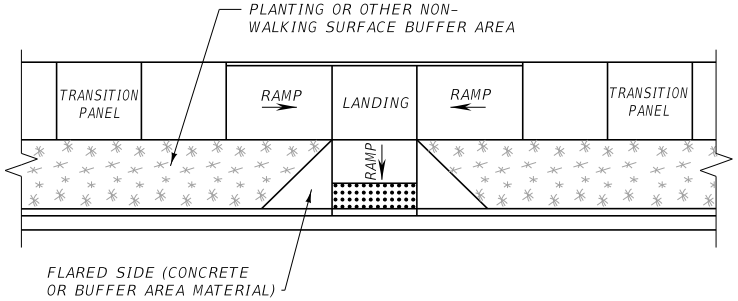
CURB RAMP TYPES



PERPENDICULAR CURB RAMP (SEE DETAILED DRAWING NUMBER 608-25 FOR ADDITIONAL DETAILS)



PARALLEL CURB RAMP (SEE DETAILED DRAWING NUMBER 608-30 FOR ADDITIONAL DETAILS)



COMBINED (PARALLEL/PERPENDICULAR) CURB RAMP (SEE DETAILED DRAWING NUMBERS 608-25 AND 608-30 FOR ADDITIONAL DETAILS)

GENERAL NOTES:

1. USE CURB RAMPS IN THE FOLLOWING ORDER OF PREFERENCE:

   A. PERPENDICULAR CURB RAMP.
   B. COMBINED (PARALLEL/PERPENDICULAR) CURB RAMP.
   C. PARALLEL CURB RAMP.

   EXISTING CONDITIONS SUCH AS R/W, SIDEWALK WIDTH, AND TYPE OF SIDEWALK (CURB-TIGHT OR BUFFER AREA) USUALLY DETERMINE THE TYPE OF CURB RAMPS TO USE.

   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.

2. 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'T BE ACHIEVED .

3. 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.

4. USE THE FLATTEST SLOPES POSSIBLE (5% MIN.) FOR ALL CURB RAMPS. MAXIMUM CONSTRUCTED RAMP SLOPES OF 8.3% ARE SHOWN FOR GUIDANCE AT DIFFICULT SITES.

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

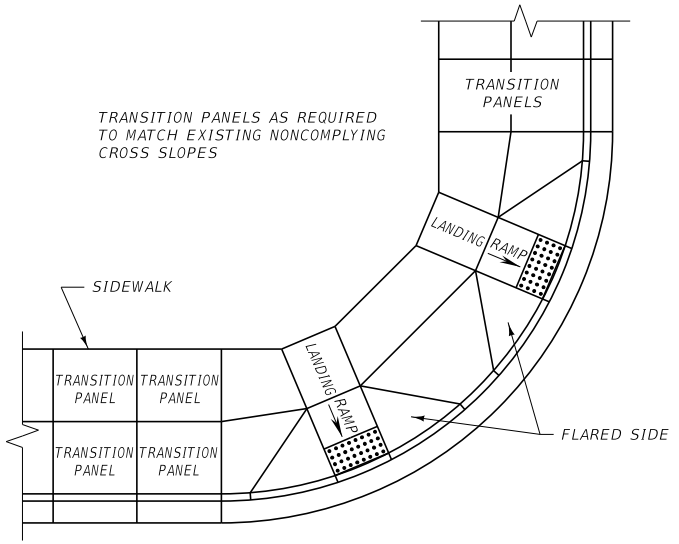
6. PEDESTRIAN ACCESS POINTS AT CROSSWALKS ARE TO BE WHOLLY CONTAINED WITHIN THE CROSSWALK LINES.

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. TAKE CARE DURING CONSTRUCTION TO ASSURE UNIFORM RAMP GRADES, FREE OF SAGS AND SHARP GRADE CHANGES.



PERPENDICULAR CURB RAMP USED ON LARGE RADII CORNER WITH WIDE SIDEWALK (SEE DETAILED DRAWING NUMBER 608-35 FOR ADDITIONAL DETAILS)

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

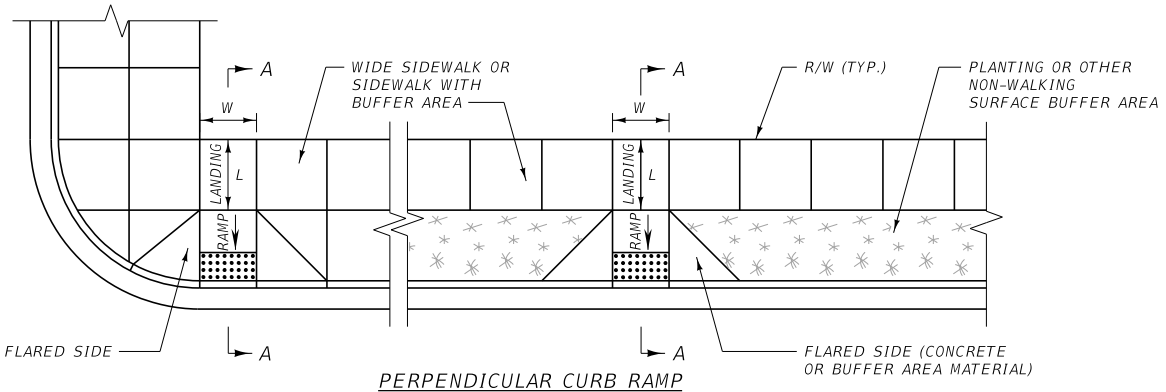
DETAILED DRAWING

REFERENCE STANDARD SPEC. SECTION 608

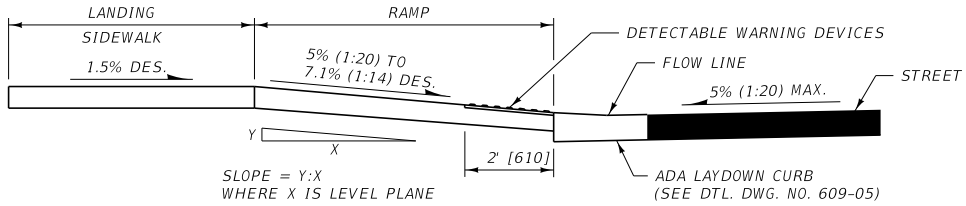
DWG. NO. 608-15

NEW CONSTRUCTION CURB RAMPS

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PERPENDICULAR CURB RAMP



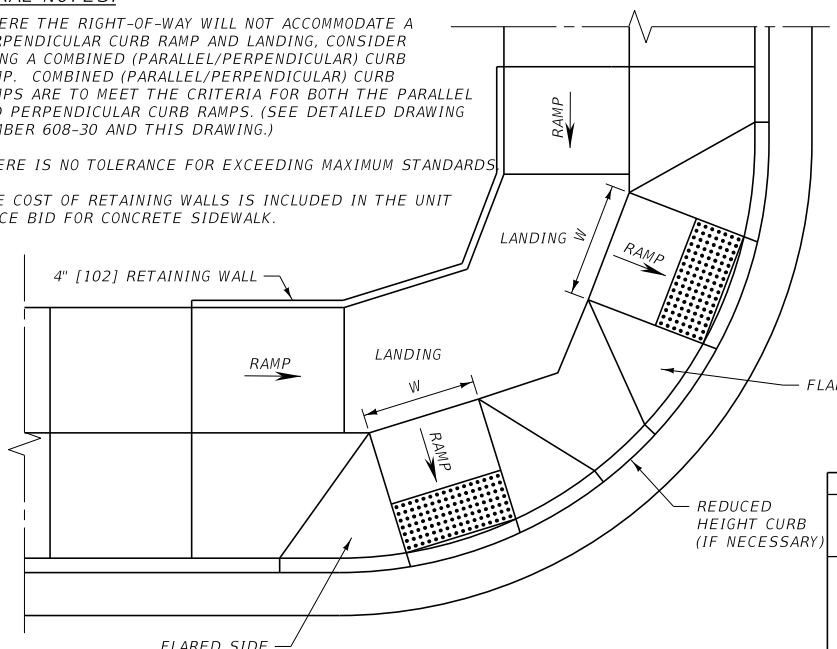
SECTION A-A

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].
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF THE CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET [1524]. THE MINIMUM LENGTH "L" IS 4 FEET [1220]. IF THE LANDING IS CONSTRAINED AT THE BACK OF SIDEWALK, THE MINIMUM LENGTH "L" IS 5 FEET [1524]. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
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 DETAILED DRAWING NUMBER 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 CAN'T 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 DETAILED DRAWING NUMBER 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.



COMBINED (PARALLEL / PERPENDICULAR) CURB RAMP

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

DETAILED DRAWING

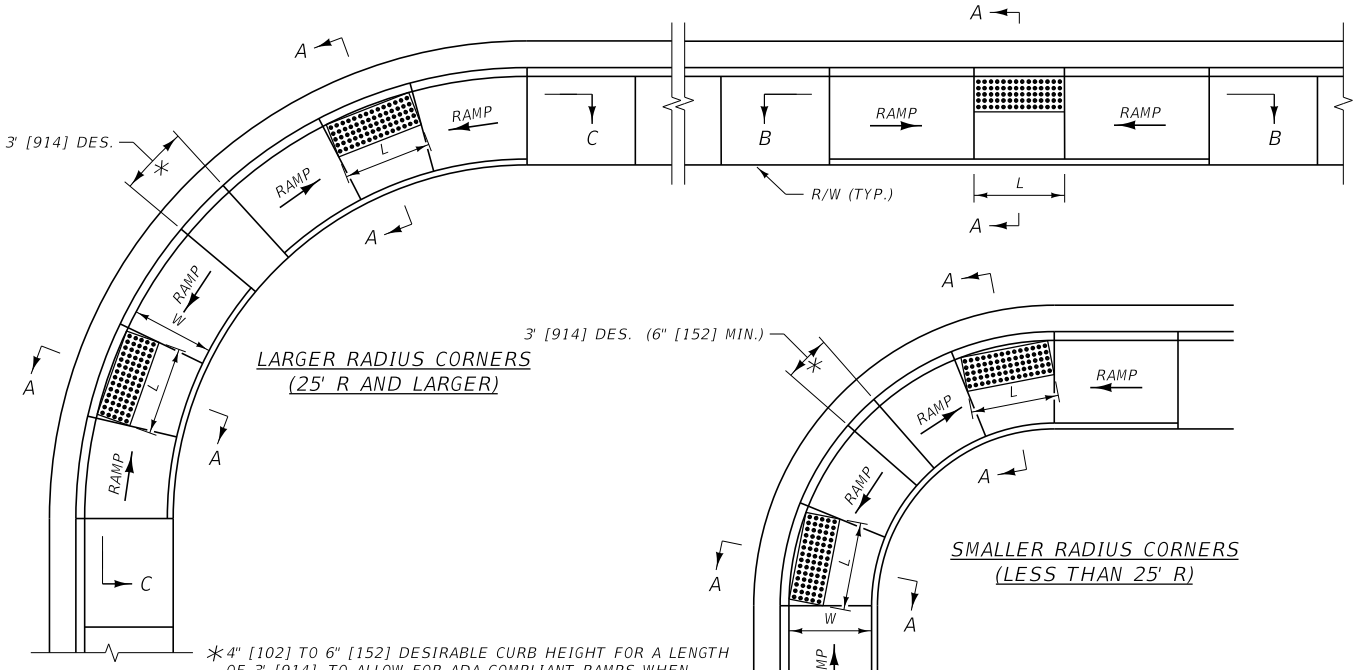
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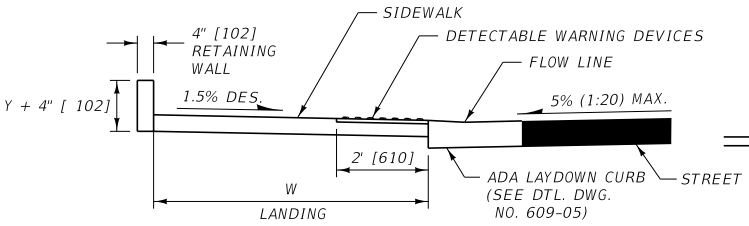
DWG. NO. 608-25

PERPENDICULAR CURB RAMPS

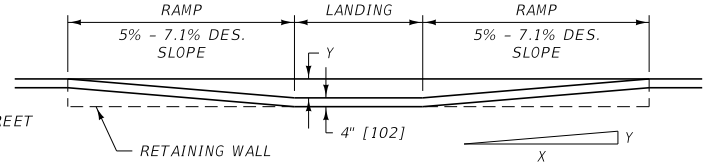
MDT MONTANA DEPARTMENT OF TRANSPORTATION

PARALLEL CURB RAMPS

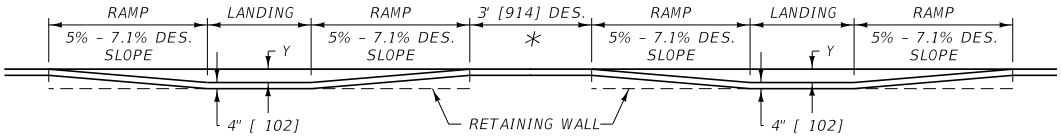




SECTION A-A



SECTION B-B



SECTION C-C

CONSTRUCTION REQUIREMENTS

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

1. THE DESIRABLE LENGTH OF THE LANDING (DIMENSION "L" ABOVE) IS 5 FEET [1524]. THE MINIMUM LANDING LENGTH IS 4 FEET [1219].
2. THE DESIRABLE WIDTH OF THE LANDING (DIMENSION "W" ABOVE) IS 5 FEET [1524]. THE MINIMUM LANDING WIDTH IS 4 FEET [1219]. IF THE LANDING IS CONSTRAINED ON ONE OR MORE SIDES, THE MINIMUM WIDTH IS 5 FEET [1524].
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, 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).
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 DETAILS.
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.

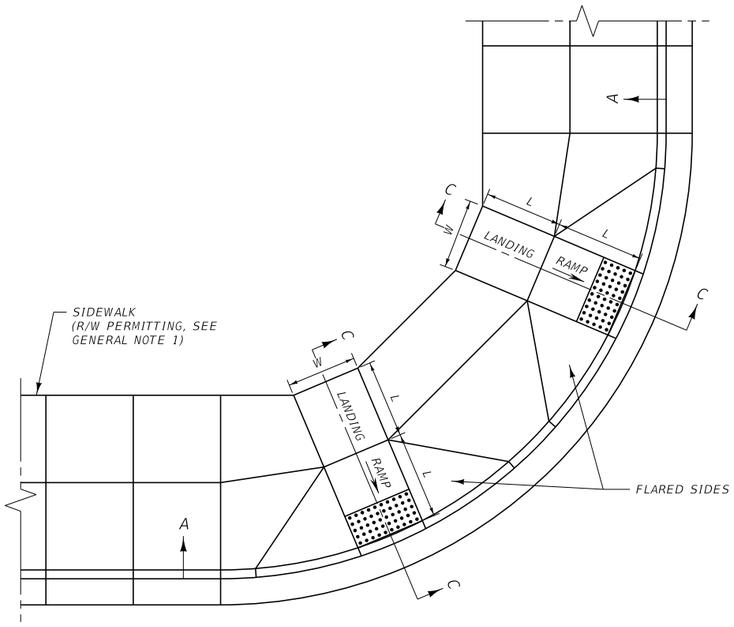
UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm) UNLESS OTHER UNITS ARE SHOWN.

DETAILED DRAWING

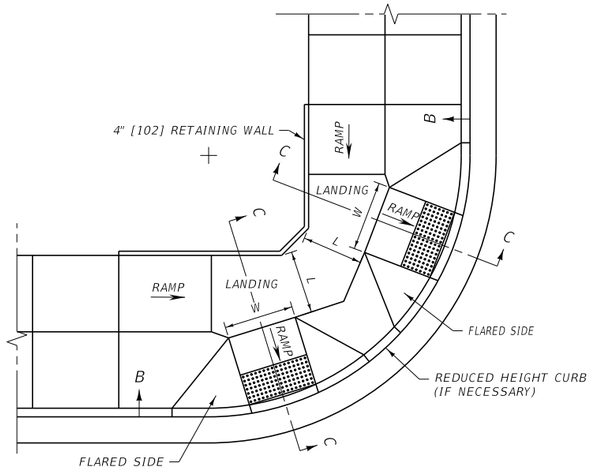
REFERENCE	DWG. NO.
STANDARD SPEC. SECTION 608	608-30

PARALLEL CURB RAMPS

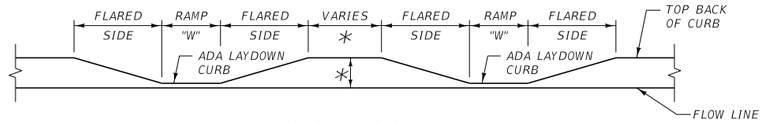
MDT MONTANA DEPARTMENT OF TRANSPORTATION



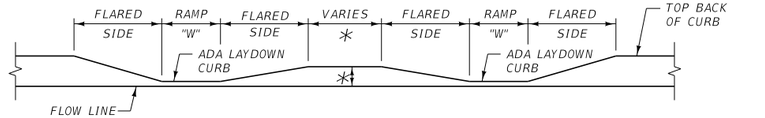
PERPENDICULAR CURB RAMP



COMBINED (PARALLEL / PERPENDICULAR) CURB RAMP

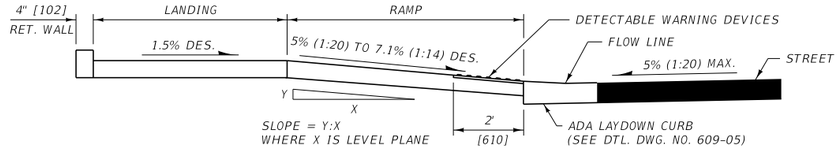


SECTION A-A

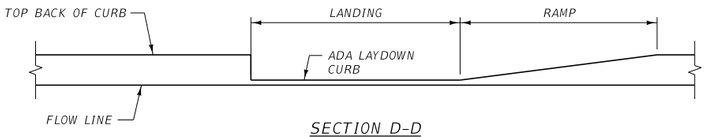


SECTION B-B

*4" [102] TO 6" [152] DESIRABLE CURB HEIGHT FOR A LENGTH OF 3.0' [914] BETWEEN RAMPS. TO ALLOW FOR ADA COMPLIANT RAMPS WHEN SPACE IS LIMITED, CURB HEIGHT MAY BE REDUCED TO 3" [76] MIN. AND THE LENGTH REDUCED TO 6" [152] MIN.

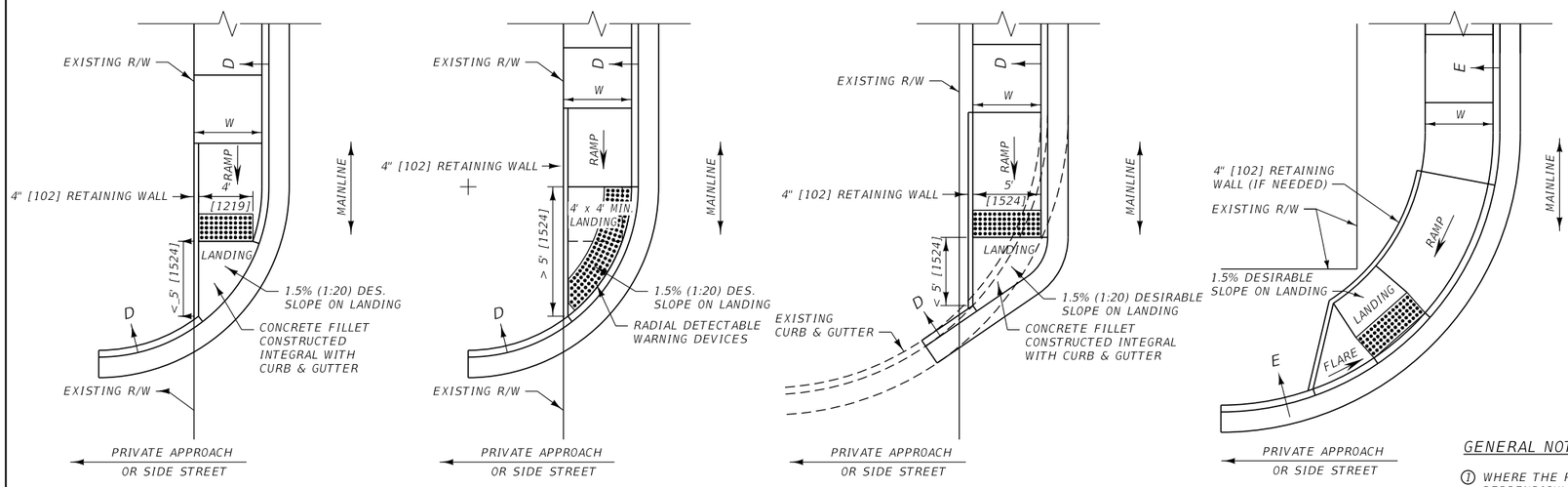


SECTION C-C



SECTION D-D

SECTION E-E



CURB RAMP OPTIONS FOR PRIVATE APPROACH OR SIDE STREETS WITH CURB RETURNS BUT WITHOUT SIDEWALK

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

REQUIREMENTS FOR NEW CONSTRUCTION AND ALTERATIONS TO EXISTING FACILITIES:

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] . THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF THE CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET [1524] . THE MINIMUM LENGTH "L" OF THE LANDING IS 4 FEET [1219] . IF THE LANDING IS CONSTRAINED AT THE BACK OF SIDEWALK, THE MINIMUM LENGTH "L" IS 5 FEET [1524] .
3. THE DESIRABLE 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. PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2 FEET [610] OF EACH RAMP OR AT THE BACK OF CURB ON CURB SIDE LANDINGS AS SHOWN. 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. DOCUMENT WITH AN ADA STATEMENT OF TECHNICAL INFEASIBILITY FORM WHEN ADA STANDARDS CAN'T BE ACHIEVED.

GENERAL NOTES:

1. WHERE THE RIGHT-OF-WAY WILL NOT ACCOMMODATE A PERPENDICULAR CURB RAMP AND LANDING MEETING THESE REQUIREMENTS, CONSIDER USING A COMBINED (PARALLEL / PERPENDICULAR) CURB RAMP DESIGN.
2. TRIM PRECAST DETECTABLE WARNING DEVICES PANELS TO FIT ON PRIVATE APPROACH SIDEWALK CURB RAMPS AS SHOWN ABOVE.
3. THE COST OF RETAINING WALLS IS INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK.
4. THERE IS NO TOLERANCE FOR EXCEEDING MAXIMUM STANDARDS.

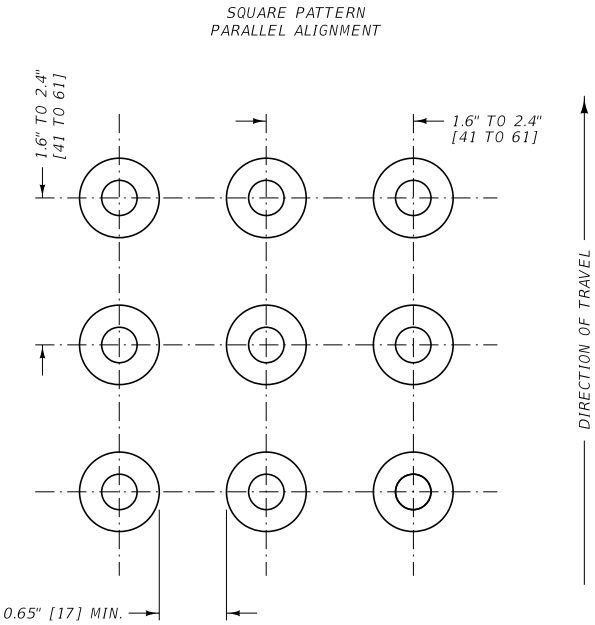
DETAILED DRAWING

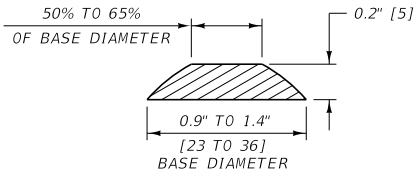
REFERENCE STANDARD SPEC. SECTION 608

DWG. NO. 608-35

CURB RAMP DESIGN OPTIONS FOR CURB-TIGHT SIDEWALKS

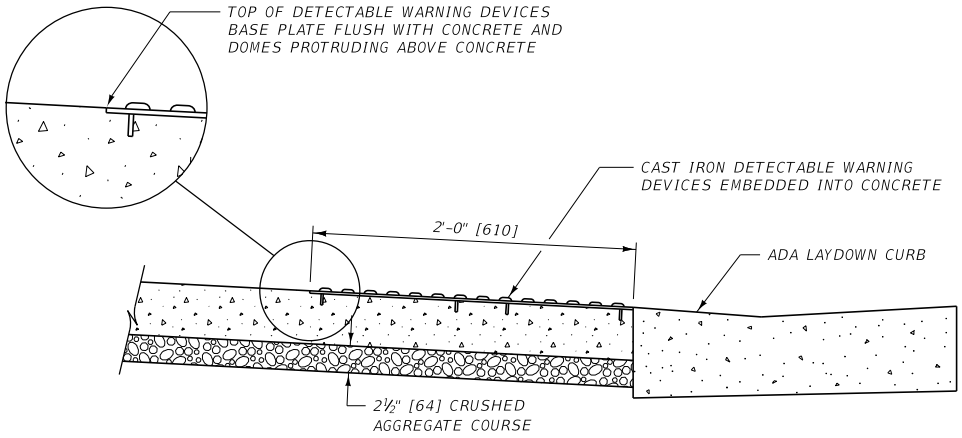
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DOME PROFILE

DETECTABLE WARNING DEVICES ALIGNMENT AND PATTERN



SIDE VIEW

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.
5. USE CAST IRON DETECTABLE WARNING DEVICES FROM THE DEPARTMENT'S QUALIFIED PRODUCTS LIST (QPL).
4. 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.

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

DETAILED DRAWING

REFERENCE	DWG. NO.
STANDARD SPEC. SECTION 608	608-40

DETECTABLE WARNING DEVICES

MONTANA DEPARTMENT OF TRANSPORTATION