



**MACOMB TOWNSHIP**  
54111 BROUGHTON ROAD  
MACOMB, MI 48042

586-992-0710



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKS/STAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

**TOWNSHIP OF  
MACOMB**

**PAVING STANDARD DETAILS  
(2 OF 2)**

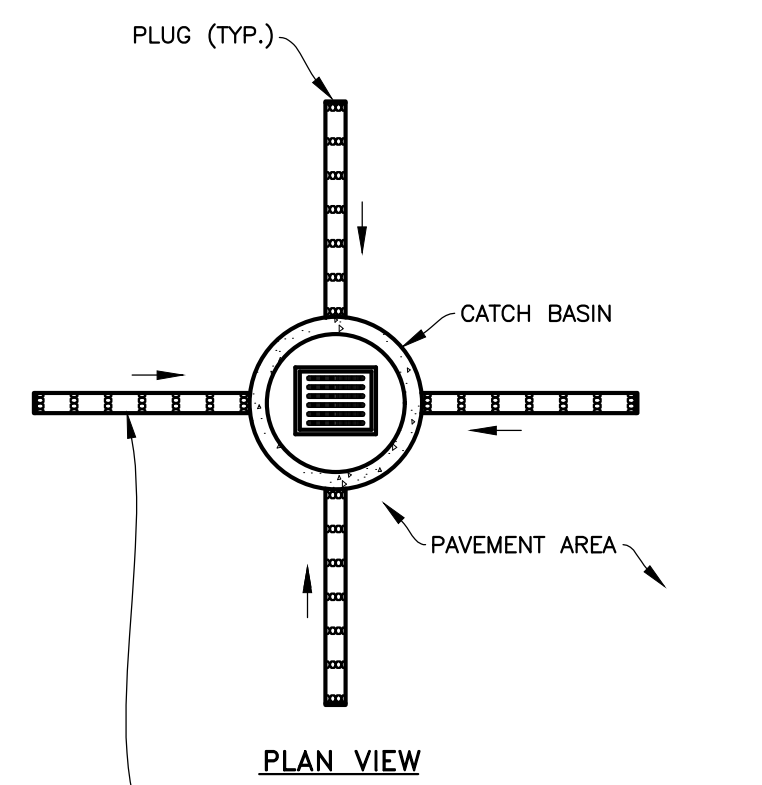
TOWN 3 NORTH RANGE 13 EAST  
MACOMB TOWNSHIP  
MACOMB COUNTY

NO.	DATE	REVISION
1	10-15-14	SHEET UPDATE
2	11-08-15	SHEET UPDATE
3	01-04-16	SIDEWALK RAMP THICKNESS
4	01-24-17	SHEET UPDATE
5	08-20-18	SHEET UPDATE

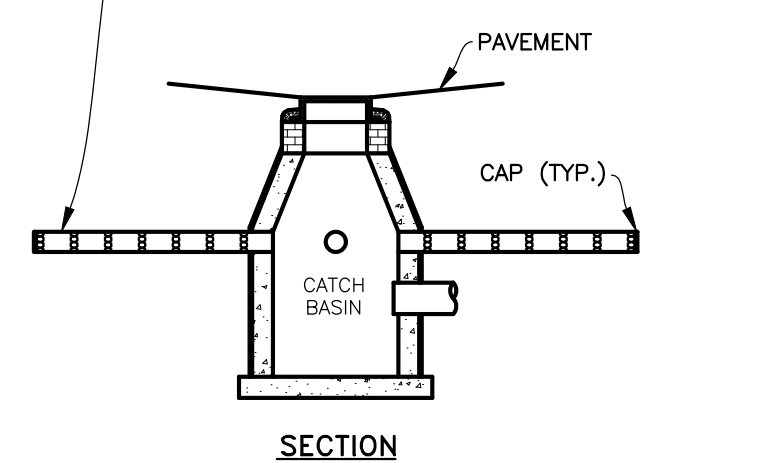
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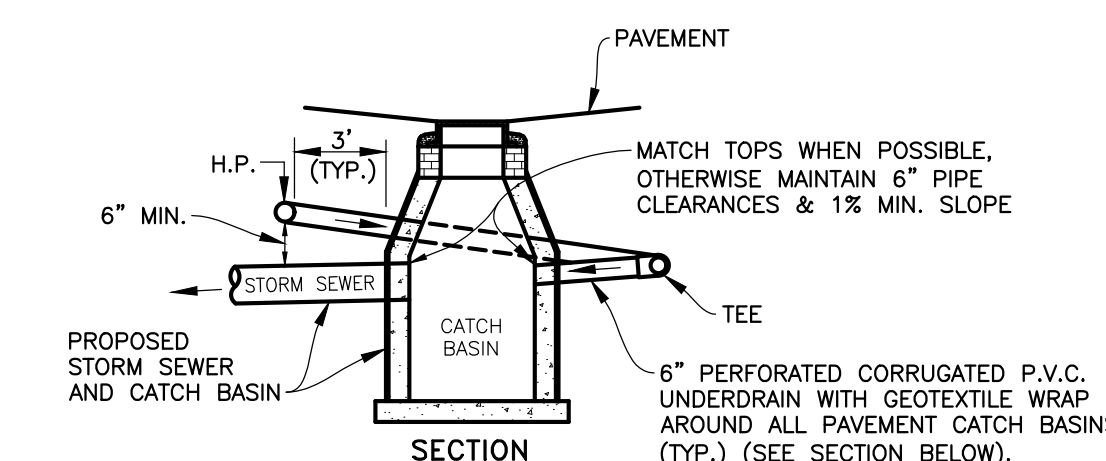
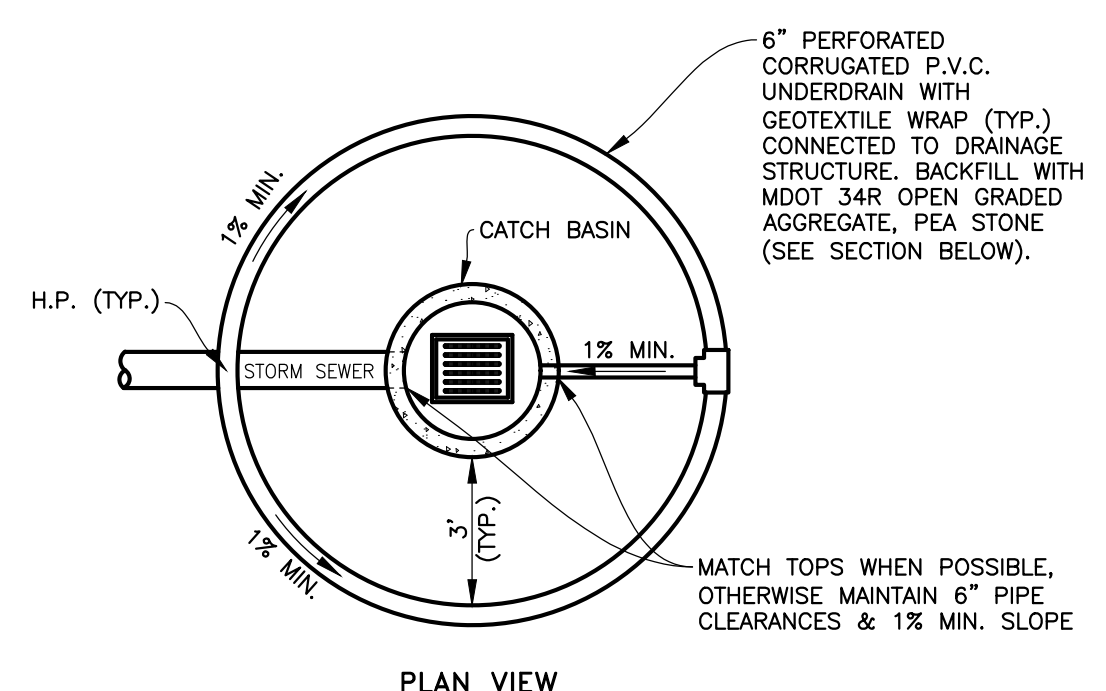
VERIFY SCALES	
BAR IS ONE INCH ON ORIGINAL DRAWING	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
JOB NO.	DRAWING NO.
SCALE:	SHEET NO.
N.T.S.	P2



10 LF. OF 6" PERFORATED CORRUGATED P.V.C. UNDERDRAIN WITH GEOTEXTILE WRAP (TYP.) CONNECTED TO DRAINAGE STRUCTURE. BACKFILL WITH MDOT 34R OPEN GRADED AGGREGATE, PEA STONE (SEE DETAIL BELOW).

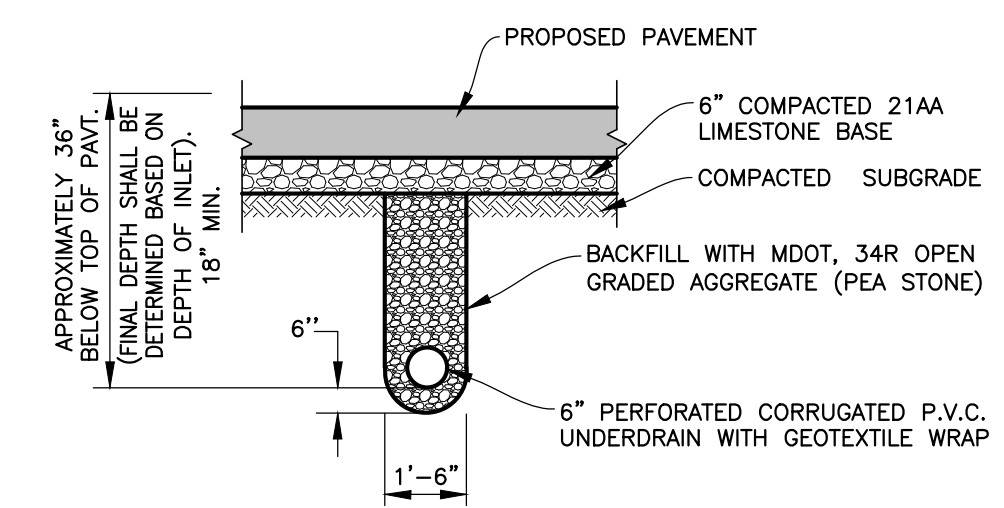


**TYPICAL 6" FINGER TYPE  
UNDERDRAIN DETAIL**  
(WITHIN PARKING LOTS OUTSIDE CURB LINES)  
**DETAIL - 5A**  
NOT TO SCALE



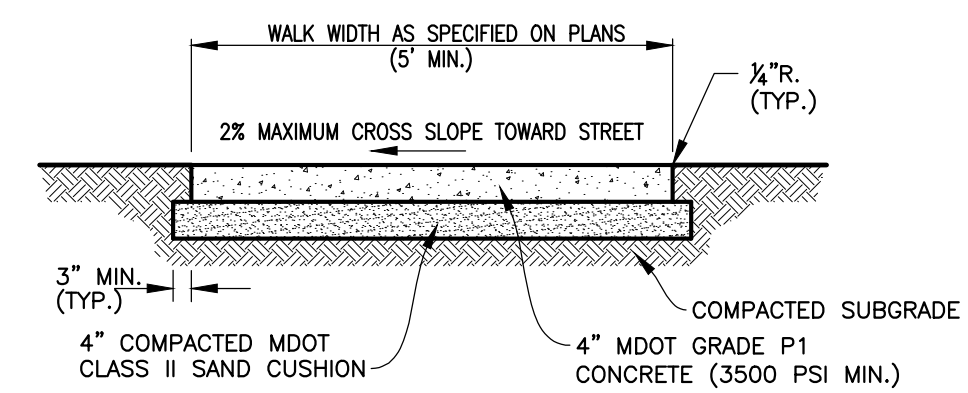
**TYPICAL 6" CIRCULAR  
UNDERDRAIN DETAIL**  
(WITHIN PARKING LOTS OUTSIDE CURB LINES)  
**DETAIL - 5B**  
NOT TO SCALE

- UNDERDRAIN NOTES**
- UNDERDRAIN TO BE 6" PVC AASHTO M 252 SDR-35 WITH PERFORATIONS MEETING AASHTO M 278 OR M 252.
  - ALL UNDERDRAIN SHALL BE INSTALLED AT A MIN. SLOPE OF 1%.
  - PIPE SHALL BE INSTALLED WITH THE PERFORATIONS PLACED DOWN.
  - PROPOSED UNDERDRAIN PIPE LAYOUT, FLOW LINE ELEVATION AND DETAILS SHALL BE APPROVED PRIOR TO CONSTRUCTION.

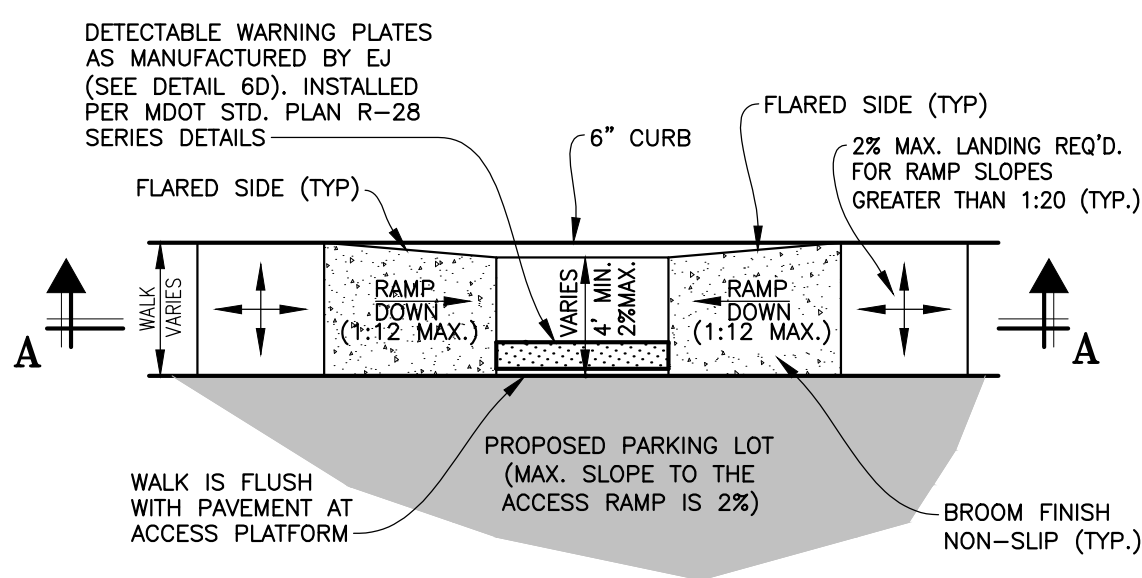
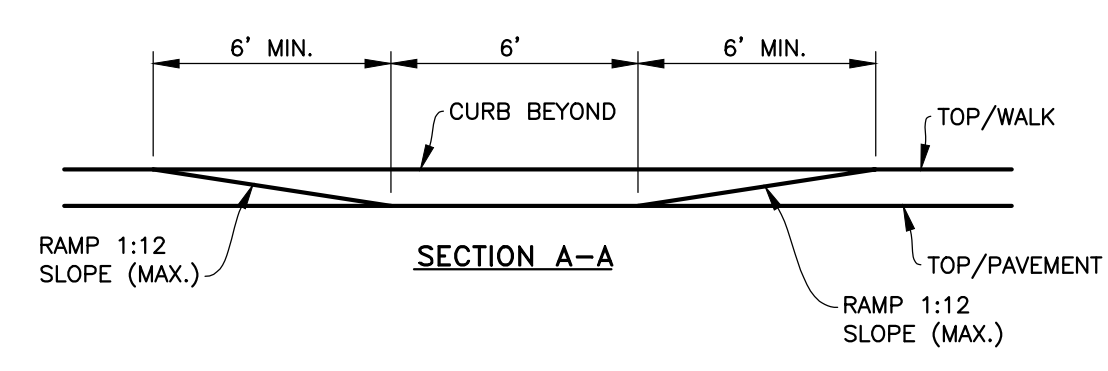


**UNDERDRAIN DETAIL**  
**DETAIL - 5C**  
NOT TO SCALE

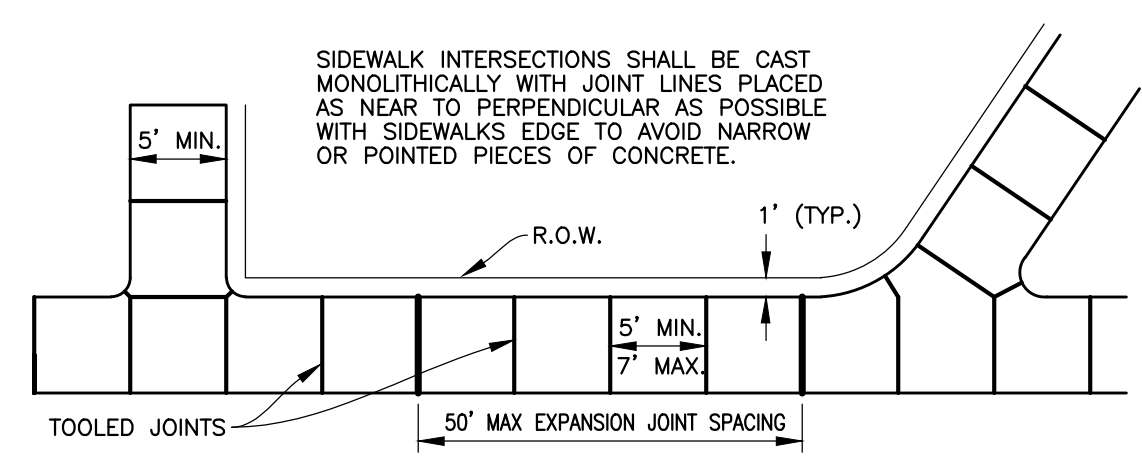
**TYPICAL UNDERDRAIN DETAILS - 5**



**TYPICAL CROSS SECTION  
4" CONCRETE SIDEWALK**  
**DETAIL - 6A**  
NOT TO SCALE



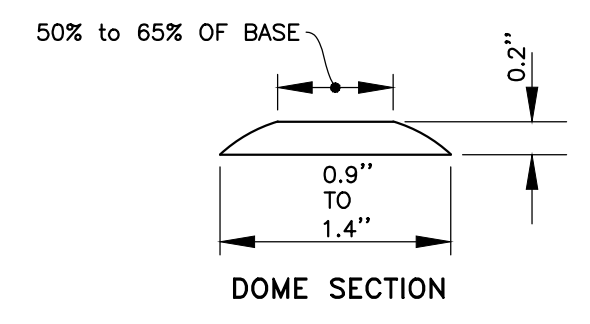
**TYPICAL PARKING LOT SIDEWALK RAMP DETAIL**  
**DETAIL - 6B**  
NOT TO SCALE



**TYPICAL SIDEWALK JOINT LAYOUTS**  
**DETAIL - 6C**  
NOT TO SCALE

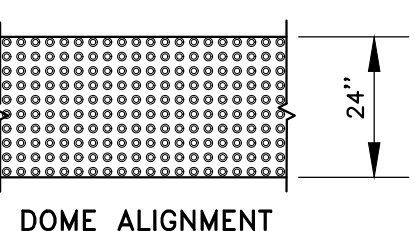
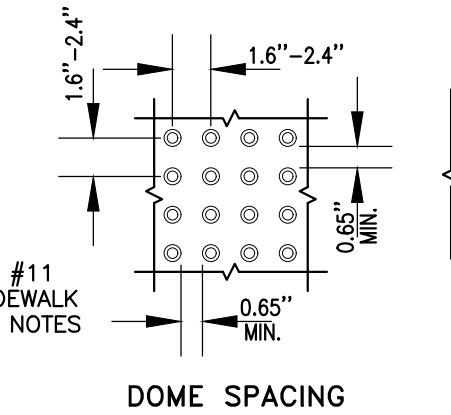
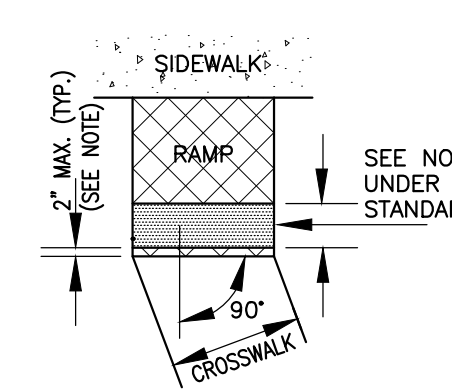
**SIDEWALK JOINTS NOTES**

- CONSTRUCT TRANSVERSE AND LONGITUDINAL EXPANSION AND PLANE OF WEAKNESS JOINTS AT INTERVALS AND LOCATIONS SHOWN ON THE PLANS. ALIGN TRANSVERSE JOINTS WITH LIKE JOINTS IN ANY ADJACENT SLAB.
- CONSTRUCT JOINTS WITH FACES PERPENDICULAR TO THE SIDEWALK SURFACE.
- PLACE CONTRACTION JOINTS AT 5' MINIMUM AND 7' MAXIMUM INTERVALS. JOINTS ARE TO BE FULL WIDTH OF THE WALK AND MINIMUM 1/4 SLAB THICKNESS DEEP AND 1/8 INCH TO 1/4 INCH WIDE.
- PLACE 1" FIBER EXPANSION JOINT FILLERS AT MAX. 50' INTERVALS. EXTEND EXPANSION JOINT FILLER THE FULL DEPTH OF THE JOINT WITH THE TOP SLIGHTLY BELOW THE FINISHED SURFACE OF THE SIDEWALK.
- PLACE 1" FIBER EXPANSION JOINT FILLERS AT EACH SIDE OF DRIVE.
- PROVIDE 1" FIBER EXPANSION JOINT FILLERS AT CURB AND BUILDING OR R.O.W. LINE.



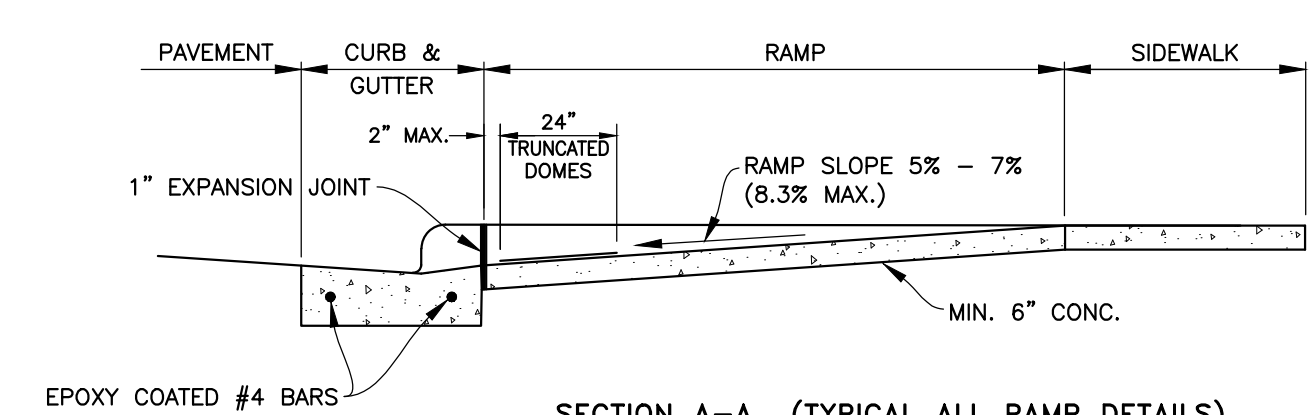
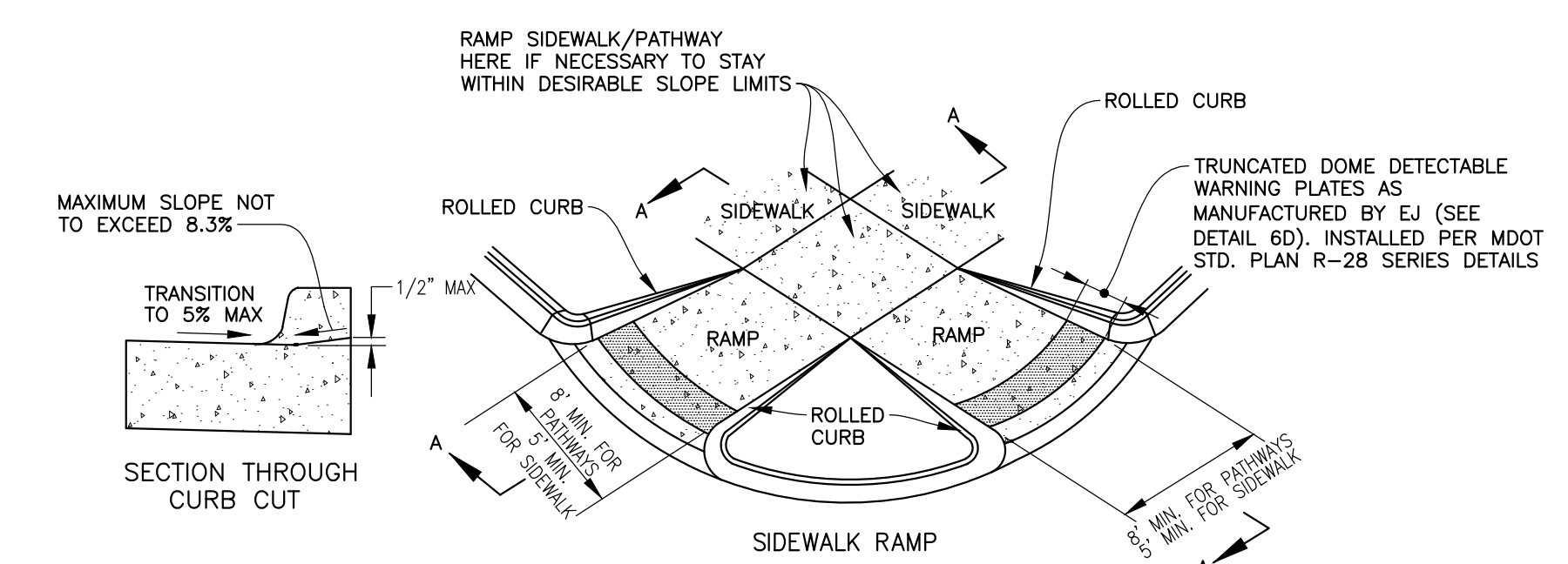
THE ROWS OF TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL (PERPENDICULAR SHOWN) TO THE GRADE BREAK BETWEEN THE RAMP, LANDING, OR BLENDED TRANSITION AND THE STREET.

NOTE: DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THEY SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 2" MAX. FROM THE BACK OF CURB. THE ROWS OF TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP, LANDING, OR BLENDED TRANSITION AND THE STREET.



ACCEPTABLE DETECTABLE WARNING PLATE MANUFACTURERS SHALL BE:  
EJ - DURALAST DETECTABLE WARNING PLATE WITH BLACK ASPHALTIC DIP FINISH

**DETECTABLE WARNING DETAILS**  
**M.D.O.T. STANDARD PLAN R-28 SERIES**  
**DETAIL - 6D**  
NOT TO SCALE



**TYPICAL SIDEWALK RAMP DETAILS AT ROAD INTERSECTION**  
**M.D.O.T. TYPE 4**  
**STANDARD PLAN R-28 SERIES**  
**DETAIL - 6E**  
NOT TO SCALE

**SIDEWALK STANDARD NOTES**

- SIDEWALK RAMP, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN ON THE PLAN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.
- SIDEWALK AND PATHWAY RAMP ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. DETAILS 6C, 6D, & 6E SHOW SIDEWALK RAMP DETAILS AT PARKING LOT AND ROADWAY INTERSECTION. HANDICAP RAMP SHALL MEET A.D.A. BARRIER FREE REQUIREMENTS.
- RAMP SHALL BE PROVIDED AT CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB.
- SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE SLOPE OF RAMP.
- SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.
- CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SACS AND SHORT GRADE CHANGES. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
- IF POSSIBLE, DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMP, EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURE.
- THE NORMAL OUTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
- THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
- CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THEY SHALL BE LOCATED AND INSTALLED AS INDICATED ON MDOT STANDARD PLAN R-28 SERIES DETAILS.

**TYPICAL CONCRETE SIDEWALK DETAILS - 6**

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