

GENERAL NOTES

- 1. THE DETECTABLE WARNINGS SHALL BE INSTALLED AT SIDEWALK TO STREET TRANSITIONS. THEY SHALL HAVE A TRUNCATED DOME SURFACE. THE DOMES SHALL BE IN A SQUARE GRID PATTERN AND ALIGNED WITH PEDESTRIAN TRAFFIC.
- 2. ALL DETECTABLE WARNING SURFACES SHALL START A MINIMUM OF 6 INCHES FROM THE FLOWLINE OF THE CURB AND NOT BE MORE THAN A MAXIMUM OF 8 INCHES FROM ANY POINT ON THE FLOWLINE OF THE CURB, WITH EXCEPTION FOR TYPES 1B MODIFIED AND 3B MODIFIED CURB RAMPS AS THIS DIMENSION MAY BE GREATER THAN 8 INCHES ON ONE SIDE OF THE RADIUS.
- 3. THE RAMP SLOPE AND DETECTABLE WARNING SURFACE SHALL BE 8.3% OR FLATTER.
- 4. TOLERANCE LIMITS ON THE RAMP RUNNING SLOPE AND FLARED SIDE SLOPES SHALL BE +0.5% MAXIMUM. THE DEPARTMENT WILL MEASURE THE SLOPES AND THOSE EXCEEDING THE MAXIMUM TOLERANCE WILL NOT BE ACCEPTED.
- 5. THE MINIMUM WIDTH FOR SIDEWALK IS 4 FEET.
- 6. DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED IN THE CURB RAMP OR TURNING SPACE AREAS.
- 7. CONSTRUCTION OF THE CONCRETE PEDESTRIAN CURB SHALL BE INCLUDED IN THE BID PRICE OF THE CONCRETE CURB RAMP.
- 8. IF THE PLACEMENT OF THE PEDESTRIAN PUSH BUTTON ASSEMBLY ON A TRAFFIC SIGNAL MAST POLE WILL NOT BE WITHIN EASY REACH (10 INCHES OR LESS AND UNDBSTRUCTED) OF ALL PEDESTRIANS (IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT), THEN A SEPARATE PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED WITHIN ADA REACH RANGES. THE PPBPA SHALL MEET THE PROVISIONS FOUND IN "SECTION 4E.08 THROUGH 4E.13 PEDESTRIAN DETECTORS" OF THE 2009 MUTCD MANUAL WITH REVISIONS 1 AND 2.
- 9. DIAGONAL CURB RAMPS (ON THE APEX) ARE NOT PREFERRED IN NEW CONSTRUCTION. A SINGLE DIAGONAL CURB RAMP (ON THE APEX) WILL ONLY BE PERMITTED DURING RECONSTRUCTION OR ALTERATION WHERE PHYSICAL OR SITE CONSTRAINTS PREVENT TWO CURB RAMPS FROM BEING INSTALLED. THE ENGINEER SHALL PROVIDE APPROVED JUSTIFICATION DOCUMENTATION (CDOT CURB RAMP DESIGN VARIANCE REQUEST FORM). ALL CURB RAMPS INSTALLED ON THE APEX MUST MEET THE STANDARDS AS DEFINED IN M-608-1.
- 10. CURB RAMPS (EXCLUDING FLARED SIDES OR BLENDED TRANSITIONS) SHALL BE WHOLLY CONTAINED WITHIN THE WIDTH OF THE CROSSWALK AND/OR THE PEDESTRIAN STREET CROSSING THEY SERVE.
- 11. ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH (0" $\pm 1/8$ "). THE JOINT BETWEEN THE ROADWAY SURFACE AND GUTTER PAN SHALL BE FLUSH.
- 12. THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS, AND AVOID PONDING IN THE FINAL CONFIGURATION.
- 13. TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, THE RAMP LENGTH SHALL NOT EXCEED 15 FEET. ADJUST THE RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE.
- 14. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 13.33%. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, TURNING SPACE, OR BLENDED TRANSITION SHALL NOT EXCEED 5.0%
- 15. FLARED SIDE SLOPES MAY EXCEED 10% ONLY WHERE THEY ABUT A NON-WALKABLE SURFACE OR THE ADJACENT CIRCULATION PATH IS BLOCKED.
- 16. THE STANDARD TURNING SPACE IS 4 FEET BY 4 FEET. WHERE THE TURNING SPACE IS CONSTRAINED, THE TURNING SPACE SHALL BE 4 FEET MINIMUM BY 5 FEET MINIMUM. THE 5 FOOT DIMENSION SHALL BE PROVIDED IN THE DIRECTION OF THE RAMP RUN.

PERCENT SLOPE	1.0%	2.0%	5.0%	7.1%	8.3%	10.0%
EQUIVALENT SLOPE	100:1	50:1	20:1	14:1	12:1	10:1

SLOPE TABLE

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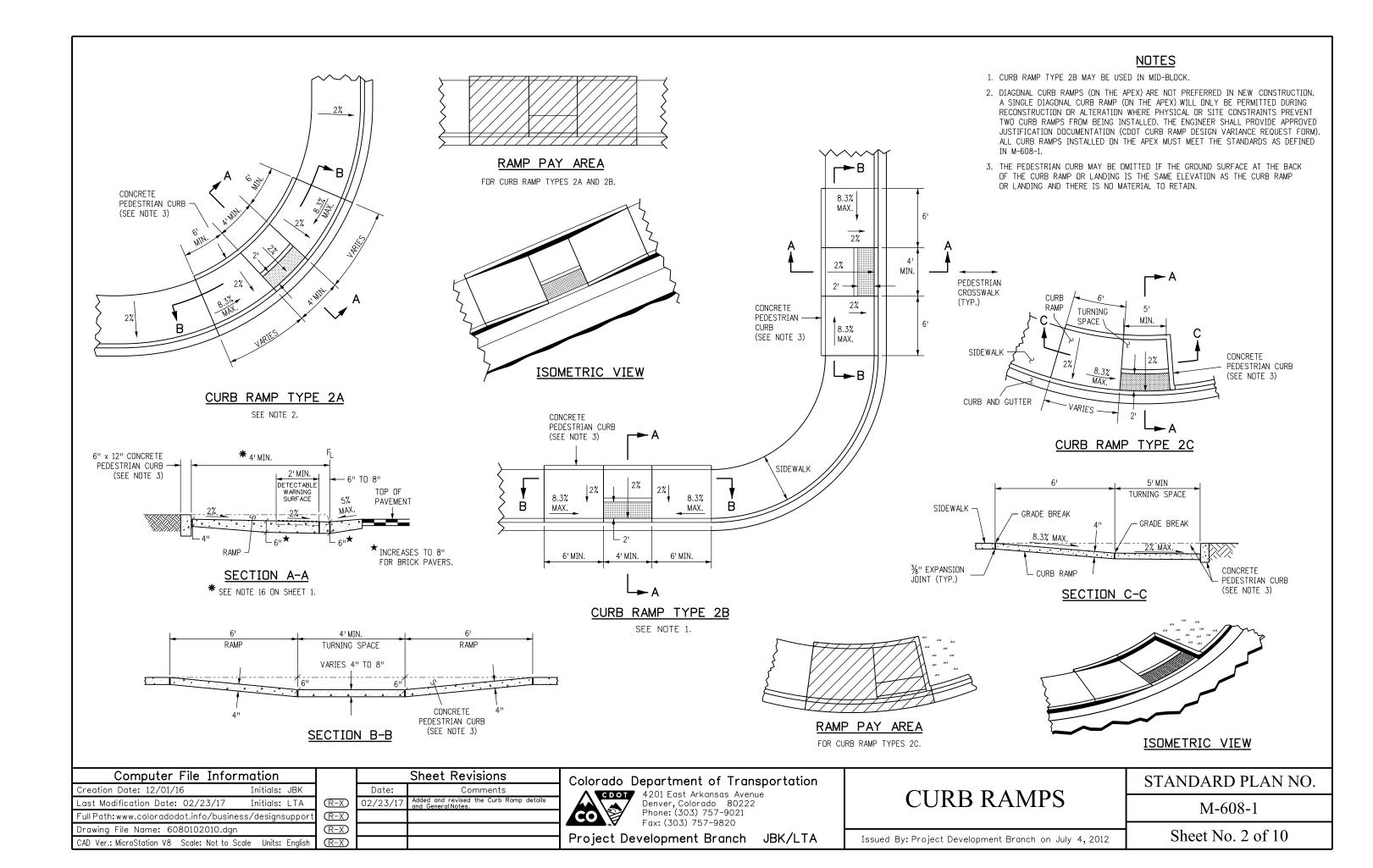
CURB RAMPS

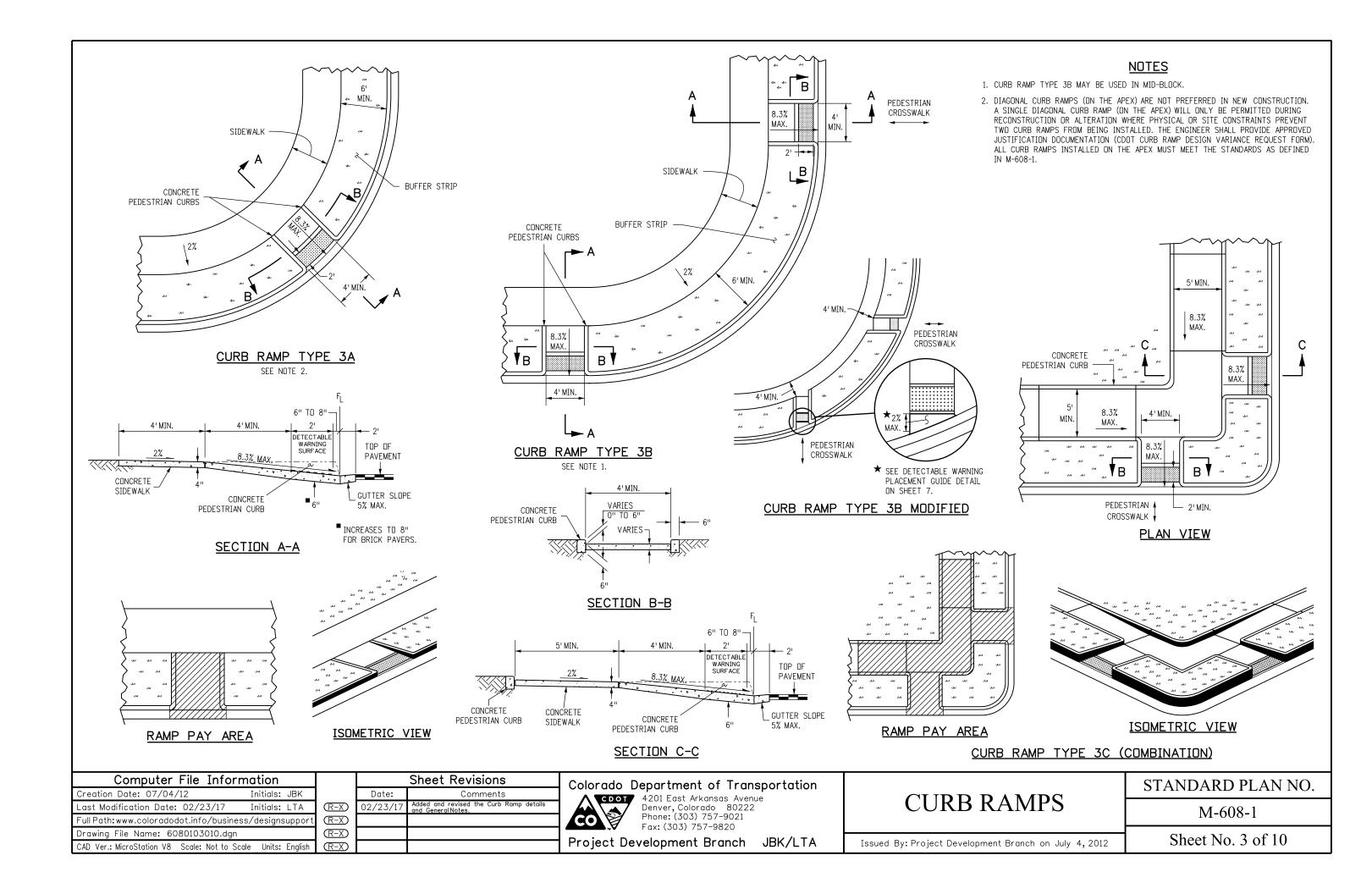
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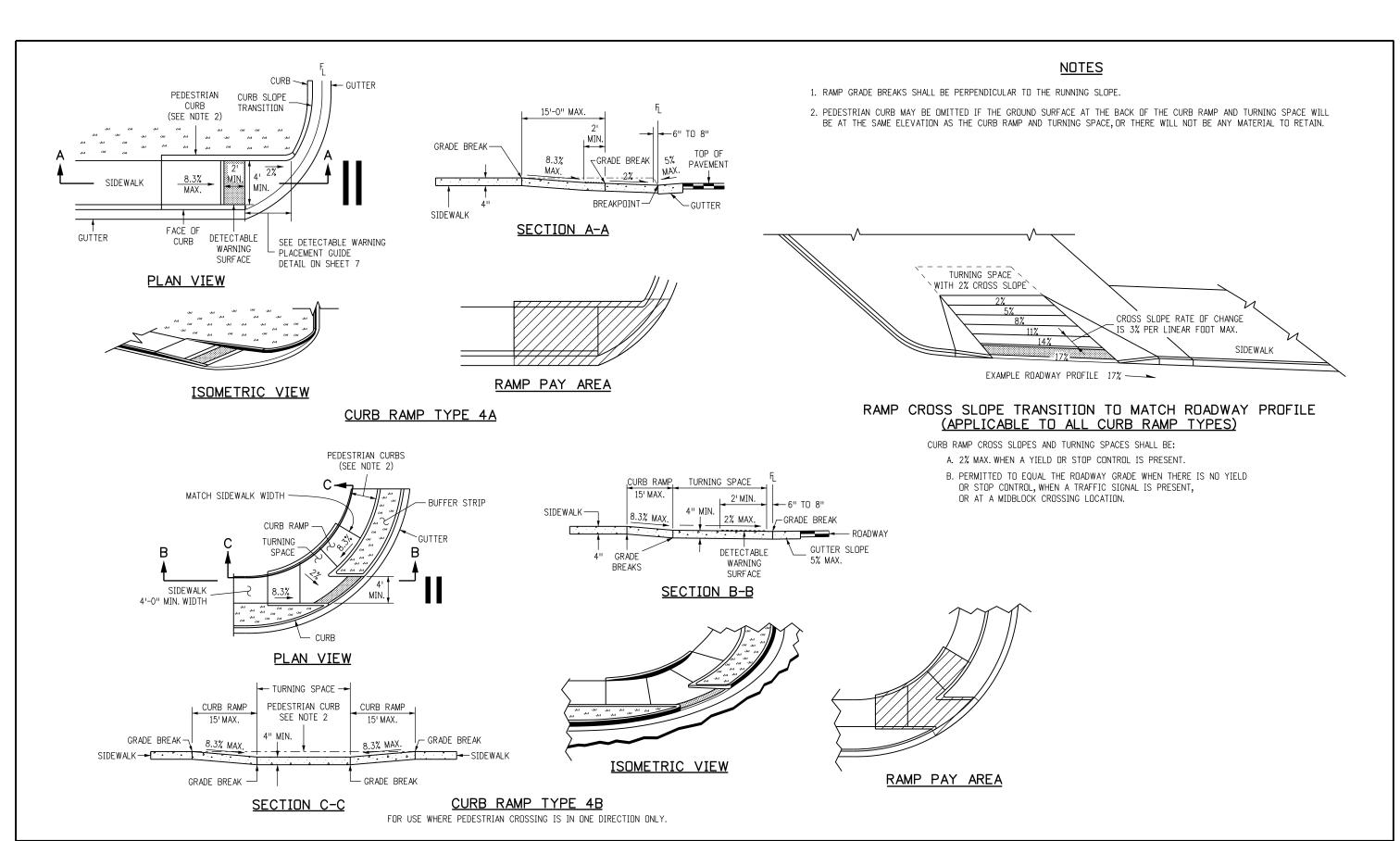
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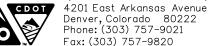
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R-X 02/23/17 Added and revised the Curb Ramp details and General Notes.

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CURB RAMPS

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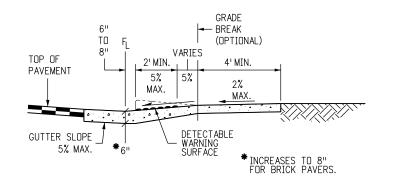
Sheet No. 4 of 10

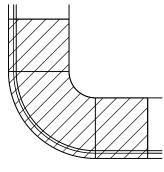
SIDEWALK WIDTH VARIES CURB & GUTTER RAMP 8.3% MAX. VARIES MAX. FLARED SIDE 0000 0000 000 GRADE BREAK 2% MAX. OPTIONAL SIDEWALK WIDTH RAMP 8.3% MAX. VARIES SIDE - VARIES -

BLENDED TRANSITION (DEPRESSED CORNER) TYPE 5A

<u>NOTES</u>

- 1. SLOPES SHOWN AS TYPICAL IN SECTION A-A MAY BE ADJUSTED IF NECESSARY TO FIT EXISTING CONDITIONS BUT MAY NOT EXCEED 5% SLOPE UNDER ANY CONDITIONS.
- 2. ALL TRUNCATED DOME PANELS OR PAVERS PLACED AT THE SAME CORNER SHALL BE MADE UP OF THE SAME UNIFORM MATERIAL TYPE.
- 3. DEPRESSED CORNERS WITH LARGE SPANS CAN MAKE THE STREET TRANSITION DIFFICULT TO DETECT FOR PEDESTRIANS AND MOTORISTS. LIMIT THE SIZE AND DELINEATE WITH DETECTABLE WARNINGS. SHOULD A LARGE DEPRESSED CORNER BE AN EXISTING CONDITION, CONSIDER ADDING INTERMITTENT BARRIERS, SUCH AS PLANTING BOXES OR BOLLARDS NEXT TO THE CURB TO PREVENT VEHICLES FROM TRAVELING ONTO THE SIDEWALK WHEN TURNING THE CORNER. SPACE THE BARRIERS AT LEAST 36 INCHES APART TO PERMIT WHEELCHAIR USERS TO PASS.





SECTION A-A

RAMP PAY AREA

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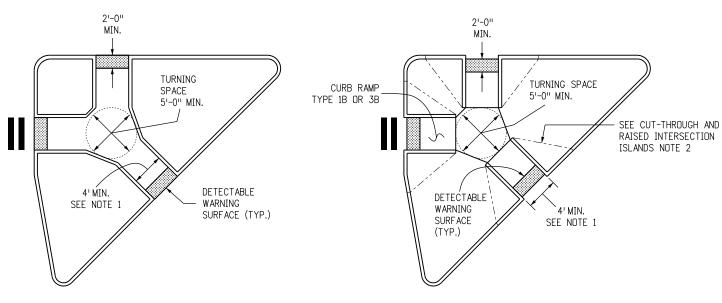
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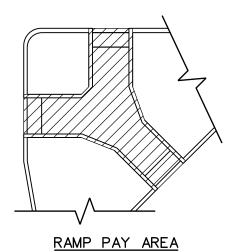
<u>NOTE</u>

1. CURB RAMP AND CUT-THROUGH WIDTHS SHOULD BE THE SAME WIDTH AS ANY SIDEWALK OR MULTI-USE PATHS WHICH THEY SERVE.



CUT-THROUGH AND RAISED INTERSECTION ISLANDS

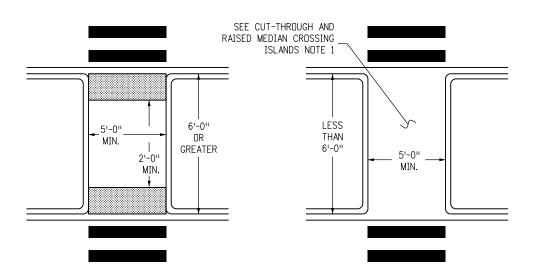
- 1. FOR CUT-THROUGH INTERSECTION ISLANDS, THE DETECTABLE WARNING SURFACES SHALL BE AT THE FLOWLINE. FOR RAISED INTERSECTION ISLANDS, THE DETECTABLE WARNING SURFACES SHALL BE 6 TO 8 INCHES BACK FROM THE FLOWLINE (SEE SHEET 7).
- 2. FLARED SIDES ARE PREFERENTIAL ON RAISED INTERSECTION ISLANDS AND SHOULD BE PROVIDED FOR ISLANDS WHICH SERVE MULTI-USE PATHS OR AT LOCATIONS WHERE BICYCLE USE IS EXPECTED.

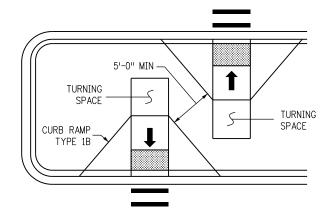


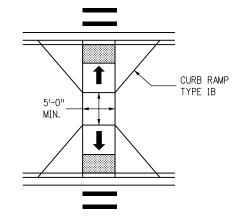
(WILL INCLUDE FLARED SIDES IF CONSTRUCTED)

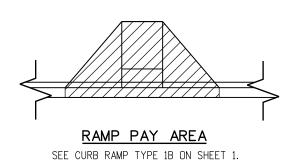
SEE CURB RAMP TYPE 3B ON SHEET 3,

OR CURB RAMP TYPE 1B ON SHEET 1.









CUT-THROUGH AND RAISED MEDIAN CROSSING ISLANDS

1. FOR CUT-THROUGH MEDIAN CROSSING ISLANDS, DETECTABLE WARNING SURFACES SHALL BE PLACED AT THE EDGES OF THE ISLAND AND BE SEPARATED BY A MINIMUM 2 FOOT SPACE WITHOUT DETECTABLE WARNING SURFACES. IF A 2 FOOT SEPARATION BETWEEN DETECTABLE WARNING SURFACES CANNOT BE PROVIDED, THEN NO DETECTABLE WARNING SURFACES SHALL BE INSTALLED.

PERPENDICULAR CURB RAMPS FOR CROSSING ISLANDS

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CURB RAMPS

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GUTTER GUTTER GUTTER GURB FLARED FLARED GROWN FLARED FLARED FLARED GROWN FLARED FLARED GROWN FLARED FOR CURB RAMP FOR AS CONCRETE CURB AND GUTTER PAID FOR AS CURB RAMP TO BE POURED MONOLITHICALLY

SECTION VIEW FOR TYPES 1 AND 3 CURB RAMPS

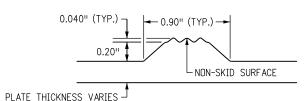
P.J. = PERMISSIBLE JOINT WITH EPOXY-COATED DEFORMED NO. 4 BY 18 IN. BARS

CONFORMING TO AASHTO M 284 AT 18 IN. SPACING.

PLAN VIEW OF DETECTABLE WARNING SURFACE

NOTES

- 1. THE TRUNCATED DOME PLATE SHALL BE EMBEDDED IN THE CONCRETE CURB RAMP WHILE CONCRETE IS PLASTIC.
- THE TRUNCATED DOME PLATE TO BE USED SHALL BE ON THE CDOT APPROVED PRODUCT LIST.
- 3. WHEN THE DETECTABLE WARNING SURFACE IS CUT, GRIND OFF THE REMAINING PORTION OF ANY CUT DOMES. SEAL ALL CUT PANEL EDGES WITH AN APPROVED PRODUCT LIST (APL) SEALANT TO PREVENT WATER DAMAGE.
- 4. THE DETECTABLE WARNING SURFACE SHALL SPAN THE ENTIRE WIDTH OF THE RAMP. IF CONDITIONS DO NOT ALLOW THE ENTIRE SPAN, THE DETECTABLE WARNING SURFACE SPAN SHALL NOT BE MORE THAN 2 INCHES AWAY FROM EACH SIDE OF RAMP.



ELEVATION VIEW OF DETECTABLE WARNING PLATE

SIDEWALK

MAX.

MAX

←FLOWLINE

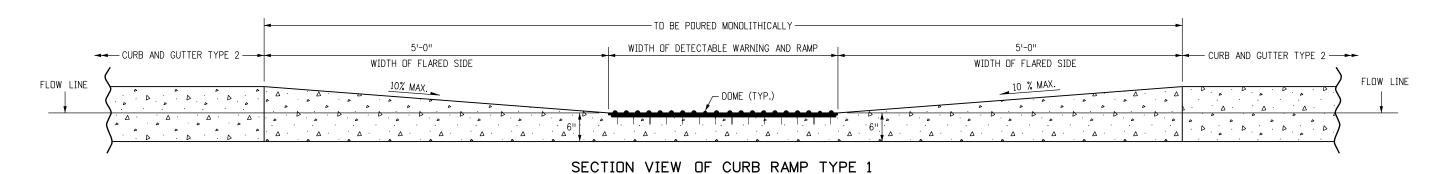
GREATER THAN 5'

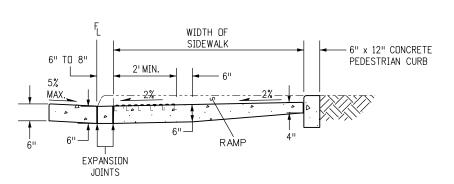
FROM BACK OF CURB

-GUTTER

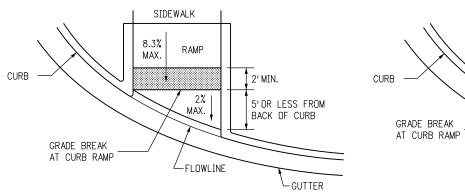
RAMP

MIN.





SECTION VIEW FOR TYPE 2 CURB RAMP



DETECTABLE WARNING PLACEMENT GUIDE FOR PAVERS AND PLATES

CURB RAMP TYPES WITH SURFACE PLATES

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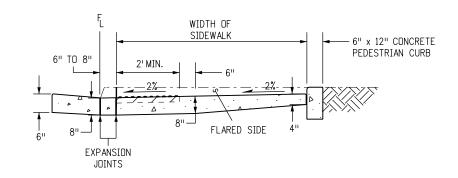


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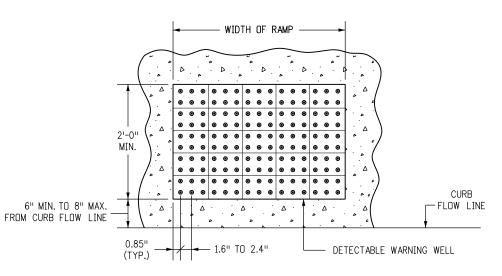
GUTTER GUTTER

P.J. = PERMISSIBLE JOINT WITH EPOXY-COATED DEFORMED NO. 4 BY 18 IN. BARS CONFORMING TO AASHTO M 284 AT 18 IN. SPACING.

SECTION VIEW FOR TYPES 1 AND 3 CURB RAMPS

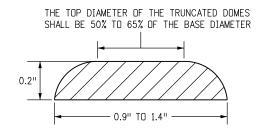


DETAIL FOR TYPE 2 CURB RAMP



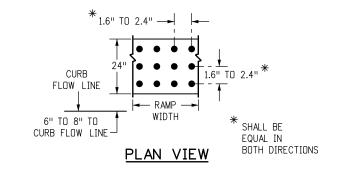
PLAN VIEW OF DETECTABLE WARNING AND WELL

(PAVERS NOT DRAWN TO SCALE)



ELEVATION VIEW OF SINGLE DOME

DOME AND DETECTABLE WARNING DETAILS



NOTES

1. THE DETECTABLE WARNINGS SHALL BE BE MADE OF PAVERS

2. THE TOP OF THE DRAINAGE WEEP HOLE SHALL BE LOCATED AT THE LOWEST POINT OF THE DETECTABLE WARNING WELL.

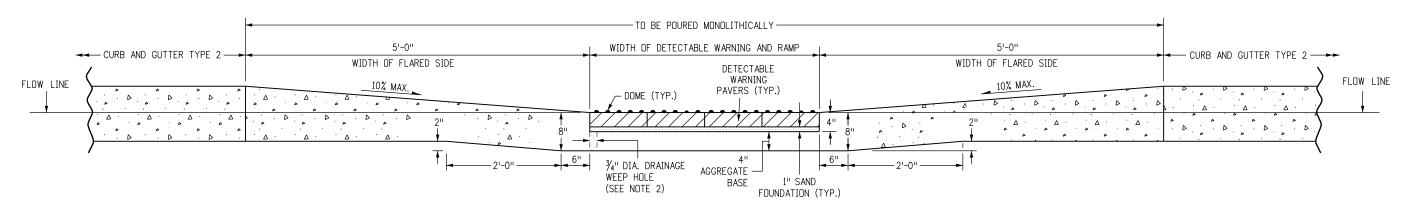
3. THE DETECTABLE WARNING SURFACE SHALL SPAN THE ENTIRE WIDTH

OF THE RAMP. IF CONDITIONS DO NOT ALLOW THE ENTIRE SPAN,

THE DETECTABLE WARNING SURFACE SPAN SHALL NOT BE MORE THAN

WITH A TRUNCATED DOME SURFACE.

2 INCHES AWAY FROM EACH SIDE OF RAMP.



SECTION VIEW OF CURB RAMP TYPE 1

CURB RAMP TYPES WITH PAVERS

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