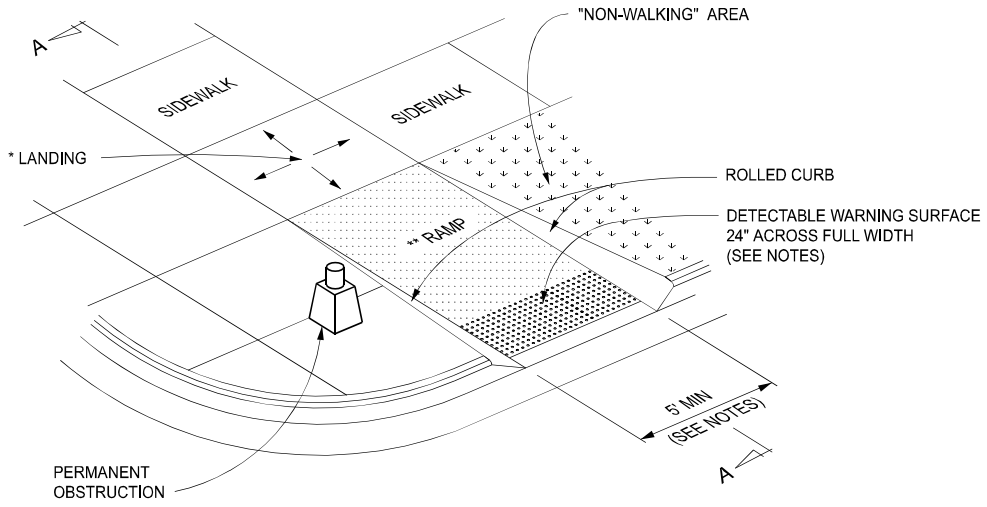
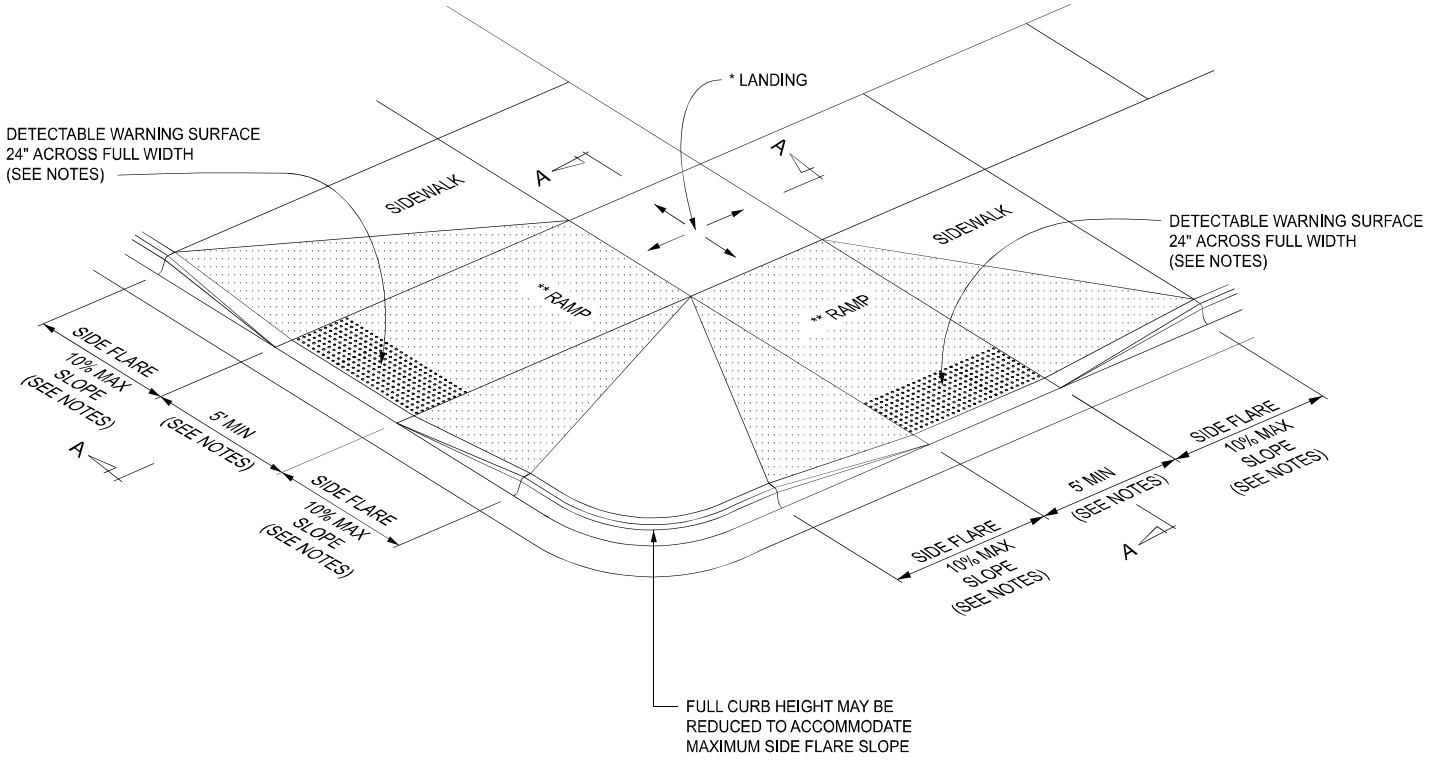
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE R

(ROLLED SIDES)



CURB RAMP TYPE F

(FLARED SIDES, TWO RAMPS SHOWN)

APPROVED BY: E-SIGNED by JASON GUTTING on 2024-09-24 12:54:17 EDT
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: E-SIGNED by Demetrius Parker on 2024-09-10 07:51:29 EDT
DIRECTOR, BUREAU OF DEVELOPMENT

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DETECTABLE WARNING DETAILS

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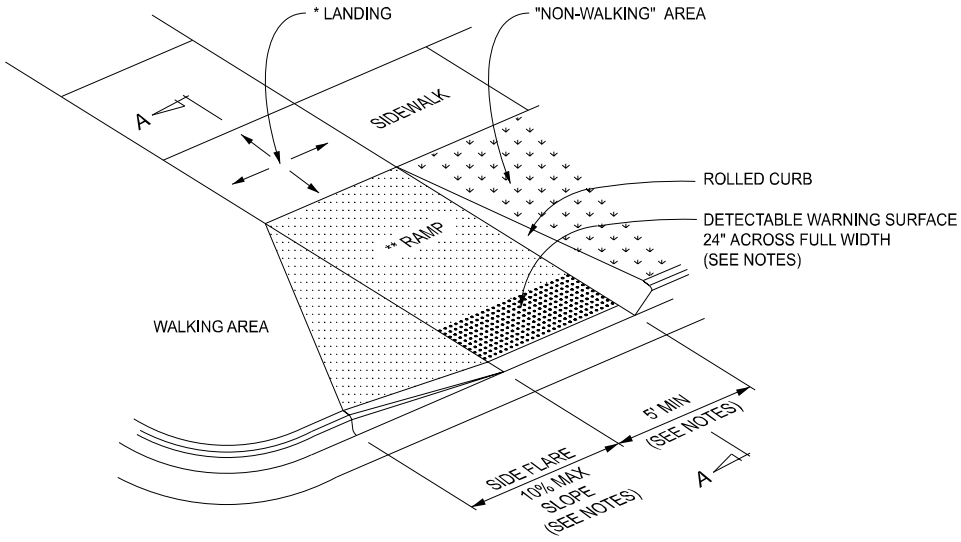
FHWA APPROVAL	PLAN DATE		1 OF 7

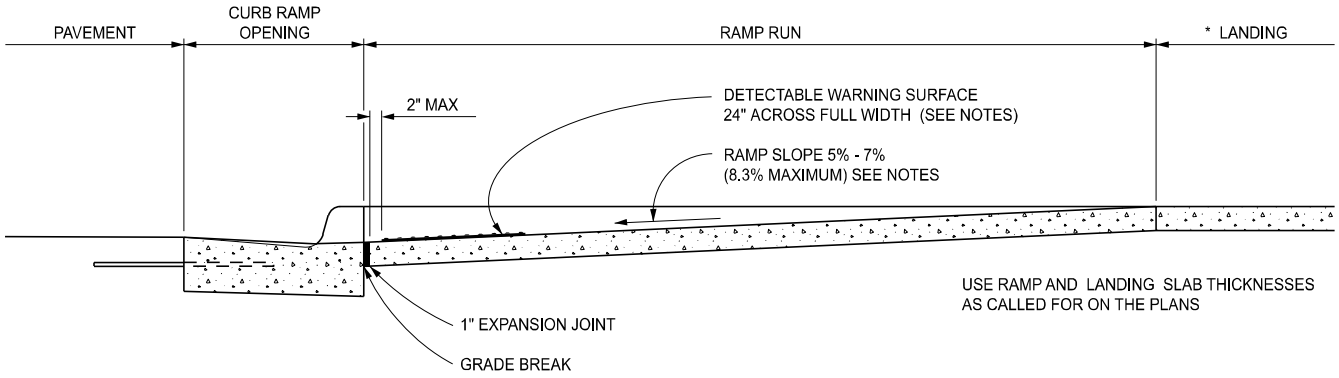
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE RF

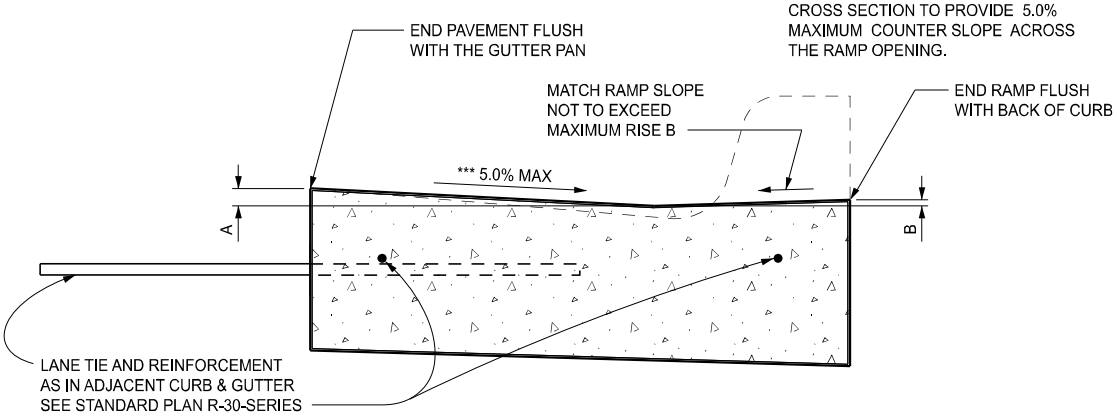
(ROLLED / FLARED SIDES)



SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	¾	1
B2	¾	1
B3	¾	1
D1	¾	1
D2	¾	1
D3	¾	1
C1	½	½
C2	½	½
C3	¾	½
C4	¾	½
C5	1	½
C6	1	½
F1	½	½
F2	½	½
F3	¾	½
F4	¾	½
F5	1	½
F6	1	½

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES



SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)

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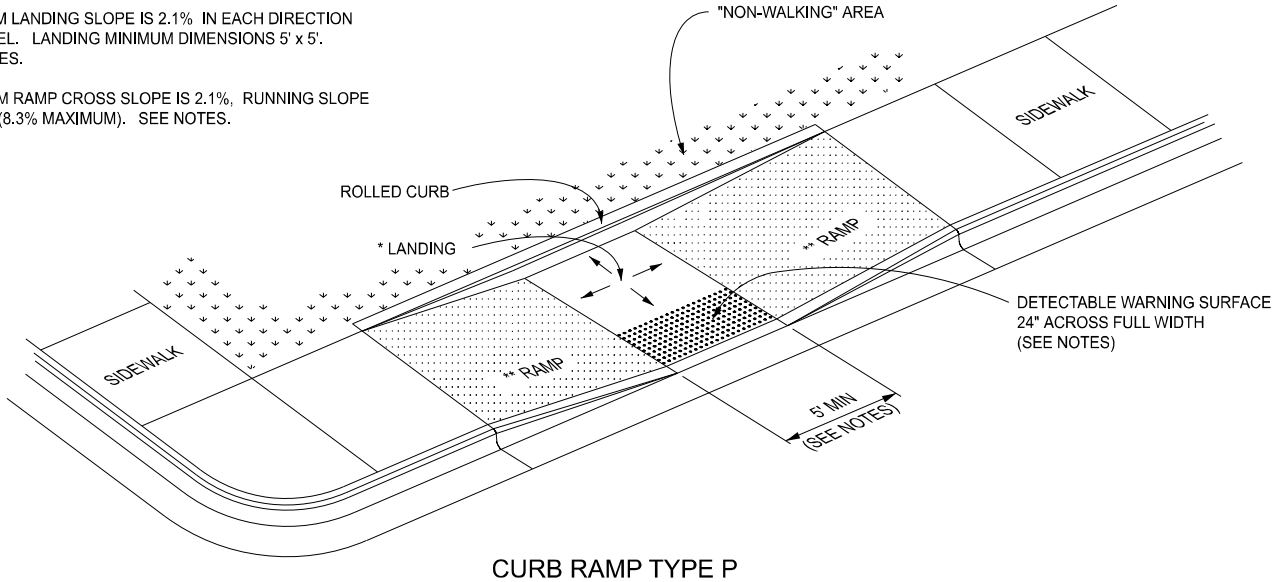
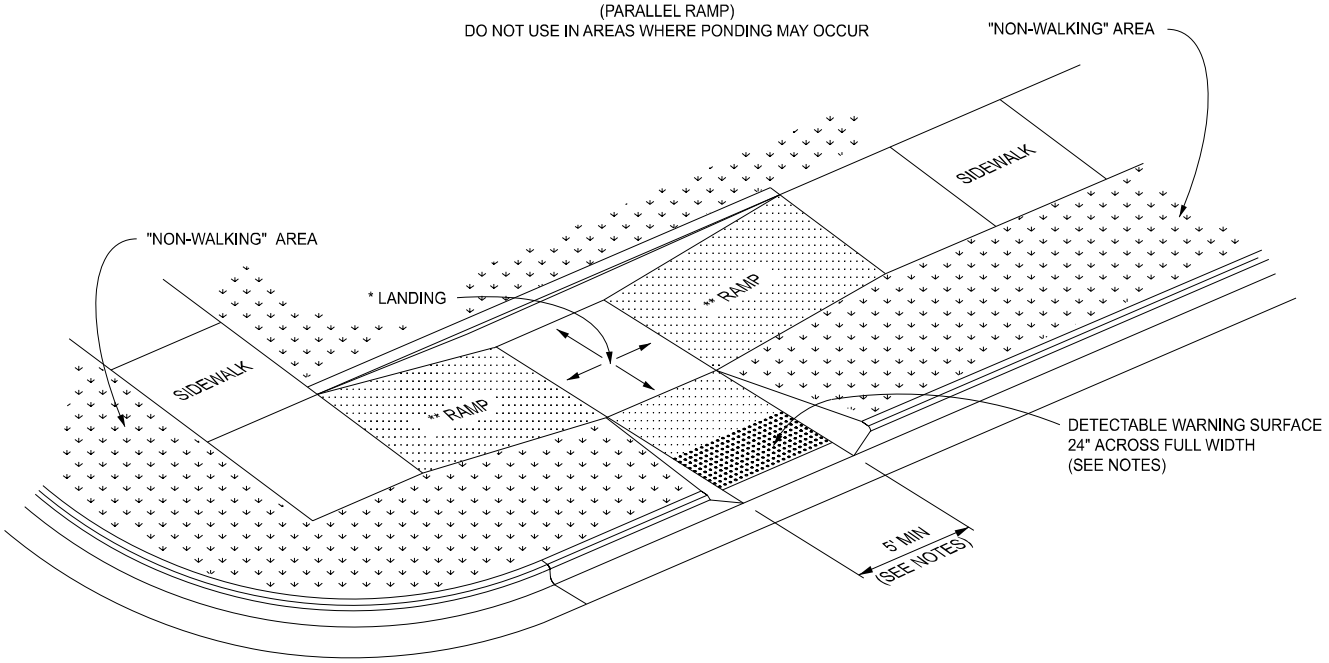
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE P

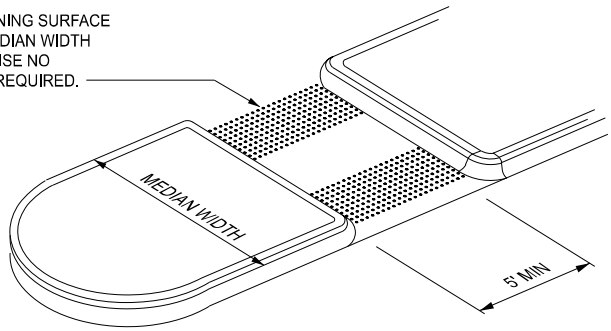
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



CURB RAMP TYPE C

(COMBINATION RAMP)

USE 24" DETECTABLE WARNING SURFACE ACROSS FULL WIDTH IF MEDIAN WIDTH IS AT LEAST 6'-0". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.



CURB RAMP TYPE M

(MEDIAN ISLAND)

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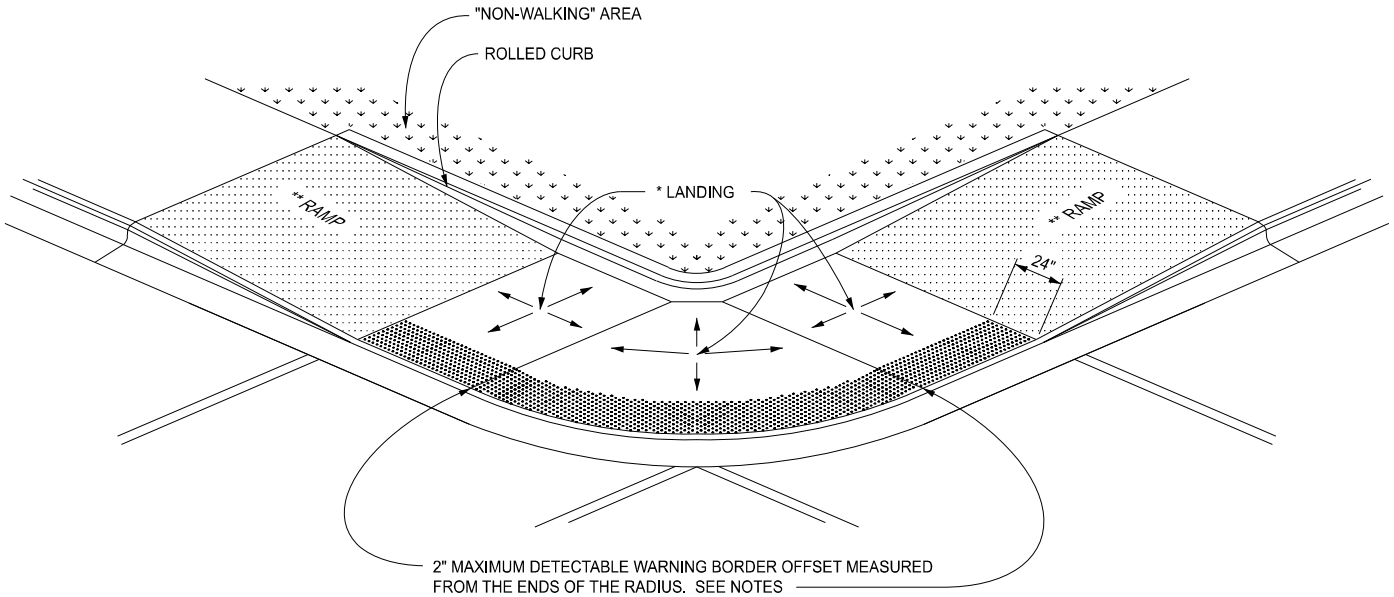
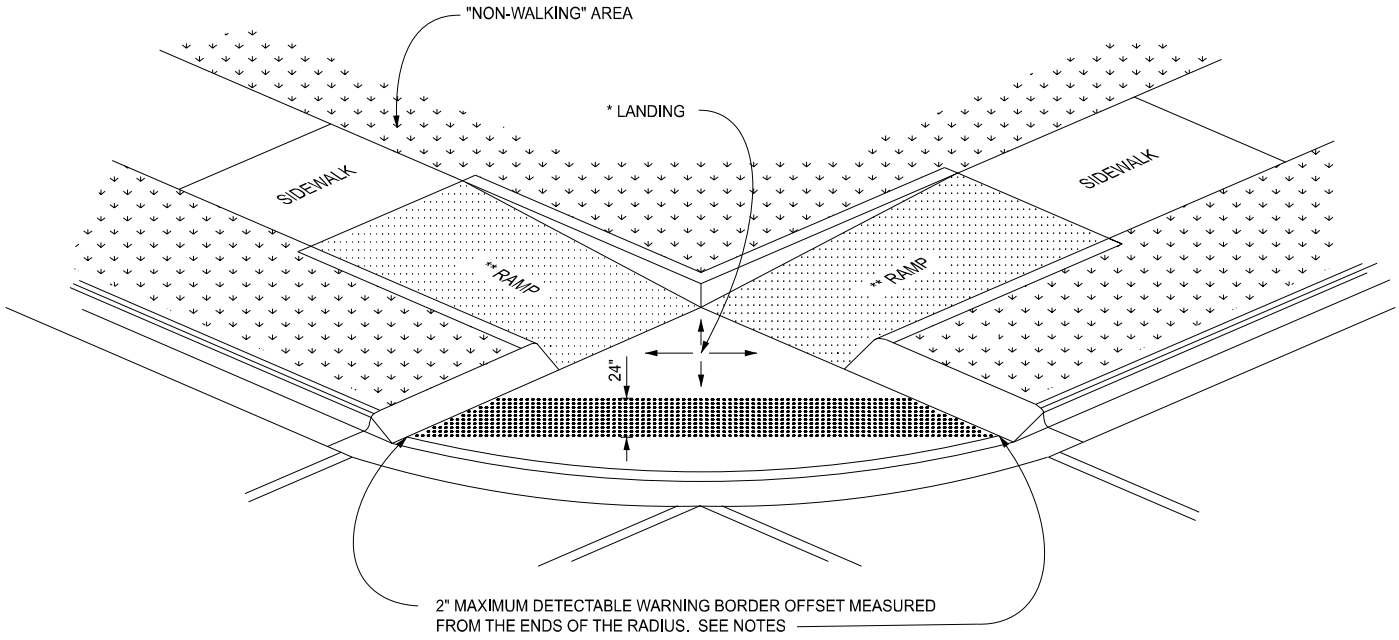
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

CURB RAMP TYPE D

(DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

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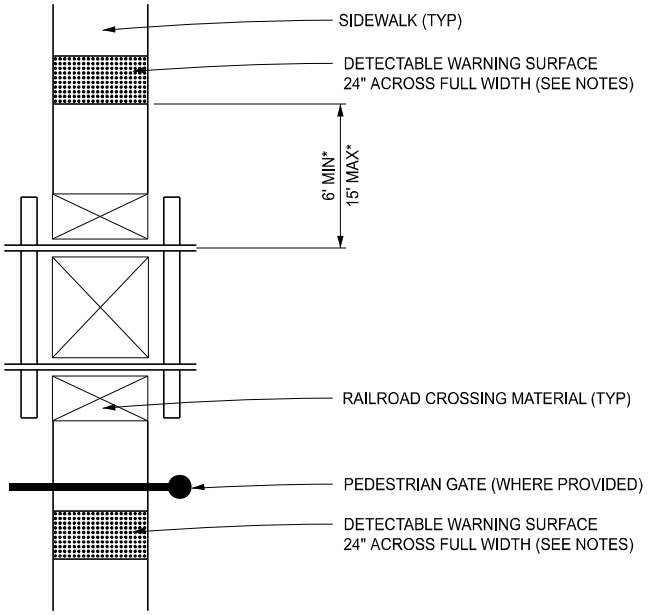
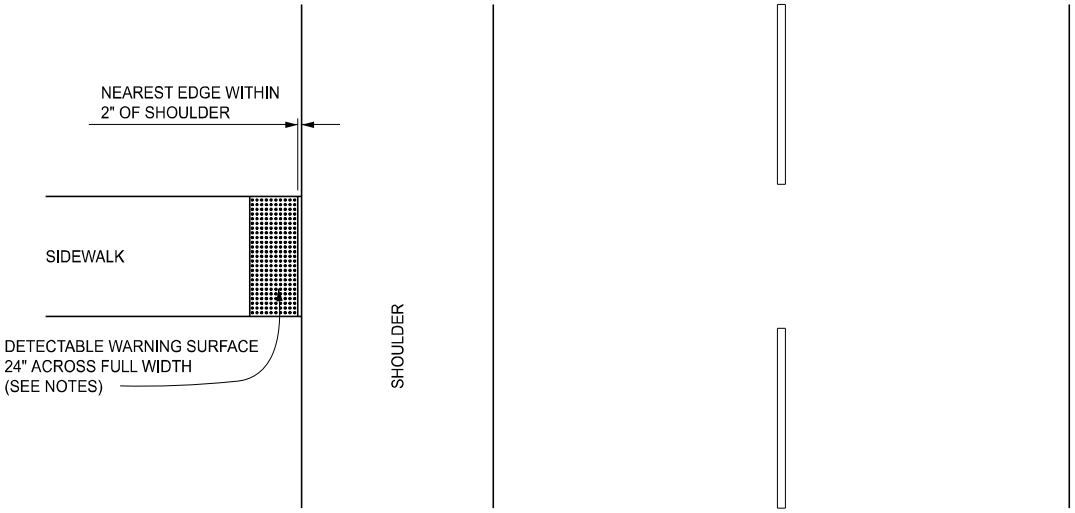
* LOCATE THE DETECTABLE WARNING SURFACE SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

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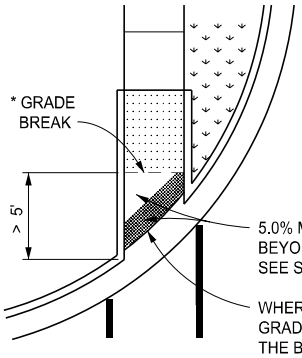
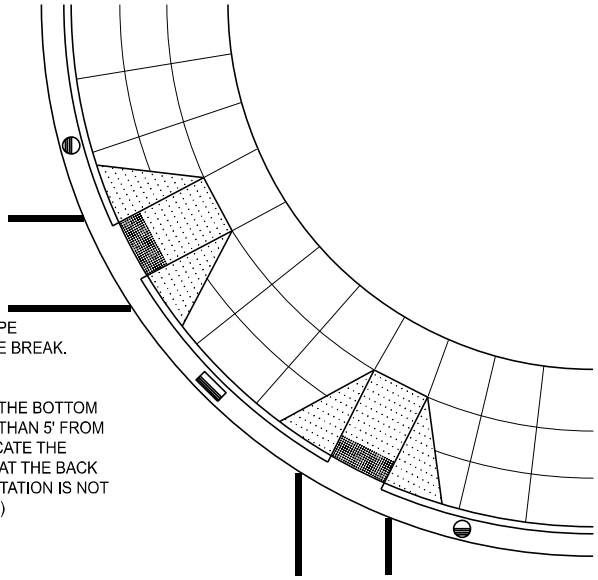
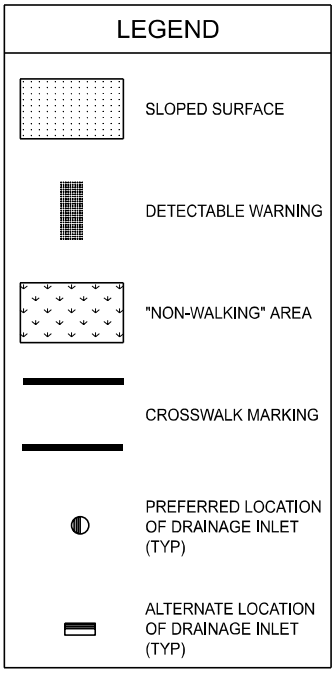


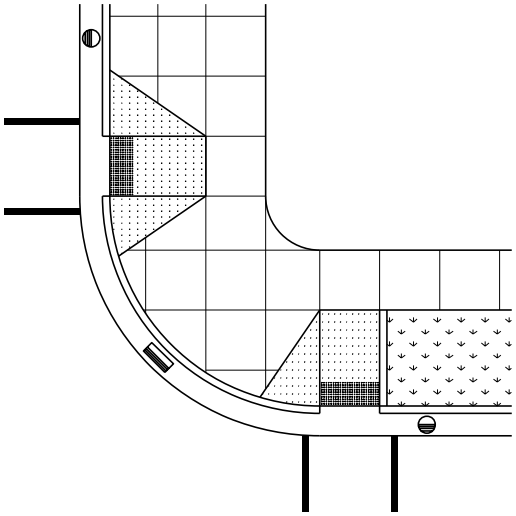
CURB RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK OFFSET GREATER THAN 5')



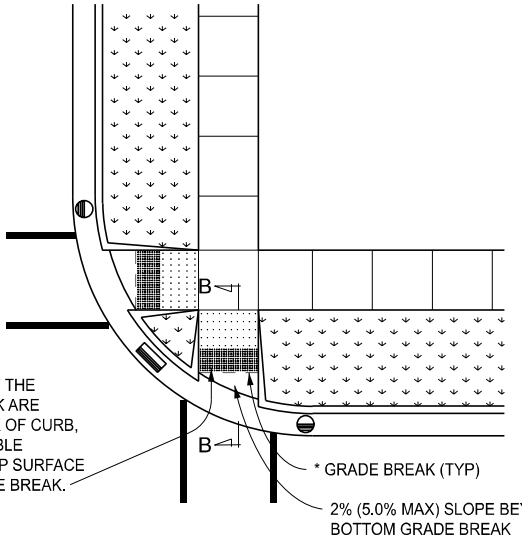
CURB RAMP PERPENDICULAR TO RADIAL CURB (TYPE F SHOWN)

(USE WITH RADIAL CURB WHEN THE CROSSWALK AND CURB RAMP ARE NOT ALIGNED)

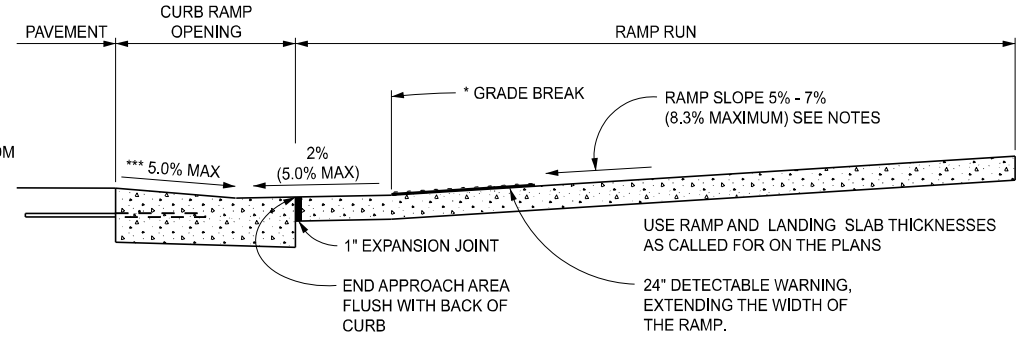




CURB RAMP PERPENDICULAR TO TANGENT CURB
(TYPE F AND TYPE RF SHOWN)



CURB RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK OFFSET LESS THAN 5')



* ENSURE GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMPS BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.

*** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.

SEE SHEET 2 FOR CURB RAMP OPENING DETAILS.

SECTION B-B

CURB RAMP ORIENTATION

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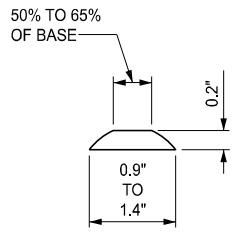
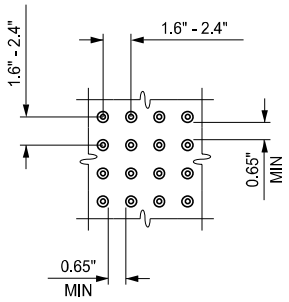
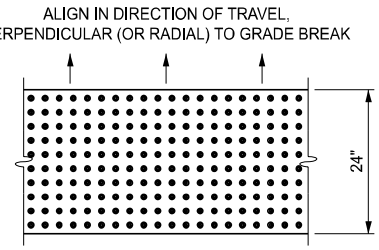


DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

APPLY DETAILS SPECIFIED ON THIS PLAN TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

LOCATE CURB RAMPS AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

PROVIDE RAMPS AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. PROVIDE RAMPS AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

PROVIDE SURFACE TEXTURE TO THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

RAMP THE SIDEWALK WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

ENSURE A UNIFORM GRADE ON THE RAMP. SLOPE THE RAMP IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL, WHERE CONDITIONS PERMIT.

INCREASE RAMP WIDTH, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

REDUCE RAMP WIDTH TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4' WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE.

CURB RAMPS WITH A RUNNING SLOPE ≤ 5% DO NOT REQUIRE A TOP LANDING. HOWEVER, FOR ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP, INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2.1% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

ENSURE DETECTABLE WARNING SURFACE COVERS A MINIMUM OF 24" IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING, EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. IF A BORDER IS DESIRED, OFFSET THE BORDER 2" MAXIMUM ALONG THE EDGES OF THE DETECTABLE WARNING. FOR RADIAL CURB, MEASURE THE OFFSET FROM THE ENDS OF THE RADIUS.

DO NOT EXCEED A RAMP CROSS SLOPE OF 2.1% FOR NEW ROADWAY CONSTRUCTION. FOR ALTERATIONS TO EXISTING ROADWAYS, TRANSITION THE CROSS SLOPE TO MEET AN EXISTING ROADWAY GRADE. APPLY THE CROSS SLOPE TRANSITION UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, NO RAMP OR SERIES OF RAMPS IS REQUIRED TO EXCEED 15 FEET IN LENGTH, NOT INCLUDING LANDINGS OR TRANSITIONS.

DO NOT PLACE DRAINAGE STRUCTURES IN LINE WITH RAMPS. GIVE PRECEDENCE TO THE LOCATION OF THE RAMP, OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. LIMIT OPENINGS TO ½" OR LESS. PLACE ELONGATED OPENINGS SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

ENSURE THE TOP OF THE JOINT FILLER (FOR ALL RAMP TYPES) IS FLUSH WITH THE ADJACENT CONCRETE.

LOCATE CROSSWALK AND STOP LINE MARKINGS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SEE THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR SPECIFIC DETAILS FOR MARKING APPLICATIONS.

PROVIDE FLARED SIDES WITH A MAXIMUM SLOPE OF 10%, MEASURED ALONG THE ROADSIDE CURB LINE, WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE NOT REQUIRED, CONSIDER FLARED SIDES IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

INSTALL DETECTABLE WARNING PLATES USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

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