PERPENDICULAR CURB RAMPS

CONSTRUCT each curb ramp using Type A1 details at Sheet 2.

Two sets of Double Parallel Curb Ramps are shown.

Acceptable design on corners with wide turning radius and where sidewalks are narrow.

DIAGONAL RAMP (Type D)

Construct each curb ramp using Type C1 details at Sheet 2.

Acceptable design for retrofit only where utilities prevent using a preferred layout.

PREFERRED CONSTRUCTION PLACEMENT

NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to ensure that the design is appropriate for the constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing site conditions warrant with the approval of the Engineer.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Type 409 Curb Ramp, Square Foot. This includes the cost of any curb or curb and gutter, detectable warnings, landing areas, and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (602) and walk (608). Removal of existing curbs, walk or existing curb ramps are paid under Item 202.

For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the area of detectable warnings as Type 508 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the area of detectable warnings as Type 508 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

Acceptable design on corners with wide turning radius and where sidewalks are narrow.

ACCEPtable CONSTRUCTION PLACEMENT

Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0".

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NOTES CONTINUED

The running slope of the curb ramp shall be a 12:1 maximum or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g., utility poles or vaults, right-of-way limits) it may be reduced as follows:

A) 50:1 for a max. rise of 0',
B) 4:1 for a max. rise of 0'
C) 8:1 for a max. run of 12" for historic areas where a flatter slope is not feasible.

To prevent shearing the grade indefinitely, the transition from existing sidewalk to the shaded curb ramp area is not required to exceed 6 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 4' or flatter.

Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

DETECTABLE WARNINGS: Install detectable warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer’s written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 6' between the 1) pavement and gutter, and 2) gutter and ramp are not allowed.

SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

GUTTER: The running slope of the curb ramp shall be a 12:1 maximum or flatter. The bottom edge of the ramp shall change planes perpendicular to the landing.

Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide 3/8" max. expansion joint filler around the edge of ramps built in historic areas where a flatter slope is not feasible.

DETECTABLE WARNINGS may be reduced as follows:

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**DETECTABLE WARNINGS NOTES**

**GENERAL:** Detectable warnings are a distinctive surface pattern of truncated domes, which are detectable by cane or footfall to alert people with visual impairments to the approach to streets and hazardous surfaces.

**PLACEMENT:** Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps, or blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

**ALIGNMENT:** Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT detail. Normally domes should be parallel to the street. In skewed conditions see DETECTABLE WARNING ALIGNMENT detail. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

**PRODUCTS & COLORS:** Color of the detectable warning should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidelines on color may be found in the Office of Roadway Engineering Service’s Detectable Warning Approved List. Install products as per manufacturer’s printed instructions.

**SECTION A-A NORMAL DETAIL**

See Sheet 2.

**SECTION A-A EXISTING WALK DETAIL**

See Sheet 2.

**SECTION B-B**

See Sheet 2.

**SECTION C-C**

See Sheet 2.

**SECTION D-D**

See Sheet 2.

**DETAIL A**

**HEIGHT AND DIAMETER**

**SQUARE PATTERN, PARALLEL ALIGNMENT**

**RADIAL ALIGNMENT**

**TRUNCATED DOMES DETAILS**

**DOME ALIGNMENT ON RADIUS CURB**

**DETECTABLE WARNING ALIGNMENT**